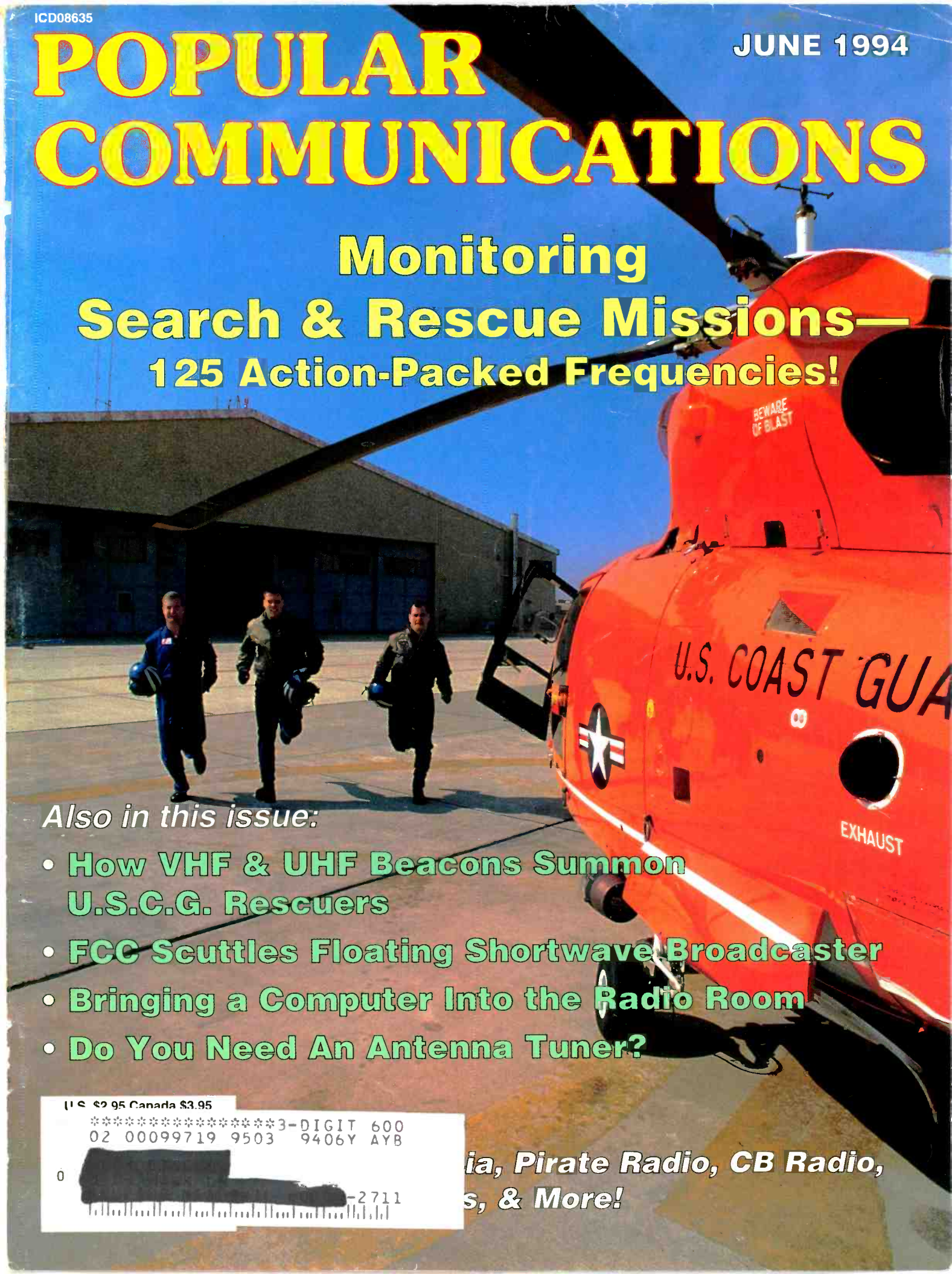


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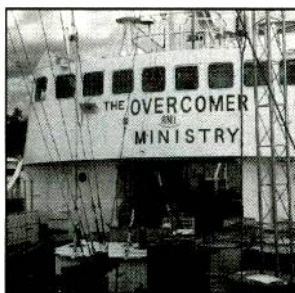
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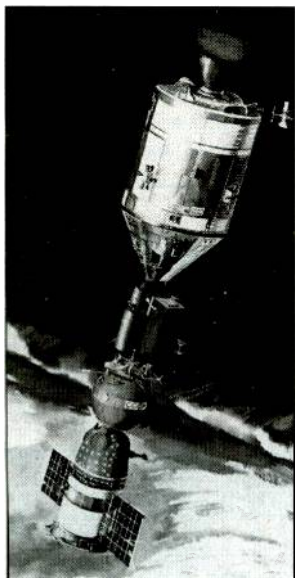
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This month's cover: The air-sea rescue unit of the U.S. Coast Guard group prepares for a mission in Cape May, NJ. Photo by Larry Mulvehill, WB2ZPI.

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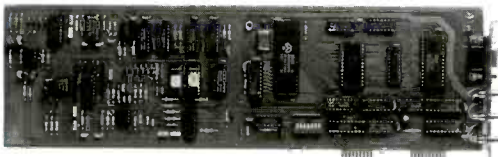
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BEAMING IN

BY TOM KNEITEL, K2AES

AN EDITORIAL

The Bad, The Good, & The Ugly

Last January, *POP'COMM* carried a feature about the popular hobby of monitoring cordless telephones. As usual when we cover topics such as this, additional snippets and kernels of relevant interest began popping up from readers and other sources.

While the January issue was still at the printer, we received a letter from a reader in Sacramento County, California. This fellow, who happens to be a licensed amateur, wrote that a few weeks earlier he had been arrested and charged with violation of law PC-632(a), "Eavesdropping." The state of California classifies this as a felony.

The stringent California laws against cordless monitoring had been pointed out several times in previous issues of *POP'COMM*, as they were also to be mentioned in the forthcoming January issue.

Our reader told us that he had tuned in on a cordless phone call made by his girlfriend. This was at a time when she was ending their relationship. He was listening in with the hope of gaining a better insight into the reason for the breakup, because he felt she wasn't telling him the truth. He describes what he heard as "an eye opener."

That caused him to make the terrible mistake of confronting her with his revelations, then compounding the error by blurted out the secret of how the information had been obtained. By revealing to someone that he had listened in on her cordless phone call, it entirely shut off any future flow of juicy information. There might have been much more to hear at a later date. No matter, he had provided information that was possibly self-incriminating.

In the aftermath of his information revelation, the ex-girlfriend went to the police and promptly filed a felony eavesdropping complaint. The rejected suitor was subsequently arrested and forced to sit in jail for four days. Then he was brought before a judge where he learned that his \$5,000 bail wasn't going to be reduced. Neither was the judge going to let him out on his own recognizance. His parents posted his bail, and the following day, he learned that the incident caused him to lose his job.

The public defender advised him that, if convicted, he faced a possible sentence of two to three years.

This bad affair inspired me to create a simple electronics surveillance axiom: "He who eavesdrops with naught to say, lives to snoop another day."

Not all cordless monitoring via scanners turns out badly. In Buffalo, New York, a scanner owner made some tapes of certain suspicious cordless phone calls. Those

tapes triggered an FBI investigation and arrests in an apparent telemarketing scam that charged four persons with cheating elderly people across the nation out of thousands of dollars. The story was reported in the *Buffalo News*.

The scanner owner had first accidentally discovered the activities one night when he happened to scan past the cordless phone channels. Someone was making sales pitches via long distance calls that he thought were being done with the intention of ripping people off. He was so disturbed and upset that he began making tapes and turning them over to the FBI, according to the newspaper account.

The scam required people to send in money to supposedly become eligible to win a prize consisting of \$25,000 in cash. All who sent money were promised a "Say No to Drugs" package. The US Attorney's office later stated that the victims of the scam were not selected at random. It was determined, "They picked on extremely unsophisticated people, often people with emotional or physical problems. They convinced these people to go into their savings accounts and send thousands of dollars, anywhere from \$1,500 to \$15,000. The most gullible and defenseless people were the victims."

One tape had the caller spend 20 minutes explaining to an elderly woman the name of his company and the address where send her check. The woman told him that her husband was just learning how to get around with the help of a walker. If necessary, the company would agree to send a private messenger service to homes to pick up the money.

At times, the company reps would pretend they were bank officers, providing victims with information how to withdraw money from their accounts.

The scannist recorded one particularly tacky call on the same phone used for the scams. It was apparently one of the members of the operation speaking to his mother, explaining how badly he felt about doing the kind of work in which he was involved, because it included cheating people. Mom offered consoling words of reassurance, asking him where else he could ever make that kind of money.

After a two-month investigation in which the agency made its own tapes, the FBI moved in and made the arrests. The people were charged with wire fraud, mail fraud, and conspiracy. Prosecutors gave

(Continued on page 81)

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MAILBAG

LETTERS TO THE EDITOR

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 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 N. Broadway, Hicksville NY 11801.

Big Brother is Listening

Your January editorial was about the many federal agencies performing electronic surveillance on citizens' "private" telecommunications. Arriving on my day off, the editorial got me wound up and I wanted to add my quarter's worth.

Print and broadcast media are complaining about restrictions put on their right to disseminate material they deem appropriate. The artistic community complains that the government is censoring their work. Cigarette smokers are sent out of doors to exercise what they see as one of their rights. The federal government tells us how to run our local schools. Legitimate ownership of handguns has become so difficult that criminals can get handguns more easily than honest citizens. Scanner owners are told which frequencies we aren't allowed to monitor, and manufacturers are forbidden to sell receivers that pick up certain frequencies.

The list goes on and on. We are losing a little at a time. You may have heard the story about being able to cook a frog by slowly bringing up the heat one degree at a time. Before the poor frog knows what hit him, he's cooked.

The problem is that we haven't yet realized that we either hang together, or we hang separately. So, long as we keep looking at the loss of someone else's rights as *their* problem, and not everybody's problem, then personal rights are going to continue to be chipped away a little at a time. Government intrusion and regulation already exists in every facet of our lives. It's more than I care to pay for.

And, by the way, how can we, as hams, be expected to control harmonics and spurious emissions on frequencies that we can't buy equipment to monitor?

David Schoepf WØZG,
Somerville, AL

Your January editorial was off base. The federal government requires the use of electronic surveillance in order to investigate certain criminal activity and threats to national security. You would tie the hands of agencies working to end the things you enumerated in your editorial, such as smuggling, illegal immigration, etc. I believe

you should support these efforts rather discuss them in a negative manner.

R. Sorensen,
Indiana

Reference is made to your January editorial regarding the unconstitutional indiscriminate monitoring of everyone's international calls, faxes, and telexes by the National Security Agency. Mr. Kneitel did a great job of alerting readers to this particular encroachment by the federal government in violation of the rights guaranteed citizens by the Constitution. However, Mr. Kneitel did an about face and dismissed the efforts of a group that has apparently filed a lawsuit against the NSA for their unconstitutional actions by disparagingly saying, "Rotsa ruck on that suit." Mr. Kneitel went on, sarcastically, "We say good luck to a person or industry that thinks any federal phone call snooping should be stopped."

We must stand up to our increasingly repressive government while we still have the right to do so. As Edmond Burke said, "All that is necessary for the triumph of evil is that good men do nothing."

Ward Dean, M.D., M.S.,
Pensacola, FL

Do nothing? Dr. Dean, I plead to note that it was yours truly who wrote the January editorial that brought all of this federal eavesdropping hanky-panky out into the open. Dr. Dean's perception that I was annoyed with the lawsuit NSA isn't correct. My comment, "rotsa luck" on the lawsuit wasn't intended as criticizing the good intentions of the worthy plaintiff. It was an educated guess that doubted that such litigation would curb the NSA. The NSA is a runaway supersecret agency that, for decades, and under many administrations, has been allowed to freely operate beyond Constitutional restraints as it eavesdrops on citizens. Remember though, all federal agencies (even NSA) run on public funds. The budgets of clandestine agencies are often buried deep within the budgets of other agencies. All fed agency purse strings are held by Congress. One effective way to control runaway fed agencies would be by Congressional action. This requires honest, intelligent, and concerned members of both houses of Congress, backed by an informed and involved electorate. Our great nation doesn't presently have enough quality members of Congress or active voters to make that idea work. So NSA continues to monitor whatever and whomever it wishes. Soren Kierkegaard, a concept cruncher I much admire, wrote, "How absurd men are! They never use the liberties they have, they demand those they do not have. They have freedom of thought, they demand freedom of speech."—Editor

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Action Packed Distress Call & SAR Log

Vital HF, VHF, & UHF Frequency Information You Need

BY TOM KNEITEL, K2AES, EDITOR

More aircraft and ships find themselves in need of immediate assistance than you'd imagine. This, due to crashes, fires, storms, equipment malfunctions and other unforeseen events that threaten life and property. Aircraft and ships can get into trouble close to shore, or in mid-ocean.

Of course, aircraft can also experience mishaps in remote land areas, as do people who go to those places for sports, camping, hiking, hunting or other recreation.

Hopefully, but not necessarily, a distress call went out via radio to summon aid. Perhaps a location was given, but not always. Once it becomes known that help is needed, it triggers into action an amazingly effective network of trained groups and personnel. Survivors at sea, or persons lost or injured in wilderness areas must be located as quickly as possible in order to provide them with medical attention, food, water, and other needs.

The job of locating and retrieving such persons is known as Search and Rescue (SAR). Who performs SAR? On a national basis, the Coast Guard and all branches of the military have SAR units. Civil Air Patrol (CAP), Air Guard, and National Guard units participate. State, county, and local agencies may also provide services if a SAR is necessary within their jurisdictions.

In many areas, specialized private SAR volunteer teams, squads, and patrols have been organized for for underwater, desert, wilderness, cave, mountain, and ski areas.

Radio communications is one of the elements that coordinates and helps all of these efforts to work with such a high level of success.

Hundreds of state, local, and private SAR operations utilize frequencies that vary widely. A few typical examples: the Washoe County (Nevada) Sheriff's SAR Team utilizes 155.205 MHz; New Mexico's Wilderness Area Rescue uses 155.295 MHz, while the state's SAR is on 155.16 and 159.225 MHz; Montana's National Ski Patrol uses 151.895 MHz; Florida's Escambia SAR is on 462.575 MHz; while the North Carolina SAR on 154.54 MHz.



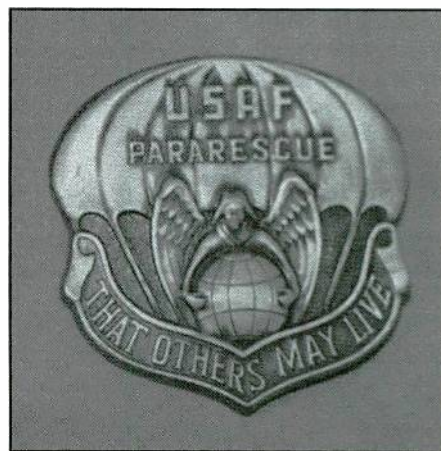
Search and Rescue Wings.

The national and international SAR frequencies remain uniform, and there are plenty of them throughout the HF, VHF, and UHF spectrum. If you have a communications receiver and/or a scanner, you can program in some basic frequencies that allow you to monitor actual distress calls, as well as the SAR missions. You'll be able to follow everything happening just as it takes place.

The accompanying *Distress Calls, Search & Rescue Log* provides a useful listing of national and international frequencies you'll want to know about.

Some explanatory notes relating to the *Log* will help. HF frequencies shown as SSB, are invariably upper sideband (USB). As a general guide, frequencies in 3 MHz and below are usually for relatively short range communications, and would be most active in the nighttime hours. Frequencies between 4 and 17 MHz would be more likely to be used both day and night, and for medium to long-range communications, with the higher frequencies preferable for the greater distances.

Emergency Position Indicating Radio Beacons (EPIRB's) are maritime devices. They come in several versions. The EPIRB-A and B units operate on 121.5 and 243.0 MHz. They transmit in AM voice, plus an unmodulated carrier, and also a rapid series of descending (1600 to 200 Hz) audio tones. EPIRB-C units operate on 156.75 and 156.80 MHz, and send out an alter-



USAF Pararescue badge.

nating two-tone (1300 and 2200 Hz) alarm signal. EPIRB-S units send out data (20 kHz bandwidth) for reception by COSPAS/SARSAT satellite. EPIRB-S units can also transmit a homing beacon on 121.5 MHz.

An Emergency Locator Transmitter (ELT) is an aviation version of an EPIRB. These units are essentially similar to EPIRB-A and B devices, and are also carried aboard survival craft.

Keying a transmitter on either 121.5 or 243.0 MHz for 30 seconds or more will activate the SARSAT International Search

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DISTRESS CALLS, SEARCH & RESCUE LOG
 (*= Most Important Frequencies)

500 kHz	Distress (CW) (phasing out)	121.6 MHz	ELT Test Stations
2103.5 kHz	Joint US/Canadian SAR Ops* (SSB)	121.65 MHz	ELT Test Stations
2174.5 kHz	Maritime Safety & Distress (NBDP)	121.7 MHz	ELT Test Stations
2182 kHz	Maritime Distress* (SSB)	121.75 MHz	ELT Test Stations
	SAR Air/Surface On-Scene* (SSB)	121.8 MHz	ELT Test Stations
2187.5 kHz	Maritime Safety & Distress (DSC)	121.85 MHz	ELT Test Stations
2261 kHz	USCG Air/Surface (SSB)	121.9 MHz	ELT Test Stations
2670 kHz	USCG Operations	121.935 MHz	National Parks Air/Ground (AM)
3023 kHz	SAR Air/Surface On-Scene* (SSB)	122.75 MHz	Air/Air* (AM)
	SAR Coordination (SSB)	122.9 MHz	SAR Practice & Training* (AM)
3109 kHz	USN SAR* (SSB)		Secondary SAR* (AM)
3120 kHz	USN/USCG Air/Surface (SSB)	123.075 MHz	Helicopter Air/Air* (AM)
3123 kHz	USN/USCG SAR Air/Surface* (SSB)	123.1 MHz	SAR Air/Surface* (AM)
4125 kHz	Air & Sea Distress* (SSB)	128.95 MHz	Pacific Ocean Air/Air (AM)
4134 kHz	Vessels to USCG on 4426 kHz (SSB)	130.55 MHz	Caribbean Sea Air/Air (AM)
4177.5 kHz	Maritime Safety & Distress (NBDP)	131.80 MHz	Atlantic Ocean Air/Air (AM)
4207.5 kHz	Maritime Safety & Distress (DSC)	132.015 MHz	National Parks Air/Ground (AM)
5167.5 kHz	Emergencies: Alaska* (SSB)	138.45 MHz	USAF SAR* (AM)
5680 kHz	SAR Air/Surface On-Scene* (SSB)	138.75 MHz	USAF SAR* (AM)
	SAR Coordination (SSB)	143.28 MHz	USCG Auxiliary* (FM)
5692 kHz	USN; USCG helos SAR* (SSB)	143.75 MHz	CAP SAR* (FM)
5696 kHz	USN; USCG Air/Surface SAR* (SSB)	148.15 MHz	CAP (FM)
5704 kHz	USAF SAR* (SSB)	155.16 MHz	Mountain SAR Squads* (FM)
5718 kHz	USN SAR* (SSB)	156.30 MHz	USCG SAR* (FM)
	Canadian Forces SAR* (AM/SSB)	156.525 MHz	Maritime Distress (DSC)
5850 kHz	Canadian Forces secondary SAR (SSB)	156.75 MHz	EPIRB-C units*
6200 kHz	Vessels to USCG on 6501 kHz (SSB)	156.80 MHz	Maritime Distress* (FM)
6215 kHz	Maritime Safety & Distress* (SSB)		SAR On-Scene* (FM)
6268 kHz	Maritime Safety & Distress (NBDP)	156.85 MHz	EPIRB-C units*
6312 kHz	Maritime Safety & Distress (DSC)	156.85 MHz	SAR Training (Non-Federal)* (FM)
6693 kHz	Canadian Forces primary SAR* (SSB)	157.05 MHz	US/Canadian CG ops (FM)
6705 kHz	Canadian Forces SAR*	157.075 MHz	Canadian CG ops (FM)
6715 kHz	USAF SAR* (SSB)	157.10 MHz	CG Liason Freq* (FM)
	Canadian Forces secondary SAR (SSB)		SAR Training (Non-Federal)* (FM)
8240 kHz	Vessels to USCG on 8764 kHz (SSB)	157.15 MHz	US/Canadian CG ops (FM)
8291 kHz	Maritime Safety & Distress* (SSB)	157.175 MHz	USCG Auxiliary* (FM)
8364 kHz	Survival Craft (CW)		Canadian CG ops (FM)
8376.5 kHz	Maritime Safety & Distress (NBDP)	161.65 MHz	Canadian CG ops (FM)
8414.5 kHz	Maritime Safety & Distress (DSC)	161.825 MHz	Canadian CG ops (FM)
8980 kHz	USN; USCG helos SAR* (SSB)	161.90 MHz	Canadian CG ops (FM)
8984 kHz	USN/USCG Air/Surface SAR* (SSB)	162.475 MHz	Canadian CG ops (FM)
8993 kHz	Canadian Forces secondary SAR (SSB)	236.0 MHz	Canadian CG ops (FM)
9006 kHz	USN SAR* (SSB)	237.9 MHz	USN/USAF Sea Survival Training (AM)
	Canadian Forces SAR* (SSB)	240.6 MHz	USCG SAR Air/Surface* (AM)
9027 kHz	Canadian Forces SAR* (SSB)	241.65 MHz	Search area marker buoy beacons
10003 kHz	Manned Space Vehicles SAR* (SSB)	242.8 MHz	USCG Air/Surface (AM)
11195 kHz	USN/USCG Air/Surface SAR* (SSB)	243.0 MHz	USCG SAR Air/Air* (AM)
11198 kHz	USN; USCG helos SAR* (SSB)		Military Aero Distress* (AM)
11201 kHz	USN/USCG Air/Surface SAR* (SSB)		ELT & EPIRB-A, -B units
11440 kHz	USAF SAR* (SSB)		Rescue beacons
	Vessels to USCG on 13089 kHz (SSB)	251.9 MHz	Manned Space Vehicle SAR* (AM)
12242 kHz	Maritime Safety & Distress* (SSB)		USAF SAR & Survival Training (AM)
12290 kHz	Maritime Safety & Distress (NBDP)	252.8 MHz	USN/USAF SAR* (AM)
12520 kHz	Maritime Safety & Distress (DSC)	259.0 MHz	USAF SAR* (AM)
12577 kHz	Maritime Safety & Distress (DSC)	261.3 MHz	Search area marker buoy beacons
14313 kHz	Ham Marit. Mobile Assistance Net (SSB)	263.8 MHz	USCG Air/Surface (AM)
14993 kHz	Manned Space Vehicles SAR* (SSB)	275.1 MHz	Search area marker buoy beacons
15081 kHz	USCG Air/Surface SAR* (SSB)	282.0 MHz	USCG Air/Surface (AM)
15087 kHz	USCG Air/Surface SAR* (SSB)	282.3 MHz	Search area marker buoy beacons
16420 kHz	Maritime Safety & Distress* (SSB)	282.8 MHz	USCG/USN/USAF SAR* (AM)
16432 kHz	Vessels to USCG on 17314 kHz (SSB)	305.4 MHz	USAF UHF Direction Finding (AM)
16695 kHz	Maritime Safety & Distress (NBDP)		USAF UHF DF Training (AM)
16804.5 kHz	Maritime Safety & Distress (DSC)	342.2 MHz	USCG Air/Surface (AM)
17995 kHz	Canadian Forces primary SAR* (SSB)	381.0 MHz	USAF SAR* (AM)
19993 kHz	Manned Space Vehicles SAR* (SSB)	381.7 MHz	USCG Air/Surface (AM)
26.62 MHz	CAP (AM/FM/SSB)	381.8 MHz	USCG Air/Surface (AM)*
27.065 MHz	CB Channel 9 (AM)	383.9 MHz	USCG Air/Surface SAR* (AM)
40.50 MHz	US Army/USN SAR* (FM)	386.5 MHz	USN SAR* (AM)
46.65 MHz	Kennedy Space Center SAR, Fla. (FM)	406.025 MHz	EPIRB-S units
	(also 138.225 141.30 383.0 396.2)	457.525 MHz	Maritime survival craft* (FM)
117.975 MHz	National Parks Air/Ground (AM)	462.675 MHz	Rescue teams (FM)
121.5 MHz	Aeronautical Distress* (AM)	1530 to 1545 MHz	Maritime Distress via MARISAT
	SAR Air/Surface On-Scene* SAR (AM)		Sea, Land SAR via MARISAT
	EPIRB-A, -B, -S, & ELT units		
	Survival craft AM & rescue beacons*		



Canada Para-Rescue Wings.



Maganavox MX-3030 portable satellite digital phone weighs 27 lbs., and is used with the MARISAT-M satellite. The mil spec unit can be used on land or sea for SAR missions. It's made by Magnavox/NAV-COM, P.O. Box 650, Deer Park, NY 11729.

and Rescue Satellite. Any activation initiates ground station processing to locate the transmitter. Historically, inadvertent activations have been very numerous and caused false alarms that tended to degrade the efficiency of the SAR system. The USAF has cautioned everyone not to key-up on either frequency for more than 15 seconds except in actual emergency or distress situations.

Reception in the 225 to 400 MHz UHF military band is maximized by using an antenna designed especially for this band, or a preamplifier, or both. This is a great band that has attracted a growing number of enthusiasts.

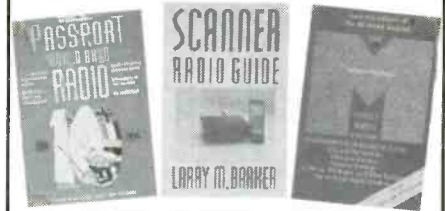
USAF aircraft engaged in SAR missions identify as "Air Force Rescue," "Air Rescue," "Petro," or "Save," followed by numerals.

USAF units ID'ing as "Jolly," "King," followed by numerals, are on SAR training missions. USCG air rescue units identify as "Coast Guard" followed by four numbers. USCG surface craft use their assigned name or numbers.

Monitors who tune non-voice circuits have frequencies of interest, too. The letters NBDP on the accompanying Log indicate where to tune for the widely used Narrow Band Direct Printing mode. This is often called SITOP, or SITOP-A. The letters DSC denote channels for comms in the less frequently encountered Digital Selective Calling mode.

Satellite communications, via shipborne and portable land transceivers are also used for distress calls and SAR operations. These are handled through MARISAT fa-

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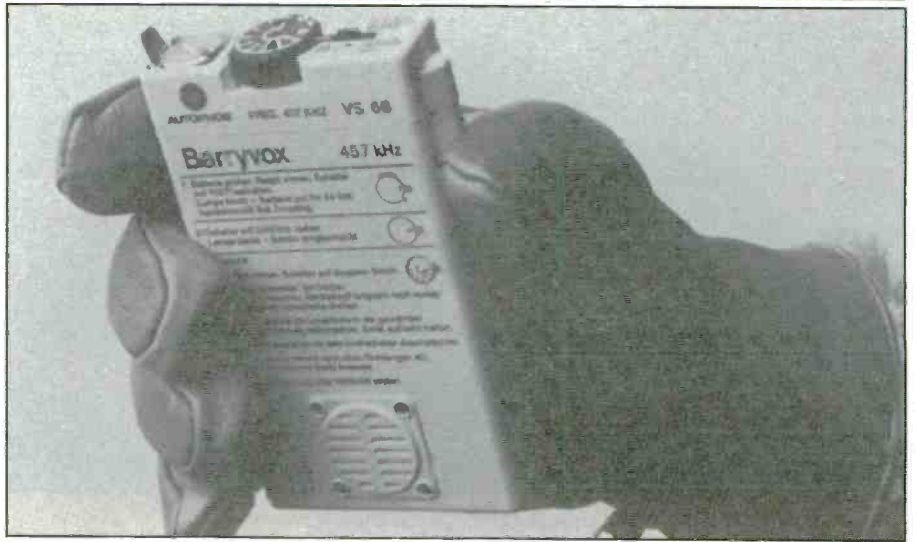
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The ANPRQ-501, made in Canada by Garrett Manufacturing Ltd., Rexdale, Ont., sends out rescue beacon signals and voice on 243.0 and 282.8 MHz. It is intended to allow SAR units to locate downed military aircraft crew members.



The VS-68 Barryvox avalanche victim detector is a miniature transceiver operating on mediumwave frequencies.

cilities, and our Log indicates the downlink band. Communications, including voice, are digital.

Note that some VHF and UHF frequencies shown, in addition to the purposes listed in the Log, may also have other applications in selected localities.

The national and international frequencies most likely to produce distress calls and SAR activity are given here. Naturally, the list doesn't show your own area's local agencies and volunteer groups. There are still other frequencies not listed here for various highly specialized SAR devices, although they are interesting. One example is the VS-68 Barryvox avalanche victim detector.

The VS-68, made by Autophon AG, of Zurich, Switzerland, is an emergency transmitter and directional receiver. Each member of a group entering an area subject to avalanches carries one set to "transmit." Each person's transmitter operates on a different frequency, but the VS-68 receivers tune the entire 420 to 510 kHz band used by all the transmitters.

Should an avalanche occur, the survivors switch their sets to "receive." Variations in the signal strength of the bleep enable the victims to be located by using the direction finding abilities of the receiver and the VS-68's internal loudspeaker. This unit will transmit for 15 days, and has a transmitting range of 200 feet.

You now have enough basic information to tune up on the most active frequencies used for distress calls and SAR missions. You won't want to miss out on these. At the very least, check out those frequencies marked with an asterisk (*), as they're the best of the bunch. ■



A Coast Guard Sikorsky HH-52A Sea Guard SAR helicopter on the job. (Coast Guard photo.)

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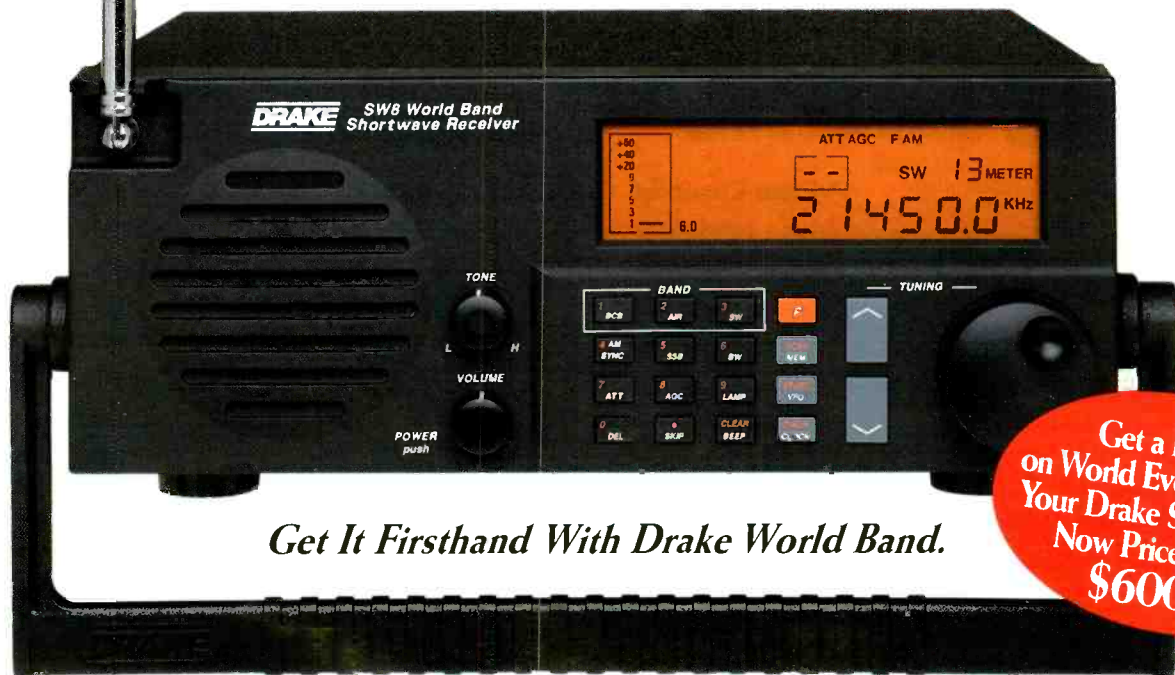
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AOR AR1000XLT
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Coverage Receiver **\$459**



Continuous coverage of .5 to 1300 MHz (no gaps). Features include: lock-out search and scan, cigarette lighter plug cord, belt clip, case, flex antenna, and earplug. Covers AM, W/N FM, and SSB. VFO knob or keypad. 6.7" x 1.4" x 2.6", 10 oz.

Hurry! Order before new F.C.C. scanner law takes effect in April!

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The IC-R1 is the ultimate in miniaturization in a hand-held communications receiver and our best seller! It covers 100 kHz to 1300 MHz continuously (no gaps) with AM, FM and Wide FM modes. Features include: 100 memory channels, several scanning modes, sleep timer, low battery indicator, and several battery power options (listed below). Comes complete with wall charger, flexible antenna and belt clip. The built-in internal NiCad battery lasts about 3 to 4 hours, the various battery options last much longer (BP-84 10 to 12 hrs.) Measures only 1.9" x 4" x 1.4" and weighs only 9.9 oz.



AOR AR2800
.5 to 1300 MHz Scanner **\$459**

The AR2800 covers .5 to 1300 MHz continuously (no gaps) with 1000 channels. Ten scan banks, and ten search banks. Covers AM, narrow and wide band FM, plus SSB. Works on DC or AC with an adapter. An antenna and mounting bracket is included for your convenience in mounting the unit mobile. 2 1/4" x 5 5/7" x 6 1/2".



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Bearcat BC 890 XLT 200 Channel Scanner-With 800 MHz! \$275

This new item from Bearcat has frequency coverage through 956 MHz* with 200 channels of action in 10 banks! The turbo scan feature lets you zip through the channels in lightning speed. 10 priority channels let you scan important frequencies every 2 seconds. It even includes a VFO knob for up-down frequency control. Other features include weather search, auxiliary tape output, weather alert, illuminated LCD display, reception counter, and step select. Frequency Range: 29 to 956 MHz (not continuous). * Cellular Blocked- modifiable



Sigma SE 1300 \$89 VHF/UHF Discone Antenna

If you've been looking for a superior wide band omni-directional antenna covering 25 to 1300 MHz, this is it! The SE 1300 is the ultimate wideband omni-directional antenna for hours of listening pleasure. Not only is it a receiving antenna, but it can also transmit on 50 MHz, 144 MHz, 430 MHz, 900 MHz and 1200 MHz with a maximum power rating of 200 watts. The antenna has stainless steel construction and comes complete with low-loss "N" connector, mounting kit and short mast section. The SE 1300 is excellent for indoor installation since it's only 5' 6" and weighs just 2.2 lbs, yet its construction and weather protected feedpoint beg to be out in the elements. This antenna is a must if you want the best possible results!



Bearcat 8500 XLT

\$375 500 Channel Scanner-With 800 MHz!

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Floating Radio Station—Not!

FCC Scuttles Proposed High Seas Broadcaster

BY GEORGE ROBERTS

For those of us who never got caught up in the TV thing, there is a romance about radio not always easy to put into words.

And, through much of radio's history, there have always been a few people for whom the idea of broadcasting from a ship at sea has been the ultimate expression of the romance of radio. Unfortunately, now and then, someone will try to make that dream a reality and almost always fail. We're now following the latest no-go effort—the FCC raid on the M/V Fury, which Voyager Broadcast Services intended to use as a floating broadcasting site.

One of the engineers crucial to the Fury effort was Allan Weiner. He had been one of the main guns of Radio New York International, who built a station on board the "Sarah" and broadcast off the coast of Long Island for a few days back in 1987. International waters or no, it was quickly raided by the FCC and the ship broadcasts were no more.

The Fury was supposed to carry four shortwave transmitters, and most of the air time was to be purchased by Brother Stair, a shortwave preacher currently buying time on a commercial US shortwave station.

Several Caribbean governments said "no" to granting a broadcast license to Voyager/Fury before authorization was granted by the government of Belize. At the time of the raid the ship had a provisional license from Belize (and was flying the Belize flag). The provisional license granted about the same rights as an FCC-issued construction permit, including the testing of transmitters.

FCC agents, along with US Marshals and Coast Guard representatives, raided the M/V Fury on January 19, 1987 as she sat docked at the Haley and Cannon boat yard on the Wando River in Charleston, South Carolina. The FCC obtained a civil in rem arrest warrant directed against the radio equipment on board the Fury (in rem, in this case, means you can arrest a transmitter).

A 1988 permanent injunction against Weiner and others associated with Radio New York International was employed again. That injunction "permanently restrained and enjoined" Weiner and others, known and unknown, once associated with RNI, from operating a station in or outside US territory without first obtaining a li-



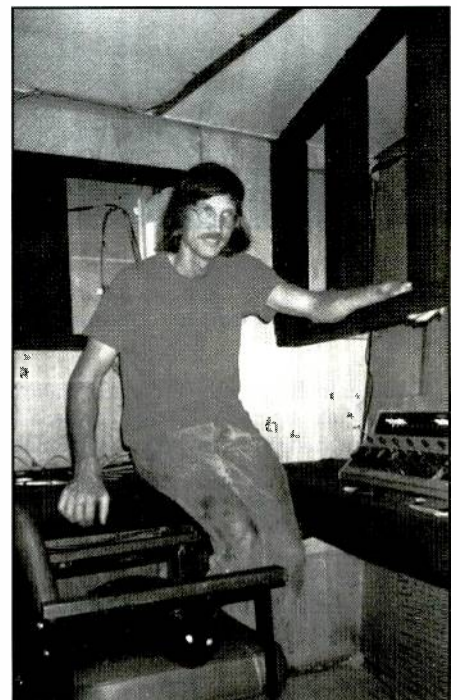
The M/V Fury docked at Charleston. The FCC decided it was broadcasting from this location.

cense. The Fury had the letters "RNI" painted on the bridge so the FCC could assume the connection if it wasn't already sure.

Shipyard workers took more than 30 hours over a two day period to cut the transmitters free and remove them from the ship. The equipment was reportedly valued at up to half a million dollars.

The FCC said they monitored a broadcast on 7415 on January 14. Their direction-finding equipment showed the broadcast was coming from the Fury. There are conflicting reports here. Tests into a dummy load were apparently made on that date. But, staff member Johnny Lightning said that dubs of RNI program tapes had been made for anyone requesting them. Some of these tapes were broadcast on 7415 on at least one earlier occasion (Christmas night), though RNI didn't realize until they started getting QSL requests. The FCC didn't specify what the January 14 broadcasts contained.

Scott Becker, who owns the Fury, also made packet amateur radio broadcasts from the ship. Though his technician class amateur license doesn't allow this, Becker claimed he was operating under a Belize-issued license.



Al Weiner aboard the M/V Fury, as the boat broadcast studio was being readied.



Overall view of the M/V Fury being outfitted at Charleston. That was before the FCC raid and this shows the antennas intact.



Bridge of the M/V Fury before the FCC boarding. Owners claim that, according to Section 306 of the Communications Act, the FCC had no jurisdiction over foreign flag vessels in US waters. M/V Fury was registered in Belize.

Weiner insists that the broadcast station was not fully operational, that no broadcasts were made and that no programming had yet been furnished by those who were going to use the station. Weiner says the station wasn't even going to operate on 7415. He says he was employed by Voyager simply as an engineer. His own Radio Newyork International had hoped to buy time on the station, just as it had once done on WWCR.

Weiner says that the owners had planned to sell the ship to Belize, and then operate it from a fixed location within the territorial waters of Belize. Weiner also says

no transmissions had been planned from anywhere else but that location.

Brother Stair, whose Overcomer Ministry was going to use at least one of the transmitters on a full time basis, has his lawyers at work. Apparently a decision was soon reached that starting the project over would be too expensive.

Stair is not the first preacher to try broadcasts from the sea. The High Adventure Ministries station, KHBN on Palau, was originally conceived as a floating religious station beaming into China from outside its territorial waters. But, even though they had a ship picked out, High Adventure

soon found the project impractical.

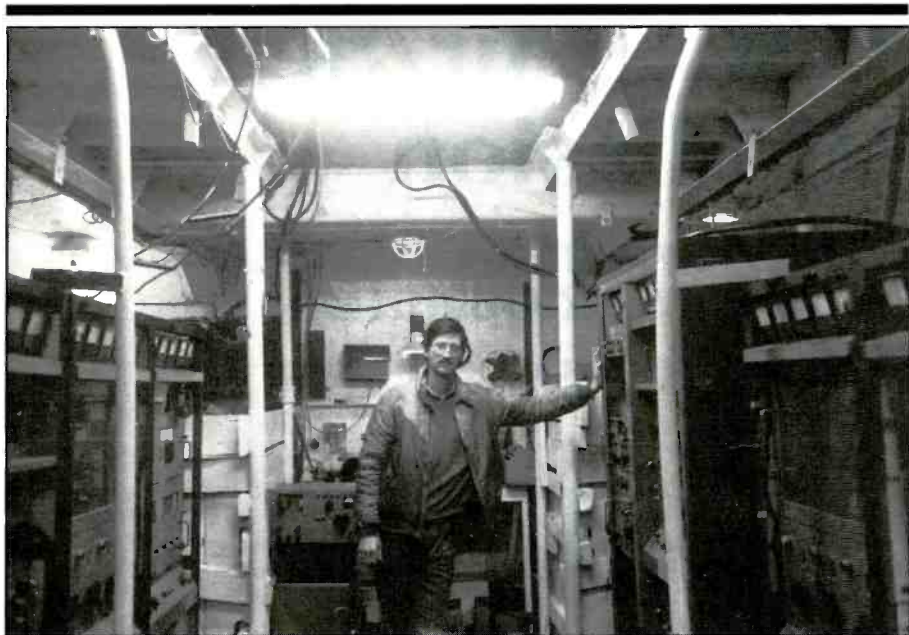
More than 20 years ago, a right wing, fundamentalist preacher, Dr. Carl McIntire, put Radio Free America on the air from a former research vessel once used by Jacques Cousteau. The ship, positioned in international waters off the New Jersey coast, broadcast on 1160 medium wave. Actually, the Radio Free America case, was the first instance in which the courts ruled that the US could, indeed, close down a broadcaster operating outside its territorial waters. A temporary injunction was soon issued and later made permanent.

McIntire's problems were as much political as they were technical or financial, and it's probably safe to say the government decided to use McIntire to set an example. He'd owned a medium wave station that lost its license for violating the then-in-force "fairness doctrine" (a law which, by the way, a number in congress want to re-instate). Indeed, the loss of that license precipitated the radio ship endeavor. Radio Free America used the courts to try to win the right to broadcast, but it lost and finally threw in the towel. Its shipboard broadcast career was extremely short—an off and on affair which amounted to just a couple of broadcasts, each one plagued with technical problems.

There have been shipboard pirate radio operators on the European scene, too. The most famous of these was Radio Nordsee International, which operated on both medium and shortwave from the ship Mebo II. It was positioned off the coast of Holland for a time in 1970 and later sailed to the English (Essex) coast. Wisely, RNI had its land-based headquarters in Switzerland, a country which didn't sign a 1965 agreement against offshore broadcasting.

After a few months off the British coast it returned to Holland because the British were jamming its signals. In the fall of 1971 the Mebo II was firebombed, killing one crewman. Three men were later charged with the crime. They'd been hired by the owners of The Veronica, a competing pirate radio ship which had been broadcasting pop to the Netherlands since 1960. The attack put the station off the air, but only for a few hours. Radio Nordsee continued to operate for a few more years, but increased competition from government broadcasters who had added pop channels and problems with an aging ship contributed to the company finally giving up on its broadcasting efforts.

Abe Nathan, an Israeli who has been pushing for peace in the Middle East for over two decades, put the Voice of Peace on the air from a ship in the waters between Egypt and Israel. His dream was to provide a means through which both sides could air their views. Nathan put most of his fair-sized fortune into the venture, which began broadcasting in 1973. A half year later it was off the air, out of money. The ensuing years saw starts and stops in the broadcast effort, with several fund-raising efforts.



Allan Weiner stands in the M/V Fury's transmitter room before the FCC showed up. These 10 kW and 40 kW broadcast transmitters were specifically included and listed on the ship's valid radio license. The call letters were V3OU3.

There were run-ins with the Israeli government and Nathan even served time in jail. The road for the Voice of Peace was anything but smooth! The Voice of Peace persevered, though, and can probably be said to be one of the rare shipboard radio stations that was something of a success. The station finally closed down last year, Nathan feeling that its mission had been accomplished (see *POP'COMM*, January, 1994)

Another successful ship broadcaster was "De Hoop" (Vereniging Hospitaalkerkchip), albeit on a vastly smaller scale. De Hoop was a medical ship operated to assist Dutch sailors (mostly Holland's herring fisherman) when they needed medical help. In addition to broadcasting weather reports to the Dutch fishing fleet, the ship's radio was used to broadcast church services on Sundays and Wednesdays. Little more than

ordinary ship's radio equipment was needed, since the broadcasts were only intended for the fleet which the ship was serving. So De Hoop didn't have to deal with the kind of technical problems other shipboard broadcasters have had to face.

Getting and keeping any radio station on the air is an expensive proposition, fraught with problems. Those who attempt to do it from on board a ship face even greater difficulties, especially when the station is left within reach of a government unfriendly to such goings on.

The Voyager Broadcasting/M.V. Fury fiasco is still more evidence that shipboard broadcasting—romantic though it may be—isn't a very practical option. You'd be better buying an island somewhere and putting your tower there. In the long run it would probably be cheaper! ■

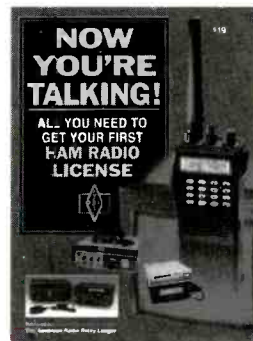


M/V Fury's transmitter room after the FCC visit. Look Ma, no transmitters!

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CIRCLE 53 ON READER SERVICE CARD

On A USCG Air/Sea SAR Mission

How Radio/Distress Signals Trigger a US Coast Guard SAR Operation

BY PETTY OFFICER CHARLES E. SMITH, U.S. COAST GUARD

Richard and John Van Salisbury were rescued by the Coast Guard, October 26, after their fishing boat, *Brook Leigh Anne*, sank nearly 20 miles east of Manasquan Inlet, NJ.

"The boat started feeling sluggish, so I pulled back on the throttle. Then the bilge alarm went off, and John came up from down below where he was in his bunk. He opened the hatch behind the wheel house and saw that the engine room was flooding," said Richard.

"I told John to radio the Coast Guard for help. But the power was out, so I told him to get the life raft and EPIRB out," explained Richard. The brothers donned their survival suits, activated their EPIRB and launched the life raft.

The brothers spent only four hours in the life raft, floating in eight-to-ten foot seas, before being rescued by the Coast Guard. They credit their prompt rescue to having 406 MHz Emergency Position Indicating Radio Beacon (EPIRB).

The need for satellite-aided Search and Rescue (SAR) was determined nearly two decades ago. In 1976, the Committee on

Search and Rescue recommended the development of a satellite system that would locate distressed aircraft and vessels.

In 1979, The Search and Rescue Satellite program (SARSAT) became a reality using U.S. National Oceanic and Atmospheric Administration (NOAA) satellites, with French and Canadian EPIRB receivers.

The former-Soviet Union added Space System for Search of Vessels in Distress (COSPAS) to the SARSAT system one year later. COSPAS EPIRB receivers are located only on Russian satellites.

SARSAT satellites circle the Earth every 102 minutes at an altitude of 528 miles, while COSPAS satellites circle every 105 minutes at an altitude of 621 miles.

The first satellite-aided rescue occurred in September, 1982, shortly after the COSPAS-SARSAT system went on line, and over 3,400 lives have been saved since the COSPAS-SARSAT program was introduced. Other nations participate in the program as system operators and users.

The COSPAS-SARSAT system operates in the emergency frequency bands of 121.5 MHz and 406.025 MHz, using

three Russian and three American satellites. Both COSPAS and SARSAT satellites have interchangeable SAR instrumentation and can be used by Local User Terminals (LUT's) worldwide.

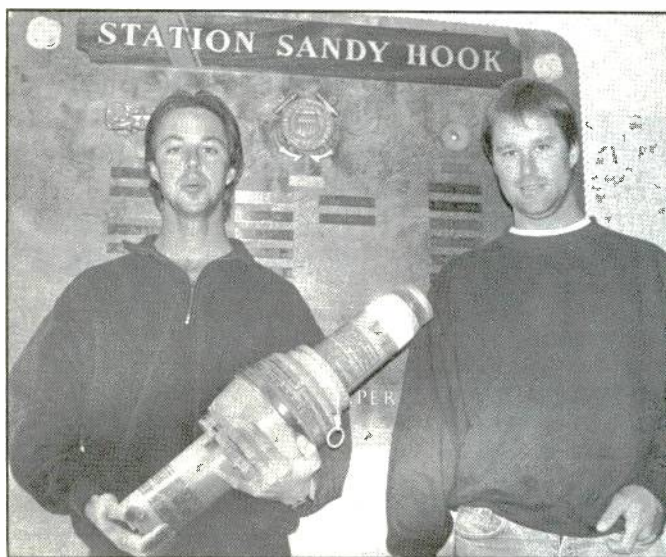
The system senses when an EPIRB is activated and transmits a signal that is picked up by a passing polar-orbiting satellite. The satellite records the frequency and time the signal was received, and downloads that information to a LUT.

To determine the location of the beacon, the satellites measure the 'Doppler' shift in the frequency of the signal.

In other words, "as the satellite approaches the beacon, the signal appears to get lower," said Ajay Mehta, SAR Analyst at the U.S. Mission Control Center, (MCC), Suitland, MD.

Mehta compared the Doppler shift to a train whistle. "When the train is coming towards you, the pitch of the whistle gets higher and then lowers as it's going away.

After calculating the information transmitting from the satellite, the LUT can give a position accurate to within one to three miles for the 406 MHz EPIRB, but only six



John and Richard Van Salisbury display the 406 MHz EPIRB that saved their lives. (Coast Guard photo by PA3 Charles E. Smith III.)



A Coast Guard HH-65 Jayhawk helicopter on scene with the grounded dredge, Alaska. (Coast Guard photo by PA3 Charles E. Smith III.)

to 12 miles for the 121.5 MHz EPIRB. The 121.5 EPIRB offers coverage at only 50% of the Earth, while the 406 EPIRB offers complete coverage of the Earth.

Besides having greater position accuracy, the 406 EPIRB has its own 15-digit identification code and the 406 MHz frequency is dedicated for satellite SAR. The 406 EPIRB transmits a digital burst (data point) every 50 seconds after activation. The data point has information including beacon identification and country registration. At least three data points are needed to calculate the location of a transmitting beacon.

The LUT passes the estimated location of the beacon to one of the 12 MCC's worldwide. There are 35 LUT's worldwide with 15 Rescue Coordination Centers (RCC's) in the United States alone.

The 406 EPIRBs come with registration cards that must be filled out and sent to their respective MCC in order for the individual EPIRB to be entered into a data base.

The MCC pulls 406 EPIRB information from the data base and passes that information to an RCC. In the Van Salisbury's case, the information was passed to the Coast Guard First District Operations Center (D1 OPCEN) in Boston.

D1 OPCEN called the contact numbers listed on the vessel data sheet and then left

a message on Richard's answering machine for his wife. D1 OPCEN also instructed Coast Guard Group Sandy Hook to issue an Urgent Marine Information Broadcast (UMIB).

Richard's wife contacted the D1 OPCEN and confirmed that Richard and his brother were fishing in the vicinity of "Mud Hole," a popular fishing spot east of Manasquan Inlet, N.J.

The Coast Guard launched a helicopter from Air Station Brooklyn and diverted the Cutter *Adak* to *Brook Leigh Anne's* projected location.

According to Mehta, SAR-tracking payloads are being installed on geostationary satellites as part of an experiment program. "An interesting thing about the *Brook Leigh Anne* case is that a geostationary satellite received the signal," Mehta said. The use of geostationary satellites to detect 406 MHz distress signals is currently being tested by NASA. Geostationary satellites cannot detect the position of transmitting beacons, but they do offer nearly instantaneous alerting.

Had *Brook Leigh Anne's* owners failed to register their 406 EPIRB, SAR units would have had to wait for either a SAR-SAT or COSPAS satellite to receive the signal before responding to the distress signal.

Another important factor in the rescue

was that the Van Salisbury's 406 EPIRB transmitted a 121.5 MHz signal, as well. Most, but not all, 406 EPIRBs also transmit a 121.5 MHz signal. Currently, SAR units are unable to home in on 406 MHz signals but can use direction-finding equipment to locate 121.5 MHz signals.

A Coast Guard Air Station Brooklyn helicopter picked up the 121.5 MHz signal from *Brook Leigh Anne's* 406 EPIRB and was about three miles from the raft when RCC Boston gave the position derived from the polar orbiting satellite.

"When we saw the helicopter, we lit off smoke and parachute flares," Richard said.

Richard praised the Coast Guard for doing a great job in rescuing him and his brother.

The brothers were flown to Coast Guard Air Station Brooklyn, NY where an ambulance was waiting to take them to Coney Island Hospital. Both were treated for minor smoke inhalation and released.

"If it wasn't for the EPIRB we wouldn't be here today. We bought the EPIRB last December for about \$1,300. It was worth the money. There's no doubt about it, it works. I know a lot of people who won't get one, because they don't want to spend the money. I think everyone that goes offshore in a boat should have an EPIRB," said Richard.

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Tuning In On Yesterday

A Few Words About Radio In Days Gone By

BY ALICE BRANNIGAN

Surprising how many letters arrive mentioning the old time radio program, *Lum and Abner*, asking us to give it some mention here. To those unfamiliar with the program, it was an immensely popular radio show that audiences followed from 1931 to 1954. Simple, too. Usually, two rural gentlemen sat around the Jot 'Em Down Store in the fictitious town of Pine Ridge, Ark. They exchanged tall tales and homey philosophies. Sometimes they left the store to involve themselves in local Pine Ridge matters, most often of the hilarious type.

Audiences loved *Lum and Abner*, who based their characterizations on people they had known all of their lives in the area around Mena and Waters, Ark., where they had grown up. In 1936, the town Waters eventually changed its name to Pine Ridge due to the national attention and interest the radio program had drawn to the area.

"Lum" was portrayed by Chester Lauck. "Abner" was portrayed by Norris Goff. We dug around in the files here and located a picture postcard bearing the caption, "Home of Lum of Lum & Abner, Mena, Ark."

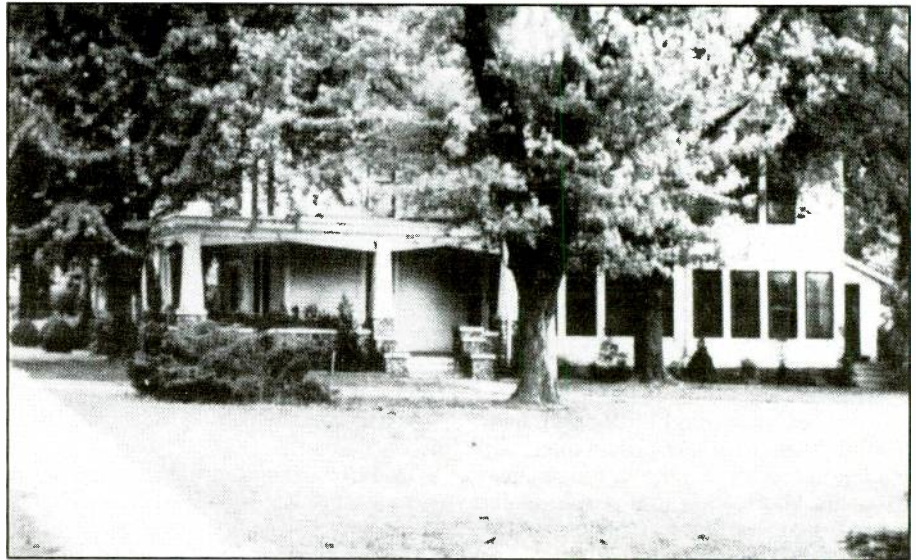
There is a Lum and Abner Museum located in Pine Ridge, Ark. Also, there's a National Lum and Abner Society. The group holds a yearly convention in Mena, Ark., and issues a membership publication, plus a catalog of available Lum and Abner program tapes. Correspondence relating to this group may be addressed to Tim Hollis, Executive Secretary, 81 Sharon Blvd., Dora, AL 35061.

Dispatches From The War Zones

The names Ethiopia and Somalia have been in and out of the headlines during recent years, primarily in conjunction with human suffering.

In 1960, Somalia was created as an independent nation when the former colonies of Italian Somaliland and British Somaliland (in 1950, Italy had assumed the trusteeship held by Great Britain since WWII). Between 1977 and 1988, Somalia was helped by Soviet and Cuban troops in an ongoing battle with Ethiopia regarding Somalia's claims to ownership of the large Ethiopian of Ogaden.

Since early 1991, Somalia has been in a state of virtual anarchy, subject to areas locally controlled by warlords. There is no central government, no economy, and no industry. UN military forces have had to help international organizations bring food



"Lum," of radio's "Lum and Abner," lived here. This house is in Mena, Arkansas.

ETB			VERIFICATION OF RECEPTION	
IMPERIAL ETHIOPIAN RADIO STATION			This is to confirm your reception for our	
TELEGRAPH TELEPHONE TRANSMITTER			Broadcast to	
AKAKI 8 km south Addis-Abeba			Columbia D.S.	
on Nov 27th 1935			2125 to 2220 CMT	
Call sign	Frequency	Wavelength	With many thanks for your kind report	
ETA	18.970	16.32	THE ENGINEER IN CHARGE	
ETB	11.055	25.04	Thore Boston	
ETD	7.620	39.37	Addis-Abeba Jan 9th 1936	
ETG	5.880	51.02		
Antennas Power max, 3.5 KW.				
directional antennas.				
Broadcasts only on special occasions.				

The Imperial Ethiopian Radio Station sent out this QSL for reception of ETB. The veri is dated November 27, 1935. That was a month after the Italian invasion of Ethiopia, and not long before the facility was captured and appropriated by the Italians.

and medical supplies to the Somali people, and keep the warlords at bay.

In October of 1935, Italy mounted a large-scale invasion of Ethiopia. The invasion forces entered from the Italian colony of Eritrea. The reason cited for the action was an ongoing border dispute between Ethiopia and neighboring Italian Somaliland.

Mogadishu is presently in Somalia. Then, it was in Italian Somaliland, and was a key Italian military radio communications site. Transmitting facilities constructed by the Italians at Mogadishu fed out endless reports from the front lines, keeping the world current on the Italian military's propagandized version of the daily battles, and justifica-

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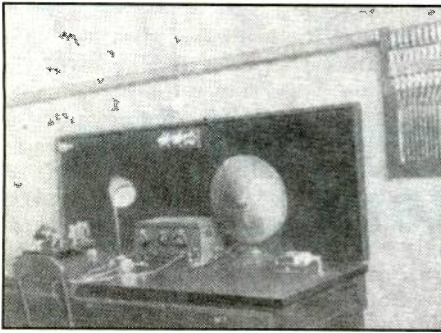
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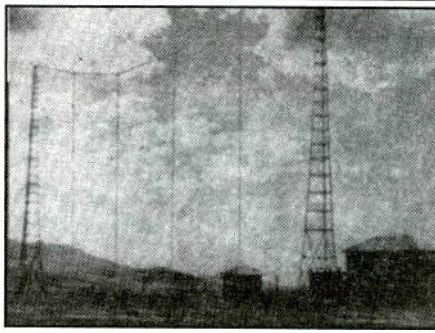
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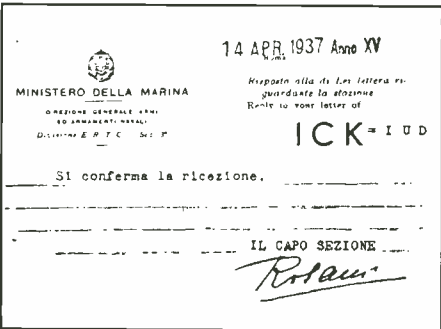
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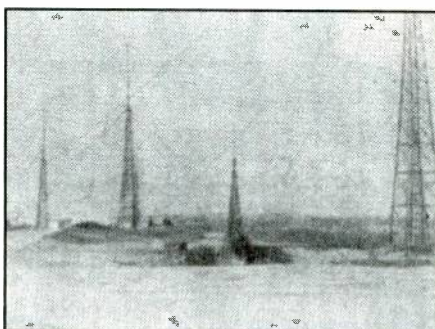
The control room of ETA while it was still the Imperial Ethiopian Radio Station.



In April of 1937, the Italian Navy sent out this unusual QSL to verify reception of its CW stations ICK and IUD in Tripoli and Ethiopia.



Transmitting facilities of the Imperial Ethiopian Radio Station. This station became station IUD of the Italian Navy in Ethiopia.



The Italian stations in Mogadishu were used to transmit press reports and propaganda items relating to the situation in Ethiopia.

agency basis from within the American Legation. They established a 2 kW station that could use voice and CW.

Although running relatively low power, the reborn ETA commenced a regular schedule of broadcasts on its former 7620 and 18270 kHz frequencies. These transmissions were picked up by the big RCA receiving complex at Riverhead, N.Y., for live rebroadcast over the CBS network. It may well have been the first regular live network broadcasts ever to come to broadcasting direct from a war zone. These broadcasts were impassioned, often pleading for help from the nations of the world.

Several SWL's along the Atlantic coast were able to receive ETA's signals directly.

The League of Nations condemned the Italian aggression in Ethiopia, suggesting numerous economic sanctions against Italy. This served only to anger Italian dictator Benito Mussolini, causing him to step up the military activity in Ethiopia.

Repeated requests over ETA for aid produced little in the way of tangible results, despite the large number of civilian casualties and deaths resulting from the hostilities. Italy annexed Ethiopia in May of 1936. Emperor Haile Selasse went into exile. In 1941, the British finally freed Ethiopia.

Forbidden Radio

The mention of radio during hostilities never fails to serve as a reminder that totalitarian governments have invariably attempted to control the information reaching the public. This can include many techniques like censorship, narrow licensing requirements, selective enforcement of regulations, and numerous other methods, both blatant and subtle.

In very recent times, some Communist bloc nations engaged in jamming broadcast signals, and imprisoning those citizens caught attempting to receive "forbidden"

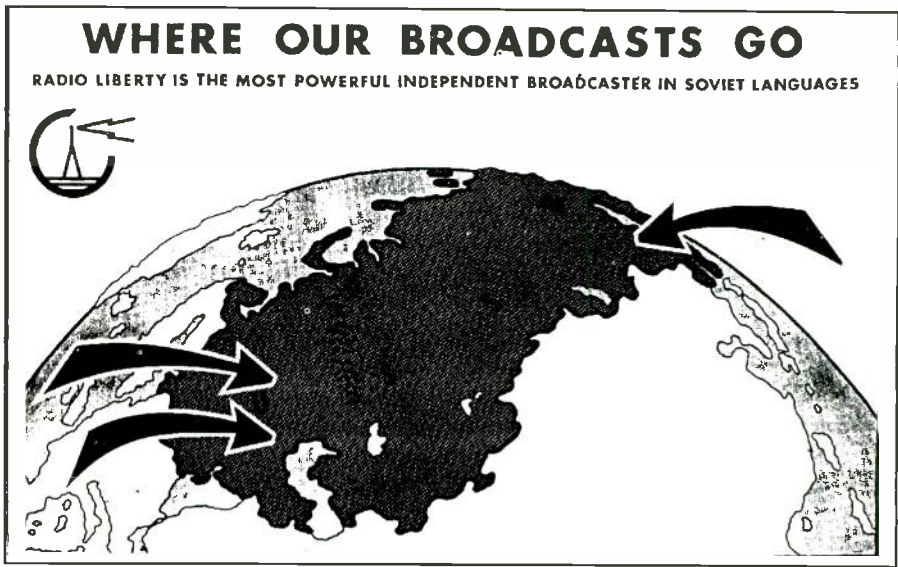
tions for invading a totally helpless nation. These stations were IDZ on 6680 kHz, ISJ on 8195 kHz, and ISL on 10480 kHz.

The Italian Naval Command set up a CW communications station (IUD) in Ethiopia for the purpose of maintaining contact with the station (ICK) at the huge Italian Navy base in Tripoli, Libya. Tripoli was the staging area for sending supplies and reinforcements to the forces in Ethiopia. Strangely enough, the Italian Navy readily verified reception reports for this circuit, which operated on 5825, 5880, and 6000 kHz. Reports to ICK got back a QSL card. DX'ers who reported hearing combat zone IUD were rewarded with an ICK card showing the callsign IUD added by typewriter.

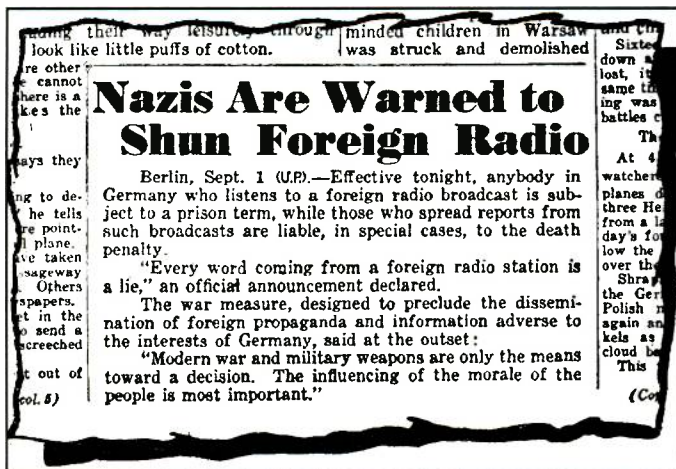
Ethiopia was an undeveloped nation with an agrarian economy, and an army roughly equivalent to something from the Middle Ages. Prior to the Italian invasion, Ethiopia's sole radio connection to the outside world depended upon a single 3.5 kW utility station at Akaki. This station employed the call letters ETA (18270 kHz), ETB (11955 kHz), ETC (11960 kHz), ETD (7620 kHz), and ETG (5880 kHz). The "Imperial Ethiopian Radio Station, ETA" as it was generally known, had been used for press transmissions and diplomatic traffic, although occasional voice broadcasts were made. Not long after the Italian Invasion, the Ethiopians were forced to aban-

don this facility, thereby disconnecting the besieged little nation from the world. As a matter of fact, the Italian Navy converted ETA into its own station, IUD.

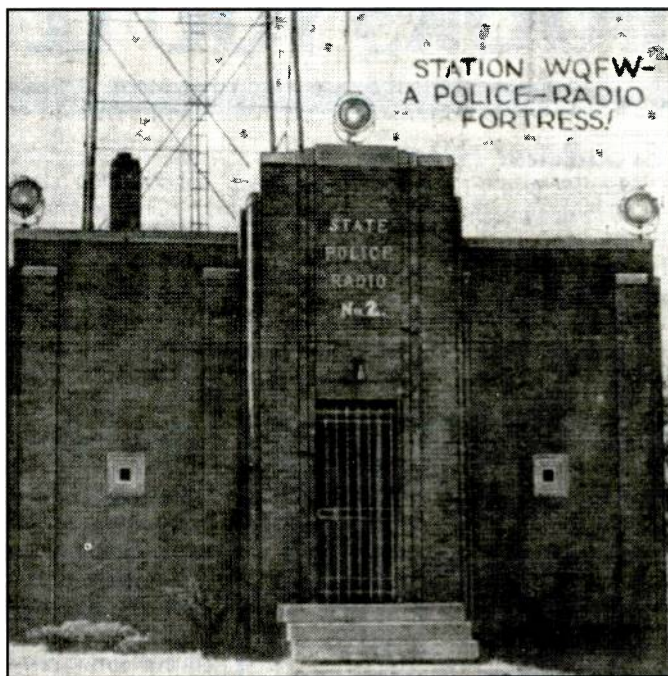
Washington wasted no time in sending four communications technicians to Addis Ababa, Ethiopia. Their mission was to return ETA to the air quickly on an emer-



Radio Liberty's broadcasts to the USSR were heavily jammed so that Russians couldn't hear what was being said by anyone from outside the Soviet media.



This yellowing newspaper clipping from 1939 tells how the Nazi government attempted to control what information its citizens could pick up on their radios.



In 1937, the Indiana State Police built this heavily-armed, bullet-proof, brick fortress to house a communications installation. Were they worried the Big Bad Wolf might huff and puff, and blow the place down?

broadcasts from Western stations such as Radio Liberty, Radio Free Europe, Voice of America, and the BBC.

Let's go back 54 years to 1939 to find the birth of forbidden radio. We traced the roots of the practice via a news story dated September 1, 1939, and filed by an American correspondent in Berlin, Germany.

As of that date, the Nazi government vowed to put people in jail if they listened to foreign broadcasts, or told others about those broadcasts. In some instances, people might be put to death for these crimes. The official government position was that every word contained in foreign broadcasts was a lie.

The government then allowed each of its citizens to own what it called, a "People's receiver." This government approved equipment was factory tuned to pick up one single frequency, that being the channel used by the nearest local German government broadcasting station. It was forbidden to attempt to modify or retune these receivers to pick up any other frequency or band. These were receivers with deliberately poor sensitivity so that they would be unable to detect anything other than strong local signals.

All older receivers, ham radios, and multi-band receivers in use prior to September 1, 1939 were declared illegal to own, and were seized by the Nazi authorities.

It is known that many illegal receivers existed in Germany. Many were homemade, while some had been smuggled in by partisans. The sets were carefully concealed

in coffee cans, shoes, books, toys, and other places where they remained hidden from detection, allowing for reception of BBC and other German language broadcasts.

No statistics are available as to how many people were caught and punished by the Nazis for listening to foreign broadcasts between 1939 and 1945.

A Veritable Fortress

The Depression era of the 1930's in the USA was marked by colorful gangs of bandits who drove around toting tommy-guns in fast cars so they could rob and shoot-up small town banks. This is the impression one gets from movies and TV. I have always thought there is some question as to how violent and lawless the 1930's were, as portrayed in today's entertainment media.

Now something has given me reason to think that maybe things were actually quite wild during the 1930's. This is because I just learned about the two fortresses the Indiana State Police constructed in 1937 to house vital radio communications facilities.

One ISP fortress was station WQFW, built at Columbia City. The other was WDHE, at Indianapolis. These stations operated on 1634 kHz, along with other (non-fortified) ISP stations WDHU in Jasper, WQFE in Seymour, and WDNS in Chesterton.

Each of the fortress stations were constructed with thick, bullet-proof, windowless walls fitted with rifle ports. The roof had a bulletproof skylight. The doors had iron bars, and the buildings were consid-

ered raid-proof. The grounds were protected by eight floodlights, barbed wire, and a single-entrance gate remotely-controlled from inside the fortress. All persons on duty within the stations were armed with rifles.

Communications were facilitated via dual 154-foot steel towers at each station. In addition to the two-way comms with stations in the the ISP network, receivers tuned to the ISP frequency were installed at all Indiana sheriff's offices, in 50 police departments, at all ISP posts and in ISP vehicles, plus numerous municipal offices, garages, banks, filling stations, and other facilities. Some of these were able to respond to traffic going out over the ISP network, although they had to use telegraph or land-line telephone for their response.

These highly fortified block houses make you realize that the Indiana State Police were taking extreme steps to protect their communications facilities 56 years ago. Somehow, we don't think of such steps having been required that long ago. Did they fear Bonnie and Clyde, Big Al, Machine Gun Kelly, John Dillinger, or Baby Face Nelson? There must be a story there.

Maybe some reader can find out this story, and let us know if these buildings still exist and are in use. Don't get too close!

Please join us next month. Thank you for your letters and helpful submissions to the column and archives. We are constantly seeking old QSL's (originals or good copies), photos or postcards of old radio or wireless stations, station listings, as well as your thoughts, suggestions, and comments.

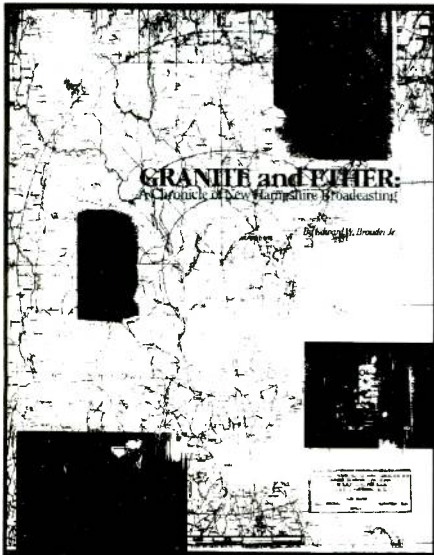
BOOKS YOU'LL LIKE

BY R.L. SLATTERY

Broadcast History

Granite and Ether: A Chronicle of New Hampshire Broadcasting, by Edward W. Brouder, Jr., is a 100-page illustrated history of one state's involvement in AM and FM radio.

Brouder's book is beautifully done, and obviously the result of many years of research by someone who has assembled and



presented the material out of a deep-rooted interest in the topic. His chronicle begins with mentions of some of the first coastal, military, college, amateur and other wireless stations in New Hampshire.

He mentions the state's official "first" broadcaster, WEAQ, in Berlin. It received a license in 1922, but turned in the license for cancellation in September of the same year. There is no evidence that WEAQ ever operated. After that, Brouder explains how the state's first real broadcaster was a 50-watt station, WKAV, in Laconia, put on the air in August of 1922 by the local ham radio club.

From there, New Hampshire broadcasting was on a roll. Brouder's book covers just about every station, telling its story in a very readable style. The book is loaded with wonderful illustrations showing station licenses, ads, news clippings, air personalities, and views of the stations.

The text explains how broadcasting evolved and spread throughout the state. He tells of the program formats tried and failed, the financial problems, the arrival of FM, and some of the new stations recently added to the dial. In the back of the book there is a complete chronological listing of every AM, FM, and TV broadcaster ever to operate in New Hampshire. This shows the callsign, frequency, date of first broadcast, and date of sign-off. Even includes one 1923 station in Manchester that seemed

not to have bothered with the formalities of obtaining a license.

Granite and Ether is an attractive and worthwhile book, recommended for every person interested in broadcast history. This book is \$10, plus \$2 shipping and handling, from the New Hampshire Association of Broadcasters, 10 Chestnut Drive., Bedford, NH 03110.

Hear Here

The new *Communications Receivers, 3rd Edition*, by Raymond S. Moore, is a revised and updated version featuring interesting changes and additions.

Basically, this is a 124-page fully illustrated reference guide to 68-brands of ham and SWL communications receivers produced during the vacuum tube era (1932 to 1981). All of the major brands are there, like Hammarlund, National, Hallicrafters, Lafayette, Gonset, Morrow, RCA, TMC, RME, Drake, Heath, Collins, and McMurdo Silver. There are also lesser known companies, such as Pierson, Howard, Postal, Ware, and many others.

The book contains 400 photos, plus descriptions of individual models. This information includes the model name, years in which the set was produced, price, frequency coverage, tube line-up, and comments.

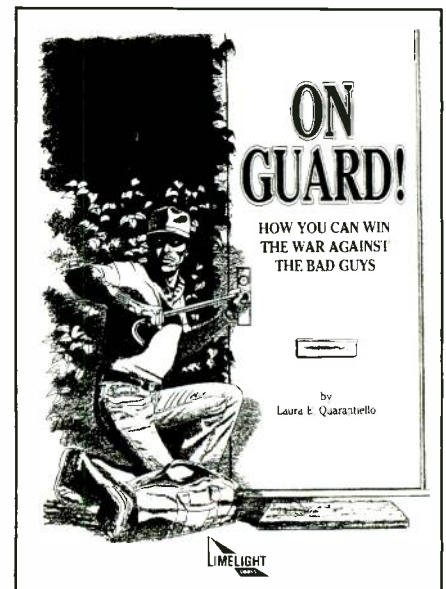
The new 3rd Edition offers improved photography, which looks much better than that in earlier editions. They have included photos of many receivers which were not illustrated in previous editions. Also, there are several pages of information on military surplus receivers such as the BC-312, BC-348, BC-454, and others. In addition, there is a new West Coast history section.

We classify this as an excellent and comprehensive reference guide to classic vacuum tube communications receivers. The book is \$19.95, plus \$2.60 shipping and handling. Florida residents please add \$1.40 tax. Order it from RSM Communications, P.O. Box 1046, Key Largo, FL 33037-1046.

Target: Crime!

On Guard!: How You Can Win The War Against The Bad Guys, by Laura Quarantello, is a 125-page book explaining how individuals and citizen's groups can reduce crime in their neighborhoods and cities.

The first section of the book tells how to minimize one's risks of falling victim to auto theft, street crime, residential crime, arson, drugs, gang violence, shooting, abduction, etc. The next section explains how to work with the police in organizing and operating a cooperative neighborhood crime-watch program, including foot and



mobile patrols. A third section contains forms that may be copied from the book and used for reporting criminal activity, bomb threats, etc.

No doubt about the fact that the crime rate is growing at an alarming rate. Police agencies face continually tightening budgets. That means many departments can't hire the number of officers they feel they need. Volunteer citizens groups, working in cooperation with, and sanctioned by, their local police, have been of genuine help. By spotting and quickly reporting suspected neighborhood criminal activity to the police, they serve to bring down the crime rate.

Even persons who don't participate in groups can make a difference in reducing the crime rate. They do this when they take the proper steps to reduce their own vulnerability to become victims.

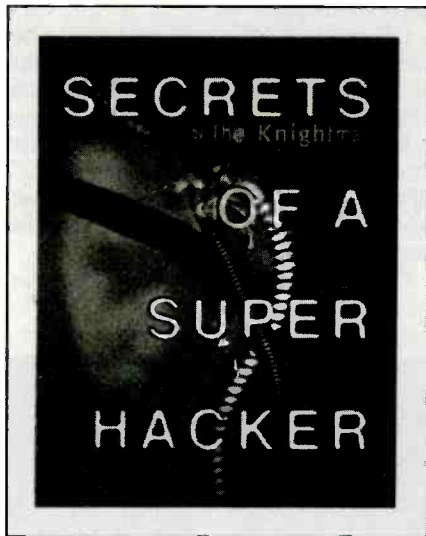
On Guard! is a book that does a fine job of telling about such matters. It is \$17.95, plus \$2 shipping and handling. Order it from LimeLight Books, P.O. Box 493, Lake Geneva, WI 53147. Phone orders: 1-800-420-0579.

Deep Inside Computer Hacking

Secrets of a Computer Hacker, by The Nightmare (with and Introduction by Gareth Branwyn), is the most revealing how-to book we have yet seen on computer hacking. These are the chronicles of one man's insatiable quest to break into computers. The Nightmare doesn't hack out of malice or for financial gain. As they say, he's in it for the hack, itself. If your computer has any link whatsoever to the outside world, it's vulnerable to his attack.

His new book reveals, in step-by-step,

illustrated detail, the techniques used by the most successful hackers to get at your data. Here are some of the methods covered in this 244-page manual: Hurling passwords at a system until it cracks. Seducing legitimate users into revealing their passwords. Designing dummy screens. Delivering fake e-mail. How to get system managers to do your dirty work for you. How to secretly record all images that appear on a computer screen. How to hide information you've collected, and e-mail it to your computer. How to use a low-level account to gain ever-higher levels of access.



The Nightmare writes in detail about his favorite tricks, such as Trojan horses, viruses, worms, trap doors, and dummy accounts. There are bare-knuckle accounts of his hacks, including on-site and remote-access hacking, as well as BBS busting.

He offers lists of likely passwords, plus a summary of computer laws, as well as a bibliography. There's a Hacker's Code of Ethics, and information on how to keep from getting caught.

It hardly seems that many systems could hope to stave off the ingenious and unrelenting hacking assaults described in *Secrets of a Super Hacker*. No person concerned with computer security can afford to miss this let-it-all-hang-out manual of computer mayhem. Here's one book computer stores probably won't have out on their book racks!

By the way, The Nightmare's book has plenty of little inside gems. One we particularly liked was about the time the *Geraldo* TV program accidentally gave hackers a helping hand. On page 51, the author reveals why computer professionals are the easiest targets of all.

Secrets of a Super Hacker is \$19.95, plus \$4 shipping and handling (\$5, Canada). Residents of NY State please add \$2.04 tax. Order it from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. VISA/MC welcome. Phone orders: 1-800-656-0056. Canada/AK/HI orders: (516) 543-9169. FAX orders: (516) 543-7486.

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 3 Sunset Way Unit A-10
 Green Valley Commerce Center
 Henderson, Nevada 89015
 Subject: Comparative Gain Testing of Citizen's Band Antennas
 Ref: Rye Canyon Antenna Lab File #870529

We have completed relative gain measurements of your model 1000 antenna using the K-40 antenna as the reference. The test was conducted with the antennas mounted on a 16' ground plane with a separation of greater than 300' between the transmit and test antennas. The antennas were tuned by the standard VSWR method. The results of the test are tabulated below.

FREQUENCY (MHz)	RELATIVE GAIN (dB)	RELATIVE POWER GAIN (%)
26.965	1.30	35
27.015	1.30	35
27.065	1.45	40
27.115	1.60	45
27.165	1.50	41
27.215	1.60	45
27.265	1.75	50
27.315	1.95	57
27.365	2.00	58
27.405	2.00	58

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 Wilson 2000 Trucker.....59⁹⁵

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Notes On L.A. Quake Comms

Emergency communicators were in short supply to handle over three weeks of communications after the big January Los Angeles earthquake. Your author took an active role in these communications, and my notes should be read by every radio operator who thinks they are completely ready for "the big one." Take a few minutes to learn what we learned the hard way.

Mutual Aid

Does your emergency communications team have a simple call-up procedure when another agency needs more help? For instance, Los Angeles activated as many as

36 evacuation shelters, putting a strain on their local Red Cross communicators. Does your emergency communications team have a mutual-aid agreement with your local American Red Cross chapter? Can the American Red Cross use *only* their own card-carrying communicators at a evacuation shelter? That was one of the first big questions to be asked in Los Angeles, and it delayed the mutual aid call-up procedure for many hours. The L.A. Red Cross eventually did use any and all communicators who came in and signed up (on official forms) for volunteer duty.

REACT members using their GMRS equipment and repeaters were of tremen-

dous help to the ham operators and emergency operation centers. Your emergency group should definitely make every effort to coordinate REACT GMRS and ham radio as a vital part of your emergency communications plan.

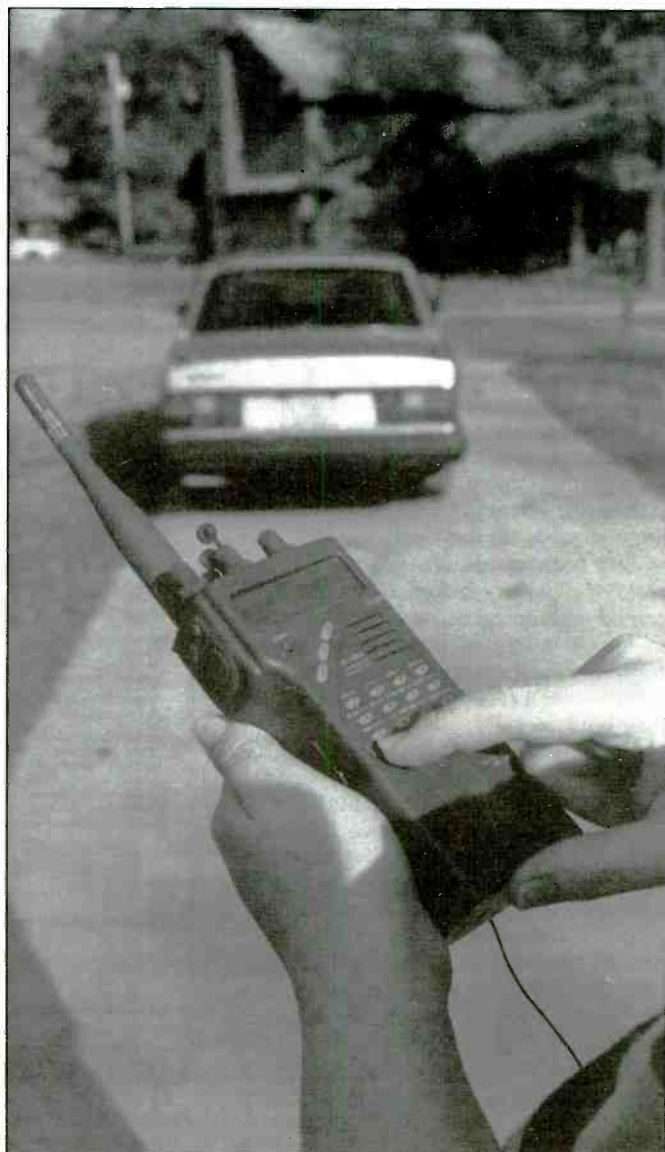
CB radio 27 MHz communications became an important tool for local devastated "block shelters" to intercommunicate between themselves, and to get messages to local evacuation centers or area Red Cross emergency operation centers. A 27 MHz 40-channel transceiver capable of all-mode operation is strongly suggested for your communications vehicle.

Cellular telephone operation is an im-



An emergency lash up like this worked well to get emergency calls out on HF from the earthquake area.

Using the mobile as a remote crossband repeater was very effective during the earthquake. ➔



portant component at shelters, command posts, and the EOC. Surprisingly, most cell sites did not "max out" right after the quake, but stayed on the air for vital wireless communications. But, the biggest problem with the cellular telephones were the constant, "all we have are dead batteries here" report from the evacuation centers. If portable and transportable cellular telephones are issued to emergency communicators at evacuation centers, the communicators should regularly keep track of how the back-up batteries are constantly being rapidly charged, and those "dead batteries" won't factor into the overall communications problem.

We saw many transportable cellular phones operated at evacuation centers. Each one was attached to an inadequate amperage power supply, and to an antenna system that was nothing more than 10 feet of coax and a mag mount whip. For a transportable, run it from a 4-amp gel-cell, and trickle charge the gel-cell. This way, during aftershocks and power outages, the cell phones stays up.

Coaxial Cable Extensions

Coaxial cable extensions are a must. Ten to 15 feet of coax is not nearly long enough at the evacuation center. Each transportable should also be packaged with 30 feet of low-loss coax, *with appropriate TNC connectors*. Regular ham coax is fine, but be sure you have a pocketful of PL to TNC connectors, plus another pocketful of PL to TNC barrel connectors to join the little magnetic antenna. The local Radio Shack stores instantly sold out of these adapters. You *must* be able to extend the length of the cellular phone coax cable run to an an-

tenna that is out in the clear from your radio operating point.

Handheld transceivers were regularly "falling out" of the local repeaters or base stations when operated inside the shelters. Most American Red Cross shelters must meet specific structural requirements, and you can be sure that they are loaded with steel. Attempting to operate a handheld with a little rubber antenna to a distant repeater or base station was futile. Literally hours of communications time was wasted by operators making transmissions that were completely unintelligible.

One solution would be a 40-watt mobile unit off of a rechargeable battery, hooked to an outside single or dual-band antenna. Instant results, even on low power. Another solution is put your emergency mobile unit dual-band transceiver into cross-band repeat. Since your mobile unit is outside and in the clear, you can easily run both sides of the link on low power, and won't end up with a vehicle dead battery. If your emergency net is on VHF, use the UHF side of your dual-band handheld to cross-band to your mobile unit. If your repeater has a long hang time on its COR, you may wish to cross-band only to the repeater input, not output. This way you can respond to any message without having to wait for the repeater output to drop carrier. Emergency earthquake communicators using their dual-band transceivers in their vehicle as a cross-band repeater to their dual-band handheld never had the problem of staying in touch inside the shelter or EOC.

During the height of the aftershocks, a FEMA official needed communications on high frequency to a distant H.F. command post. We found the combination ham/ma-

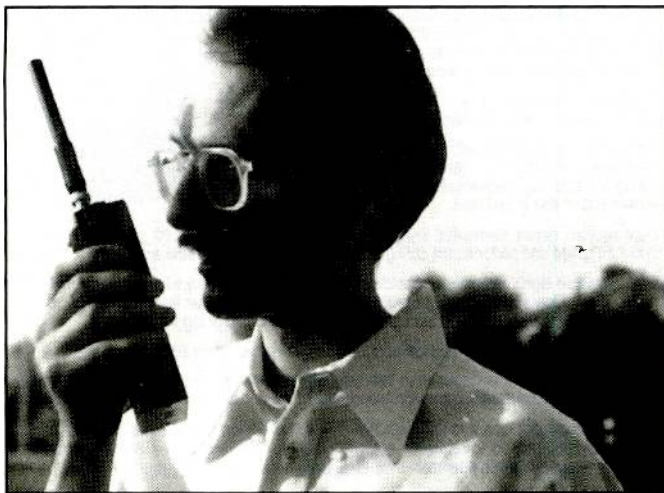
rine band taps on a six-foot Outbacker a perfect match to our Part 90 SGC SSB mobile unit. Many high-frequency SSB emergency channels are situated within 100 kHz of H.F. marine band frequencies, making the combination Outbacker ham/marine whip a natural at the emergency scene.

Talk Training

Many transmissions that took 30 seconds could have been executed in less than 10 seconds. Emergency communicator training exercises should emulate the communications from aircraft and control tower operators. Quick, direct, and minimum key-down time. Ham operators who were skilled emergency communicators were good, but could have been shorter. Hams who were plugged in out of communicator shortages did a great job, but many times took several minutes to send a message that could have been said in less than 20 seconds to another skilled operator.

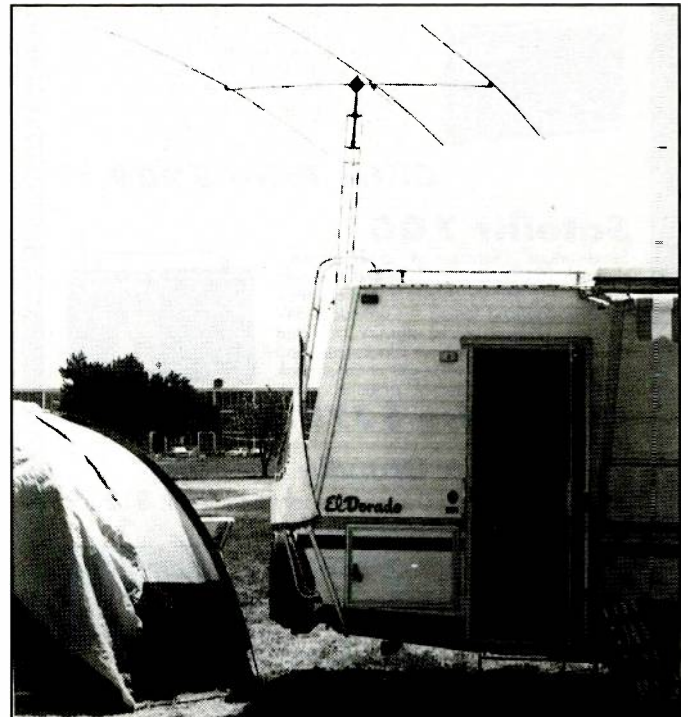
And let me tell you, it was the relatively new no-code ham population that jumped into the communication assignments—many 12-hour-long graveyard shifts—who did a terrific job without questioning the comm boss. If ever the no-code amateur radio class service was in the spotlight, it was during the L.A. quake. The old-time professional hams ended up at the emergency operating centers, and they too did a fabulous job, assisted by REACT GMRS operators, as well as trained American Red Cross communicators.

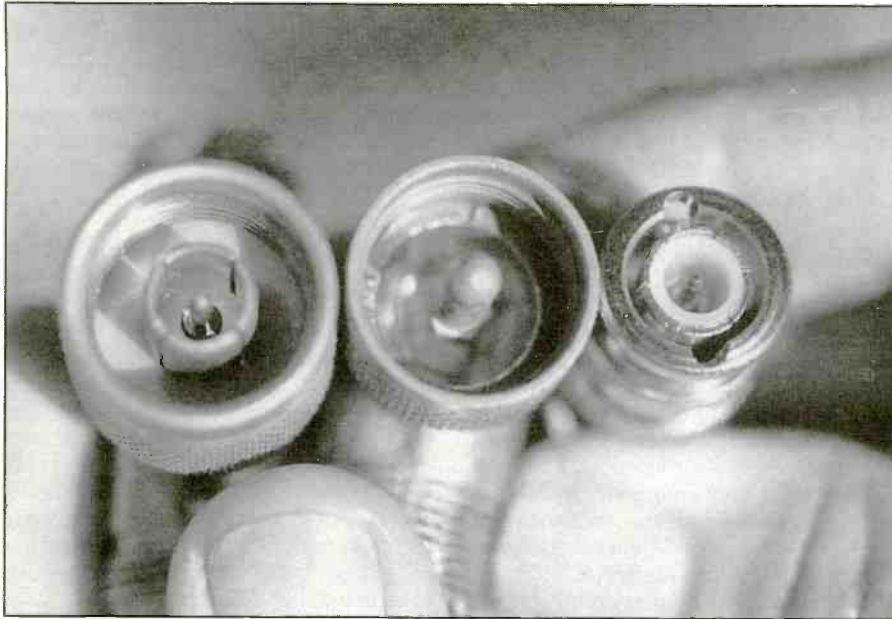
The most efficient operation came from those communicators using equipment that they were trained to operate. Hours of valuable air time were wasted when well-intentioned organizations brought in specialized



Handheld range was adequate only if the equipment was operated outside of the shelter.

The emergency center trailer was hooked into a three-element beam for good 10-20 meter range out of the earthquake area.





Coax adapters are necessary to match different types of fittings at the emergency site.



Spare coax cable sets are necessary to get signals out from underground shelters.

mobile radio (SMR) systems to try to help out in shelter-to-shelter and shelter-to-EOC communications. While at times these sets would occasionally get through, they may have wasted more time than what they were worth. Instead valuable time was spent *over ham frequencies* trying to get

this equipment up and running. If you haven't used the equipment before, I suggest you work with it before someone drops it off at your shelter.

Finally, to the thousands of L.A. radio operators on the thousands of different frequencies in use, congratulations to you all

for a job well done. For the high-frequency ham operators who took our messages throughout the country and the world, a big thanks to you, too. And for all emergency communicators, please use this review to help make *YOUR* big incident run smoothly on the airwaves. ■

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27 MHz COMMUNICATIONS ACTIVITIES

A note to the column from Uniden tells us that they manufacture approximately 65% of the world's CB radios, and that they are the world's largest maker of SSB radios.

Last year, Uniden points out, the company introduced its Professional Series, consisting of the PC-66XL, PC-76XL, PC-122XL, and top of the line, Grant XL. That series was designed especially with the professional trucker in mind. The units have all metal chassis and high-output speakers.

In addition to the Professional Series, the regular line of CB radios includes the Pro-510XL, Pro-520XL, and the Pro-538W with weather channels. These are priced between \$9.95 and \$99.95.

Uniden is also introducing a new handheld, the Pro-340XL, with four watt output and electronic channel selector. We hope to look at that one closer next issue. Another new addition is the road emergency Pro-501XL with LED channel display, volume control, and squelch. A version called the Pro-501AXL comes with a mag mount antenna.

These sets are available through Uniden's many dealers.

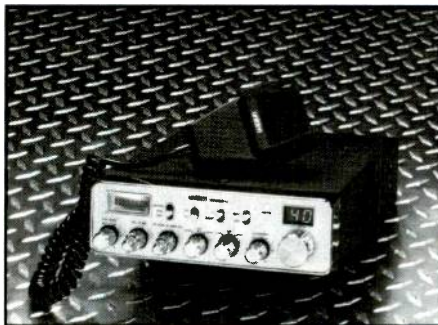
The Company Behind the Radios

It has been a few months since we have gotten around to mentioning historic CB radios. Your mail has reminded me of this. Sorry about that. Hope to make it up with this interesting item.

In the February '93 column, we wrote of the DeWald Co., of Long Island City, New York. DeWald radios weren't very stylish, or marketed forcefully. Their several low-cost CB's in the early 1960's received little notice from CB'ers.

Eric Nelson, of Dix Hills, New York, has done some research into this, pointing out that DeWald's 1962 ads indicated that DeWald was a brand name of United Scientific Laboratories (USL). While USL's own DeWald brand sets may not have been heavily marketed, USL actually manufactured most of the many CB radios brought out by Lafayette Radio and widely sold under the Lafayette brand name between 1960 and 1964. This includes the Lafayette HE-15, HE-20, HE-43, HE-90, HB-111, HB-115, early HB-115A, and HB-222 radios, and their refined versions. These were big sellers.

USL's arrangement with Lafayette is a common practice in the electronics industry known as "private label manufacturing." Early CB radios bearing brand names such as Allied Radio, Burstein-Applebee, Olson, and others, were also produced by other companies, just like the Lafayette radios. A great deal of today's electronic equip-



Uniden's President Grant XL is a mobile AM/SSB rig.

ment of all types is private labeled.

About the time USL stopped producing equipment for Lafayette, USL moved to Westbury, New York, and had become a division of Vernitron Corporation. Beginning in 1965, under its own USL brand, the company began aggressively marketing three CB radios.

The USL "Contact 23" was their top-of-the-line model, with full 23-channel operation, panel meter, speech compression, mechanical filter, and dual voltage power supply. It sold for \$199.50. Then there was the USL "Contact 8," which had a 23-channel tunable receiver but could transmit on only eight channels. This was \$149.50. Lastly, there was a USL T-1050A; a 6 channel transmitter coupled to a tunable receiver. The USL T-1050A was

a tired old DeWald CB being offered for \$119.95. When Vernitron bought out USL, a warehouse filled with unsold DeWald T-1050A CB radios must have been part of the deal.

USL, under the auspices of Vernitron Corporation, dabbled in CB only briefly, then went on to other pursuits.

In The Mail

The FCC advised us that they sent NAL's to the following persons for operating on unauthorized frequencies: John L. Larsen, Seattle, Wash. (\$100); Michael J. Tucker, Port Townsend, Wash. (\$2,000).

Victor, in Lancaster, Penna., writes that this magazine is one of his "true passions." He can hardly wait for each issue to come out. He had a couple of questions in the aftermath of the February column mention of SWR.

First, he asks if there is a significant difference between an antenna matcher and an antenna tuner. I suppose you might consider a matcher to be a balun or part of the design of an antenna. And, you could consider an antenna tuner to be an accessory intended to be placed in the coaxial transmission line to allow the operator to adjust for maximum interfacing between transmitter and antenna system. In popular usage, the terms appear to have become rather interchangeable when referring to an antenna tuner.



Lafayette's HE-15B was made in mid-1962 by USL. It had eight transmit channels. The IF frequency was changed to 455 kHz from the earlier version's 1750 kHz. Set sola for \$59.50.



The Lafayette HE-90 was a late-1963 USL creation. It transmitted on six channels. The receiver had a Nuvistor front end.



In 1963, USL manufactured Lafayette's HB-115 to replace that company's HE-20 in the \$59.95 price slot.



In the mid-1960's, USL brought out several CB radios under its own name. This was its Contact 23 unit.

tenna. He would sell it to anyone interested. Write to: Chuck Klasek, 1704 Yule, Moore, OK, 73160.

Overseas Mail

Gary L. Memory, of the American Embassy, Athens, Greece, writes to observe that a low pass filter is useful in reducing TVI, but it is a patch and not a solution. He points out that a transmitter has a certain finite amount of power it can generate. Unwanted transmission products such as excessive modulation, spurs, harmonics, etc., serve to deplete the desired signal going to the receiving end of the contact. Also, a low pass filter absorbs RF energy at a fixed level of attenuation, but doesn't prevent harmonic generation at the transmitter. Lastly, a low pass filter doesn't reduce adjacent channel interference. In all, Gary feels that a better approach is a quality transmitter, properly adjusted and operated. We hear that, Gary!

Nice letter from Frank, 14-AT-545, who told us about the special QSL being issued for his special event station in Paris, known as 14-AT-ED-SES. This station is named for Eugene Ducretet. Frank's address is BP 6 Vanves Cedex, 92173 France.

We heard from Jo, a POP'COMM subscriber in Indonesia, who wrote to say that he enjoys this column because it is tangible evidence that 27 MHz will never die. He sent along the QSL from 91-AT-000, which is from the club station in Jakarta. Readers wishing to write can address letters and cards to Jo, P.O. Box 147, Sawangan 16501, Indonesia.

Anton, K7-375, is one of our regular readers from Manila, Philippines. In a very informative letter, he writes that it's a toss up as to which column he likes best, this one or Joe Carr's "Antennas 'n Things." Anton belongs to BREAK (Broadcasters

Next, Victor asks if there are differences in the way SWR is checked when working with transmitters of different power ratings. Follow the instructions that come with every SWR bridge (meter). As a general rule, checking SWR shouldn't make much difference whether you are working with a 2 or 4 watt transmitter or one running a few hundred watts (assuming you are on a band where such power is authorized). With the transmitter in AM mode (not SSB), and the SWR meter in "set" mode, adjust the meter to read full scale. Then, shut off the transmitter carrier and change the meter mode to read out the SWR. Key up the mic again (in AM mode) and you get an SWR reading, regardless of the power output.

A letter from a reader asks about obtaining information from other readers regarding Browning 23/S-Nine radios, particularly R-2700 receivers. These were manufactured in the 1960's by Browning Labs. Although his letter isn't completely clear, it may be that he wishes to purchase one. If you have information, or one for sale, you might want to contact him. He is James Cannon, SSB Network Member SSB-77J, P.O. Box 21, Oconto Falls, WI 54154. Note that Jim is a trucker, so if it doesn't get back to you pronto, it may be that he's out on

the superslab earning some greenstamps.

A reader wrote to say that he has an antique RCA CB radio known as the Mark VII/CRM-P3A-5. He reports that it is in working condition, with its mic, but no an-

14 AT ED SES

Eugène DUCRETET

GRUPPO RADIO ITALIA

ALFA TANGO

INTERNATIONAL DX GROUP

QSL SPECIALE

PARIS

QTH PARIS

This special event QSL from 14-AT-ED-SES is issued by a station in Paris.

Radio Emergency Action Krew), which operates on Channel 37 (AM-mode). The group was founded in the 1970's by radio and TV station announcers, hence the name. CB radio was very popular in the Philippines during the 1970's, but late in that decade it was eventually declared by President Marcos to be illegal. The ban has never officially been lifted, although many stations are active. Appeals to the government to make the service legal again have not been successful.

Anton complains that many CB channels are clogged by punks who take delight in "splating" one another, which we presume means jamming with dead carriers. He laments that the punks tie up the channels for hours with long-winded conversations with their girlfriends. CB equipment theft is common.

A curious fact Anton brings out is that Uniden has a large manufacturing facility located in Manila, yet Filipinos are not allowed to buy directly from it. Scanners, CB's and other Uniden products are made there. The products must be purchased from dealers in the United States, then shipped from the USA to customers in the Philippines. Anton wonders if we might explain what kind of a business deal made that happen. Sorry, Anton, international trade isn't our strong point. We have been carrying around a Icelandic coin like a half dollar for two years in our pocket change. Can't figure out how we got it, or how to unload the thing.

Readers looking to contact Antonio, write Antonio R. del Rosario, c/o EDP Service, Supreme Court, Taft Avenue, Ermita, 1000 Manila, Philippines.

The Ultimate Question

N.R.P., of Texas, writes to say that he has heard many times never to transmit while having the car filled up at a gas pump. In addition, he has heard that radio transmitters should be turned off in any area where blasting is taking place. He wants to know if this is misinformation, if it makes any sense, and if there have been any explosions resulting from those who failed to do these things.

This is not misinformation. Gas pumps in many areas, and blasting zones, are posted with warning signs advising that radio transmitters be turned off. While we have no personal knowledge of explosions resulting from radio transmissions in volatile environments, it certainly makes good sense to cease transmitting for a few minutes until out of such danger zones. This may not be easy for everyone.

Catch you on the flip-flop. Please pass along your comments, QSL cards, station photos, questions, and other CB related information. ■

GRUPPO RADIO ITALIA

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INTERNATIONAL DX GROUP
DIVISION : INDONESIA



91 AT 000

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ON :
AT :



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QSL from 91-AT-0000, the Jakarta Club Station, in Indonesia.

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CIRCLE 86 ON READER SERVICE CARD

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

Readers are invited to contribute their SW broadcast loggings to this column.

Like a shortwave radio signal, let's skip from here to there and take note of some recent happenings on the shortwave broadcasting scene.

We welcome the return of the Argentine Antarctic station, Radio (Nacional) Arcangel San Gabriel which has reportedly resumed transmissions on its former frequency of 15476. Your best bet to hear this is around 2300 or 2330, mostly in Spanish but with an occasional English language ID.

The Voice of the Islamic Republic of Iran has put some new high power transmitters on the air, adding several new frequencies. Among these are 7100, 7285, 9720, 11745, 11790, 15084, 15260, 15315 and 15365. Long-used 9022 seems to have been discontinued.

There are two new stations on the air from Honduras. Radio Litoral, announcing as "La Voz de Esperanza" is using 4830. Sign on time is thought to be not until 1230, which will make it difficult to pick up in the mornings. You might give this one a shot in the early evening hours, but expect a lot of QRM around this frequency.

The other new Honduran is Radio Paz, operating on or about 4325 from the town of Choluteca and noted signing on at just past 1100.

Broadcasts of the Organization of American States (La Voz de la OAS) have been discontinued. This Spanish language service was aired daily over VOA facilities for many years. As is so often the case, the service was the victim of a budget cutback.

The same problem is hurting Radio Vilnius and its overseas service to North America. The government couldn't afford the rent on the Russian transmitters. Radio Centras continues to operate on 9400.

A couple of months ago we reported that WRMI was on the air at last, but those turned out to be simply test broadcasts. Once the tests were completed WRMI went silent again. But based upon what Jeff White of WRMI told us, the station should be fully operational by the time you read this. The frequency used is 9955.

Radio For Peace International has dropped their 7385 sideband frequency and replaced it with 9375, upper sideband, running 5 kW.

Radio Vanuatu, on the Pacific island of



Here's the monitoring post of Brendan Boomer in New Jersey. This impressive line-up includes these receivers: a National HRO-500 and HRO-600, Drake SPR-4, SW-4 and R7, an Icom R-71 and a Collins 51S1 and associated panadaptors, distribution amplifiers, antenna rotator. Whew!

that name, is reportedly set to have some upgrade money spent on its facilities. Radio Vanuatu is a difficult but far from impossible catch. It operates on 3945 and 7260 and many North American DXers have caught it. The best opportunities are late at night during the summer months.

The government of Equatorial Guinea has closed down Radio Africa 2000, a cultural station which operated with 10 kW on 6910. Reportedly, the plug was pulled because the Spanish government had cut back the financial aid it was giving the government of Equatorial Guinea. Africa 2000 was supported by the Spanish government.

Roland Richter of Waco, Texas has been DX'ing since 1957. Roland emphasizes the importance of record keeping as a way of learning about propagation and notes that he's kept detailed logs since 1959. He says "I have been able to get a real feel for trends in prop (sic) through tree complete sunspot cycles and have been able to learn enough to successfully "target" finding great DX catches even when listening time has been greatly limited. The idea, of course, is to know when and where to be for the "big" ones...sort of like psyching out the old fishing hole! I have learned that it is very important to carefully choose listening frequencies that are optimum to the limited time slots often available. The key to doing this has been to carefully log every station heard during a session, even if it is a real routine

one like WWV, HCJB or WCC with time, signal strength, frequency and antenna used. It has really paid off in catching some good stuff, but it has more importantly, taught me a lot about prop (sic) in general. But most importantly, it's been fun!"

Roland would like to correspond with other reporters and says he'd be happy to help beginners with tips, advice on choosing receivers and such. His address is 4405 Harrison, Waco, TX, 76705.

Jeff Demer would also like to have a shortwave penpal or two. His address is 287 Holt Ave., Manchester, NH 03109.

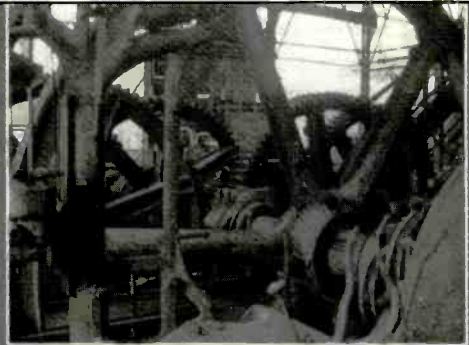
And here's the usual pitch: please keep those logs coming in as regularly as you can. You must, however, list them individually by country, and include your last name and state abbreviation after each. Also leave some cutting room between each or cut them yourself.

Also wanted are shack and shortwave station photos, spare QSLs you don't need returned, schedules, shortwave news you've run across and anything else you think might be of interest to this column's readers. Thank you!

Here are this month's logs. All times are UTC, which is five hours behind EST, i.e. 0000 UTC equals 7pm EST, 6pm CST, etc. Broadcast language is assumed to be English unless otherwise specified (SS=Spanish, PP=Portuguese, AA=Arabic, RR=Russian, etc.)



LAMIRANDE ANCIENNE RHUMERIE



RFO-Guyane, French Guiana, sent this QSL to Andy Johns in Texas.

ALASKA—KNLS, 7365 at 0800 and again at 1300. (Bush, Japan)

ANTIGUA—Deutsche Welle relay, 6048 at 0058 with IS and ID with site and sign on of English to North America. (Meece, OH)

ARGENTINA—RAE, 9690//15345 at 0034 in SS with local folk music and IDs. This runs weekends only. (Lamb, NY)

ARMENIA—Radio Yerevan via Russia, 17690 at 0345 with two day old news. (Bush, Japan)

ASCENSION ISLAND—BBC relay, 9600//15400 at 0700 and 15260 at 0100. (Bush, Japan) 11750 at 2000 sign on. (Low, TX) 15260 at 2200. (Meece, OH) 15390 at 2356 in SS, ending English lesson, ID "Transmite del servicio America Latina del BBC de Londres." (Lamb, NY)

AUSTRALIA—Radio Australia, 5995 at 1230. (Demers, NH)

6020 at 1202//9580. (Meece, OH) 6020 at 1230. 6080 to Papua New Guinea at 1200. 760//11660 at 1430. 9580 at 1000. 9710 at 0800.

9770//11695 at 1500. 11800 at 1530. 13755//15365//15415//17630//17715//17880//21595//21740 at 0200 and 15630//17670//17715//17880//21595 at 0600. (Bush, Japan)

9770 at 1506, 15530 at 2353 in Indonesian. (Lamb, NY) 13605 in CC at 1420. (Low, TX) 17670 at 1320. (Northrup, MO)

VL8A, Alice Springs, 4835 at 1300 with ID for ABC Territorial Radio and "Sounds of Summer" music show. (Rausch, NJ)

BELGIUM—Radio Vlaanderen Int'l, 5900//9930 at 0026 with IS, ID, "Brussels Calling" and "Belgium Today," "P.O. Box 26." Off at 0100. (Lamb, NY)

BOLIVIA—Radio Santa Cruz de la Sierra, 6135 at 2230 in SS with news show "Informacruz" and interview with a nurse on medicines to get rid of worms and heal insect bites. (Hathaway, Bolivia)

Radio Potosi, 3220 with folk music, all SS. Off 0230. (Hathaway, Bolivia)

Radio Semaipata, 3370 at 2230 with folk music and SS announcer. (Hathaway, Bolivia)

Radio Santa Ana de Yacuma, 4472 at 2000 with SS pops and commercial for Bolivian Pacena beer. (Hathaway, Bolivia)

BRAZIL—Radio Nacional, 15445 at 1315 with YL and "African Friend Campaign" and "Brazil Today." (Northrup, MO)

Radio Guarujá, 5980 at 0833 in PP with Brazilian pops, commercials, ID jingles, announcer with echo effects. (Lamb, NY)

Radio Bandeirantes, 9645//11925 at 0247 in PP

with Brazilian and US pops, IDs, frequencies. (Lamb, NY)

Radio Nacional, Sao Gabriel Cachioera, 3375 at 0913 in PP with Brazilian pops, rap, slogans, IDs, community announcements. (Lamb, NY)

Radiodifusora Amazonas, 4805 at 2359 in PP with IDs, jingles, frequencies, commercials, announcements with echo effects, disco. (Lamb, NY)

Radio Educacao Rural, 3385 at 0930 in PP with pops, jingles, woman with IDs. (Lamb, NY)

BULGARIA—Radio Bulgaria, 7445//9700 at 2300 and 0100. (Demers, NH) 11630 at 1330. (Bush, Japan)

CANADA—BBC via Sackville, 5965 at 1213. (Meece, OH)

CBC Northern Quebec Service, 9625 at 1407. (Lamb, NY)

Radio Canada Int'l, 6150 at 0522. (Low, TX) 1230 via China at 1230 and 1330, parallel 9535 via China. 11705 via Japan at 2200. (Bush, Japan) 9755 at 0000. (Demers, NH) 15425 at 1320 in FF. (Northrup, MO)

CHINA—China Radio Int'l, 4883 at 2308 in RR but soon lost. (Paszkiwicz, WI) 9440 via Xi'an at 1245 in CC. (Meece, OH) 9780//11715 via Mali to 0100 sign off. (Demers, NH)

COLOMBIA—Radio Buenaventura, 4836 at 0337 in SS music, station and Caracol network IDs, commercials and taped news from BBC Latin America service. (Lamb, NY)

Caracol Bogota, 6150, reactivated, 0155 in SS with news, promos, IDs. Apparently the expected new 50 kw transmitter. (Lamb, NY)

COSTA RICA—Radio For Peace Int'l, 7375 at 0100 in SS/EE. (Demers, NH) New 9375USB at 0606 with "Sounds of the New Ark" (Lamb, NY) 15030 USB at 2218. (Low, TX) 21465 at 1320. (Northrup, MO)

TIAWR, 9725//11870 in SS with mentions of the Bible, letters, radio drama. (Lamb, NY)

CROATIA—Croatian Radio, new 5985 at 2218 with news, IDs, IS, US pops. Croatian folk music to 0651 off. Also 0703 5895//5920 in Croatian but EE news 0709-0712, off 0726. Also 13830 at 1705 with radio drama, classical music, time pips, IS, ID, news about Bosnia and Tudjman. (Lamb, NY)

CUBA—Radio Havana Cuba, 6010 at 0315 with news. Also in SS at 0103. (Demers, NH) 9510 at 0649, into SS at 09700. (Pappas, ND)

CYPRUS—BBC relay on 11780 at 0702, off 0730. (Lamb, NY) 15575 at 0400. (Bush, Japan)

ECUADOR—Ecos del Oriente, 3270 at 1045 in SS with instrumental music, call letters, ID, station promo, possible news before fade. (Lamb, NY)

HCJB, 9745 at 0250. (Demers, NH) 9745//15155 at 0300 and 11925 at 0500. (Bush, Japan) 15140 at 0355 in SS. (Low, TX) 17890 at 1310. (Northrup, MO)

Radio Federacion (presumed) 4960 at 1116 in SS and local language with religious talk. (Lamb, NY)

Radio Baha'i, 4949.9 at 1040 in SS with vocals, flutes, time check and mention of Otovalo. (Paszkiwicz, WI)

ENGLAND—BBC, 6125 at 2300 and 6175 at 2300. (Demers, NH)

12095 at 1530. (Meece, OH) 15220 at 1315, 17790 at 1320 and 21660 at 1335. (Northrup, MO)

VOA via Woofferton, 6040 at 0628. (Lamb, NY)

FINLAND—Radio Finland Int'l, 15400 at 1250. (Demers, NH) 1310 in Finnish. (Northrup, MO)

FRANCE—Radio France Int'l, 4130 via China at 1400. (Bush, Japan). 6045//new 7280 at 0431 in FF. 5925 may be a move from 5920. (Lamb, NY) 9715 in FF at 2206. (Low, TX) 15300 at 1320 in FF, 17860 in SS at 1315, also 21645. 21765 in FF at 1330. (Northrup, MO) 17695 at 1451. (Demers, NH)

GABON—Africa Number One, 17630 at 1325 in FF. (Northrup, MO)

Swiss Radio Int'l relay, 12035 at 2200 sign on. (Low, TX)

GHANA—GBC Radio One, 4915 at 0514 with local music and into talk. (Meece, OH)

GERMANY—VOA relay, 5995 at 0600. (Bush, Japan)

Deutsche Welle, 6040 at 0230. (Demers, NH) 7225 via Sri Lanka at 1600 and 12055 at 0900. (Bush, Japan) 9665//11740 at 1949. (Pappas, ND) 15275 in GG at 1315 and 17715 in GG at 1325. (Northrup, MO)

GREECE—VOA relay, 9700 at 1500, 11805//15205 at 0600. (Bush, Japan)

GUAM—KTWR at 1513 on 9785 in Mandarin with contemporary Christian music, religious talk, sign off at 1528. (Lamb, NY)

GUATEMALA—TGNA/Radio Cultural, 3300 at 0333 with EE religious programming. Off at 0414. (Lamb, NY)

La Voz de Nahuala, 3362 at 1055 in SS and Mam with "Beer Barrel Polka," ranchera and marimba music. IDs. (Lamb, NY)

Radio Maya de Barillas, 3324 at 1036 in SS and local language with local music, ID, religious talks. (Lamb, NY)

HAWAII—KWHR, 9930 at 1334 in unidentified language, ID at 1400 and into EE. Also 17555 at 0017 with religious talk and South Bend address. (Lamb, NY)

Abbreviations Used in Listening Post

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

HONG KONG—BBC relay, 7180 at 1400, 11820 at 1330 and 15280//21715 at 0600. (Bush, Japan) 11945 (in parallel with Antigua-5975) at 2325. (Lamb, NY)

INDIA—All India Radio, 11620 at 1830, 1853. (Demers, NH; Rocker, NY)

INDONESIA—RRI Sibolga, 5256.6, tentative, at 1318-1332 with vocals and talks in II. (Paszkiwicz, WI)

IRAN—VOIRI, 9022//15260 at 1813 in GG with classical and easy listening music, frequencies, IS, IDs and into FF at 1830. (Lamb, NY)

ISRAEL—Kol Israel, 7465 at 1800 and into FF at

1815. (Bush, Japan) 2230 with business program. (Demers, NH) 11590 at 0538 in HH with commercials, time pips, ID, news. (Lamb, NY)

ITALY—RAI, new 6005 at 0058 in II; into EE at 0100 with ID, news, II pops. Into FF at 0120 and back to II at 0140. (Lamb, NY)

JAPAN—Radio Canada relay, 11705 at 2218 to Asia, into FF at 2230. (Lamb, NY)

BBC relay, 15370 (//Antigua-5975) at 2320 with classical music. (Lamb, NY)

Radio Japan, 9535//9750 at 1400, 9610//11885//17810 at 0500, 9750//11815 at 0900, 11915 at 1500, 15195//17775//17810//17845 at 0100, 15210//15230//17810 at 0300, 17810//17860//21610 at 0700 and 21610 at 0600. (Bush, Japan) 11705 at 1455. (Demers, NH) 11925 via Gabon at 2145. (Rocker, NY)

JORDAN—Radio Jordan, 9560 at 1536 with US pops and rap, time check, ID, news. (Lamb, NY)

KAZAKHSTAN—Kazakh Radio, 11950 at 2354 in presumed RR and Kazakh with test tones, IS, ID, anthem, news, classical music. (Lamb, NY)

KUWAIT—Radio Kuwait, 13620 at 2000. (Low, TX)

LESOTHO—BBC relay, 3255 at 0308 with news, program promos, sports. (Lamb, NY)

LIBYA—Radio Jamahiriya, 15435 in AA at 1944. (Low, TX)

MADAGASCAR—Radio Netherlands relay, 9810 at 0100 and 9895 at 1400. (Bush, Japan)

MALTA—Voice of the Mediterranean, 11925 at 1515 with music and news in FF. (Demers, NH)

MOLDOVA—Radio Dniester, 7105 at 0330, a new station with IS, ID, schedule and press review. (Rausch, NJ)

MOROCCO—VOA relay, 6140 at 0652 with interview. Off at 0700. (Lamb, NY)

NETHERLANDS—Radio Netherlands, 6020 at 0000. (Demers, NH)

NEW ZEALAND—Radio New Zealand, 9510 at 1515. (Low, TX) 9700 at 1100 with BBC relay, back to RNZ programs at 1130. (Meece, OH) 0700. Also 15115 at 0400. (Bush, Japan)

NORTHERN MARIANAS—KHBI, Monitor Radio,

Saipan, 9425 at 1240. (Meece, OH) 9430 at 1100, 13625 at 1300 and 17555 at 0900. (Bush, Japan)

NORTH KOREA—Radio Pyongyang, 9325 at 1500, 9977 at 1100, 15180//15230 at 0600, 15180 at 0800, 15230//17765 at 0400. (Bush, Japan) 11335//13760//15130 at 0002 with anthem, ID, program lineup, news. (Lamb, NY) 11720 at 0340. (Rocker, NY) 13760 at 0001 with ID, sign on and into Korean news. (Meece, OH)

OMAN—BBC relay, 7215 at 1500, 15310 at 1400, 17790 at 0130 and 0700. (Bush, Japan)

PAKISTAN—Radio Pakistan, 17705//21730 at 0230 for 15 minutes of EE news. (Bush, Japan)

PAPUA NEW GUINEA—Radio East New Britain, 3385 at 1130 in Pidgin with tribal sing-sing and promo for the new Port Morseby 31 meter band frequency of 9675 (which is 100 kw). (Rausch, NJ)

PERU—La Voz de la Selva, 4824.3 at 1015 in SS with ballads, ID, time checks, sound effects, mention of Loreto. (Paszkiwicz, WI)

Radio Libertad, 5039.2 at 1055 in SS with Peruvian music, time checks, ID, mention Junin. (Paszkiwicz, WI)

Radio Nacional, 6095 at 0400 in SS with IDs, ballads, mention of Tacna. (Paszkiwicz, WI)

PHILIPPINES—FEBC on 15450 at 0100. (Bush, Japan)

Radio Pilipinas, 17760//17840//21580 at 0230. (Bush, Japan)

VOA relay, 6110//9760 at 1100, 9645 at 1500, 11920 at 1630, 12040 at 1800, 15160//15425 at 1130, 17740//21550 at 0100. (Bush, Japan) 15290//15305 at 2305 and 17735//17820 at 0006. (Lamb, NY) 15425 at 1340 in special EE. (Low, TX)

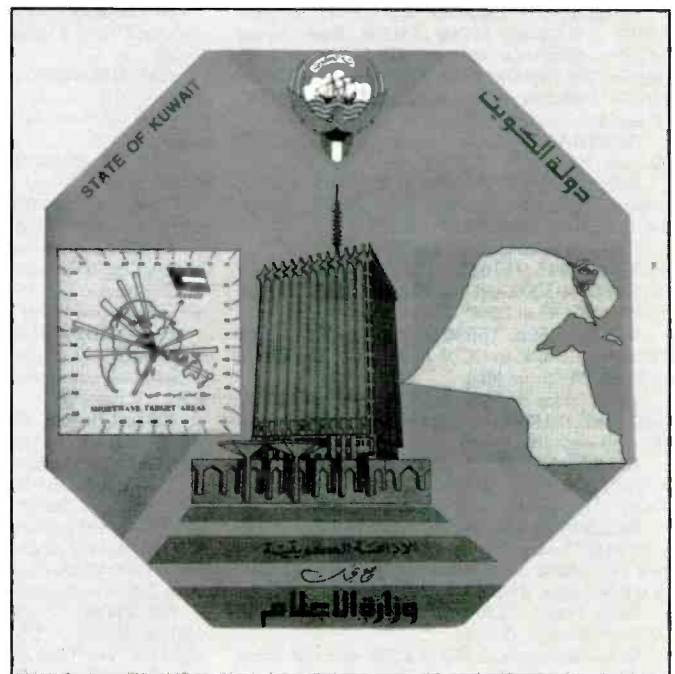
PORTUGAL—Radio Portugal via Maxoquiera, Portugal, 7190 at 0648 in Polish with interview, news headlines, fill music, ID and off at 0700. (Lamb, NY)

ROMANIA—Radio Romania Int'l, 15365 at 1310 with ID and talk on Romania. (Northrup, MO)

RUSSIA—Radio Aum Shinrikyu, 11915//21655 at 0430 with religious program. (Bush, Japan)

Adventist World Radio, via Russia, 9835 at 2340. (Rocker, NY)

Radio Moscow, 4860 at 2122 with "Culture and



▲ Andy Johns, Texas, received this card from Radio Kuwait.

◀ Paul M. Casale has been a DXer for nearly 25 years. His shack in Long Island City, NY, is built around a Kenwood R5000.

TARGET AREA	LANGUAGE	FREQUENC (KHZ)	METER BAND	Time			
				LOCAL		UTC	
				FROM	TO	FRO	TO
North America	English	11885	25	0200	0400	2200	2400
	English	9770	31	0200	0400	2200	2400
	Arabic	11885	25	0400	0600	2400	0200
	Arabic	9770	31	0400	0600	2400	0200
North West America	English	9605	31	0200	0400	2200	2400
	Arabic	9605	31	0400	0600	2400	0200
Far East (Towards Japan)	Arabic	17740	16	1300	1500	0900	1100
		15315	19	1400	1600	1000	1200
		11885	25	1500	1700	1100	1300
Far East (Towards Australia)	Arabic	17855	16	1500	1700	1100	1300
		11885	25	1700	2000	1300	1600
		9535	31	1700	2000	1300	1600
North Africa	Arabic	21630	13	1200	1500	0800	1100
		17645	16	1100	1300	0700	0900
		9605	31	2100	0200	1700	2200
Europe	Arabic	11970	25	1000	1200	0600	0800
		15265	19	1000	1200	0600	0800
		17855	16	1200	1400	0800	1000
		21735	13	1200	1700	0800	1300
		15315	19	1700	2000	1300	1600
		11970	25	2000	0200	1600	2200
		9790	31	2000	0200	1600	2200
Middle East	Arabic	6180	49	0700	1000	0300	0600
		7215	41	0800	1000	0400	0600
		9770	31	0800	1000	0400	0600
		13605	21	1600	1800	1200	1400
		9770	31	1800	2100	1400	1700
		7215	41	2000	2200	1600	1800
		6180	49	2200	0200	1800	2200
India & Pakistan	Arabic	9695	31	0600	1030	0200	0630
		9695	31	2000	2400	1600	2000

MINISTRY OF INFORMATION & CULTURE, TECHNICAL DEPARTMENT, P.O. BOX 17, ABU DHABI, UAE

IBRAHIM RASHID,
DIRECTOR GENERAL,

Here's a recent schedule from UAE Radio, Abu Dhabi. Thanks to Stan Schmidt, Indiana.

the Arts." (Lamb, NY) 5930//6065 at 0600, 7175//7270//7345 at 0700, 9550 at 1400, 9780//11710//12050 at 1100 and 21480//21585//21690//21770//21790 at 0130. (Bush, Japan)

7345 at 1520. (Pappas, ND) 9620 at 2305. (Rocker, NY) 15335 at 1315 in unidentified language, 15320 at 1320 and 15380 at 1315. (Northrup, MO) 15380 at 1515. (Demers, NH) 15550 at 1500 sign on. (Low, TX)

RWANDA—Deutsche Welle relay, 15425 at 2109 to West Africa. (Meece, OH)

SAUDI ARABIA—BSKSA, 11780 at 1728 in AA. (Pappas, ND) 1758 in AA with local music, ID for Holy Qu'ran service, anthem, news, suddenly off at 1801. (Lamb, NY) 15345 at 1310 in AA with news. (Northrup, MO)

SINGAPORE—SBC Radio One, 11940 at 0400. (Bush, Japan)

BBC Relay, 5975 at 1630, 9740 at 1100, 11750 at 1200, 15360//17830 at 0600, 15380 at 0230. (Bush, Japan) 9740 at 1256 with sports, ID. "News-hour" at 1300. (Meece, OH) 11750 at 1415. (Low, TX) 15360//17790 at 0142. (Lamb, NY)

SLOVAKIA—Adventist World Radio, 7180 at 0659 with organ IS, ID in EE, FF, GG, II and into religion. Off at 0759. (Lamb, NY) 7270 at 0100 with test, IS with multi-lingual IDs. (Rausch, NJ) 0250 to 0300 close with Christian programming in Hindi. (Paszkiwicz, WI)

SOUTH AFRICA—Channel Africa, 7270 at 1600. (Bush, Japan) 9520 at 0250 with IS, IDs, into FF at 0300 with news, African music. (Lamb, NY)

15240 with music, news of African nations, ID 1659. (Pappas, ND)

SOUTH KOREA—Radio Korea, 7275//11945 //15155 at 0600, 7550 at 0800 and 7550//15575 at 0100. (Bush, Japan)

SPAIN—Radio Exterior de Espana, 9540 at 0031 with feature on drug abuse in Spain. (Lamb, NY)

SRI LANKA—VOA relay, 11705 at 0153. (Lamb, NY)

SWAZILAND—Trans World Radio, 6040 at 0357 with IS, ID, and Evangelischer Rundfunk broadcast, over VOA. (Paszkiwicz, WI)

SWEDEN—Radio Sweden, 15240 with news at 1330 and close at 1400. (Demers, NH)

SWITZERLAND—Swiss Radio Int'l, 6110 at 2018 with DX program. (Rocker, NY) 7480//11690 (via China) at 1300 and 9420 at 1500. (Bush, Japan) 13635 at 1530 sign off. (Demers, NH)

TAIWAN—Voice of Free China, 9765//11880 //15345. (Bush, Japan) 15345 (direct), parallel with WYFR relays on 5950//9680 at 0205. (Lamb, NY)

Voice of Asia, 9280 at 0935 in CC with US and CC pops, talks, ID. (Lamb, NY)

Broadcasting Corporation of China, 9610 at 1021 in CC with News Network featuring remote reports, IDs. (Lamb, NY)

THAILAND—VOA relay, 9680 at 1611 in CC with jazz, IS, ID and off at 1659. (Lamb, NY) 11705 at 1400, 11855 at 1630. (Bush, Japan)

TURKEY—Voice of Turkey, 9445 at 2300. (Rocker, NY)

UGANDA—Radio Uganda, 4976 at 2056 in EE

and Swahili with African music, bilingual sign off announcement, anthem. Off 2101. (Lamb, NY)

UKRAINE—Radio Moscow via Ukraine, 4795//7195 at 2143. (Lamb, NY)

Radio Ukraine, 7195 at 1732 in Ukrainian with news, march music, IS, ID, into GG at 1800. (Lamb, NY) 17605 and 17690 via Russia at 0100. (Bush, Japan)

UNITED ARAB EMIRATES—UAE Radio, Dubai on 15435//21700 at 0530. (Bush, Japan)

UAE Radio, Abu Dhabi, on new 9605 at 2330. (Rocker, NY)

UNITED STATES—VOA on new 5860//9455 at 0142. Off at 0200 without usual sign off announcement. (Lamb, NY) 19379USB feeder at 1942. (Rocker, NY)

WINB, 15145 at 0110, stronger since transmitter repairs. Also new 15715 at 2106. (Lamb, NY)

UZBEKISTAN—Radio Tashkent, 9540 at 1200 with IS, ID, news and local music. (Rausch, NJ; Bush, Japan)

VATICAN—Vatican Radio, 6095 at 0258 with church music and "Ask the Abbot" mailbag show. Also 15090 at 1634 in Amharic. (Lamb, NY) 9605 at 0227. (Rocker, NY) 9695//11625//15090 at 0630 to Africa. (Bush, Japan)

That's about the size of it for this time. Glasses raised, please, to the following folk who did the good thing this month:

Brad Low, Jacksonville, TX; Steve Bush, Japan; Marina Pappas, Huron, SD; Jeff Demers, Manchester, NH; Ed Rausch, Cedar Grove, NJ; Marie Lamb, Brewerton, NY; Mark W. Meece, West Chester, OH; Karen Hathaway, Bolivia; Sheryl Paszkiewicz, Manitowoc, WI; Mark Northrup, Gladstone, MO; and Daryl Rocker, Herkimer, NY.

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

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Do You Need an Antenna Tuner?

There is a great cloud of mythology surrounding antenna tuners, particularly when the conversation turns to what they can and cannot do. Make no mistake, they are useful devices in the right applications. The trick is deciding whether you need one or not.

When Rigs and Antenna Systems Disagree

Every antenna has an *impedance* expressed in *ohms*. The same is true of the feed line you use to connect your transceiver to the antenna. Impedance is a complicated beast and, for our purposes, we can think of it as simple resistance.

The impedance of an antenna depends on a number of factors including its length, size of its wire or tubing, operating frequency, height above ground, the proximity of metal objects and even weather conditions (such as ice on the antenna). The impedance of the feed line depends on how the cable is constructed.

Your feed line does more than simply connect your radio to your antenna. It acts as an impedance *transformer*. That is, the impedance of your antenna is transformed by the feed line into the value your radio "sees" when you connect it to the cable. This *system impedance* acts as a *load* for the energy created by your radio—just like a light bulb is a load for the energy supplied by a battery.

Most ham transceivers are designed to work with a load impedance of 50 ohms. When your radio sees antenna system impedance of 50 ohms, or something close to it, you're on easy street. You press the mike switch, close the CW key or type on your keyboard and all is right with the world.

But what happens when the impedance isn't 50 ohms? Now you have a situation known as a *mismatch*.

When a mismatch exists, a certain portion of the power generated by your radio is *reflected*—like light is reflected by a mirror. This reflected power comes shooting back down the cable to your radio. When it reaches the radio, it's reflected back toward the antenna. The reflected power combines with the *forward* power being generated at the radio to create *standing waves* in the feed line.

By using a standing wave ratio (SWR) meter, you can measure the forward and

reflected power. A 1:1 SWR reading indicates that very little power is being reflected back to your radio. This is good. On the other hand, an SWR of 3:1 or more means that a substantial amount of power is being reflected. This is bad. (Don't you love these simple concepts?)

If your antenna system presents a serious mismatch to your radio, what can you do? You need to provide a 50-ohm load for your transceiver—regardless of what is really present. One way to accomplish this is by using an antenna tuner.

How Does an Antenna Tuner Work?

In its most basic form, an antenna tuner is simply a network of variable inductors (coils) and capacitors. By adjusting these coils and capacitors, the feed line impedance at the transceiver is brought back to 50 ohms. As far as your transceiver is concerned, the load impedance is matched and it's free to dump all of its power into the antenna system.

Of course, the reflected power is still bouncing back and forth between the antenna tuner and the antenna. Some of this power is lost in the feed line, but if you're using low-loss feed line, most of it is radiated at your antenna. In the meantime, your transceiver is happy and you're happy. Who could ask for more?

Use an Antenna Tuner if...

- You want to feed your antenna with open-wire line. Open wire line (or *ladder line*) offers extremely low loss at HF frequencies (much better than coaxial cable). One problem is that open wire line is *balanced* while your transceiver output is *unbalanced*. You need to use an antenna tuner with a built-in *balun* to form a bridge between the balanced line and the unbalanced output of your radio. A balun is a type of transformer that converts balanced feed lines to unbalanced, or vice-versa. (BALanced to UNbalanced. Get it?) Most antenna tuners use 4:1 baluns that also convert the impedance of open-wire feed lines to a value that the tuner can handle.

- You want to operate your antenna on bands other than those it was designed for.

When you attempt to use, say, a 40-meter dipole on 10 meters, a big mismatch will develop along with a high SWR. By using an antenna tuner, you may be able to create a 1:1 SWR at your transceiver. (I say "may" because the mismatch can often be so great that it is beyond the capability of your tuner to handle.) The high SWR may cause substantial loss in a coaxial feed line, but at least you'll radiate *some* power at the antenna.

- Your antenna has a narrow *SWR bandwidth* on some bands. Some types of multiband antennas do not offer low SWRs from one end of each band to the other. There is usually a range—expressed in kilohertz—where an SWR below 2:1 can be achieved. With an antenna tuner, you can operate outside the SWR bandwidth and still load the full output of your radio into the antenna system.

Don't Bother With an Antenna Tuner if...

- Your SWR is 1.5:1 or less at the frequencies you operate most often. An SWR of 1.5:1 or less is not serious and does not require the assistance of an antenna tuner. Most modern rigs will tolerate a 1.5:1 SWR just fine. In fact, many will be happy at an SWR of 2:1.

- You have a high SWR at VHF or UHF frequencies. VHF/UHF antenna tuners are available, but my advice is to save your money. Remember that an antenna tuner messages the antenna system impedance at the *transceiver*. The mismatch still exists as the SWR is still high at the antenna side of the tuner. Even the best coaxial cables have horrendous losses at VHF and UHF frequencies when the SWR is high. A VHF/UHF antenna tuner will make your radio happy, but most of its power will never make it to the antenna. The best approach is to correct the mismatch at the antenna by adjusting whatever tuning mechanism it provides. If the antenna cannot be tuned, check the cable for defects and make sure you have installed the antenna properly.

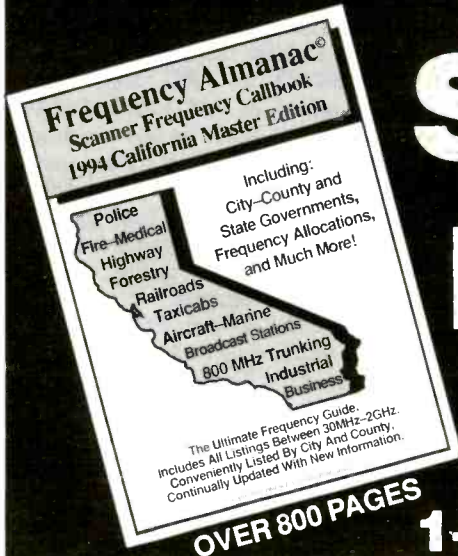
- You are interfering with TVs, telephones and other appliances in your neighborhood. Despite what you may have heard, an antenna tuner will not necessarily cure your interference problems. It's true
(Continued on page 82)

ORDER YOUR

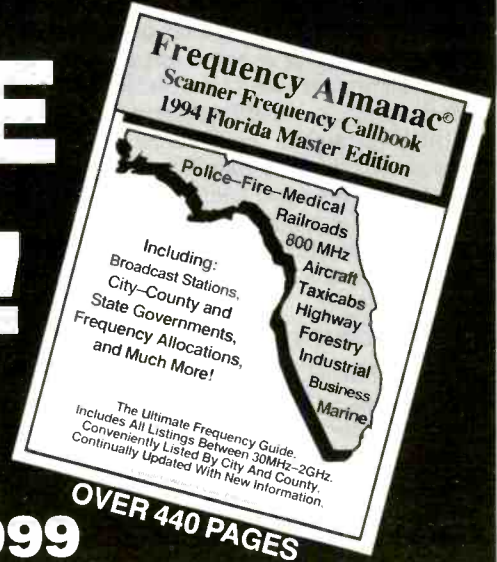
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INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

Bringing A Computer Into The Shack

I'm convinced by the end of this decade that most SWL's are going to have a personal computer (PC) of some sort in their shacks. Computers won't tune and log the DX for you (that's a relief!) but they will take care of a lot of random "housekeeping" and miscellaneous chores, letting DXers devote more of their time and energy to actually pulling in rare stations. Much of my recent mail has been about using computers in the shack, so here is a column in response.

Which Computer?

First off, I'm going to assume you are already familiar with basic computer concepts and terms like RAM (random access memory), hard drive, mouse, super VGA, Windows, different types of microprocessors, etc. I'm not going to conduct a crash course in PCs here, because Tom Kneitel would be upset if this column ran to 30 pages this month! Such basic computer information is available from a lot of different books, and I suggest that you get a couple and read them. Even if you don't plan on getting a computer for your shack, you'll find such knowledge will eventually be worthwhile for your job or school.

The good news is that you don't need the fastest or most powerful PC around for your shack—in fact, a super-duper 486 machine with 8 megabytes of RAM and 160 megabyte hard drive would be overkill for SWL'ing applications. You can get a PC that's perfectly suited for SWL'ing for less than the cost of most shortwave receivers or deluxe scanners.

Your choices in PCs are basically either MS-DOS or Windows units using Intel microprocessors (the so-called "IBM compatible" PC's) or Macintosh computers. While these two systems are battling it out in the home and business markets, there's really no question about which is best for the radio shack: it's the MS-DOS/Windows units. The reason why is that much more hardware and software is now available for MS-DOS/Windows machines, and that trend is steadily increasing. I love my Macintosh—in fact, I'm writing this column on one—but I use a MS-DOS system in my shack. In the past, some SWLs have used other computer systems such as Tandy or Amiga, but these are fading away under the MS-DOS/Windows flood.

For virtually all SWL needs, a PC with a 286 microprocessor, one megabyte of RAM, a 40 megabyte hard drive, a serial and a parallel port, and a VGA monitor will be all you need. Goodies such as more RAM or hard disk space, a super VGA monitor,

and a 386 or 486 microprocessor are nice and make the PC more suitable for non-radio uses, but really don't add that much to its utility for SWL'ing. My choice for my DX'ing computer is a laptop model with one megabyte of RAM, a 40 megabyte hard drive, a 286 microprocessor, an internal modem, and a monochrome display. It's not state of the art computing, but it's fine for my needs and is the sort of computer that's widely available today for only a few hundred dollars.

Receiving Digital Modes

The biggest thing I use my PC for is to receive various digital modes. For these, you will need a separate *interface* or *terminal unit* along with appropriate software for your PC. The audio from your receiver is fed to the interface unit, where the signal is converted from audio into a purely digital form that your PC can process and display. The interface unit is usually connected to your PC via the serial port. The interface unit is controlled via special software for your PC. Almost all interface units will let you receive and "see" such modes as Morse code and Baudot code-based RTTY. More elaborate units will let you receive ASCII, FEC, ARQ, SITOR, packet, and even facsimile modes.

Several of the terminal units currently on the market are designed for the ham radio market and have provisions for transmitting digital modes as well as receiving them. While these work fine for receiving, there's no need to pay extra for transmitting capability unless you are, or plan to become, a licensed ham. You can get more performance for your money by using a receive-only unit. Most interface units are "stand alone" external devices, although some are available as plug-in circuit cards you can directly install inside your PC.

Terminal units consists of three basic circuit sections: a series of filters, demodulators, and analog to digital converters. The filters are generally the bandpass audio type designed to pass certain tones while rejecting others; most terminal units will have some sort of tuning indicator to show when your receiver is receiving the desired tones properly. The demodulators extract the content of the different signal modes your terminal unit can receive. Finally, the analog to digital converters take the demodulated audio tones and change them into a digital form that your PC can both process and display.

Interface units are available in a wide range of receiving mode capabilities. If

you're starting out in digital mode monitoring, I'd suggest looking for a unit that could at least receive Morse code (CW), Baudot RTTY, ARQ, and SITOR (also referred to as AMTOR and NAVTEX). Such a unit would let you monitor (view?) the majority of digital modes used below 30 MHz. If you get hooked on digital mode monitoring, you can later upgrade to a more elaborate interface unit that includes such modes as FEC, packet, slow-scan TV (SSTV), and facsimile.

How well do such interface units work? Most work really well on all modes except Morse code. The problem there is not so much the units themselves as it is with how the CW is generated. All other digital modes used today are "machine generated," meaning the text or photos (for fax and SSTV) are precisely created by electronic or mechanical means. While Morse code can be produced at a keyboard now, much of it is still created "by hand" using keying devices. The speed, timing, duration, spacing, and other important parameters of the Morse characters can wildly vary, even when transmitted by the same individual. Terminal units expect the characters in various digital modes to be regular and precise. The irregularity and imprecision of hand-sent CW means that a good bit of the CW you try to receive will "print" as gibberish or be badly garbled.

There are some "dedicated" units for reception of digital modes. These require no PC, and include all necessary circuitry and software. All you have to do is connect one to the audio output of your receiver, add a video monitor, and you're ready to go. These perform better than PC interface units, but are also more expensive.

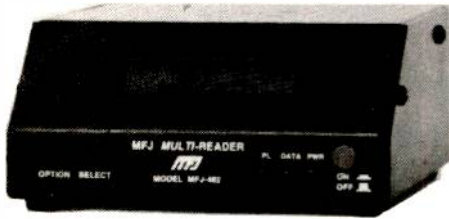
Controlling Your Receiver

Now this sounds like the ideal situation—let your computer do the hard work of tuning around for new stations! It's not that simple, however. Receiver control and scanning software can be very useful in some applications, but useless in some others.

Many premium shortwave and VHF/UHF receivers—the Drake R8, the JRC NRD-535, and the Icom R7100 among others—have a RS232 serial port built-in. This port means that you can control the microprocessor-based tuning circuitry of such receivers through your PC if appropriate software is used. Software to do so is advertised in the pages of *POP'COMM* and is available through many of the SWL equipment dealers who advertise here each month. A few receiver manufacturers offer

Tap into secret Shortwave Signals

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



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

\$149⁹⁵ Then watch mysterious chirps, whistles and buzzing sounds of RTTY, ASCII, CW and AMTOR turn into exciting text messages as they scroll across your easy-to-read LCD display.

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

Eavesdrop on the World

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

Super Active Antenna

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

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

Receives strong, clear signals from all over the world. 20dB attenuator, gain control, ON LED. Switch two receivers and aux. or active antenna. 6x3x5 in. remote has 54 inch whip, 50 ft. coax.

3x2x4 in. 42 VDC or 110 VAC with MFJ-1024 MFJ-1312, \$12.95.

Indoor Active Antenna

MFJ-1020A **\$79⁹⁵**

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

Tuned circuitry miniaturizes intermod, improves selectivity, reduces noise outside tuned band. Use as preselector with external antenna. Covers 0.3-30 MHz. Has Tune, Band, Gain, On/Off/Bypass Controls. Detachable telescoping whip. 5x2x6 in. Use 9 volt battery, 9-18 VDC or 110 VAC with MFJ-1312, \$12.95.

Compact Active Antenna

MFJ-1022 **\$39⁹⁵**

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

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

Detachable 20 in. telescoping antenna. 9 volt battery or 110 VAC with MFJ-1312B, \$12.95. 3/4x1 1/4x4 in.

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

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

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

Printer Monitors 24 Hours a Day

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

Printer cable, MFJ-5412, \$9.95.

MFJ MessageSaver™

You can save several pages of text in 8K of memory for re-reading or later review using MFJ's exclusive *MessageSaver™*.

High Performance Demodulator

MFJ's high performance *phaselock loop* demodulator consistently gives you solid copy --

MFJ Antenna Matcher

MFJ-959B **\$89⁹⁵**



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

Preamp with gain control boosts weak stations 10 times. 20 dB attenuator prevents overload. Pushbuttons let you select 2 antennas and 2 receivers. Cover 1.6-30 MHz. 9x2x6 inches. Use 9-18 VDC or 110 VAC with MFJ-1312, \$12.95.

High-Gain Preselector

MFJ-1045B **\$69⁹⁵**



High-gain, high-Q receiver preselector covers 1.8-54 MHz. Boost weak signals 10 times with low noise dual gate MOSFET. Reject out-of-band signals and images with high-Q tuned circuits. Pushbuttons let you select 2 antennas and 2 receivers. Dual coax and phono connectors. Use 9-18 VDC or 110 VAC with MFJ-1312, \$12.95.

Dual Tunable Audio Filter



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

Easy Up Antennas Book

How to build MFJ-38 and put up **\$16⁹⁵** inexpensive, fully tested wire antennas using readily available parts that'll bring signals in like you've never heard before.

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

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

MFJ-1214PC **\$149⁹⁵**



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

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

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

Super Hi-Q Loop™ Antenna

The Super Hi-Q MFJ-1782 **\$269⁹⁵** Loop™ is a professional quality remotely tuned 10-30 MHz high-Q antenna.

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

High-Q Passive Preselector

MFJ-956 **\$39⁹⁵**



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

Mobile Scanner Ant.

Cellular MFJ-1824BB/BM **\$19⁹⁵**

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

even with weak signals buried in noise.

Easy to use, tune and read

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

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

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

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

Use 12 VDC or use 110 VAC with MFJ-1312B AC adapter, \$12.95. 5/4x2 1/2x5 1/4 inches.

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

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

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

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

MFJ 12/24 Hour LCD Clocks

MFJ-107B **\$9⁹⁵**



MFJ-108B **\$19⁹⁵**

MFJ-105B **\$19⁹⁵**

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

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

MFJ Antenna Switches

MFJ-1704 **\$59⁹⁵**



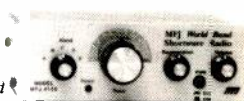
MFJ-1702B **\$21⁹⁵**

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

World Band Radio Kit

MFJ-8100K **\$59⁹⁵ kit**

MFJ-8100W **\$79⁹⁵ wired**



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2390	LV de Atitlan, Guatemala	0100	local	6117	La Voz del Llano, Colombia	0900	
3220	HCJB, Ecuador	0400	SS	6120	R. Japan via Canada	1100	
3230	R. Oranje, S. Africa	0230	Afk.	6130	CHNX, Halifax, Canada	0500	
3235	R. West New Britain, P. New Guinea	1100		6135	Swiss Radio Int'l	0230	
3255	BBC Lesotho Relay	0300		6150	Caracol Neiva, Colombia	0200	SS
3270	Namibia Bc Corp.	2345		6165	R. Netherlands via Bonaire	0400	
3270	Ondas del Oriente, Ecuador	1015	SS	6175	Faro del Caribe/TIFC, Costa Rica	1000	SS
3290	Namibian Broadcasting Corp.	0400		6185	R. Educacion, Mexico	0600	SS
3315	R. Manus, P. New Guinea	1130		6190	R. Yugoslavia	0200	
3320	Radio 2000, S. Africa	0100		6205	HCJB, Ecuador	0300	
3325	R. Maya, Guatemala	1130	vern	6220	R. Bulgaria	0430	s/on
3335	TWR Swaziland	0330	PP	6245	Vatican Radio	0640	
3366	R. Rebelde, Cuba	0300	SS	6250	R. Nacional, Eq. Guinea	0500	SS
3370	R. Tezulutlan, Guatemala	1100	SS	6576	R. Pyongyang, N. Korea	1130	
3375	R. Nacional, Sao Gabriel	1000	PP	6890	R. Bosnia Hercegovina	0030	
3380	R. Chortis, Guatemala	1130	SS	7105	R. Dniester Int'l	0330	
3395	R. Catolica Nacional, Ecuador	0100	SS	7110	R. Moscow	0000	
3980	VOA, Germany	0630		7125	RTV Guinea	0700	FF
4040	R. Mayak, via Armenia	0330	RR	7150	Capital Radio, S. Africa	0330	
4325	R. Paz, Honduras	1100	SS	7160	R. Qatar	2100	AA
4615	Iraqi Radio	0330	AA	7220	R. Budapest, Hungary	2200	
4712	R. Abora, Bolivia	0300	SS	7240	R. Australia	1100	
4735	Xinjiang PBS, China	1130	CC	7245	R. Nacional, Angola	0545	PP
4753	RRI, Ujang Pandang, Indonesia	1100	II	7250	Vatican Radio	0600	
4754	Rdf. Maranhao	0000	PP	7255	V of Nigeria	0500	
4760	ELWA, Liberia	0555	s/on	7265	Sudwestfunk, Germany	2200	GG
4765	RTVC, Congo	0355	s/on, FF	7270	AWR, Slovakia	0230	Hindi
4770	R. Nigeria, Kaduna	0500		7285	RT Malienne, Mali	0700	FF
4775	R. Tarma, Peru	0958	s/on SS	7295	RTV Malaysia	1030	
4799	R. Oriental, Ecuador	0100	SS	7335	R. Moscow	0300	
4780	Onda Musical, Dominican Rep.	0200	SS	7340	R. Marti, USA	2300	SS
4800	R. Lesotho	0400		7345	Czech Rep. Radio	0700	
4805	Rdf. Amazonas, Brazil	0030	PP	7365	KNLS, Alaska	0830	
4810	Afrikaans Stereo, S. Africa	2200	Afk	7415	VOA Relay, Botswana	0500	Hausa
4830	R. Tachira, Venezuela	0200	SS	7455	R. Bulgaria	2300	
4835	RTV Malienne, Mali	0600	FF	7475	RTT Tunisienne, Tunisia	0500	AA
4860	R. Maracaibo, Venezuela	0200	SS	7670	R. Bulgaria	0330	Bulgarian
4865	R. Alvorada, Brazil	0930	PP	9165	R. Omdurman, Sudan	0255	sign on, AA
4885	R. Clube do Para, Brazil	0100	PP	9375	RFPI, Costa Rica	24hrs	USB
4890	RFI Relay, Gabon	0355	s/on FF	9405	R. Prague, Czech Rep.	0000	
4895	LV del Rio Aruca, Colombia	0130	SS	9420	Voice of Greece	0130	GG/EE
4895	R. IBP, Brazil	0600	PP	9445	Voice of Turkey	2330	TT
4900	RTV Guineenne, Guinea	0600	FF	9475	R. Cairo, Egypt	0200	
4910	Zambia Broadcasting Corp.	0345	lang.	9480	TWR, Monaco	0730	
4914	R. Cora, Peru	0230	SS	9495	Radio France Int'l	2030	FF
4920	R. Quito, Ecuador	0300	SS	9505	R. Record, Brazil	2300	PP
4970	R. Rumbos, Venezuela	0300	SS	9510	R. Romania Int'l	0200	
4980	Ecos del Torbes, Venezuela	0300	SS	9510	R. New Zealand Int'l	1200	
4985	R. Brazil Central, Brazil	0030	PP	9520	R. Veritas Asia, Philippines	1200	
5010	R. Cameroon, Garoua	0500		9530	R. Ssingapore Int'l	1100	
5015	R. Brazil Tropical, Brazil	0700	PP	9540	R. Nacional Espana, Spain	0100	
5020	ORTN, Niger	0530	FF	9560	V of Ethiopia	1400	AA/
5025	R. Transamazonica, Brazil	0930	PP	9560	R. Jordan	1500	
5030	Bhutan Broadcasting Service	1200		9570	R. Portugal	0230	
5035	R. Aparacida, Brazil	0800	PP	9570	R. Romania Int'l	0230	
5045	R. Cultura do Para, Brazil	0200	PP	9575	Radio Medi Un, Morocco	0730	FF
5047	RTV Togolaise	0524	s/on FF	9580	R. Tirana, Albania	0230	
5055	TIFC, Costa Rica	0400	SS	9580	R. Yugoslavia	0030	
5060	R. Nac. Progreso, Ecuador	0300	SS	9605	V of UAE, Abu Dhabi	2200	
5260	Kazakh Radio	0330	Kazakh	9610	Rdf. Rwandaise, Rwanda	0258	s/on, FF
5882	Vatican Radio	0515		9625	CBC No. Quebec Service	1600	
5920	Croatian Radio	0800		9630	Spanish Ntl Radio via Costa Rica	0200	SS
5930	R. Slovakia Int'l	0100		9635	R. Portugal	0230	
5945	R. France Int'l	0230	FF	9640	Ecos del Torbes, Venezuela	1100	SS
5960	R. Japan via Canada	0300		9645	R. Bandeirantes, Brazil	0000	PP
5985	R. Moscow	0000		9650	Swiss Radio Int'l	0000	
6010	R. Havana Cuba	0330		9650	Channel Africa, S. Africa	0400	PP
6010	R. Mil, Mexico	1100	SS	9655	R. New Zealand Int'l	1300	
6020	R. Netherlands	2330		9675	NBC, Papua New Guinea	1200	
6050	HCJB, Ecuador	0700	PP	9680	RRI, Jakarta, Indonesia	1300	II
6055	R. Prague, Czech Rep.	0700		9685	R. Ukraine Int'l	2300	Ukrainian
6060	R. Nacional, Argentina	0500	SS	9690	China Radio Int'l, via Spain	0300	
6060	RAI/Radio Uno, Sicily	0530	II	9695	R. Sweden	0200	
6095	Vatican Radio	0250		9700	R. New Zealand Int'l	0800	
6100	Deutsche Welle, Germany	0400	GG	9725	AWR, Costa Rica	1100	
6115	R. Union, Peru	0200	SS	9725	RAI, Italy	0100	
				9730	Channel Africa, S. Africa	0300	

9745	HCJB, Ecuador	0730		13720	AWR, Guam	1600	non-EE
9750	R. Korea, S. Korea	1200		13730	R. Austria Int'l	1130	
9755	Radio Canada Int'l	0000		13750	AWR Latin America, Costa Rica	1200	s/on
9760	R. Tirana, Albania	0330	Alb.	13750	Reshet Bet, Israel	1415	Yiddish
9765	V of Mediterranean, Malta	0630		13785	R. Pyongyang, N. Korea	1500	
9770	R. Australia	1500		13835	INBS, Iceland	1230	Icelandic
9779	Rep. of Yemen Radio	2100	AA	13830	Croatian Radio	1800	
9780	China Radio Int'l, via Mali	0300		15050V	R. Patria Libre, clandestine	1400	SS, irr.
9810	R. France Int'l	1200		15090	Vatican Radio	2245	s/on
9815	Radio Havana Cuba	0200	USB	15095	FEBC, Philippines	1130	VV
9825	R. Kiribati	0555	s/on	15100	FEBC, Philippines	1400	EE & others
9830	KHBN, Palau	1400		15115	Radio New Zealand Int'l	0400	
9840	R. Kuwait	2100	AA	15140	R. Veritas Asia, Philippines	1500	
9845	R. Netherlands via Kazakhstan	0100		15168	R. Tahiti	0300	FF/TT
9880	R. Galaxy, Russia	2200		15175	FEBA, Seychelles	1100	AA
9880	R. Austria Int'l	0130		15185	R. Finland Int'l	2300	
9900	R. Cairo, Egypt	2230		15195	R. Ukraine	0030	
9910	All India Radio	1500		15205	R. Algiers, Algeria	1600	
9960	Wings of Hope, Lebanon	0400		15235	V of Great Homeland, Libya	2000	AA
9965	R. Caiman, anti-Cuba	0200	SS	15240	R. Finland Int'l	1530	
9977	R. Pyongyang, N. Korea	1100		15240	R. Sweden	0330	
11100	CPBS, China	1530	CC	15260	VOIRI, Iran	0030	
11402	INBS, Iceland	2300	Icelandic	15270	HCJB, Ecuador	1930	
11550	RTV Tunisienne, Tunisia	1600	AA	15295	R. Tashkent, Uzbekistan	1200	
11570	R. Pakistan	1600		15305	UAE Radio, Abu Dhabi	2340	
11600	R. Cairo, Egypt	0200		15315	R. Canada Int'l	1430	
11620	All India Radio	2000		15325	R. Japan via Fr. Guiana	0300	
11625	Vatican Radio	0630		15340	Rdf. Rwandaise, Rwanda	2000	FF
11645	Voice of Greece	1600	Greek	15345	RTV Marocaine, Morocco	1800	AA
11650	FEBC, Philippines	2300		15345	RAE, Argentina	0200	SS
11657	R. Moscow	0000		15345	RTV Marocaine, Morocco	1700	AA
11665	R. Netherlands, Madagascar	0030		15395	UAE Radio, Dubai	1330	AA
11675	Kol Israel	2230		15400	R. Finland Int'l	1330	
11680	China Radio Int'l via Fr. Guiana	0400		15410	VOA, Morocco relay	2200	s/off
11690	FEBC, Philippines	1200	VV	15420	R. Tashkent, Uzbekistan	1200	
11710	UAE Radio, Abu Dhabi	2330	AA	15425	SLBC, Sri Lanka	1500	
11710	RAE, Argentina	0200		15445	Radiobras, Brazil	1245	EE
11725	R. Korea, S. Korea	1000	SS	15445	R. France Int'l	2300	FF
11730	BSKSA, Saudi Arabia	2230	AA	15475	Africa Number One, Gabon	2100	FF
11750	Channel Africa, S. Africa	0500	PP	15505	Swiss Radio Int'l	1500	
11755	R. Finland Int'l	0130		15510	R. Australia	0600	
11780	R. Nacional do Amazonia, Brazil	2100	PP	15515	R. Portugal	1900	
11785	Rdf. Nacional, Colombia	1900	SS	15565	R. Australia	1200	
11790	VOIRI, Iran	1530		15575	R. Korea, S. Korea	0030	
11800	SLBC, Sri Lanka	1200		15630	R. Australia	1200	
11800	RAI, Italy	0100		15640	Kol Israel	1400	
11805	KTWR, Guam	0930		15650	Voice of Greece	1830	
11815	Spanish Ntl Radio via Costa Rica	0100	SS	15675	R. Copan Int'l, Honduras	2300	SS
11820	BBC Relay, Hong Kong	1400		15715	WINB, Pennsylvania	2000	
11825	R. Tirana, Albania	2200		15770	ISBS, Iceland	1230	Icelandic
11827	R. Tahiti	0300	FF/TT	17490	HCJB, Ecuador	1000	
11835	HCJB, Ecuador	0700		17500	RTV Tunisienne, Tunisia	1330	AA
11840	R. Japan	1100	JJ	17535	V of Greece	1430	GG/EE
11850	R. Denmark via Norway	1530	DD	17590	R. Vlaanderen Int'l, Belgium	1400	
11865	R. Norway Int'l	0300		17595	R. Cairo, Egypt	1200	
11870	AWR, Costa Rica	1400		17620	R. France Int'l	1600	
11880	R. Galaxy, Russia	2100		17630	Africa No. One, Gabon	1430	FF
11885	UAE Radio, Abu Dhabi	2330		17670	Swiss Radio Int'l	1500	
11890	R. Oman	2100	AA	17690	R. Ukraine Int'l	0100	
11895	Voice of Turkey	2300		17705	R. Havana Cuba	2130	SS
11910	R. Sweden	2230		17730	Swiss R. Int', via Brazil	0000	
11925	R. Norway Int'l	2200		17740	R. Finland Int'l	1430	
11945	R. Canada Int'l	2100		17745	R. Algiers, Algeria	1930	
11950	WINB, Pennsylvania	1030		17750	Voice of Free China, Taiwan	2200	via WYFR
11980	KSDA, Guam	1400	CC	17760	R. Havana Cuba	2130	
11985	UAE Radio, Dubai	2100	AA	17775	R. Romania Int'l	1300	
11990	R. Kuwait	1500	AA	17790	HCJB, Ecuador	2130	
12005	RTT Tunisia	1400	AA	17805	R. Romania Int'l	1730	
12035	Swiss Radio Int'l via Gabon	2000		17810	R. Japan	2300	
12050	R. Cairo, Egypt	0300	AA	17820	R. Canada Int'l	1300	
12085	R. Bulgaria	1515		17845	Spanish Foreign Radio	1500	SS
12085	R. Damascus, Syria	2030		17870	R. Sweden	1500	
13590	R. Pakistan	1600		17875	R. Canada Int'l	2030	
13605	Capitol Radio via UAE, Abu Dhabi	2230		17880	R. Finland Int'l	1300	
13615	R. Bangladesh	1230		17890	Spanish National R. via Costa Rica	2130	SS
13620	R. Kuwait	2000		17900	R. Portugal	2000	PP
13625	KHBI, Saipan	1300		21455	HCJB, Ecuador	1330	
13640	Croatian Radio	1500	Croat	21515	R. Portugal	1500	PP
13650	R. Pyongyang, N. Korea	2300		21550	R. Finland Int'l	1430	
13660	R. Havana Cuba	0200	USB, EE	21590	R. Netherlands, Bonaire	1800	
13675	UAE Radio, Dubai	1630		21605	R. Yugoslavia	1230	
13680	Deutsche Welle, Germany	1600		21625	Radio Sweden	1330	
13690	R. Canada Int'l	2200		21810	R. Vlaanderen Int'l, Belgium	1330	Flemish

software to control their receivers, as Drake does for the R8.

Most receiver control software lets you enter desired frequencies and times into a database. Your receiver can then be automatically tuned to a desired frequency at the indicated time by your PC. Almost all receiver control software also permits scanning of frequencies in the database. Some receiver control software will scan through frequencies much like a scanner receiver and pause on a channel with a signal present until the carrier of the signal drops out. Other control software will continuously scan through frequencies in the database and record each time a signal is present; this is a great way to determine how active various frequencies are at times (like late night) when you can't listen. Some advanced receiver control software even includes terminal unit control capabilities. Such software can scan through your database frequencies and shift your terminal unit to CW, RTTY, or other digital modes received and write all transmissions received to your receiver's hard disk!

So how useful is this sort of software? For scanning frequencies above 30 MHz, it is a terrific tool, especially for uncovering new frequencies and determining just how active different channels are in your area. For frequencies below 30 MHz, it's much less useful. The reason why is that transmissions on the VHF/UHF "scanner

bands" are generally short, whereas transmissions below 30 MHz can go on for hours. The receiver control software might stop at the first signal it finds below 30 MHz and stay there for hours (some software has a "time out" feature, however, to resume scanning after a specified interval even if a signal is still present on a frequency). Moreover, reception below 30 MHz often depends upon proper adjustment of a receiver's selectivity, sensitivity, automatic gain control, noise limiter, etc. Presently, there is no way for the receiver control software to "know" that a narrow receiver bandwidth should be used or that a faster AGC time is necessary. Those sort of judgments still require a human in the loop.

With those limitations in mind, receiver control software can still be a valuable addition to your shack if your monitoring involves keeping track of several different frequencies within the same time period or searching for new frequencies and judging their level of usage. But, if your monitoring is directed toward just one station at a time, particularly DX stations where correct settings of your receiver's controls are important, then you can get by fine without controlling your receiver via a PC.

Frequency Directories on CD-ROMs

Prices of compact disc (CD) drives for

PCs have been dropping rapidly, and they're showing up in many PCs today as standard equipment. These drives are used to read CD-ROM (read-only memory) disks, which can contain several megabytes of data and applications programs. One of the most popular types of CD-ROM's are those which contain files from the FCC's master station and frequency database. Such CD-ROM's are organized so that the complete FCC listings for a single state are available on one CD-ROM. Each CD-ROM also includes a data search and retrieval program; the data on each CD-ROM can often be exported to a popular database applications program (like dBase II or III) and sometimes even exported directly into some types of receiver control software. Other FCC databases, such as those for ham radio operators, are also available on CD-ROM.

These CD-ROM directories are especially valuable if you do any VHF/UHF DX-ing or like to look for more obscure users of the bands above 30 MHz. The search and retrieval programs for most CD-ROM's are very good, allowing you to do searches based on fragmentary data (such as hearing only a mention of "Ellensburg" on 30.17 MHz). Having a collection of databases covering your areas of interest on CD-ROMs will allow you to turn a lot of puzzling receptions into solid loggings. Many of the CD-ROM databases also include address data



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so you can go QSL hunting.

One warning: CD-ROM databases are not cheap. Expect to pay upwards of \$60 to \$80 per CD-ROM. As an alternative, extracts from the FCC's databases are becoming available on high density floppy disks for \$30 to \$40 per disk. Like CD-ROM's, these are usually sold on a per-state basis. However, to fit the complete listing for a state onto a floppy, certain information (like the licensee's mailing address) must be left out. However, if you can be content with just knowing the basics like a station's call sign, authorized frequency, and location, then floppy disks can be a cost-effective alternative to CD-ROM databases.

Other Applications Software

The amount of available radio-related applications software increases each month. You can find programs to track satellites, forecast propagation conditions, practice Morse code, design antennas, keep a log-book of your DX, find the location of the gray line terminator between day and night, or calculate the great circle path from your location to a DX target. An example of the variety of software available can be found in the offerings from one dealer. His products range from a simple 24-hour clock accessory for Windows PCs all the way to a comprehensive database of English language schedules from around the world!

Such applications programs are available on massive CD-ROM libraries, on floppy disks, as "shareware" on floppy disks or via bulletin board systems (BBS's), or free from BBS's. "Shareware" is software you try first to see if you like it or can use it; if you decide to use it, you send the developer a nominal fee at the address given in the software. This is a great way to get useful software at very reasonable prices, but you need to use a virus detection and removal utility if you use shareware.

Avoiding Computer QRM

The high speed digital circuitry in PCs generates a lot of broad-band noise throughout the RF spectrum. If you bring a computer into your shack, you need to take steps to keep that noise from getting into your receiving gear.

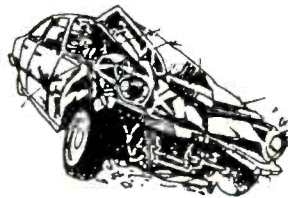
The first place to start is to make sure you're using a computer certified by the FCC for home use. Such computers are labeled—a bit misleadingly—as "class B" computers. You would logically think that "class A" computers would produce less noise than class B computers, but that isn't the case; class A computers are certified only for industrial or business use where interference to radio communications is not a concern.

Even class B computers can be surprisingly "dirty." The key to keeping their noise out of your receiver can be summed up in

one word: *isolation*. Run your receiving gear and PC off separate power outlets and use a noise filter/surge suppressor between your PC and the wall outlet. Keep all cables and other wiring used by your receiver, antenna, and PC as physically separate as possible, and likewise keep your receiving gear and PC as far apart physically as you can. Use shielded cables, and that is one place where a good DC ground on your receiver can help shield your receiver from the radiated PC noise. Be particularly careful when using preamps, active antennas, or loop antennas around PCs, as such devices can pick up and amplify weak radia-

tion from your PC. Watch out for laptop PCs that use so-called "active matrix" displays, as such displays are especially bad sources of RF noise. Don't be too surprised if you have to re-arrange some items of gear in your shack to get the lowest possible noise level!

You may not think you need a PC in your shack until you try one, and if you do you'll soon wonder how you got along without one! We're still in the infancy of "computerized DXing," and the proliferation of digital modes will soon make a PC a necessity. Now's the time to start putting a PC to work for you. ■



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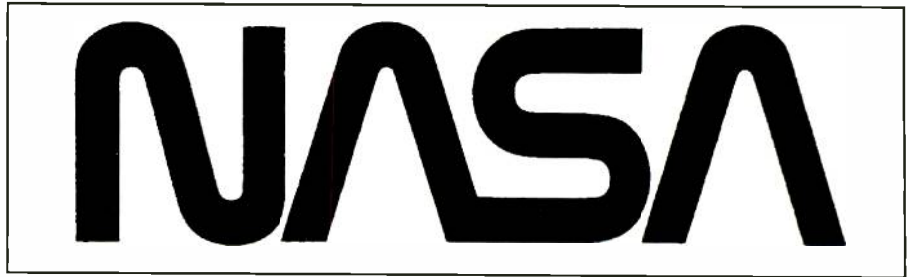
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INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

NASA News



The Hubble Space Telescope (HST) is back on track but the Mars Observer is lost in space. Let's review what has been happening with NASA during the last year or so.

The Mars Observer was the first US spacecraft in 17 years to be sent to Mars. The day it was to begin its orbit was the day it disappeared. An investigation into its disappearance indicates that the spacecraft stopped sending signals back to Earth after the command to pressurize the propellant tank was given. NASA speculates that the tank had a leak, which sent the spacecraft out the control and into a deep space orbit or onto the Mars surface. Its fate may never be known as Mars is 3.6 million miles away.

HST provides scientists with a close-up view of a shattered comet hurling toward a collision with Jupiter in July of this year.

The Gamma-Ray Observatory (GRO) spacecraft has discovered a new physical phenomenon. Rare flashes of gamma rays are produced in the Earth's upper atmosphere above the regions of intense thunder storms, and seem to be associated with electrical discharges. It is also directly above such storms that Sporadic-E propagation occurs. Sporadic-E will reflect VHF signals

up to 1,200 miles; signals which are normally line-of-sight only. The GRO also discovered that gamma rays do not originate in the Milky Way galaxy, but instead comes to us from deep space.

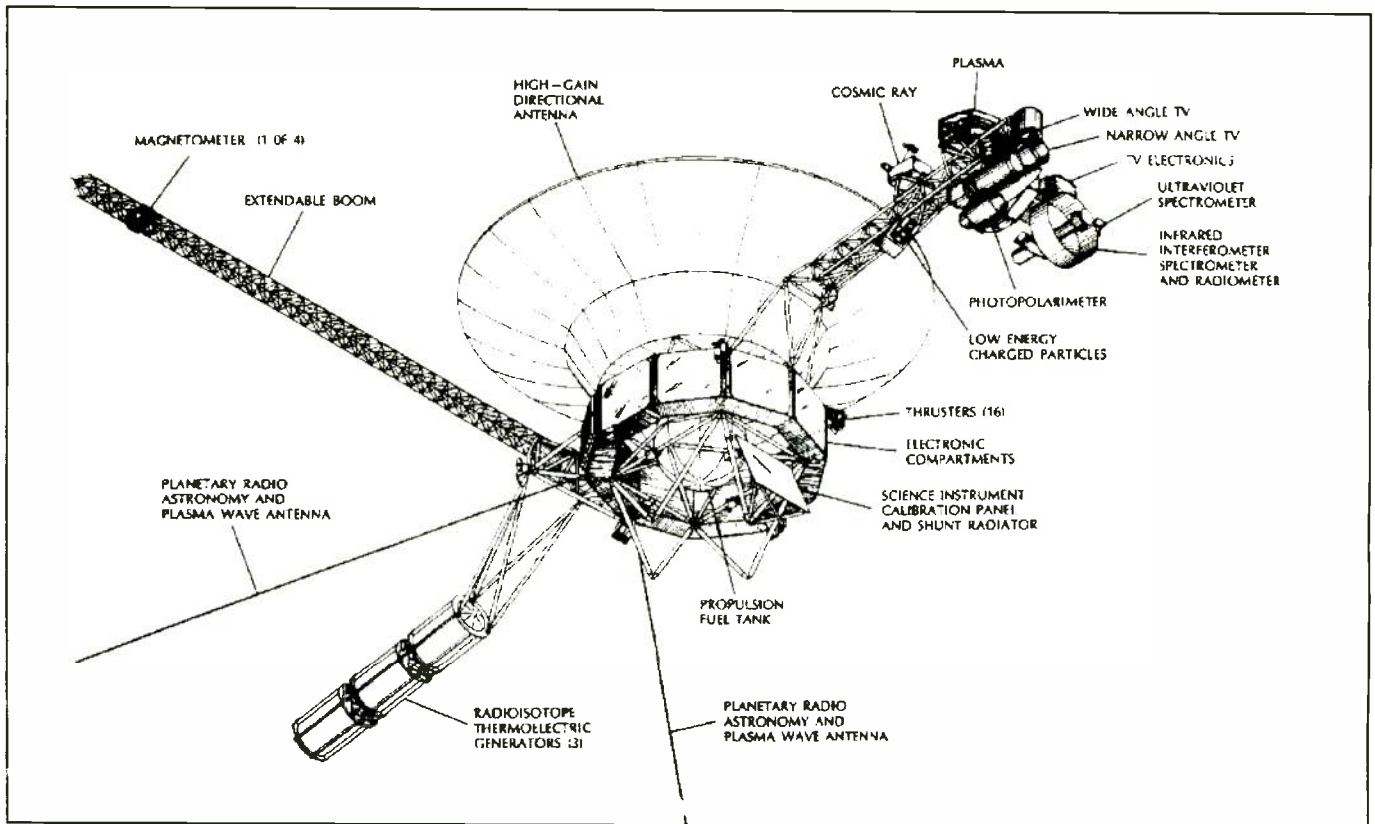
The research spacecraft Rosat has discovered a huge concentration of so-called dark matter in space about 150 million light years from Earth (a light year is the distance light travels in a year, about 5.8 trillion miles). The discovery appears to confirm that most of the universe's dark matter is concentrated in and around small groups of galaxies, and makes up to 95% of the universe's mass.

The International Ultraviolet Explorer

(IUE) provided the first direct evidence that the red super-giant stars, the largest stars known, end their existence in a massive explosion known as a supernovae. IUE transmits on a frequency of 136.860 MHz.

The first successful attempt to "aerobrake" a spacecraft by dipping into a planet's atmosphere was achieved by the Venus probe, Magellan. This maneuver, the spacecraft's orbit around Venus, changed from highly elliptical to nearly circular.

Three interplanetary spacecraft, the Mars Observer, Galileo and Ulysses, were used in an experiment attempting to prove the existence of elusive waves in the universe's gravitational field. This is the first



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Low-Band Voice Frequencies

FREQUENCY	SPACECRAFT
121.750 MHz	Soyuz
142.415 MHz	Soyuz
143.625 MHz	Mir/Soyuz
145.000 MHz	Mir/Shuttle
145.550 MHz	Mir/Shuttle
145.825 MHz	Dove (voice chip failed)
145.985 MHz	RS-14

time three spacecraft have made simultaneous observations. Einstein predicted the existence of gravitational waves, but none has been detected directly.

The Sampex spacecraft located a new radiation belt around the Earth which seemed composed of cosmic rays—a result from the solar wind interaction with the gas between stars.

The Voyager spacecraft detected radio waves which were believed to come from long-sought-after helipause, the boundary that separates the solar system from the interstellar space. Voyager 1 is now about five billion miles from the sun; while Voyager 2 is now four billion from the sun. Both were launched 15 years ago.

A special low-light-level all sky camera aboard NASA's research aircraft discovered the ozone, as well as huge flashes of upper atmosphere lightning which may affect the ozone.

The Upper Atmosphere Research Satellite (UARS) conducted a study which showed a 20% depletion of the ozone compared to 1992 levels.

NASA is conducting experiments on the



Ex-astronaut Bryan O'Connor is heading the redesign group for U.S. space station "Alpha" (see June '88 interview with Mr. O'Connor).

AIDS virus by using advanced x-ray crystallography technology in an attempt to better understand it.

The US-French Topex/Poseidon spacecraft continued its precision measurements of changes in global sea levels. In February, scientists used this data to correctly predict that the ongoing El Nino event would be strengthened, leading to excessive precipitation than experienced in normal winters in the Eastern U.S. In November, this data indicated conditions were primed for another El Nino next year.



Hubble space telescope (HST) image of Mars

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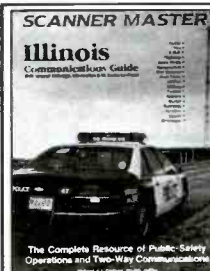
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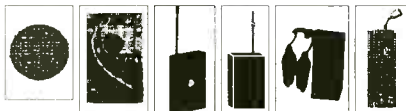
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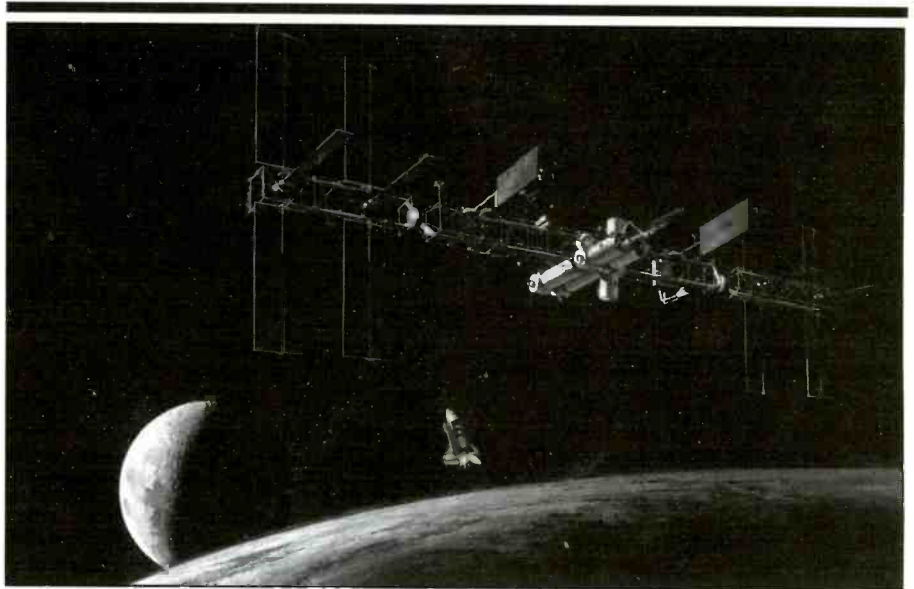


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"Freedom" is dead, but "Alpha" will rise from the rubble of its predecessor's death.

By mid-year the Freedom space station, per se, no longer existed. An entirely new station design, nicknamed "Alpha," was being put into place. Program management and staffing was being completely overhauled. In addition, Russia has agreed to become an international partner.

NASA established a 45-member redesign team led by Space Flight's Associate Administrator, Bryan O'Connor. O'Connor's team, which began work in March, recently submitted its final report making three options available. First, to utilize a modular approach to the space station using flight-proven hardware (we already

have off the shelf hardware on hand); next, the majority of Freedom systems were suggested to be retained but scaled down; or finally, to use a single module somewhat similar to the Russian Mir design, to be launched on the shuttle and placed into orbit in one trip, ready to use. The President chose option A, and the Alpha Station may become a reality.

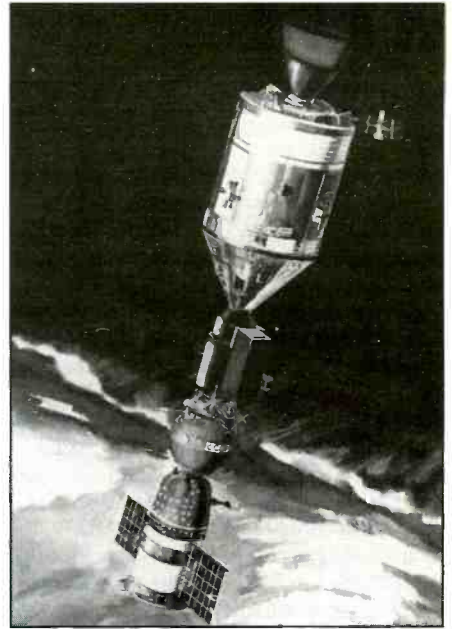
NASA is making good use of the retired SR-71 Blackbird, by utilizing this ex-spy plane for a variety of research projects. It has been decided that it is cheaper and quicker to fly than to prepare a launch vehicle to send research instruments aloft.



It was 19 years ago next month that this Soviet and American crew flew the first joint space mission.

Low-Band Satellite Update

SAT	FREQUENCY	ORBIT
MOS 1	136.110 MHz	polar
ACTS 3	136.370 MHz	geo 105°W
GOES	136.360 MHz	geo 88, 135, 176°W
NOAA 11	136.770 MHz	polar
IUE	136.861 MHz	polar
FENGYUN	137.035 MHz	
METEOSAT	137.080 MHz	geo 50°W
MARECS	137.170 MHz	geo 22/14°W
COSMOS	137.280 MHz	polar
METEOR	137.300 MHz	polar
INTERCOSMOS	137.350 MHz	polar
OKEAN	137.400 MHz	polar
INTERCOSMOS	137.450 MHz	polar
NOAA 12	137.500 MHz	polar
X-3	137.560 MHz	polar
NOAA 9	137.620 MHz	polar
NOAA 11	137.770 MHz	polar
FENGYUN	137.795 MHz	
METEOR	137.850 MHz	polar



The 1975 Apollo-Soyuz mission.

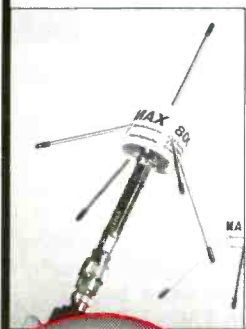
NASA also continues research in aircraft safety. They are trying to design engines and control surfaces that will allow aircraft to safely land even if the hydraulic control systems fail. They are experimenting with fiber optic electronic circuits to prevent signal interference from other sources and lower the risk of shorts and circuit failure.

A new satellite link was tested for use in the 1996 Mars mission, a joint US/Russian venture. The Ames research center in California successfully maneuvered a Russian built robotic rover while it sat in a Moscow laboratory, by satellite link. This was a test of interface compatibility.

Our final note from NASA is a dramat-

ic change in U.S. space policy. NASA has signed an agreement with the Russian Space Agency (RSA) stating the U.S. Shuttle will make up to 10 trips to the Mir space station beginning in 1995. U.S. astronauts will also be part of the regular crew on at least four manned missions to the Mir station. The times they are a-changing! ■

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THE EXCITING WORLD OF RADIOTELETYPE MONITORING

The Federal Emergency Management Agency (FEMA) may have had a regional station on HF Radio in January trying to set up Pactor communications with another station.

Using an ident of "FC5FEM" the station sent out many test messages. The sender appeared to be learning how to use the Pactor RTTY mode while transmitting live over the air, and ran into great difficulty in doing so. I ran into the station on Jan. 20, at 1909 UTC on 6152.7 kHz, and caught it again the next day on 5403.7 kHz at 1933 UTC.

Testing consisted of repeats of RY's, "of all the fishes in the sea the mermaid is the one for me," "now is the time for all good women to come to the aid of me," and "this is a test of this system." Tests were sent to "FR5FEM," who was not heard in reply.

I conclude that this is a FEMA station for two reasons: 1) both transmissions are near known FEMA frequencies, i.e., channel F13 on 5402.0 kHz and channel F19 on 6151.0 kHz, and 2) "FEM" in the callsign appears to be a truncation of the acronym FEMA. The "5" in the callsign might indicate FEMA region 5, which consists of stations in the Midwest.

For the next three weeks after the initial intercepts, I tried to find the station doing more testing, but had no luck.

U.N. In Mexico

The United Nations High Commission for Refugees (UNHCR) is often heard with Sitor-A RTTY broadcasts over HF Radio. Until recently, the transmissions came mostly from Europe, Africa and Asia; I've had no reports of intercepts occurring within the Western Hemisphere.

In mid February, the UNHCR was found on 10460.0 kHz in the early afternoon (local time) sending Telexes in Spanish from Mexico. The location was given several times as "UNHCR Sochis Mexico," but Sochis, Mexico, is not listed in my atlas.

The Telexes dealt with many matters, such as "refugiados" (refugees) or "solicita autorization de viaje" (travel authorization), and were monitored on two week-days.

Unusual Baudot speed: CLP1, the foreign affairs ministry in Havana, Cuba, on the air in January with diplomatic traffic at a baud rate of 70.5. This was on 18639.8 kHz at 1426 UTC.

New Fax Schedules

At least three weatherfax stations in the U.S. came out with new transmission schedules in January. They were NAM, Norfolk Naval Base, Va., NMF, Boston Coast Guard Station, Mass., and NMC, Point Reyes Coast Guard Station, Calif.

NAM changed not only its schedule on

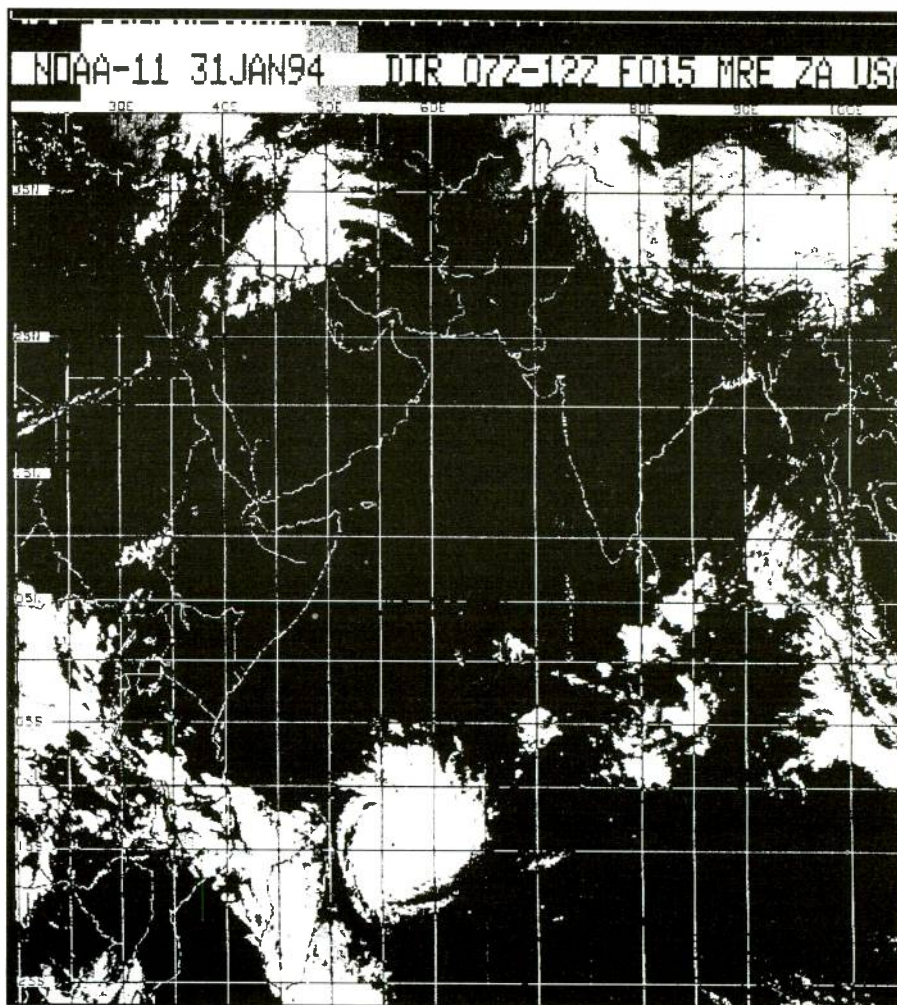


Photo mosaic weather chart of the Indian Ocean area are sent at 1630 UTC on Spacenet 3, transponder 17, 1927.5 kHz. (From Robert Margolis)

Jan. 19, it also changed the name of the place where the weather charts are plotted from Naval East Oceanography Center to Naval Atlantic Meteorology and Oceanography. The site of the transmitter was moved from Norfolk to Cutler, Maine, and was noted on the schedule issued at 0000 UTC. The other transmitter at Keflavik, Iceland, remains in use.

Many of the weatherfax charts were redesigned and had a much cleaner appearance than did the charts they replaced. They were smaller in size, which reduced the transmission time from 15 minutes to 10 minutes each. The transmitter, therefore, is shut off for five minutes after each of the newer charts is sent. The charts that were not changed still take 15 minutes to send over the air, and the transmitter remains on after they are sent.

The number of weatherfax products was increased from 52 under the broadcast schedule of Aug. 2, 1993, to 62 under the current schedule. NAM also increased the

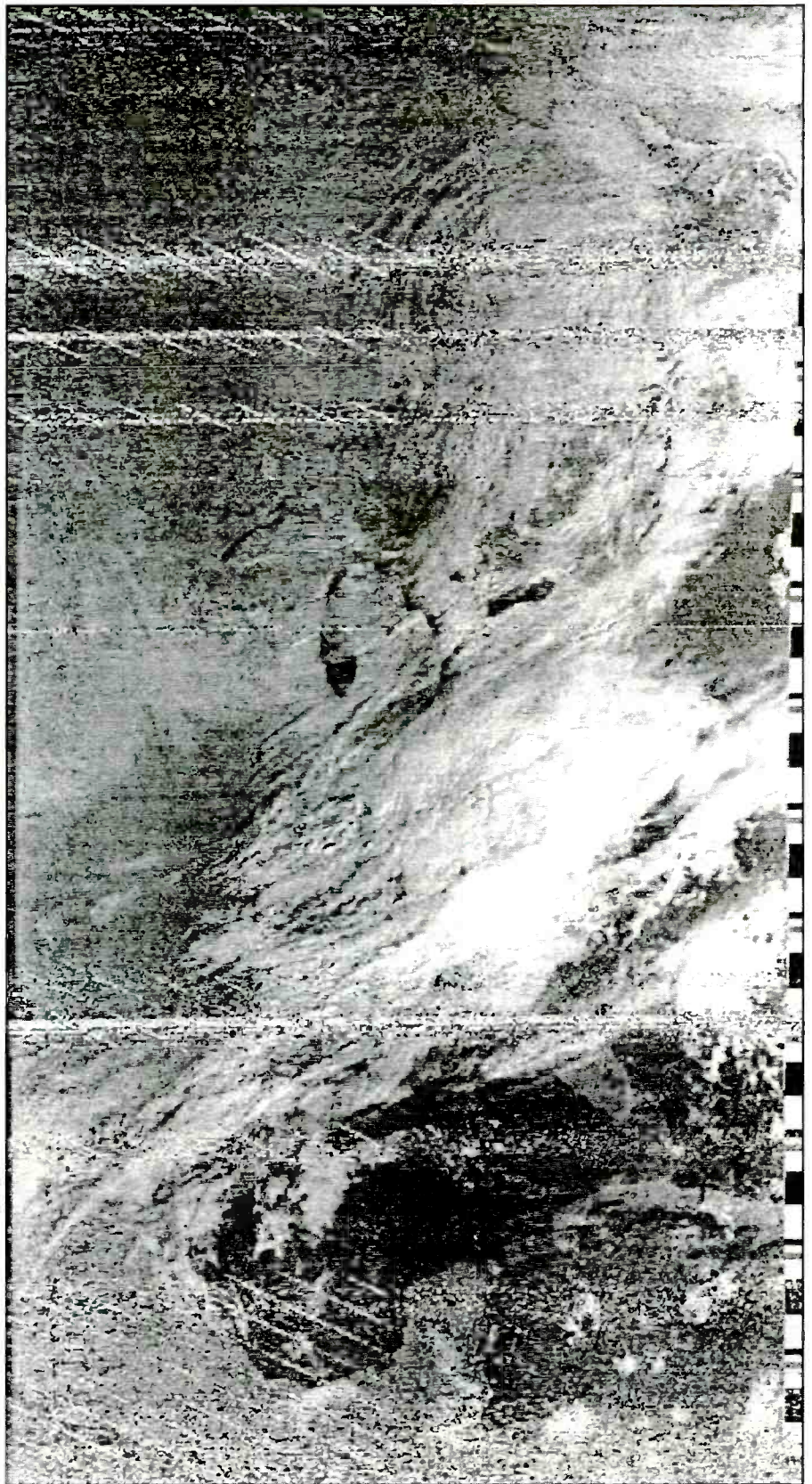
number of weather satellite photos sent daily from five to 10.

Under the schedule of last August, 3357.0 and 10865.0 kHz were in use 24 hours a day. Now the lower frequency is in use from 0000 to 1300 UTC, and the higher frequency from 1200 to 0000 UTC. The other three frequencies, 8080.0, 15959.0, and 20015.0 kHz remain on call via COMSPOT as under the old schedule. The Icelandic frequency/time schedule remains unchanged. Continuous charts are sent on 9318.0 kHz, and 3820.5 and 18486.0 kHz are on call via COMSPOT.

Oh yes, I almost forgot to tell you—the current schedule retains the very, very, very small type style that was first seen over a year ago. Keep that magnifying glass handy.

NMF, Boston Coast Guard Station, Mass., put its new radiofax schedule into effect on Jan. 31. Starting the day on 3242.5 kHz, a fax header is issued at 0300 UTC, followed by a fax schedule at 0305 UTC. Weather charts follow at 0315,

NOAA-9 satellite weather photo of North America was received on 137.620 MHz. When this real time photo was taken, the satellite was passing from the northeast to the southwest over Labrador and Quebec Provinces, Canada, the Atlantic coast of the United States, Cuba, Costa Rica, and out over the Pacific Ocean. Labrador can be seen near the upper right corner, Lake Michigan in the middle, and Florida, Cuba, and Mexico, in the lower third of the photo. (From Robert Margolis) ➔



0325, 0338, 0351, 0401, and 0414 UTC. Staying on the same frequency, NMF issues a fax header at 0700, followed by weather charts at 0705, 0715, 0725, 0735, and 0745 UTC. NMF returns at 0905 UTC with a fax header, followed by a legend at 0910, request for comments at 0920, and weather charts at 0930, 0943, 0956, 1006, 1016, 1026, and 1039.

NMF moves to 7530.0 kHz for a fax header at 1730, and charts at 1735 and 1748. Another fax header comes at 1835, followed by charts at 1840, 1853, 1906, 1916, 1926, 1936, and 1946.

Staying anchored on 7530.0 kHz, NMF sends a fax header at 2015, and charts at 2020, 2030, 2040, 2050, 2100, 2110, 2120, 2133, 2146, and 2159.

Also with a new radiofax schedule on Jan. 31, was the Point Reyes, Calif., Coast Guard station, which kicked off the event with a notice stating, "Responding to user requests," the coast guard station and the National Weather Service, Washington, D.C., were implementing "a new, expanded radiofacsimile program."

NMC now sends out schedules in two parts, at 1104 and 1115 UTC, and at 2324 and 2335 UTC. The basic time periods for fax transmissions are 0145 to 0420, 0815 to 1023, 1102 to 1148, 1415 to 1623, and 2013 to 2345 UTC. Daytime frequencies are 8682.0, 12730.0, 17151.2, and 22528.9 kHz. That last frequency is a change from 22527.0 kHz. Nighttime frequencies are 4346.0, 8682.0, 12730.0, and 17151.2 kHz.

Photo Quality Faxes

When I bought an OFS WeatherFAX board for my computer several months ago for processing weather satellite photos, Jerry Dahl at OFS told me that although my Hewlett-Packard LaserJet IIP plus printer was adequate for printing out photos at 300 dots per inch, upgrading to a LaserJet 4 printer at 600 dpi will give more "astounding" photos. I was reluctant to buy the recommended printer because I had my LaserJet IIP plus for less than a year and didn't feel it was ready to be consigned to the junk heap. Meanwhile, I put up with the muddied and darkened printouts and

wished that there was another way in which to improve the printing quality.

Leafing through a thick stack of catalogs of computer equipment, I came across a product that seemed to be what I wanted. It was a "doubleRES 4 Accelerator Board" for \$449.90 from Tiger Software of Coral

Gables, Fla. (1-800-888-4437), that beefed up the resolution of LaserJet II and III printers from 300 to 600 dpi. It worked within Windows 3.1 on MS-DOS based computers. Upon calling Tiger Software, I learned that my LaserJet IIP plus was not quite the same as a LaserJet II, and therefore the

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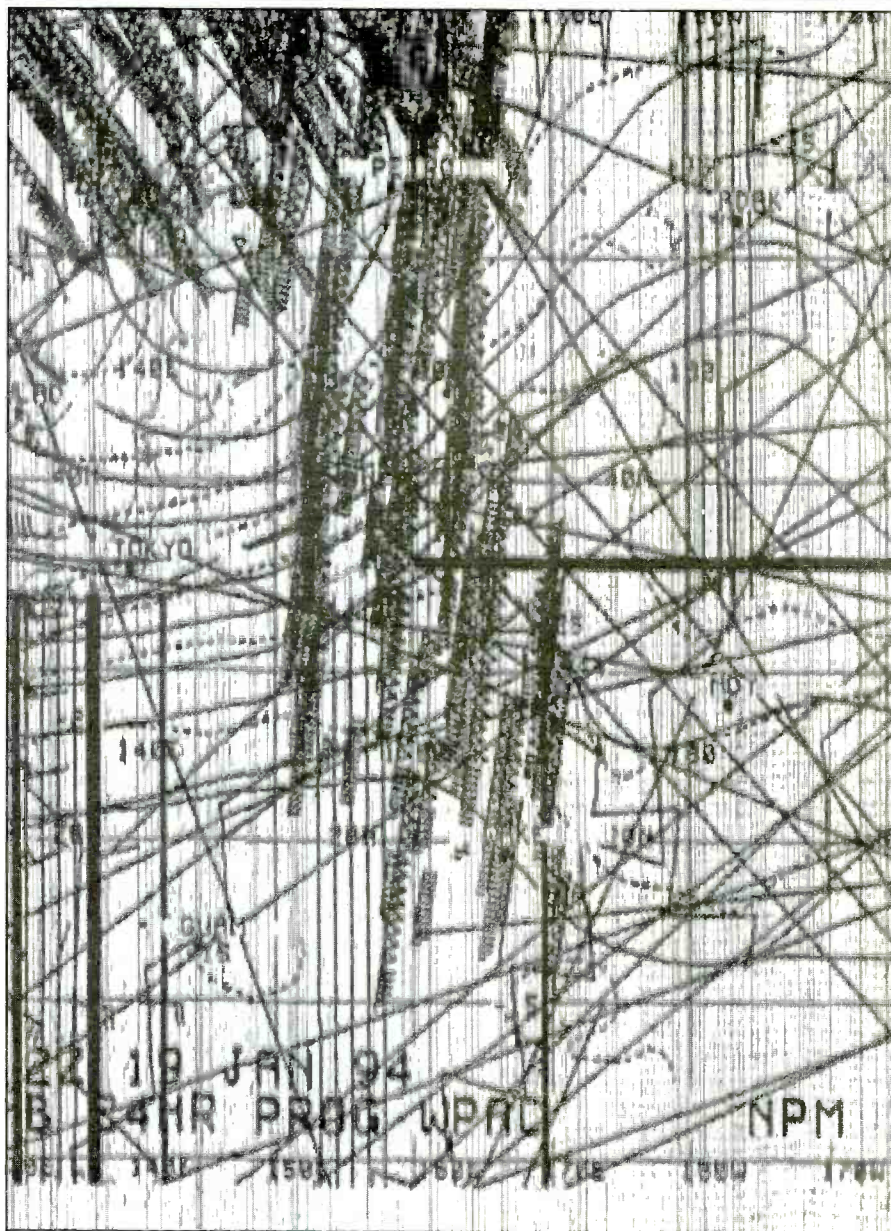
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CIRCLE 19 ON READER SERVICE CARD



"Admiral, sir, I think we're in for some very rough weather." (Corrupted weather chart of NPG, USN, San Francisco, California, from Robert Margolis)

product would not work with my printer. It looked as if I was stuck with so-so printouts.

A couple of months later, while reading the ads in back copies of computer magazines, I came across one for a resolution board that could make a LaserJet II, IID, III, IIID, or 4 print graphics at a whopping 2400 dpi resolution. It was LaserPix 5.0 from XLI Corp., 800 West Cummings Park, Suite 6650, Woburn, Mass., 01801. It also printed text at 1200 dpi and cost \$1,295.

Seeing sample printouts the firm mailed to me, I called the firm's 800 line, only to learn that that product also will not work with the LaserJet IIP plus. I was now convinced that I had to have a suitable laser printer and chose to get the LaserJet 4 after finding no place in my area selling the older LaserJet II's and III's.

After purchasing a LaserJet 4, which, incidentally, prints out at a resolution of

600 dpi, I called Dick Davidson at XLI (1-800-433-8040) and told him I wanted to purchase the LaserPix 5.0 so that I can get photo quality reproductions of weather satellite fax transmissions.

Since I only planned to use the product for working with fax charts, and not for doing desktop publishing, Davidson advised me instead to get PhotoJet, which is the graphics portion of the LaserPix package. It would enable me to do everything the LaserPix can do, except for printing text at 1200 dpi, for only \$895. I placed the order.

A couple of days later, the PhotoJet package arrived at the front door. I put the circuit board inside my computer, installed a printer interface board in the options slot of the LaserJet 4, connected the printer to the circuit board with an interface cable in the package, and installed the printer driver software program to Windows 3.1 (there



Sources say a seasick sailor was on duty the night this chart from NAM, USN, Norfolk, Virginia, was sent. (From Steve Wielgos, of Indiana)

is no DOS version), which was on the hard drive. The PhotoJet package also came with a Limited Edition of Picture Publisher from Micrografx Inc. of Richardson, Tex. This is a generic version of the full retail software, but it had all that I needed for processing weather satellite photos. This too was placed within the Windows program. The entire installation was complete in less than a half hour.

Since then, I have been using the OFS WeatherFAX for picking up not only weather satellite pictures, but also UPI wirephotos off of TVRO satellite and Argentine and North Korean wirephotos off of HF Radio, and I process all in the Picture Publisher program. The results are truly "astounding," as Jerry Dahl said they would be. The NOAA-9 polar-orbiting weather satellite photo shown in this column was printed out at 2400 dpi without any image processing whatsoever. I could have enhanced the photo so that it would look about as good as what the satellite's cam-

era saw. Maybe I'll do that next time. In the meantime, I highly recommend this product to those of you who work with satellite photo images and want the printouts to look as if they're on steroids.

What happened to my LaserJet IIP plus printer, you ask? It's now connected to the Universal M-8000 Communications Terminal on a full-time basis.

Stax of Fax Dept.

Heard an unidentified station sending a radiofax chart on 5864.4 kHz at 120/576 at 0421 UTC in January. No listing for a fax station on this frequency.

Received several newsfax photos and weather charts from Steve Wielgos of Indiana in early February. One newsphoto, from Telam, Buenos Aires, Argentina, sent Jan. 23, showed two bikini-clad women getting a suntan on a sandy beach in the South American country. That photo looked very familiar to me, so I went

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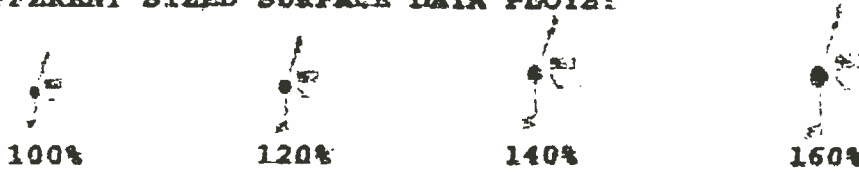
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Notice of NMC, USCG, Point Reyes, California. (From Ed Flynn of California)

through my pile of radiofaxes to see if I also had received it over my radio. Indeed I did, but my copy was logged in on Jan. 31, eight days after Steve's. My photo showed the same two women wearing the same bikinis. There was one difference, however—the poses were not the same! It appears that the photographer took a series of photos, clicking off shot after shot after shot, and it was evident that Steve's copy was taken before mine.

I'm always looking for interesting radiofax newsphotos and weather charts, and weather satellite photos to exhibit in this column. Here are some guidelines for getting your material into print. The main criterion is that the photo or chart should be of interest to your fellow readers. KCNA, Pyongyang, North Korea, sends out a huge amount of pictures showing groups of people standing before a painting showing North Korean mountains that is displayed inside the Great Hall, or whatever they call the place. These photos, as well as others, such as workers operating machinery, or new buildings that have opened up, are commonplace. I prefer action shots involving people, but not scenes depicting car, bus, train, or plane accidents, or bullet-riddled bodies, as sent by Telam several times in January and February during an outbreak of violence on the streets of Buenos Aires. Many headshots sent by Telam and Noticias Argentinas are not suitable either, because the persons shown are, for the most part, unknown to us.

Unusual weather charts are wanted, ones that are not seen every day of the year. I need charts from European, Asian and African weather stations because they are not seen regularly by American viewers. I have plenty of my own charts from U.S. Coast Guard stations, the U.S. Navy and Air Force, the Canadian Military, and American coastal and intercoastal stations, and I don't need more of them, unless the transmissions are out of the ordinary, such as goofs made during transmissions. Two examples of errors in transmissions are shown in this month's column.

The quality of pictures and charts is important too. Misframed faxes and grayed images are unacceptable. Occasionally I

will allow poorer quality material, but only when a photo or chart is a "one-time" transmission that will never be seen again. I use them "for the record."

Lastly, it is important for all contributors to know that material they send to me gets used in the first available issue, and it is all appreciated.

This month's loggings come from Ary Boender of The Netherlands (A.B.), Richard Baker of Ohio (R.B.), "L.D." of Germany (L.D.), Robert Hall of South Africa (R.H.), P. Loo of Quebec Province, Canada (P.L.), Zacharias Liangas of Greece (Z.L.), Harold Manthey of New York (H.M.), Robert Margolis of POP'COMM (R.M.), Jim Navary of Virginia (J.N.), and Eddy Waters of Australia (E.W.)

RTTY Intercepts

- 2233.8:** "SHVHF," MOI, Bonn, Germany, w/standard operational msg to Kiel. ARQ-E/72. FDM. at 2000. (L.D.)
- 2385.3:** "BYVHF," MOI, Bonn, Germany, w/encrypted tfc to Munich after ZCZC 011 BYVHF 081906. Was ARQ-E/96. FDM. at 1806. (L.D.)
- 3249.5:** EIP, Shannon Air, Ireland, w/RURY + EIAAHYX ID. 850/50 at 0135. (H.M.)
- 4000.8:** USA MARS stas w/net BC at 0033, FEC. (R.M.)
- 4002.0:** YRR2, Bucharest Meteo, Romania, w/coded wx at 0100, 400/50. (H.M.)
- 4023.8:** 3BZ, Plaisance Air, Mauritius, w/aviation wx. ARQ-E3/48 at 0217. (R.M.)
- 4084.0-4086.0:** Un-ID, but most likely the Canadian Military link to Australia, w/all FDM channels encrypted, 170/75 at 0238. (R.M.)
- 4167.2:** Un-ID w/encryption at 0042, 850/300. (R.M.)
- 4173.0:** SVJP, the Greek cgo ship Pantelis A Lemos, w/arrived Norfolk msg to shipping ofc, ARQ at 0454 (R.M.)
- 4176.5:** UKET, ves Adezhdha Bukhova w/TG in ARQ at 0212. (R.B.) Listed as the Russian cntnr ship Nadezhda Obukhova—Ed.
- 4178.0:** OISD, the Finnish tnkr Igloo Norse, w/msg in ARQ at 0054. (R.M.)
- 4215.0:** WCC, Chatham R., Mass., w/tfc list at 0841, FEC. (R.B.)
- 4252.5:** Un-ID using unk TTY mode, 375/29.5 at 2035. Seemed to be idling. (R.M.)
- 4442.5:** RGC72, Kiev Meteo, Ukraine, w/coded wx, 50 baud at 0031. (A.B.)
- 4600.0:** IZB, un-ID Italian Navy, w/encrypted ARQ tfc at 1900. Also, IZS, another un-ID, w/"oc oc oc syncaynl pk pk pk nca nca nca" in FEC at 1855. (A.B.)
- 4602.0:** Un-ID w/5L grps "routine" tfc at 1950, ARQ. Ends w/"NNNN INT QSL 2050? RGR IFIS TAR." (A.B.)
- 4613.0:** LZAS, Sofia Meteo, Bulgaria, w/coded

- wx, 50 baud at 0048. (A.B.)
- 4618.4:** Un-ID w/periodic "controle de voie" or op msg. ARQ-E/200 at 0259. Lots of misprinting prevents positive ID. (R.M.)
- 4646.0:** Un-ID w/encryption at 0230, 170/81. (R.M.)
- 4788.0:** 6VY25, Dakar Meteo, Senegal, w/coded wx at 0139, 400/50. (R.M.)
- 4853.0:** Un-ID w/encryption, ASCII 170/300 at 0120. (R.M.)
- 5208.0:** FSB, Interpol, Lyon, France, w/ARQ phasing sig + CW ID at 0209. (R.B.)
- 5434.7:** Un-ID idling, CIS-11 170/100 at 2041. (R.M.)
- 5797.0:** Navmarcormars stas w/MARSgrams at 1733, ARQ. (R.M.)
- 5863.5:** Navmarcormars sta, NNN0ICP w/MARS tfc, Pactor at 1841. (R.M.)
- 6262.5:** DCDP, Baco-Liner 1, w/msg to Pilot Vlissingen, ARQ at 2144. (A.B.) German cntnr ship—Ed.
- 6264.5:** UWXD, the Russian tnkr Ventspils, w/TG's, ARQ at 0300. (R.M.)
- 6267.5:** MMAJ, the British ves Marthia Majesty w/ETA SW Passage msg in ARQ at 0218. (R.B.)
- 6270.5:** SVBT, ves Doric Trident, w/ARQ tlc at 0057. (R.B.) Greek cgo ship—Ed.
- 6272.0:** C6KD, Carnival Cruise Lines' psgr ship Fiesta Marina (formerly Carnivalve) w/AMVER at 2250, ARQ. (R.B.)
- 6274.0:** KNBD, NOAA ship Delaware II (R-445), w/tlx to NOAA Marine Support Facility, Miami, Fla., ARQ at 1220. (R.B.)
- 6314.0:** NMF, Boston Cogard, Mass., w/wx BC, FEC at 0155. (R.B.)
- 6317.5:** VCS, Halifax Cogard, N.S., Canada, w/ice bulletin at 1305, ARQ. (R.B.)
- 6324.0:** WCC, Chatham R., Mass., w/tfc list + wx in FEC at 1644. (R.B.)
- 6915.0:** BAP46, Xinhua, Yuryumqi, China, w/nx in EE, 850/75 at 1055. (E.W.)
- 6988.2:** Un-ID w/encryption, Packet at 1800, Sender's ID left blank, rcvr's ID encrypted. Viewed amongst USAF region 5 MARS tfc. (R.M.)
- 7437.7:** NMN, USCG, Portsmouth, Va., w/ARQ phasing sig + CW ID at 2141. (R.M.)
- 7512.0:** ZRO2, Pretoria Meteo, RSA, w/coded wx, 425/75 at 0112. (H.M.)
- 7540.6:** CCM, Chilean Navy, w/5L grps at 0115, 850/100. (H.M.) Magallanes Navrad, Chile—Ed.
- 7621.0:** AFS, Offutt AFB, Elkhorn, Nebr., w/Mission Planning Forecast at 2152, 850/75. (R.M.)
- 7624.8:** HZN47, Jeddah Meteo, Saudi Arabia, w/coded wx, 850/100 at 2220. (R.M.)
- 7644.5:** USMC MARS sta, NNN0MRG w/Packet R. msgs to NNN0MRH at 1520. (R.M.)
- 7681.5:** AGA1WP, USAF MARS, Wright-Patterson AFB, Ohio, w/routine tfc to AFB1CX, Packet at 1510. (R.M.)
- 7685.5:** NNN0XHD w/MARS net operational msg. Pactor at 2234. (R.M.)
- 7720.7:** USA MARS stas heard using diff. RTTY modes, Stas incl. AAT6TFC w/routine tfc at 2157, ARQ, AAA6USA, Fort Sam Houston, Tex., w/MARSgrams at 1459, Packet R.; & AAM6RC w/msg to AAR6QX, Pactor at 1506. (R.M.)

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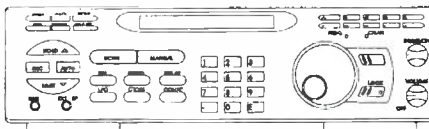
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7800.7: MFA, Cairo, Egypt, w/diplo t/c in AA, ARQ at 2310. (R.M.)

7832.0: AFB1PF heard as NCS in USAF MARS regional net. 170/75 at 2346. (R.B.)

7850.0: ZAA, ATA, Tirana, Albania, w/RURY at 1858, fol'd by nx in EE at 1900. 400/50. (R.M.)

7922.0: Un-ID w/RURY, Autospec/62.3. 1710-1732. (R.M.)

7975.0: SPW, Warsaw R., Poland, w/nx in Polish at 1828. FEC. (R.M.)

7992.5: NNN0ZLS. USMC MARS, Yorktown, Va., w/MARS msgs, Pactor at 2151. (R.M.)

8041.7: Un-ID idling, Torg-11/100 at 1702. (R.M.)

8049.0: 9BC25, IRNA, Teheran, Iran, w/nx in EE, 425/50 at 2100. (E.W.)

8055.0: MFA, Sofia, Bulgaria, w/"informaciya," 400/75 at 2305. (R.M.)

8065.7: Un-ID going QRT at 2055 tune-in. Appeared to be using a 72-baud synchronous mode. (R.M.)

8165.2: Un-ID w/5L grps at 1855, 454/75. (R.H.)

8302.5: LOR, Puerto Belgrano Navrad, Argentina, w/5L grps + wx in SS, 850/75 at 0205. (H.M.)

8377.0: YTCK, the Yugoslav bulk car Cast Beaver, w/tlx in SC, ARQ at 2156. (R.M.)

8377.5: KHRC, Matsonia, w/tlx t/c to KFS at 0223, ARQ. (R.B.) American cgo ship—Ed.

8378.0: IBCR, the Italian cruise ship Costa Romantica, w/pos rpt to "difmar," at 2127. ARQ. (R.M.)

8379.0: KIYN, the American tnkr Texas Trader (ex-Esson Washington), w/tlx t/c at 2045. ARQ. (R.M.)

8383.0: UNES, the Russian ore & bulk oil car Marchal Boudennyi, w/TG's at 0240. ARQ. (R.M.)

8390.0: P3AA3, the Cypriot M/V Epta, w/ETA New Orleans msg, ARQ at 0243. (R.M.)

8392.0: 7THK, the Algerian liquified gas car Larbi Ben M'Hidi, w/tlx in FF re ship's faulty radar "racial decca." Was ARQ at 1705. (R.M.)

8439.0: PBC, Goeree Island Navrad, The Netherlands, w/RURY & SGSG, 850/75 at 2045. (E.W.)

8490.0: Un-ID w/encryption, 170/110 at 1710. (R.M.)

9105.0: Un-ID w/5L grps in ARQ at 1435, fol'd by long idling period & QRT 1510 w/"ok tuss cc ql zev qxm.v." (Z.L.)

9127.0: Un-ID diplo w/5L grps at 1330. (Z.L.)

RTTY mode ???-Ed.

9129.8: MTO, Rosyth Navrad, Scotland, w/available freqs list, 850/75 at 1830. (R.M.)

10115.0: French Forces, Paris, France, w/wx & personal msgs to Crozet, Kerguelen & Amsterdam Islands, ARQ-E3/96 at 0308. (P.L.)

10133.7: TZH, ASECNA, Bamako, Mali, w/RURY, 425/50 at 0650. (R.H.)

10169.8: New Delhi Meteo, India, w/coded wx, 130/50 at 1935. (R.H.)

10199.3: MKK, RAF, London, England, w/foxes, 170/50 at 0955. (E.W.)

10235.2: Un-ID w/5L grps at 0320, 850/75. (P.L.)

10247.0: Bulgarian Emb., Vienna, Austria, w/TG's in Bulgarian, 85 baud at 0655. (Z.L.)

10313.0: OMZ, MFA, Prague, Czech Rep., w/encryption, 425/100 at 0736. (E.W.)

10407.2: 6VY56, ASECNA, Dakar, Senegal, w/RURY, 404/50 at 0431. (R.H.)

10418.6: ETS, Addis Ababa, Ethiopia, w/RURY, 799/50 at 0435. (R.H.)

10492.5: "V5G," MFA, Bucharest, Romania, w/nx in Romanian at 0455, ROU-FEC/164.5. (P.L.)

10502.0: Un-ID w/encryption, 170/110 at 2147. (R.M.)

11067.0: Un-ID in AA at 0720, 50 baud. (Z.L.)

11092.0: RFVI, French Navy, Le Port, Reunion, w/msgs to Mayotte, ARQ-E/96 at 1217. (E.W.)

11112.8: RFHI, French Navy, Noumea, New Caledonia, w/"controle de voie," ARQ-E3/100 at 1340. (R.M.)

11436.0: Un-ID w/round-the-clock encryption, 170/110. (R.M.)

11512.0: Un-ID w/encrypted Packet msgs at 1543. (R.M.)

12216.0: OMZ, MFA, Prague, Czech Republic, w/5F grps + msg in Czech to New York City, 371/100 at 1845. (R.M.)

12369.0: Un-ID w/encryption, ASCII 1400/300 at 1600. (R.M.)

12383.0: Un-ID w/encryption, 800/300 at 0230. (R.M.)

12481.0: ELEU4, ship Laja, w/tlx t/c via CBV at 1553, ARQ. (J.N.) Liberian cgo ship—Ed.

12482.0: WSRP, the American steam tnkr Brooks Range, w/AMVER rpt via KPH, ARQ at 0122. (J.N.)

12544.8: "RSB 1," prob. in the Middle East.

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
t/c	Traffic
w/	With
wx	Weather

w/RURY + 10 count at 1832, FEC-A/192, VFT, QRT after AR AR VA VA. (L.D.)

12597.0: SPB, Szczecin R., Poland, w/t/c list, FEC at 1404. (J.N.)

12616.0: UBN, Zdanov R., Ukraine, w/Navareas, 1840-2030, FEC. (R.B.)

13418.0: "DOR," MFA, Sofia, Bulgaria, w/"PSE ZAL 10248," 75 baud at 1435. (L.D.)

13437.0: RPFN, Monsanto Navrad, Portugal, w/foxes at 1500, 75 baud. (P.L.)

13530.0: RVW53, Moscow Meteo, Russia, w/coded wx, 1000/50 at 1424. (R.M.)

13867.6: Un-ID w/t/c in FF ("kyungu ici. ici bjrs") at 0725, ARQ. (R.H.)

13940.0: CLP65, Cuban Emb., Managua, Nicaragua, w/encryption to CLP1, 500/100 at 1528. (R.M.)

13941.5: Tunisian diplo ch. Uses FEC. "JWB" w/msgs in FF to "DKC" & "MUC" at 1716. "CMA" w/5L grps to "GIB," "VGE," & "IVS" at 1740. (R.M.)

14352.7: Swedish Emb., Guatemala City, Guatemala, w/5L grps, SWED-ARQ at 1900. Most likely SAM84 judging by the workings of the next logged xmsn. (R.M.)

14353.7: SAM84, Swedish Emb., Washington, D.C. s/on w/"SAM84 WASHTN," SWED-ARQ at 1913. QSY to 14353.0 at 1915. S/on w/"SAM84 WASHTN+? CARACAS+? fol'd by msg from Ambassaden Caracas to UD Stockholm. This xmsn says that Washington, D.C. sends t/c for Swedish embs in Central America to Stockholm.

14410.0: Un-ID w/uncl TTY mode, 400/96 at 1707. No sync to usual 96-baud modes. (R.M.)

14481.7: RFTJ, French Navy, Dakar, Senegal, w/uncl msgs & nx, ARQ-E3/48 at 2145. (R.M.)

14488.5: OEC, MFA, Vienna, Austria, w/msgs in EE to Cairo emb., ARQ-S6/96 at 1025. (E.W.)

14612.0: PWX33, Brasilia Navrad, Brazil, clg LOL at 0809, 75 baud. (L.D.)

14713.0: Un-ID in Piccolo mode at 1220. (A.B.)

14718.3: RFHI, French Navy, Noumea, New Caledonia, w/uncl msgs, ARQ-E3/100 at 1728. (R.M.)

14812.0: Ceteka, Prague, Czech Republic, w/nx in Czech, 100 baud at 1300. (A.B.)

14814.4: SAM, MFA, Stockholm, Sweden, w/t/c to Athens, Greece, SWED-ARQ at 1235. (A.B.)

14840.4: HGX21, MFA, Budapest, Hungary, w/encryption, DUP-ARQ at 0609. (E.W.)

14989.1: TNL, ASECNA, Brazzaville, Congo, w/wx on ch A & B, ARQ-M2/96 at 1142. (R.H.)

15705.0: YZJ6, Tanjug, Belgrade, Yugoslavia, w/RURY at 1100, 425/50. (E.W.)

15708.0: "AMNX," French Emb., Amman, Jordan, heard at 1342, FEC-A/192. (L.D.)

16111.0: HBD20, MFA, Berne, Switzerland, w/5L grps at 1010, ARQ. (H.M.)

16113.0: HBD20 w/5F grps, ARQ at 1050. (Z.L.)

16117.0: 6VK317, Pana, Dakar, Senegal, w/nx in EE at 1750, 425/50. (H.M.)

16322.0: Romanian Emb., Tel Aviv, Israel, w/msgs re Israeli politics, ROU-FEC/218.3 at 1256. (L.D.)

16334.7: Un-ID Romanian diplo w/encryption at 1127, ROU-FEC/164.5. (P.L.)

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16683.5: YLAQ, the Russian ves V. Fesenkovs, w/KYVM selcalling (Riga R., Latvia), fol'd by msg, "foresee loading completed 23/01 ice stretching cape north breton island to summerside ridged ice vicinity summerside up to 5 feet," ARQ at 1501. (R.M.)

16685.5: DHHO, the German cntnr ship San Pedro, w/AMVER, ARQ at 1919. (R.M.)

16687.5: 3FDP, the Panamanian M/N (Merchant Navy?) Presidente Frei, w/msg for Capuerto Guayaquil, ARQ at 1415. 3EIX2, the Panamanian cgo ship Presidente Ibanez, w/XFCV selcalling (CBV, Valparaiso Play Ancha R., Chile) in ARQ at 1421, fol'd by idling, going QRT at 1432. (R.M.)

16690.0: UBLV, the Russian ves Kapitan E. Egor1600, RQ'd urgent reply via Satcom. (R.M.)

16702.0: C6LZ3, the Bahamian cgo ship Ravenscraig, w/AMVER, ARQ at 1718 (R.M.), and C6IK5, the Bahamian tnkr Mountain Blossom, w/kg KPH, ARQ at 1653. (J.N.)

16806.5: NMF, USCG, Boston, Mass., w/high seas forecast, navareas, hydrolants & notices to fishermen, FEC at 1630. (R.M.)

16836.0: DCF, Norddeich R., Germany, w/kg YJYZ7 at 1426, ARQ. (J.N.)

17472.0: RPFN, Monsanto Navrad, Portugal, w/RVRY at 1503, 850/75, fol'd by test msg to RPAO. (H.M.)

17479.0: "V5G," MFA, Bucharest, Romania, w/nx in RO at 1534, ROU-FEC/164.5. (R.M.)

17481.7: Un-ID Cuban emb. in Africa w/5L grps & t/c in SS at 1515, 425/50. (R.M.)

17483.3: "V5G," MFA, Bucharest, w/t/c in RO at 1023, ROU-FEC/164.5. (E.W.)

17910.0: Un-ID w/encrypted Piccolo xmsn at 1730. (R.M.)

18006.7: Prob. MFA, Cairo, Egypt, w/tlx's in AA at 1641, ARQ. (R.M.)

18040.0: CLP55, Cuban Emb., Georgetown, Guyana, w/t/c to CLP1 at 1450, 425/100. Two msgs were re the visit to Guyana by former president Carter. (R.M.)

18041.1: HGX21, MFA, Budapest, Hungary,

w/nx in Hungarian, 799/50 at 1210. (R.H.)

18050.0: SNN299, MFA, Warsaw, Poland, w/5F grps & tlx's to Lagos, Nigeria, POL-ARQ at 1424. (R.M.)

18060.0: SNN299, MFA, Warsaw, Poland, w/t/c to Montreal, Ottawa, Toronto & Vancouver, POL-ARQ at 1340. On another day, SNN299 w/nx in EE at 1355, fol'd by "Biuletyn Prawny" at 1357. (R.M.)

18064.0: SNN299 w/5F grps & msgs to Damascus, Syria, POL-ARQ at 1423. (R.M.)

18268.0: HBD20, MFA, Berne, Switzerland, w/nx in GG & FF at 1433, ARQ. (J.N.)

18275.0: Un-ID w/encryption, ARQ-E/288 at 1352. (R.M.)

18388.6: 5AF, Tripoli Air, Libya, w/HLLTYF c/s + RVRY, 50 baud at 1740. (A.B.)

18490.0: RUZU, Molodezhnaya, Antarctica (Russian base), w/wx for islands in the Southern Hemisphere, Torg-11/100 at 1040. (E.W.)

18498.7: Un-ID Dutch diplo w/TVQK selcalling in ARQ at 1548. (R.M.)

18503.7: RFFA, Mindefense, Paris, France, w/msgs & 5L grps to Fort de France, ARQ-E3/192 at 1406. (R.M.)

18553.7: RFTJ, French Navy, Dakar, Senegal, w/"non protege" t/c to RFLI at 1530, ARQ-E3/192. (R.M.)

18639.8: CLP1, MFA, Havana, Cuba, w/circulars marked "a todas las embajadas y consulados," 500/70.5 at 1426. (R.M.)

18702.4: DFS70, PIAB, Bonames, Germany, w/nx in GG at 1444, FEC-A/96. (R.M.)

18890.6: Un-ID w/5L grps on maritime freq., ARQ at 1625. (R.H.)

19011.8: PCW1, MFA, The Hague, The Netherlands, w/nx in Dutch, ARQ at 1314. (R.H.)

19089.0: CLP45, Cuban Emb., Luanda, Angola, w/encryption, 461/75 at 1715. (R.M.)

19101.5: RFLI, French Navy, Fort de France, Martinique, w/"controle de voie," 5L grps & msgs, ARQ-E3/192 at 1423. (R.M.)

19126.7: Dutch Emb., Tripoli, Libya, w/t/c to

The Hague re Libyans seeking to enter The Netherlands, Twinplex, YBYB YBBY, at 1206. (L.D.)

19145.8: Un-ID idling ARQ-E3/200 at 1432. (R.M.)

19204.7: RFLI w/5L grps at 1600, ARQ-E3/192. (R.M.)

19216.7: RFLI w/"controle de voie," ARQ-E3/96 at 1632. (R.M.)

19419.9: Moscow Meteo, Russia, w/wx at 0647, Torg-11/100. (E.W.)

19425.5: SAM, MFA, Stockholm, Sweden, w/t/c to Manila, SWED-ARQ at 1152. (E.W.)

19463.0: KUNA, Khartoum, Sudan, ending nx BC in EE at 1717, 175/50. (R.M.)

19623.0: Un-ID idling at 1528 & going QRT at 1548, ARQ6-90/200. (R.M.)

19865.0: YZJ4, Tanjug, Belgrade, Yugoslavia, w/nx in SS, 400/50 at 1602. (R.M.)

20160.0: AAA6USA, USA MARS, Fort Sam Houston, Tex., AAA0USA, Fort Lewis, Wash., and other MARS stations heard with Packet at 1608. (R.M.)

20129.0: DFZG, MFA, Belgrade, Yugoslavia, w/5 encrypted msgs (nr's 0050-0054) after VCVVCV ... 425/75 at 1628. (R.M.)

20157.1: 5KM, Bogota Navrad, Colombia, w/IANTN t/c in SS to NBA, 827/75 at 1525. (R.M.)

20560.0: Jana, Tripoli, Libya, w/nx in EE at 1615, 50 baud. (A.B.)

20670.0: World Food Program, Rome, w/msg re air supply drops over Sudan, ARQ at 1133. (R.H.)

20872.0: AGA8HI, USAF MARS, Hickam AFB, Hawaii, & AGA6TR w/MARS t/c, 170/75 at 1746. (R.M.)

22353.5: UYDW, the Russian ves Leonid Ivanov, w/kg Murmansk R., 170/50 at 1145. (R.H.)

22363.5: LYEB, the Russian fct trawler Malta, w/kg Kaliningrad R., 170/50 at 1155. (R.H.)

22387.6: SVA, Athens R., Greece, w/t/c list, FEC at 1025. (R.H.)

22905.6: DMK, MFA, Bonn, Germany, w/t/c in GG to emb. in Harare, Zaire, ARQ-E/96 at 1152. (R.H.)

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Vacation time means mobile scanning. If you're planning a trip, pick up some scanner directories for the area you're visiting from your local scanner shop or from one of this publication's many advertisers. Organize your listening before you leave on your trip. For instance, what kind of listening will you want to do while you're on vacation? Will you want to hear all the local police and fire action around you? If you are visiting an amusement park, you'll want to check out business band frequencies for communications related to security, operations and other activities. If you're headed for a natural park such as a forest or national park, you'll want to scan forestry conservation frequencies, primarily in the 151 and 159 MHz bands.

Wherever you visit this summer, plan to take along the handheld or mobile scanner for an enjoyable time. While visiting a state you haven't been in before, you may want to check with the state's police before visiting to see whether there are any laws prohibiting the use of mobile scanners. At this time, states that have such laws have exemptions for those who are licensed amateur radio operators. There is a benefit for those who take the step to become licensed, even if it's the entry-level novice or no-code technician class license. And don't forget that if the family is along for the trip, non-stop scanning action may not be their plan for vacation fun. Scanning in the right amount of doses, however, shouldn't bother anyone.

Loretta Hughes of Wilton, California, says she recently visited England and found an interesting article in a newspaper there. Apparently the police in Doncaster, South Yorks, got tired of persons eavesdropping on their transmissions, so they staged a hoax to catch several in the act. Officers transmitted a report of a flying saucer landing on a lane, and then sat back and waited. Apparently several people showed up on the lane and were charged with eavesdropping, the newspaper quoted a South Yorkshire police magazine as saying. The article went on to say that many criminals in England are using scanners to monitor police frequencies—a scary thought in the United States!

John McGowan of Batavia, Ill., responds to the mention in the February column as to using a cellular phone as a scanner through keyboard tricks. He feels we have been slightly misinformed in that while the keyboard commands will let one monitor cellular frequencies, it will not scan, per se. What the command does allow is to manually program in the cellular channel number into the phone to allow one channel to be monitored at a time—all for diag-



Dan Wathen of Kentfield, California, sends in a handy tip for standing up handheld scanners while using them at home. A credit card application holder works fine. The scanner fits fine and there usually are holes in the back and side for passing through charger plugs. Many stores and restaurants have these lying around without any use and will give them away if you inquire.

nostic purposes, of course! John says that by entering the diagnostic mode and enabling the receiver audio unmute, some cellular phones will allow the monitoring technique. He also notes that many cellular phone manufacturers have sent memos to their service centers with strict instructions not to show the general public how to enable the function.

John McGowan also passes along some frequency information for Aurora, Ill., one of the larger suburbs in the Chicago area with a population of about 100,000, two gambling riverboats and a gang problem. Aurora police dispatch is on 155.610(F-1); a secure, scrambled, tactical frequency is 151.385(F-2); fire dispatch is on 154.250 for city units and 154.070 for outlying volunteer departments; fireground is on 154.295; ambulance to hospital is 155.340; and local investigations involving neighboring police departments in Kane County use 156.150.

Mike Ramirez of Toledo, Ohio, has been a scanner listener for six years and owns Uniden Bearcat 200XLT and 145XLT scanners. He likes to listen to activity from

emergency services to amateur radio repeaters. Mike also sends along frequencies he likes to listen to in the Toledo area: Toledo police—851.0625, 852.0625, 853.0625, 854.0625, 855.0625, 851.4375, 852.4375, 853.4375, 854.4375, 855.4375, 851.4625, 852.4625, 853.4625, 854.4625, 855.4625, 851.4875, 852.4875, 853.4875, 854.4875, 855.4875; Oregon police—460.100, 460.075; Lucas County sheriff—460.475; Maumee police—460.375; Sylvania police—460.050; Sylvania Township police—453.575; Ottawa Hills police—460.025; Perrysburg Township police—155.130, 154.770; Woodville Mall—464.825; Toledo Streets Department—150.995, 156.045; Oregon Streets Department—155.085, 153.815; TARTA buses—453.725(F-1), 453.775(F-2), 453.675(TARPS); Remsno Rescue Squads—462.950(dispatch), 462.975(dispatch and rescue squads); Life Flight helicopter—123.050. Thanks, Mike, for the great frequencies.

Andrew W. Clegg, who is with the Naval Research Laboratory in Washington, D.C., says he enjoys reading POP'COMM and came across something interesting in Delta Airlines' in-flight magazine. In fine print on the airline's in-flight information is the notation that scanners are allowed to be used while in flight! The rules state "VHF scanner receivers...may be operated when the aircraft is not in the taxi, take-off, initial climb, approach, or landing phases."

Andrew comments that he assumes that "VHF scanner receivers" means regular scanners, including those that have the UHF band (why would they limit the scanning to the VHF band and not the UHF band?).

Andrew retrieved his scanner from his carry-on luggage during a recent Delta flight and started scanning. He says he heard a wide variety of stations, including several NOAA weather stations simultaneously, 2-meter ham repeaters galore, many 800 MHz systems and several air-to-air pilot conversations. He also was able to monitor his hometown police department in Arlington, Va., on 453.825 while 100 miles away from the airport. Using a scanner in flight is equivalent to having a tower several thousand feet tall! Andrew comments that it would be interesting to know what other airlines besides Delta allow scanners to be operated in flight.

On the same note, he comments that he will use his scanner only during the allowed portions of the flight because if too many scanner owners abuse the privilege, the rule could become rescinded. The use of radio receivers (and also transmitters) are

restricted while in flight because of the potential to cause interference to the plane's communications equipment and avionics.

The Delta magazine lists the following devices that cannot be used at any time during a Delta flight: cellular phones, commercial two-way transmitters; ham radio transmitters, CB radios, 49-MHz transceivers, "devices designed to radiate RF energy on a specific frequency," peripheral devices for computers or games connected by cable such as printers, AM-FM radios and portable TVs and remote-control toys. If in doubt about whether you can use certain electronics equipment on a flight, ask. FAA rules seem to give the pilot the last word and everyone should respect that decision.

On the same subject, William Rhine, Registered Monitor KTN4FN, writes from Columbia, Tennessee, to say he flew to Texas last winter and took along all his receivers (Icom R100, Uniden Bearcat 200-XLT and Realistic DX-390 shortwave receiver). He planned to use his Bearcat 200XLT during the flight and asked the flight attendant if he could use the radio. He did not mention that it was a scanner, but was told that he could operate the radio after the "Fasten Seat Belts" light went out. Another flight attendant then walked by and asked whether he was using a cellular phone. He explained that he was using a scanner and comments: "With the way she reacted, I was sure when we landed the air-

port police would be there to greet me. She seemed real bent out of shape and told me I should cut it off right there, right now." He goes on to say he was so upset by the flight attendant's reaction he did not inquire further. As I mentioned in the Delta Airlines comments above, check with the pilot when you board the plane (I have in the past). If the pilot says no, respect the decision and try again on the next flight.

Rick Garrett, N9GSU, of Muncie, Indiana, says he's been reading POP'COMM for a long time. He uses Realistic Pro-37 and Pro-2022 scanners in his ham shack. Here are some frequencies of local interest he has found: 461.075, Delaware Investigations (private security) and Ball State University; 462.475 and 462.525, Borg Warner automotive plant security and maintenance; 463.600, Century Cable TV; 151.115, Prairie Creek park police and street department; 154.600, McDonald's drive-through windows.

What frequency information would you like to share with our readers? What listening tips or comments would you like to send in? What questions do you have on scanning the VHF and UHF bands? We also welcome your photographs of listening posts, dispatch stations and antenna towers. Send your information to: Chuck Gysi, N2DUP, Scanning VHF/UHF, Popular Communications, 76 N. Broadway, Hicksville, N.Y. 11801-2909.

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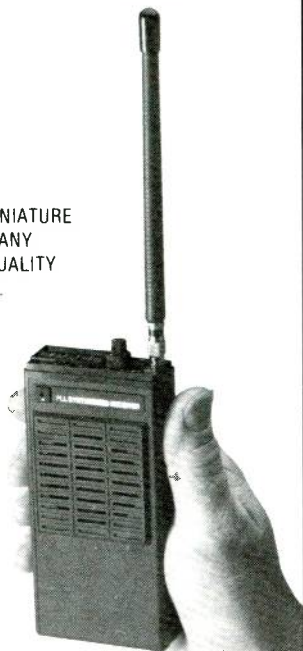
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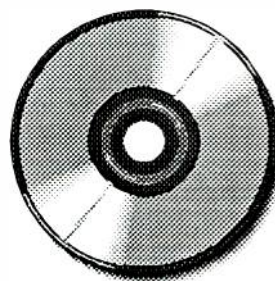
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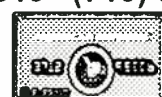
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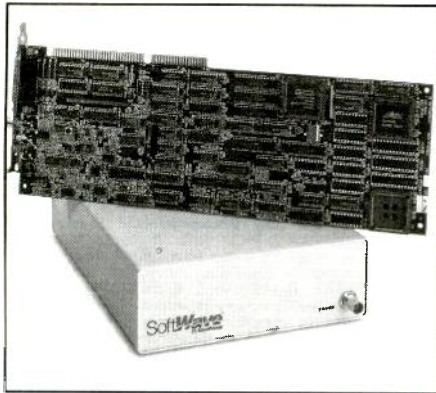
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NEW PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS



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A product that combines shortwave/VHF, digital signal processing and Microsoft Windows®, *SoftWave™* is the industry's first digital receiver for Microsoft Windows. Each *SoftWave* package contains a receiver module, a DSP card for a standard PC slot, and program disks. A cable and easy-to-read manuals are also included.

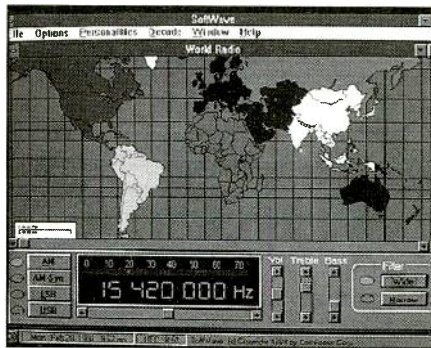
Six different radio "personalities" await the user. With a click of the computer mouse, the user can choose from a standard AM Radio, a Communications (HF) Radio, a VHF Scanner, a World Radio, a Time Synch Radio and a Spectrum Analyzer. Each personality has its own characteristics. *SoftWave* is several separate receivers in one package. Because the radio personalities are completely under software control, new features are as easy to install as a floppy disk.

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The VHF Radio tunes continuously from 108 to 174 MHz. Load stations into one of the scanning groups provided by ComFocus or create your own scanning group. *SoftWave's* scanning database will store up to 5,000 stations, identified by

name, number, frequency or any other ID method you choose. Split and priority stations can be identified or changed with a few clicks of the computer mouse.

For those who don't know *exactly* where to find Radio Moscow at 0100 UTC, *SoftWave's* World Radio solves the problem. By selecting this personality a world map appears on the screen. Use the mouse to point and click on a particular continent and *SoftWave* gives you a list of all the sta-

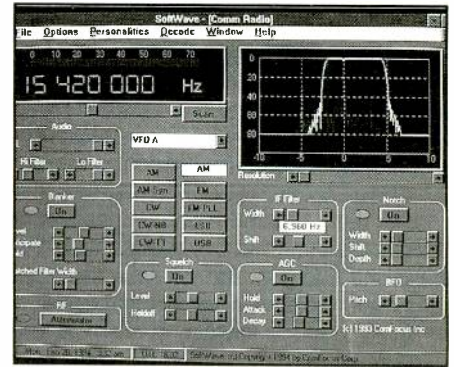


tions currently on the air from the selected location. *SoftWave's* digital signal processor tunes up to 100 stations per second and indicates the reception quality for each right on the screen! You can ask the database what's on the air in an hour (or two) or select from news, sports, general interest or user priority. Point and click again and automatically tune to the selected station. Or select "auto tune" and scroll through the stations, listening to each.

The Time Synch Radio displays all WWV frequencies. *SoftWave* will automatically show the signal strength for each. Select the strongest signal and even reset your computer clock for the correct time.

The Wide Band Spectrum Analyzer, a separate personality, displays all signals in a bandwidth up to 5 MHz. This is useful for finding new signals.

SoftWave also includes a Morse Code decoder. Called the Morse Code Translator, this window displays the text as received. It also shows the words per minute, the error rate, the relative quality of the transmission and the relative confidence of the digital decoder. By selecting the options you can also decode Q signals and commonly used abbreviations. *SoftWave* even has Word Guess™, a proprietary method of "guessing" the word that has been received the signal conditions are poor. By clicking on the Zoom button, *SoftWave* automatically narrows the IF fil-



ter bandwidth and centers the signal.

Since most of *SoftWave's* computations are done by the DSP, the computer is free to run other Windows applications. You can tune into your favorite station and play Jet Fighter at the same time. Perhaps you want to type a letter on Microsoft Word™. No problem, *SoftWave* can share the screen with any Windows programs. This allows you to click the mute button when the boss is coming.

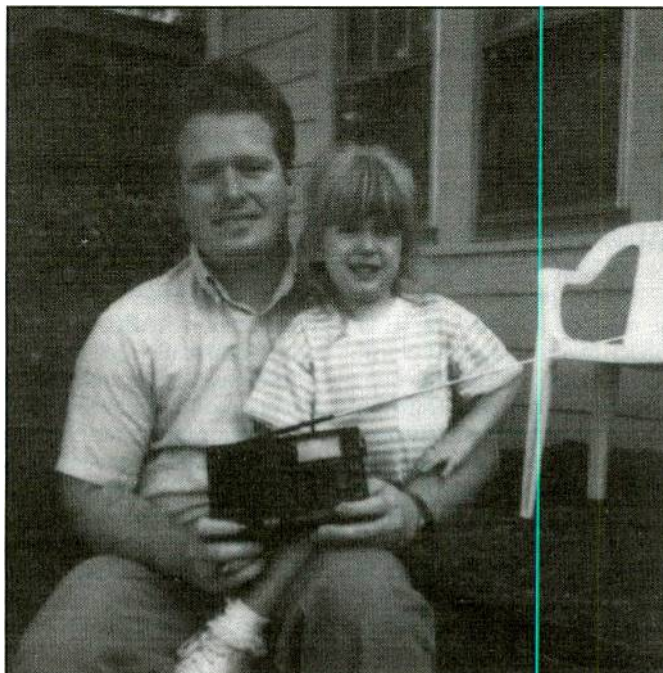
SoftWave includes a complete database, accessible to all of the personalities. Current program schedules from shortwave broadcasters throughout the world are pre-installed. Select from one of *SoftWave's* stations or add your own.

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SoftWave™ is currently available from ComFocus at an introductory price of \$1,495. The introductory period expires July 31, 1994. ComFocus is also offering a 14 day money back guarantee for sales within the United States. The ComFocus sales department can be reached at 1-800-SOFT-WVE (763-8983). Its service department can be reached at 1-800-763-2750.

HOW I GOT STARTED



David M. Perry wastes no time teaching his daughter about shortwave listening!

Popular Communications invites readers to submit, in approximately 150 words (more or less), how they got started in the communications hobby. They should preferably be typewritten, or otherwise easily readable. If possible, a photo of the submitter should be included.

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

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Our June Winner

This month our winner David M. Perry, writes us from Gaffney, South Carolina. He

tries a different twist while explaining how he started:

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BROADCAST DX'ING

BY ROGER STERCKX, KVT1JH

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

Two for Memphis: No less than two experimental FM broadcast station licenses have been issued for Memphis, Tenn. The first is for WKNO-FM, a 100 kW (ERP) station on 91.1 MHz. The licensee is Mid-South Public Comm. Foundation. The other station is WSMS, 91.7 MHz, operated with 25 kW (ERP) by Memphis State University, 1138 Sycamore View Road.

Reports Good DX: Reader B.G. Murphy, in Fla., tells this column that he owns a Panasonic RF-B300 receiver. Using its internal antenna, the set has no trouble pulling in distant stations at night. He mentions New York's WCBS/880, as well as two stations in Chicago, WLS/890 and WBBM/780.

B.G. has discovered the enjoyment of broadcast band DX. These three broadcasters are clear channel powerhouse stations that enjoy wide interference-free nighttime signal coverage. There are others also in this category. After doing as much as you can with this top layer of DX

signals on the AM band, progress along into the next stage of the hobby, which will probably be aided by an external longwire antenna.

Begin checking the more crowded frequencies. Try to pick one station out of the pack and see if you can identify which one it is. This is a wonderful hobby that offers many challenges.

B.G. would like to know if there are any active groups of AM DX'ers in the South Florida area. If so, he would like to make contact. He may be reached at: B.G. Murphy, 15515 Miami Lakeway North, Apt. 202, Miami Lakes, FL 33014.

More Power to Low Power: The April POP'COMM had a feature about low power broadcasting. A reporter reminds us that there are additional low powered AM stations to be DX'ed in the Travelers Information Service. That reminder came from Charlie Warfield, Jr., of Naperville, Ill. Charlie logged WPCB670 on 1610 kHz, located in his own community. Then he

racked up WNYB218 on 1620 kHz, situated in Glen Ellyn, which is about eight miles away. Considering that TIS stations run only a few watts and are intended for reception within a few hundred yards, these are fair game for the DX'er.

The two stations Charlie logged were broadcasting repeating messages relating to municipal matters, such as street closings and train skeds.

Two for One: In Los Angeles, Cap Cities, which has long owned local talk/news station KABC/790, purchased another local station, all-sports KMPC/710. The idea was apparently conceived with the intention of dropping KPMC's sports format, then moving the station into a more generalized talk format aimed at the 18 to 34 year old age group.

This information was sent to us by Pat Ellyson, of Rowland Heights, Calif. Pat asked, "I wonder what Cap Cities has to gain by owning two AM stations in Los Angeles." We'll try to answer that.

Applied for Permit to Construct New AM Station

LA	Bossier	1030 kHz	5 kW
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Applied for Permit to Construct New FM Stations

AL	Columbiana	101.5 MHz	2.3 kW
CA	Vallejo (KUIIC-FM booster)	95.3 MHz	5 kW
CO	Glenwood Springs	92.7 MHz	1 kW
ID	Boise	88.7 MHz	3 kW
IL	Galva	102.5 MHz	
IL	Lena	102.1 MHz	3.2 kW
KY	Lebanon	100.9 MHz	25 kW
LA	Blanchard	102.1 MHz	
LA	Clayton	107.9 MHz	
MD	Massey	88.7 MHz	5.4 kW
MO	Moberly	97.3 MHz	16 kW
MT	Livingston	100.7 MHz	100 kW
NY	Chenango Bridge	104.1 MHz	3.1 kW
OR	Coos Bay	93.5 MHz	2.5 kW
VA	Charlottesville	88.5 MHz	120 watts

Permits Granted to Construct New FM Stations

IN	Lafayette	102.1 MHz	2.5 kW
KY	Paducah	89.3 MHz	
MN	Blooming Prairie	100.9 MHz	6 kW
MN	Detroit Lakes	102.3 MHz	50 kW
UT	Moab	96.7 MHz	1.63 kW

Cancelled

KGDN	Pasco, WA	101.3 MHz	3 kW
KHEN	Caldwell, TX	95.1 MHz	3 kW
KIOZ-FM8	Pacific Beach, CA	102.1 MHz	(booster)
KIUS	Hutchinson, KS	97.1 MHz	2.65 kW

KJYY	Brush, CO	106.3 MHz	3 kW
KZPJ	Levelland, TX	91.9 MHz	20 kW
WHOX-FM1	Columbus, OH	95.5 MHz	37 watts (booster)
WWFS	Kosciusco, MS	103.3 MHz	25 kW
WWIA	Palm Bay, FL	88.5 MHz	1 kW

Seeking Changed AM Facilities

KFMS	N. Las Vegas, NV	1410 kHz	Seeks 1400 kHz, drop to 1 kW.
WKYD	Andalusia, AL	920 kHz	Seeks drop to 400 watts.

Changed AM Facilities

KBOQ	Soquel, CA	1200 kHz	Dropped to 25/ 10 kW.
KUBR	San Juan, TX	1210 kHz	Increased nights to 5 kW.
WACK	Newark, NY	1420 kHz	Increased nights to 730 watts.
WCRN	Cherry Valley, MA	830 kHz	Moved to Worcester, in- creased to 7/5

kW			
WTMJ	Milwaukee, WI	620 kHz	Increased to 50/10 kW.

Seeking Changed FM Frequencies

KLJV-FM	Mountain Home, ID	99.1 MHz	Seeks 99.3 MHz, 100 kW.
KVRH-FM	Salida, CO	92.1 MHz	Seeks 92.1 MHz, 13.5 kW.
WKKY	Geneva, OH	104.5 MHz	Seeks 104.7 MHz, 6 kW.
WSMU-FM N.	Dartmouth, MA	91.9 MHz	Seeks 89.3 MHz, 5.6 kW.

Changed FM Frequencies

KCSU-FM	Fort Collins, CO	90.5 MHz	Moved to 89.7 MHz, 4 kW.
KMMT	Mammoth Lakes, CA	106.3 MHz	Moved to 106.5 MHz, 439 watts
KWRL	La Grande, OR	100.1 MHz	Moved to 99.9 MHz, 91 kW.
KYRE	Yreka, CA	97.7 MHz	Moved to 103.9 MHz, 3.25 kW.
WCQM	Park Falls, WI	98.3 MHz	Moved to 105.3 MHz, 6 kW.

Pending AM Call Letters

Now	Seeks	
KDNT	KICI	Denton, TX
KXOK	KJSL	St. Louis, MO

Changed AM Call Letters

New	Was	
KCEE	KWFM	Tucson, AZ
KEJO	KFLY	Corvallis, OR
KOGO	KKLQ	San Diego, CA
KQNA	KWDS	Prescott Valley, AZ
KTEZ	KCAS	Slaton, TX
WNTR	WALI	Cumberland, MD
WNVY	WKGT	Cantonment, FL
WOKB	WXTO	Winter Garden, FL

Pending FM Call Letters

Now	Seeks	
KDWG	KBMJ	Hardin, MT
KKRX-FM	KIRQ	Lawton, OK
KOQL	KTST	Oklahoma City, OK
WMKO	WHKN	Millen, GA
WPGT	WHKN	Roanoke Rapids, NC
WWSS	WBHG	Meredith, NH

Changed FM Call Letters

New	Was	
KDEC-FM	KDRI-FM	Decorah, IA

KFLY	KEJO	Corvallis, OR
KFTG	KFTG	Pasadena, CA
KGGO	KGGO-FM	Des Moines, IA
KHIH	KHOW-FM	Denver, CO
KICI-FM	KAND-FM	Corsicana, TX
KJKT	WMBH-FM	Joplin, MO
KLOB	KVYZ	Thousand Palms, CA
KRQC-FM	KBOQ-FM	Marina, CA
KZRK	KQTX	Portland, TX
WAKS	WWHT	Marysville, OH
WAVJ	WPKY-FM	Princeton, KY
WBAV	WCKS-FM	Gastonia, NC
WBQW	WXPT	Kennebunkport, ME
WBZE	WBGW-FM	Tallahassee, FL
WCLN-FM	WMXS	Clinton, NC
WHHR-FM	WLOW	Bluffton, SC
WHTK-FM	WYAI	La Grange, PA
WIAR	WTRV	Leland, MI
WJEN	WYOY	Rutland, VT
WLNI	WMXQ	Lynchburg, VA
WLOW	WNCK	Port Royal, SC
WQCC	WLJO	La Crosse, WI
WRTS	WMXE	Erie, PA
WRXQ	WYYA	Olive Branch, MS
WXEF	WBFG	Effingham, IL
WXOU	WAEX	Oakland, MI
WXYK	WGUD-FM	Pascagoula, MS
WYJB	WROW-FM	Albany, NY
WYRS	WAGB	Manahawkin, NJ

Newly Issued FM Calls

KAGB	Waimea, HI
KAGR	Morro Bay, CA
KAGT	Lake Havasu City, AZ
KMGC	Camden, AR
KSTM	Indianola, IA
WACQ	Fisher, IL
WAHA	Charlotte, NC
WJYB	Breese, IL
WKCD	Pawcatuck, CT
WRDS	Phoenix, AZ

KABC runs 5 kW, while KMPC pumps out 50 kW during the day, and 10 kW at night. With more than 80 stations in *Shakytown* all vying for listeners, it's no wonder that Cap Cities seized the opportunity to acquire KMPC. They got a second, and louder, voice in town. In addition, they removed one competitor with 50 kW from the Los Angeles AM dial. The downside is that a number of KMPC employees, from its sports-radio incarnation, lost their jobs in the process.

KMPC began operating in 1927 as KRLO, then later used the call letters KEJK prior to its present call letters. In 1952, it was purchased for \$800,000 by actor Gene Autry and his business partner. Autry has now reportedly sold the license and transmitter site to Cap Cities for about \$20-million.

Problem Line: The FCC inspectors have found numerous reasons to issue broadcast station NAL's for alleged deviations from the tech regulations. Some of the NAL's and alleged violations were:

WAWK, Kendallville, Ind., sent an NAL for \$2,500 for a defective lock on the fence surrounding the antenna, and for the public inspection file missing the ownership report and program list.

WCST/WCST-FM, Berkeley Springs, West Virginia, issued an NAL for \$4,600 for defective EBS equipment, and not having station authorizations posted. Also operated with less than authorized power for 30 days without FCC authorization.

WBSL, Bay St. Louis, Miss., sent an NAL in the amount of \$3,750 because the transmitter metering couldn't be observed from the operating position, and the public inspection file was missing issues and program lists.

WHLV, Hattiesburg, Miss., told to pay a \$9,000 NAL because its tower enclosure had been destroyed, and the required remote control metering was not available at its studio.

WHSY/WHSY-FM, Hattiesburg, Miss., sent an NAL for \$11,300 because of inoperative EBS equipment, and an unmain-

tained log of weekly EBS transmissions. The remote control metering for FM transmitters was inoperative. The metering for the AM transmitter couldn't be observed from the operating position. Public inspection file was incomplete.

Talk Radio: Three stations had received NAL's because the FCC alleged they broadcast conversations without first informing the people that their words were going to be heard on the air.

Station WBAW, Barnwell, S.C., was sent an NAL for \$5,000 for allegedly recording a conversation and then broadcasting without permission it in a news story. The station claimed it had a "strong belief" that the person who had been interviewed was informed and was knew that the material was intended for broadcast use, and had agreed for it to be used in that manner. WBAW could not provide hard evidence to support its claim. The person who had been interviewed denied having been advised of the station's intent to broadcast, and denied granting such permission.



Popular rocker KRNA/94.1, Iowa City, Iowa, has this clever bumper sticker. Their powerful signal reaches listeners in more than a dozen Iowa counties! (Thanks to our friends at KRNA.)



Australian Broadcasting Company's 5MV/1305, Renmark, South Australia, gives listeners this bumper sticker. Renmark is 140 miles north of Adelaide. (Sent by Larry Mulvehill, WB2ZPI.)

The FCC considered all of the facts presented and decided that there had not been a no violation of the rules. The \$5,000 NAL was rescinded.

Station KKAT, Salt Lake City, Utah, was sent a \$5,000 NAL because the FCC claimed that the station's deejays broadcast a conversation without first informing a caller of their intention to do so. KKAT acknowledged this happened, saying that it was because of a misunderstanding rather than bad faith. They said the deejays apologized to the caller and that steps have been taken to avoid the rule violation cropping up again.

The FCC thereupon reduced the amount of the fine to \$3,500.

Station WBHT-FM, Wilkes-Barre, Pa., received an NAL in the amount of \$5,000 for one of its deejays allegedly placing a phone call to the office of the mayor of a neighboring community. He recorded a conversation with the mayor's secretary, then broadcast it. The secretary claimed to have not been informed in advance of the intended broadcast use of the conversation.

WBHT-FM acknowledged the rule violation, stating that steps were taken to prevent it from happening again. The station that the deejay had been from, was reprimanded, all on-air personnel were warned, and a memo had been circulated to all employees concerning the rule. In addition, an apology had been issued to the mayor and his secretary.

The FCC has offered WBHT-FM the opportunity to submit a written plea seeking

cancellation or reduction of the \$5,000.

Snag in The Deal: Not all radio station transitions go smoothly. Such was the case regarding the renewal for the license of WCBM/680, Baltimore, Md., and for the assignment of its license from Bennet G. Gaines to WCBM Maryland, Inc.

The FCC remanded the proceeding for further hearing with respect to the candor of WCBM's principal, Nicholas B. Mangione. The FCC affirmed all other aspects of the Board's decision thereby denying an application for review filed by Mount Vernon Broadcasting, a mutually exclusive applicant.

Station was licensed to Magic 680, Inc. When it went into receivership, Gaines was appointed Receiver for the benefit of the creditors and the FCC approved the assignment of the WCBM license to Gaines. Gaines agreed to transfer the license to WCBM Maryland and negotiated a consulting agreement to operate WCBM on his behalf.

Mount Vernon Broadcasting argued that the Board erred in finding it (Mount Vernon) financially unqualified to be a licensee. It also claimed that the Board failed to find that Gaines made an unauthorized transfer of control of the station to WCBM Maryland, and that Mangione had given false testimony.

The Commissioners remanded the proceeding to the presiding judge to review these questions, and to determine whether WCBM Maryland possesses the basic qualifications to be a broadcast licensee.

Weather or Not: Frank Bertieux, of Norristown, Pa., sent along an interesting question. Frank writes that he always hears radio and TV weather forecasters refer to "Accu-Weather." That makes him wonder what that means, and he hopes we know.

What luck. A reader came up with a question for which we have an answer. Hey, we were beginning to get worried there.

Accu-Weather is the name of a company headquartered in State College, Pa. This is a professional weather information source. Their name should be familiar to those who tune to top-rated radio and TV stations in Philadelphia, Los Angeles, New York City, and in medium and small markets. Accu-Weather provides the staff meteorologists at subscriber stations with a continual flow of additional or background information to supplement the station's own locally developed data. Or, it may be the primary source of a station's updated meteorological data. It depends upon the station's requirements.

Accu-Weather maintains a full-time staff of meteorologists. Among their products and services are, a 32-bit UltraGraphix Weather System; high-resolution air-ready custom graphics; their Accu-Weather Forecasts; real-time custom Nexrad Doppler radar; FirstWarn weather warning crawl system; Accu-Data database; and Accu-Weather FAX database.

Providing subscriber stations with ready-to-use programming has become a big industry. Many people think of it only in terms of satellite music, but there are many other services. They provide weather forecasts, world news, traffic reports, stock market prices, sports news, and other specialty spots. Accu-Weather is one of these services. It happens to be one of the more well known.

New Format: The column received a letter from Mark R. Schmidt, Senior Marketing Consultant, Radio WCIB, Falmouth, Mass. In the past, we wrote up 50 kW WCIB's new tower on picturesque Cape Cod. This time, we'll tell you about their great new sound. WCIB changed from Lite AC to Hot New Country, and now ID's as *Thunder 101.9 Hot New Country*. That means Garth Brooks, Travis Tritt, Brooks and Dunn. Mark sent along new WCIB bumper stickers, a signal coverage map, and a fantastic WCIB T-shirt. Much appreciated!

The big WCIB country signal can be heard all over Cape Cod, as far away as Gloucester and Worcester, Mass., throughout Rhode Island, and west to beyond New London, Conn.

Oops! The clock says it's almost the top of the hour. Time for a station break and to finally straighten up the booth. For now, we'll ask you to let this column hear from you. Please pass along news clippings, questions, format changes, photos, bumper stickers, and whatever you may have relating to AM and FM broadcasters. ■

FOR THE HANDICAPABLE COMMUNICATIONS HOBBYIST

Hello again, and welcome. Summer has always been my favorite time of year, and here's wishing all of you an enjoyable one. Amateur radio is one of the most rewarding and multifaceted areas of the communications hobby, as well as one of the oldest. Hams were active on the air before World War I, and well before KDKA and Westinghouse sent out those 1920 election returns. Through the years, the Amateur Radio Service has consistently remained on the cutting edge of technology, and the introduction of the VHF codeless technician license on February 14, 1991 has sparked phenomenal growth. Furthermore, it is an equal opportunity pursuit, taking no account of age, gender, race, religion, or condition, and placing high premiums on skill, ingenuity, perseverance, and personality. Chances are, someone reading this column has considered testing for an amateur license, while others are on the upgrade path. With those readers in mind, I thought this month we would survey some of the organizations and resources available to the handicapped amateur, or prospective amateur.

Within the United States, the leading amateur radio organization is the American Radio Relay League, headquartered in Newington, Connecticut. ARRL training materials include *Now You're Talking*, a novice-technician study guide, as well as license manuals for all higher classes, and a series of Morse code training tapes. Those already licensed may further their knowledge of general radio theory and application, antenna design, and more through various ARRL books, as well as its monthly magazine, *QST*. Material may be ordered directly from the ARRL; and book stores, libraries, and local Radio Shack outlets may also stock some League material. Their address is 625 E. Main St., Newington, CT 06111.

Speaking of Radio Shack, despite the tendency of recent advertising to downplay its origins, it remains an important source of amateur radio training material. In addition to the ARRL's *Now You're Talking*, there are written study guides for all classes from novice through advanced, and code tapes for speeds from five through 13 words per minute. For a complete list of prices and catalog numbers, phone your local Radio Shack.

Anyone reading the braille edition of *Popular Communications* already knows about the National Library Service for the Blind and Physically Handicapped. What some of you may not know is that the NLS

magazine program also includes a recorded edition of *QST*. Anyone thinking of going for a license should subscribe immediately. The technical articles may seem difficult at first, but you can gain a real leg up in preparing for that first license exam. Over the years, there have been a few articles of particular interest to visually impaired operators or applicants, and the recently inaugurated "New Ham Companion" section is first-rate. A call to your regional library may also reveal some interesting book titles, including a few by *POP'COMM* contributor Harry Helms (AA6FW).

Those who read the February installment may recall my mention of Recording for the Blind, the nation's foremost lender of recorded academic and professional titles. Anyone wishing to pursue amateur radio will find several ARRL titles, along with books on general electronics. Better yet, for a \$25 one-time sign-up fee, all RFB borrowers are automatically enrolled in Computerized books for the blind. Those wishing to learn more should contact Recording for the Blind at 20 Roszel Rd., Princeton, NJ 08540, or call (800) 221-4792.

Computer users have some fine training packages from which to choose. Perhaps the best known ham-related program is M. Lee Murrah's Super Morse. At a shareware cost of \$15, it is the Cadillac of code packages. Highlights include complete user control of all parameters, the ability to simulate QSO's from easily modifiable lists of words and phrases, and two operational modes—allowing code to be sent either over the telephone or on the air. Super Morse may be downloaded from either GENie, in the IBMPC section; or CompuServe, under HAMNET. Those wishing to purchase direct should contact M. Lee Murrah (WD5CID) at 10 Cottage Grove Woods, S.E., Cedar Rapids, IA 52403. Phone (319) 365-6530.

Also deserving of mention are the software-based study guides from The Lanz Company. Bob Lanz (N4ISL) has prepared a series of user-friendly, Q&A-based comprehensive study guides—one for each amateur license class. Each package contains a code module, which, while not nearly as sophisticated as Super Morse, is flexible—with several practice modes and a speed range of from five to 30 words per minute—and easy to use. Users of 386 and later machines, will need to add a "LOAD-FIX," statement to the loading batch file, in order to ensure proper operation. All product inquiries should be directed to the Lanz Company, 3523 Dayton Avenue, Louis-

ville, KY 40207. Phone (502) 895-1377.

No survey such as this could fail to mention the Courage Handi-Hams of Golden Valley, Minnesota—an organization created to assist handicapped individuals who wish to obtain or upgrade a ham ticket. Founded in Rochester, Minnesota, in the early 1960's, Handi-Hams gained the sponsorship of the Minnesota Society for Crippled Children and Adults (subsequently renamed the Courage Center). Over the next six years, word of their good work spread beyond the Midwest. In 1975, Handi-Hams merged with Courage Center, going on to earn a reputation for national service.

A \$10 annual fee entitles members to a variety of services—including a quarterly news letter, an equipment loan program, discounts on various adaptive technology devices and training material, and a useful guide to additional resources. In addition, Handi-Hams sponsors semi-annual radio camps, keeps close tabs on all its students, and will even provide local references for further one-on-one instruction. Correspondence should be addressed to Sister Alverna O'Laughlin (WA0SGJ), Director, Courage Handi-Hams, 3915 Golden Valley Rd., Golden Valley, MN 55422. Phone (612) 520-0511. The club station (W0ZSW) conducts three HF phone nets: Monday, 10:00-10:30 A.M., Central, 129.390 MHz SSB; 10:30-11:00 A.M., 21.442 MHz, SSB; 3:00-3:30 P.M.

All times are given in central time. The frequency is 7.272 MHz, SSB. A Saturday CW net runs from 10:00 to 10:30 A.M. on 7.120 MHz.

Nets have long played a vital role in the Amateur Radio Service, and at least two others deserve mention here. The International Handicapped Net meets from approximately 10:00 A.M. to 1:00 P.M., Eastern on 14.287 MHz. This is primarily a fellowship net, featuring general conversation, information exchange, or just about anything else permissible within Part 97. FARA (Fairfield Amateur Radio Association), Fairfield, Ohio, features a wide area VHF net on Thursdays at 9:30 P.M., to enable visually impaired hams, and those interested in working with them, to exchange technical tips and other related information. FARA's 13 repeaters and 33 receive sites provide coverage from Michigan to Tennessee, Indiana to West Virginia. Check your local frequency.

Before closing, I am happy to note a recent trend among schools and organizations for the blind toward organizing ama-

(Continued on page 80)

PIRATES DEN

BY EDWARD TEACH

FOCUS ON FREE RADIO BROADCASTING

There are lots of logs in the hold this month so...

Altered States Radio, logged by Mike Leclerc in Connecticut on 7413 at 2232 with Outer Limits IS and various music selections. Reports go to PO Box 293, Merlin, Ontario N0P 1W0, Canada. Scott Gentry in Illinois found them at 2233. Scott says they ask for a dollar or two—IRCs with reports.

Radio Free Euphoria on 7465USB was heard by Gentry at 0233 with Captain Ganja and the Maharishi Hashishi Ali Ganja, broadcasting in favor of pot—music by Grateful Dead, The Who and Wings.

Similar note: Voice of the Runaway Maharishi also noted by Gentry on 7413USB at 2306 with the Maharishi Hashishi Ali Ganja reading listener's letters, telling everyone to send him their receivers at once, and blowing himself up at the end of a letter from Paul W. Shallbetter. Leclerc had this on 7444USB at 0138—"I have run away from the state of Euphoria. I have stolen a transmitter from Radio Free Euphoria. I have also stolen some marijuana bags from Captain Ganja." PO Box 452, Wellsville, NY 14895, but in care of Radio Free Euphoria, says Mike.

One more druggie—KNBS, 7420 at 2012 with Phil Muzik and "Fruit of the Loom Newsbriefs," and comments of the "California Marijuana Corporation." Wellsville address given.

Duane VanDenburgh in Wisconsin had Happy Hanukkah on 7415 at 0305 with Alvin and the Chipmunks, and announcements for the Merlin address.

Also from Duane, WLIS (We Love Interval Signals) on 7413 at 2300 with the Blue Ridge Address. Also heard by George Roberts in Pennsylvania at 2310. Gentry had them at 2315 on 7414 with an interval signal from Radio Prague. Leclerc logged this on 7412 at 2301 with Jack Boggan and listeners salute to pirate DXers Rob Ross, Harold Frodge, Ed Rausch and Jerry Coastsworth plus several interval signals and commercial radio station promos.

Gentry had CSIC on 7375 at 2139 featuring Pirate Rambo talking about pirate frequencies and signing off with the "Psycho-Chicken" song. Leclerc had them on 7413 at 2323 and 7425 at 2201. They mentioned a possible broadcast on 9901 at 1400 Sunday.

Pirate Radio Insanity was logged by Leclerc twice on 7444USB; once at 2301, "One frequency, one night. It's Pirate Radio Insanity—the best of the best." Also promos for "Insanity '94" and at one point called itself "Insanity Control."

Gentry heard Liberty on 7416 at 1503 giving a New York address for reports.

Radio DC was noted by Janet in Virginia (sorry, Janet, I couldn't make out your last name!) on 7476USB at 2350 sending "Don't vote Republican" in CW and a program called "Ollie North—CIA Drug Kingpin." Off with Abba music at 0010.

Leclerc heard Radio Airplane three times on 7465 at 0136 and 0143, and 7443 at 0026, with Captain Eddy and Billy Bob Joe Smith sighting UFO, Elvis, etc.

Radio Cyclops was another Gentry log, on 7425 at 2210 with DJs Mike and Mel poking fun at Kristen Kay, Hillary Clinton (oops, insert "Rodham" in there!), Tipper Gore, Ross Perot, 60's revival. Leclerc found this one at 2206.

Radio Doomsday went into Leclerc's log at 2316 on 7444USB—"there's nothing wrong with your radio, we are controlling transmission." Music, Canadian comedy, visit from Elvis, Mr. Dope America, the Laughing Song and more. Gentry heard them on 7445USB at 2321. The program included a "Mr. Dope America" pageant. Wellsville address.

"You are tuned to radio station UNID—the unidentified pirate," with Stupid People's Court, Pirate Radio News, Hall and Oates Bran Cereal, etc. Leclerc, who logged this one, says he heard no address.

Basil Shelley in California heard a test broadcast from Radio Freedom on 7415 at 2202. The broadcast was playing rock and giving the ID at closing.

Gentry had Radio Garbanzo on 7420 at 2005. Aired a "commercial" for radio transmitters. "99 Pitchers of Beer" song closed broadcast.



Scott also had WJLR on 7408LSB at 2225. David Bowie, Cheap Trick, WJLS and WJLR IDs at 0001 sign off. Leclerc had this on 7415LSB at 2300, 7480LSB at 0030 and 7407LSB at 2220. Use the Blue Ridge Summit address for this one.

Leclerc had Radio Caroline on 6294 at 0234 with "From the M/V Ross Revenge. This is Radio Caroline." DJ was Barry Lewis with various rock groups.

The Great Southland was another Leclerc logging, 7425 at 2003 with John Quigley the announcer, and various numbers. This uses the Merlin address.

No more room. Thanks for all the good input. Keep it coming! See you next month!

Radio Piraña Int

We are pleased to confirm your reception report that is in accordance with our programmes log.

To: Michael Leclerc..... Date: 26th Sept 93 Time: 20:07 UTC
Frequency: 139.50 (430)..... KHz SINPO: fair in prog
Tx power: 50-600 W..... Antenna: directional 7-8db gain QSL no: 205

Thank you!! J.R. Garcia

Here's Mike Leclerc's QSL from Radio Pirana International.

A KEYNOTE SPEAKER from Grove!

NEW!



Why pay over \$400 for these separate accessories:

- Speaker
- Adjustable Filter
- Recorder Activator
- Audio Amplifier
- Audio Activated Squelch
- Noise Limiter



When you can have it all in the new Grove

SP-200!

SOUND ENHANCER

The Grove engineering team has created the most revolutionary audio accessory on the communication market: the **SP200 Sound Enhancer**.

Housed in a stylish, solid oak cabinet hand crafted in the mountains of North Carolina, the **SP200** is sure to enhance any room and radio receiver. The control panel, constructed of sturdy, black aluminum, has been designed for optimum ease and convenience when tuning and refining signals.

The **SP200** combines a powerful audio amplifier, top-of-the-line speaker, and an adjustable filter system in one to create the most versatile and precise listening environment ever available to radio enthusiasts. The keen peak/notch filter system and advanced noise limiter allow the listener to pull clear and distinct signals out of the haze of interference and background noise, while the

adjustable bass and treble provide the flexibility to create just the sound you want. FSK, RTTY, packet, FAX, CW and all other data systems are enhanced while interference and electrical noise are reduced or even eliminated by the analog audio processor.

The **SP200** also comes equipped with a stereo/mono headphone jack, for private listening, and an automatic tape activator so that you never have to miss anything.

Try the new Grove **SP200** Sound Enhancer with your receiver, scanner, or transceiver and enjoy the latest in speaker sophistication; you'll agree this is truly a keynote speaker!

SPECIFICATIONS:

Power Required: 12 to 14 VDC @500 mA; 120 VAC adaptor incl.
Audio Power Output: 2.5 W @ 10% THD (8 ohms)
Audio Selectivity: Peak/notch 30 dB or greater, 0.3-6 kHz
Squelch Hold: 0-10 seconds
Noise Limiter: Adjustable-threshold pulse noise clamp
Tape Activator: Audio activated (VOX), 3 second hold
Tape Output: 500 mV P-P @ 600 ohms (nom.)
Headphone Jack: Universal mono-wired stereo jack
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CLANDESTINE COMMUNIQUE

WHAT'S NEW WITH THE CLANDESTINES

It's back! The National Radio for the Democratic Arab-Saharan Republic was active for a couple of months early last year and then it disappeared. Now it's returned to the air and, fortunately, it's one of those clandestines which can be heard fairly well in North America. The station is using 11320 (it was formerly on 11520). Currently it's on the air until sign off at 0100, mostly in Arabic, although the last hour or so is in Spanish. The station is operated by the Polisario Front which wants independence for the Moroccan-held Western Sahara. Transmitters for this station are believed to be either in Algeria, near the border with Western Sahara, or perhaps even within the Polisario-held part of Western Sahara.

The other Polisario broadcaster—a program called the Voice of Free Sahara continues to be aired over Radio Algiers in Spanish on 9640 and 15215 at 2200 to 2300. This broadcast has issued QSLs for reports directed to Directeur d'Information, Polisario Front, B.P. 10, El-Mouradia, Algiers, Algeria. This address might also work for Polisario's other station.

Radio Algiers carries another clandestine-type program, The Voice of Palestine/Voice of the Palestinian Revolution, which is on the air daily at 1700 to 1800 on 7245, 9510, 9685, 11715, 15205 and 17745—the last three frequencies are probably your best bet. Programs are in Arabic.

The Voice of Human Rights and Freedom in Iran began its existence as "The Voice of the Liberation of Iran," and later operated with the name "Iran's Flag of Freedom Radio" before taking on its current monicker in January, 1993 (doesn't the term "human rights" cast just a little suspicion in the direction of the good old USA as perhaps having a hand in this one?).

The actual transmitters have long thought to be in Egypt and now there's more evidence of that. The station has opened up a medium-wave service which, when not broadcasting anti-Iran programming, carries such domestic Egyptian services as the Voice of the Arabs and Nile Valley Radio. The current shortwave schedule is believed to be from 0230-0425 on 11470; 0600-0645 on 9530 and 11470, 1545 to 1630 on 9530 and 11650 and 1630 to 1825 on 15260. There's a whole mess of address possibilities: c/o R. Farhadi, P.O. Box 19740-187, Irvine, CA 92740; France Box Holder, 18 bis Rue de Violet, 75015, Paris; P.L.K. 00559-B, 22391 Hamburg, Germany or Postfach 102824, 44028 Dortmund, Germany. Robert Ross of Canada says he recently QSL'd this one via the Paris address, receiv-

ing a full data QSL sheet signed by Mina Alborze, along with an info pamphlet and schedule. The group behind this station calls itself the Organization of Human Rights and Basic Freedoms for Iran.

We discussed the Guatemalan clandestine La Voz Popular a couple of months ago. Now Robert Ross, who supplied the original information has also sent a flyer being used to drum up contributions in the US and Canada (see illustration). The station says it has been on the air since May 22, 1987 and claims to run 2 kW. It's a little hard to believe they run that much power, or are even active very consistently. If they were, surely we'd be hearing the station during its listed Tuesday and Friday broadcasts from 2300 to 0045 on 7000, or even 0200 to 0300 on 3500. The station, operated by the Guatemalan National Revolutionary Unity (URNG), claims to "constantly live with artillery and aerial bombings and military attacks" and also that the Guatemalan army tries to jam the station's broadcasts, which are in Spanish and Mam. If you should catch a log on this one, Ross says you can send your report to Fernando Garcia, Centro de Promocion Popular, Apto 20-668, Mexico, DF, Mexico.

Although we don't have specifics at this

point, we understand that the commercial Honduran station Radio Copan International on 15670 has added several more anti-Cuban broadcasts, in addition to the Radio Roquero mentioned last month. We'll try to have specifics for you next time.

Here's a Russian clandestine you may want to try for: Radio Dnester International is operated by Russian separatists in Moldavia's Pridnestrovye region. The station has a half hour of English beamed to North America daily except Fridays, when it's in Ukrainian. Check 7105 at 0330 to 0400. Reception reports go to Radio Dnester International, 25th October Street, 45 Tiraspol, Pridnestrovye, via the C.I.S.

We're told that La Voz del CID is experiencing some tense financial times and, as a result, has apparently cut back on some of its broadcasts. You'd think that they'd be getting more support than ever now. Whassa matter, CIA?

That will do it for this time. Remember we welcome whatever information about the clandestine scene—the back alleys of broadcasting—that you'd care to send in. All types of loggings, QSL news, news clips, schedules, theories, letters and so on are all welcome.

Until next month, good hunting! ■

A Guatemalan Jungle Radio

The Popular Voice, Canadian tours

Julia Batres Lemus

A lieutenant, guerrilla women combatant is a member of the Popular Voice (La Voz Popular) a jungle radio in Guatemala. The Popular Voice is the official underground radio of the Guatemalan National Revolutionary Unity (URNG). The radio operation is in the jungle of the Tajamalco volcano in Guatemala and from there it spreads alternative information, those under censure in Guatemala. Julia Batres will share information of URNG government peace process negotiation, free expression, human rights, and guerrilla struggle under the army dictatorship in Guatemala.

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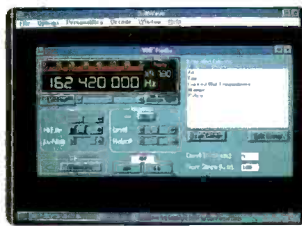
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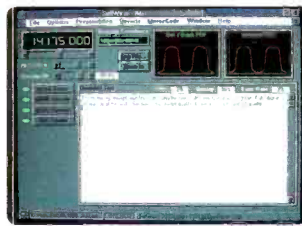
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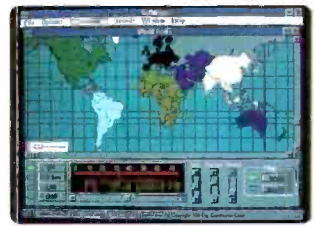
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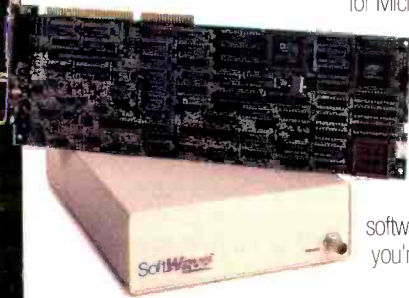
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COMMUNICATIONS CONFIDENTIAL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

We have another mystery communications installation to report. Bruce Rossi, AZ, sent in four photos he shot at a location about 10 miles southwest of Nevada state route 266 and 15 miles west of U.S. 95—"Lida Junction." Friends of Bruce told him they believed there was a missile site in that area which was in an active status during the early '70s.

When Bruce drove to the location, he found an HF facility with a windowless bomb-proof type structure. He drove right up to the completely isolated building, and saw no indication of overhead power of phone lines. Due to this discovery, the utilities must have been underground.

"The Rhombic antennas each had a feed point that split into two legs, with three elements each. The longest ones were about 500 meters long and the shortest Rhombics about 100 meters. They seemed to be arranged for 360° coverage with the building in the center. Poles to the north of the building could have supported a Log-Periodic wire antenna. The only signs were on a section of fence remaining in the south side of the building.

I had the impression that the people who operated this place just picked up and left one day. The antenna wires are still in place and the wind sock remains on the airstrip."

Thanks for the interesting rundown on this mystery facility, Bruce. In checking for background information in some references, I note that the location of this site is less than 25 miles from the boundary of Nellis Air Force Base. Perhaps there is a connection between the two facilities?

Mark Heywood, Canada, has indicated that the *High In the Sky* aeronautical book was sold out earlier this year. However, by now the 1994 issue should be out. Information about this publication can be obtained from the Aviation Hobby Shop, Dept. AC1, 4 Horton Parade, Horton Road, West Drayton, Middlesex, England UB7 8E4. Ask for current price and shipping/handling costs.

Perry Crabill, Jr., VA, has again made some neat beacon catches. He wrote, "I'm especially pleased with TCO in Tumaco, Colombia, South America. I compute the distance as 2,580 miles from my location. Another one was MM, at Ft. McMurray, Alberta, Canada, which is 1,923 miles and is my farthest west logging."

Richard Baker, OH, advised that perhaps the slight difference in the 11.5 MHz loggings reported for the U.S. Antarctica stations may simply be due to a case of "un-assigned" versus "window" frequency notations being indicated on QSL's.



Thunderbirds

PHONE (702) 652-4018

1994 USAF THUNDERBIRDS AIR DEMONSTRATION SCHEDULE

MARCH		AUGUST
19-20	Mesa, AZ	6
26-27	MacDill AFB, FL	7
APRIL		10
9-10	Wilmington, NC	13
16	Tyndall AFB, FL	15
17	Barksdale AFB, LA	17
23-24	NAS Norfolk, VA	19
30	Shaw AFB, SC	21
MAY		23
1	McEntire ANGB, SC	27
7-8	Dover AFB, DE	SEPTEMBER
14-15	NAS LeMoore, CA	3-4
21	Kelly AFB, TX	10-11
22	Goodfellow AFB, TX	17
28-29	Avoca, PA	18
JUNE		24-25
1	USAF Academy, CO	OCTOBER
4-5	Myrtle Beach, SC	1-2
11-12	NAS South Weymouth, MA	8
18-19	NAS Willow Grove, PA	9
25-26	Redding, CA	15-16
JULY		22-23
2	K.I. Sawyer AFB, MI	29-30
4	Battle Creek, MI	NOVEMBER
16-17	Portland, OR	5-6
23-24	Dayton, OH	12-13
27	F.E. Warren AFB, WY	20
30-31	Broomfield, CO	

Current as of December 6, 1993

USAF AIR DEMONSTRATION SQUADRON • BOX 9733 • NELLIS AFB • NEVADA 89191

The following is the 1994 USAF Thunderbirds air demonstration schedule.
(Courtesy of Norm Pihale, MN.)

I have observed that the most often used frequency reading is 11553 kHz.

Wilton B. Baumann, CA, wrote, "Had been using a Kenwood 680 Transceiver for the 200/400 kHz range with a 50 foot longwire and logged about 30 beacons over a three to four month period. Changed to a TS390 Kenwood with a Cushcraft R4 Ham antenna fed by a 30+ foot of RG8U with the shield braid 'floating.' Now have 80 beacons in the log. Picked up about 40 new listings in just a couple of weeks."

Nellis AFB in Nevada was mentioned at the beginning of the column and I wanted

to point out that the base is also the home of USAF Air Demonstration Squadron known as the "Thunderbirds." Through the courtesy of Norm Pihale, MN, following is a schedule of Thunderbirds demonstrations for 1994. I regret I was unable to work this list in the column sooner, but I do try to utilize material sent in by contributors on a first-received, first-used basis and thus I did not place the schedule in the column when I initially received it.

HF traffic concerning Thunderbirds activity does show up with messages relating to different support functions connected



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Sensitivity:	30-540kHz	540-1800kHz	1.8-30MHz
CW	<1μV*	<5μV*	<.5μV*
SSB	<1μV	<5μV	<.5μV
AM	<3μV	<15μV	1.5μV
FM	N/A	N/A	.5μV

*Sensitivity improves with optional 500Hz CW Filter.

Selectivity: -6dB: CW, SSB, FAX @ 2.4kHz / AM @ 6kHz / AMN @ 2.4kHz / CW @ 500Hz (opt.)

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Image & Spurious rejection: >70dB

IF Freq.: 51.655MHz 1st 455kHz 2nd

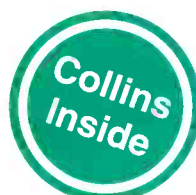
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(3) Hi-Z for whip

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MIKE'S ELECTRONICS

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OMAR ELECTRONICS

(GA) • 404-466-3241

R & L ELECTRONICS

(OH) • 800-221-7735

RADIO CITY COMMUNICATIONS

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TRE RADIO ROOM

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RADIO WORLD

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RAY'S AMATEUR ELECTRONICS

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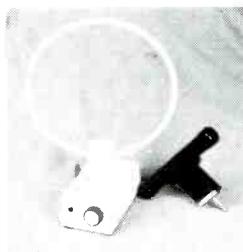
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with the arrival/length of stay/departure of the Thunderbirds Squadron at a particular location.

An Air Force Reserve news item furnished by Richard Baker, OH, indicated the following: "The 53rd Weather Reconnaissance Squadron designation was activated and assigned to the AF Reserve's 403rd Airlift wing, Keesler AFB, MS.

While the 'Hurricane Hunters' were being activated, their old unit designation, the 815th Weather Squadron, was inactivated.

The reservists track hurricanes and tropical storms over the Atlantic and Pacific Oceans. During Hurricane Emily, they flew more than 230 hours in support of gathering hurricane data for the National Hurricane Center in Coral Gables, FL.

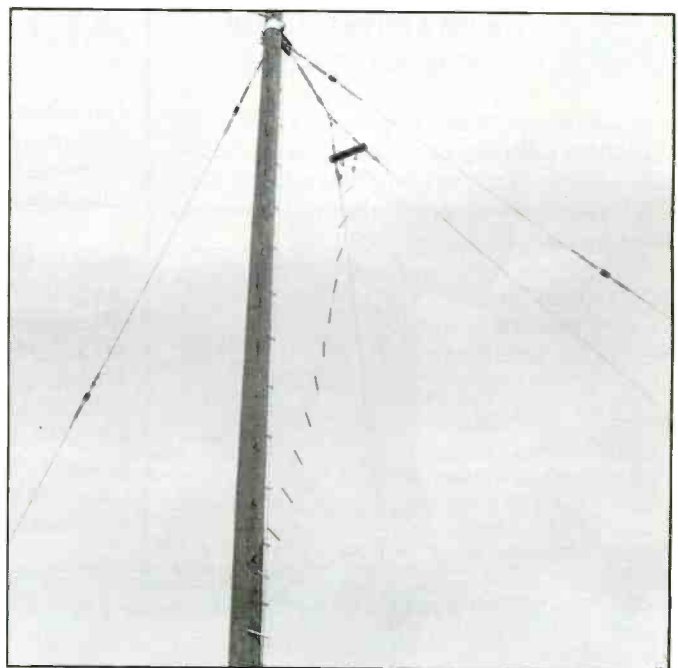
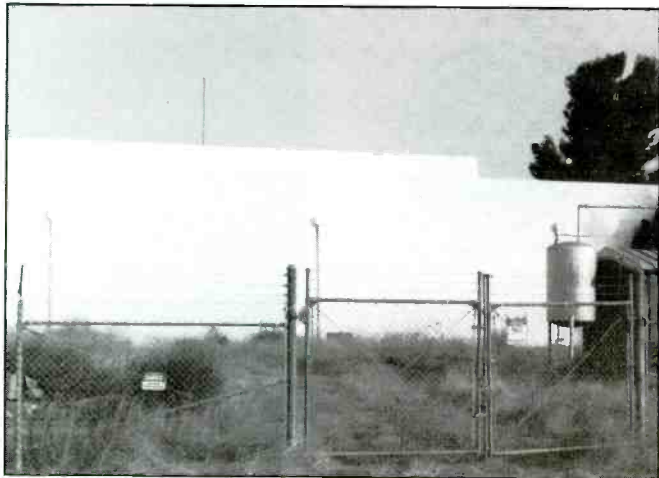
The 53rd WRS traces its roots to August 1944 when it was activated as the third WRS at Presque Isle AAF, ME. From there it transferred several times, including tours in Bermuda, England, and Puerto Rico, before landing at Keesler in July 1973. The former active-duty unit was inactivated June 30, 1991, when the Air Force's entire

WC-130 weather reconnaissance mission was transferred to the Reserve."

UTE Intercepts. All Times in UTC.

- 203:** Beacon WRB, u/i at 2204. (Farley, NM)
- 206:** Beacon GLS, Galveston, TX at 1955. (Farley, NM)
- 216:** Beacon CLB, Wilmington (Carolina Beach), NC at 1508 & 0431. (Vylasek, VA)
- 219:** Beacon LB, Lubbock, TX at 1950. (Farley, NM)
- 230:** Beacon REN, Richlands, VA at 1109. (Crabill, VA)
- 237:** Beacon EZF, Fredericksburg (Shannon), VA at 1511. (Vylasek, VA)
- 239:** Beacon LHX, La Junta, CO at 1947; Beacon UBC, Ballinger, TX at 1946. (Farley, NM)
- 240:** Beacon LE, Auburn/Lewiston, ME at 1122. (Crabill, VA)
- 241:** Beacon PVG, Portsmouth (Hampton Roads), VA at 1511 & 0458. (Vylasek, VA)
- 242:** Beacon CUH, Cushing, OK at 1945. (Farley, NM); Beacon YMY, Ear Falls, Ontario, Canada at 1047. (Crabill, VA)
- 244:** Beacon DDA, Jefferson, GA at 1143. (Crabill, VA)
- 245:** Beacon GTP, Thomasville, GA at 1139. (Crabill, VA)
- 248:** Beacon CPY, Camp Peary, VA at 1513. (Vylasek, VA); Beacon WG, Winnipeg, Manitoba, Canada at 0948. (Baumann, CA)

- 251:** Beacon AM, Amarillo, TX at 1942. (Farley, NM)
- 254:** Beacon LLW, Elizabeth City (Woodville), NC at 1513. (Vylasek, VA)
- 257:** Beacon CGE, Cambridge (Municipal-Dorchester), MD at 1502. (Vylasek, VA)
- 261:** Beacon CPK, Chesapeake (Municipal), VA at 1500. (Vylasek, VA)
- 265:** Beacon SXD, Springfield, VT at 1026. (Crabill, VA)
- 274:** Beacon AKQ, Wakefield (Municipal), VA at 1514. (Vylasek, VA)
- 275:** Beacon ING, Philadelphia, PA at 1234. (Crabill, VA)
- 278:** Beacon GOS, Lakeview (Lake Country), OR at 1224. (Vaage, CA)
- 280:** Beacon LJK, Ashland, VA at 1515. (Vylasek, VA)
- 289:** Beacon MR, Marina Del Rey Light 3, CA at 1228. (Vaage, CA)
- 290:** Beacon YYF, Penticton, BC, Canada at 1229. (Vaage, CA); Beacon AOP, Rock Springs, WY at 0813. (Baumann, CA); Beacon TVK, Centerville, IA at 1135. (Crabill, VA)
- 298:** Beacon HL, Cape Henlopen, DE at 1517. (Vylasek, VA)
- 302:** Beacon L, Pt. Loma Light Station near San Diego, CA. Hrd at 1235. (Vaage, CA); Beacon G, Ashtabula, OH at 1117. (Crabill, VA)
- 317:** Beacon IBM, Kimball, NE. No time given. (Baumann, CA)
- 322:** Beacon U, Miami, FL, at 1109. (Crabill, VA)



Here are four views of the mystery installation mentioned in this month's column. Photos taken by Bruce Rossi., AZ.

Abbreviations Used For Intercepts

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

326: Beacon YQK, Kenora, Ontario, Canada at 1152. (Crabill, VA)

329: Beacon AAA, Lincoln, IL at 1150. It is DSB; listed as SSB in Beacon Guide. (Crabill, VA)

332: Beacon POA, Pahoia, HI, at 1157. New ID ex-PHN. (Crabill, VA); Beacon IC, Wichita, KS at 1931; Beacon CZX, Crosbyton, TX at 1930. (Farley, NM)

337: Beacon CDH, u/i at 0348. (Low, TX)

338: Beacon LSA, Lamesa, TX at 2031. (Farley, NM)

341: Beacon SG, Santa FE, NM at 2031; Beacon HRX, Hereford, TX at 1928; Beacon LUJ, Big Lake, TX at 1928. (Farley, NM)

344: Beacon FCH, Fresno Chandler Municipal, CA at 1252. (Vaage, CA)

346: Beacon PCM, Plant City, FL at 1141. New, DSB. (Crabill, VA)

348: Beacon NID, China Lake, NW Trona, CA at 1255. (Vaage, CA)

350: Beacon NUC, San Clemente Island, CA at 1255. (Vaage, CA); Beacon RG, Oklahoma City, OK at 1926. (Farley, NM); Beacon MY, Endery, BC, Canada at 0954. (Baumann, CA)

353: Beacon F7, Georgian Bay/Parry Sound, Ontario, Canada at 1124. 400 Hz, Beacon Guide lists as 1000 Hz. (Crabill, VA); Beacon LLD, Lanai, HI at 0804. (Baumann, CA)

355: Beacon TCO, Tucamo, Colombia at 1105. DSB 1000 Hz. (Crabill, VA)

356: Beacon PTT, Pratt, KS at 1925. (Farley, NM)

359: Beacon BO, Boise Air Terminal, ID at 1259; Beacon YAZ, Tofino, BC Canada at 1304; Beacon EMT, El Monte, CA at 1305. (Vaage, CA)

365: Beacon HQG, Hugoton, KS at 1922. (Farley, NM); Beacon AA, Fargo, ND at 1204. Hrd while local TZ-364 kHz off the air; Beacon TV, Traverse City, MI at 1050. (Crabill, VA)

367: Beacon HA, Tuamotu, French Polynesia at 0852. (Baumann, CA)

368: Beacon IMR, Marshfield, MA at 1058; Beacon NVK, Milton, FL at 1208. (Crabill, VA)

378: Beacon CPM, Compton, CA at 1332. (Vaage, CA)

382: Beacon YPL, Pickle Lake, Ontario, Canada at 1017. (Baumann, CA)

385: Beacon BF, Bakersfield Meadows Field, CA at 1333; Beacon WL, Williams Lake, BC, Canada at 1334. (Vaage, CA)

388: Beacon MM, Fort McMurray, Alberta, Canada at 1121. (Crabill, VA)

390: Beacon BR, Burlington, IA at 1149. (Crabill, VA)

394: Beacon OR, Chicago, IL at 1152. (Crabill, VA)

398: Beacon G, Charlottetown, PE Island, Canada at 1203. 1000 Hz. Beacon Guide shows 400 Hz. (Crabill, VA)

400: Beacon EWP, Newport, AR at 1049. (Crabill, VA)

402: Beacon CV, Carlsbad, NM at 1915. (Farley, NM)

404: Beacon ST, St. Louis, MO at 0534. (Crabill, VA)

405: Beacon LVV, u/i at 1058. Possible move

This QSL letter was received by Hiroshi Saito, Japan.

ITT WORLD COMMUNICATIONS INC.
12780 AMABELLA STREET
CERRITOS, CALIFORNIA 90701



ITT World Communications Inc. subsidiary of International Telephone and Telegraph Corporation

450 Mission St. San Francisco Calif 94105
Telephone (415) 421-1303

APR 4 1975

HIROSHI SAITO

CHIBA-PREF, JAPAN

DEAR SIR

THIS WILL CONFIRM YOUR RECEPTION OF KOK ON 8590 KHZ AT 0700GMT
MARCH 23, 1975.

TRANSMISSION OUTPUT APPROXIMATELY 9 KW.

ANTENNA, DOUBLET WITH MAXIMUM RADIATION NW BY SE TO BEST COVER
GREAT CIRCLE ROUTE TO ORIENT AND CARIBBEAN AREA.

THANK YOU FOR YOUR INTEREST AND HOPE YOU HAVE MANY SUCCESSFUL
QSO'S IN FUTURE.

73's
T. W. Hennessy
T. W. HENNESSY, MGR
KOK

This QSL letter was received by Hiroshi Saito, Japan.

404 kHz. (Crabill, VA). I agree. This probably Delevan, WI. (Ed.)

407: Beacon PRZ, Portales, NM at 1915. (Farley, NM)

413: Beacon OEG, Yuma Proving Grounds Army Eagles, AZ at 1345. (Vaage, CA)

414: Beacon PYD, u/i at 0851. (Baumann, CA)
Wonder if this could be PYF on 418 kHz which is located at Fairfield, TX? (Ed.)

421: Beacon EF, McKinney, TX at 0500. (Crabill, VA)

423: Beacon PCW, Port Clinton, OH at 1134. New freq. ex-414 kHz. (Crabill, VA)

1860: WAORCR, Ham news service in AM at 0424. (Low, TX)

2118: Canadian CGS Earl Gray, CG3029 wkg VCS, Halifax CG Radio (on 2514) for R/T call. Was hailed on 2182 kHz. Hrd 0149 in USB. (Baker, OH)

2182: CommSta New Orleans wkg M/V Dickerson Tide at 0318 re Medico, have several persons on board they rescued from a life raft. At 0603 USCG Group Fort Macon, NMN37 in comms w/distressed S/V Thumper, advised a C-130 was on the way. At 0633 told Thumper to contact Rescue 1501 on VHF Ch. 16. Apparently no joy because at 0636 calls Thumper on 2182 kHz & advises them re procedure for drop. At 0637 asks how pump landed, then advises stand-by for second drop. Thumper later sank. POB saved. At 0833 Yarmouth CG Radio w/two-tone alert signal and announcement of MAYDAY relay from F/V Erwin Melissa, a 90 foot F/V w/3 POB taking on water. Advises crew has abandoned ship. Requests all vessels in vicinity to proceed and assist. All USB. (Baker, OH)

2582: ZBM, Bermuda Harbor Radio at 0441 in USB w/NavArea info & Notices to Mariners after announcement on 2182 kHz. Hrd at 0838 on another night. (Baker, OH)

2941: Moscow Volmet, URS. YL/RR in USB at 0315. (Mike, Germany)

3189: NNNBOG as NCS for Wisconsin, 4WIB U.S. Navy MARS tfc net at 0223 in USB. (Baker, OH)

3413: Shannon Volmet in USB at 0323. (Mike, Germany)

4017: Army MARS, AAT7QM wkg AAR7AT passing monthly report at 0242 in USB. (Baker, OH)

4020: Army MARS, AAR7OI, AAR7RT, AAT7XA, AAR7CM in USB at 1330. (Shelley, CA)

4024: At 1900, CW station w/237 callup, GR35

and into 5F grps. On another day sending NNN in CW at 2000 then YL/GG w/Gruppe 15 and into 5F grps. (Mason, England)

4098: WBN3428, Tug Viking at 0153 in USB concluding R/T tfc w/WOM, Pennsco, FL. LAEB2, Cruise ship M/S Sovereign of the Seas concluding R/T tfc w/WOM at 0305. Also USB mode. (Baker, OH)

4396: WLC, Rogers, MI w/Lake Erie wx, gale warning. (Pihale, MN)

4470: OM/EE rptng 431 from 2215-2220 then 516 x2 80 x2 & into 5F grps. (Mason, England)

4570: SLHFM "V" at 0125 w/3 second gap between Vs. (Mason, England)

4882: YL w/ULX callup at 1907 and into 5L grps msg. New YL's voice used and also 2 kHz away from freq used when "usual" YL voice is used, i.e., 4880 kHz, Mossad station. (Mason, England)

4888: YL/GG w/Golf Kilo callup from 2030-2035, then 4F grps for addressee 740 of 92 grps in length. (Mason, England)

4996: RWM, Moscow, Russia Time Signal station. (Pihale, MN)

5297: YL/GG w/1-0 count and 413 callup from 0200-0210. Then Gruppe 151 x2 and into 3/2 grps. (Mason, England)

5305: SLHFM's "C" & "S" at 2135. (Mason, England)

5364: OM/RR at 2130 rptng 168 168 168 000. Off at 2135. (Mason, England)

5550: Arinc NY wkg United 987 (over Brazil). Selcal ck then QSY 6640 kHz at 0320 in USB. (Baker, OH)

5696: CommSta New Orleans wkg CG 2130 w/pp to CommSta Boston; also CG Cutter Foreward (NICB) re flares & strobes from C-130 in search area near Japanese freighter, passing info to District 1 OPS re u/i MV w/crew overboard at 0331. (Pihale, MN)

5718: Halifax Military wkg Rescue 113 at 0056 w/updated position of destination. At 0128, Rescue 113 w/Halifax reports located vessel, has very bright red light and does look like is on fire, but it's not. USB mode. (Baker, OH)

5732: YL/GG announcing numbers in USB at 0141. All zeroes pronounced in EE. (Mike, Germany)

5770: YL/GG rptng Whisky Lima from 1930-1935. Then 5F grps for 522 of 70 grps in length. (Mason, England)

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To reach an AT&T High Seas Operator call: 1 800 SEA-CALL

KMI AT&T Coast Station California

Address: AT&T Station KMI, P.O. Box 9, Iverness, California 94937.
For Technical Information Call: +1-415-669-1055 (Collect)

Channel Designation	Coast Station Transmit (Carrier kHz)	Ship Station Transmit (Carrier kHz)
242	2450.0	2093.0
248	2506.0	2406.0
401	4557.0	4065.0
416	4402.0	4110.0
417	4405.0	4113.0
804	8728.0	8204.0
809	8743.0	8219.0
822	8782.0	8258.0
1201	13,077.0	12,230.0
1202	13,080.0	12,233.0
1203	13,083.0	12,236.0
1229	13,161.0	12,314.0
1602	17,245.0	16,363.0
1603	17,248.0	16,366.0
1624	17,311.0	16,429.0
2214	22,735.0	22,039.0
2223	22,762.0	22,066.0
2228	22,777.0	22,081.0
2236	22,801.0	22,105.0

Voice Broadcast Channels: 416 and 1203

UTC	TFC	WX
0000	*	<input type="checkbox"/>
0400	*	
0800	*	
1200	*	<input type="checkbox"/>
1600	*	
2000	*	

* Traffic List of Stations with Calls Waiting

Forecasts from the National Weather Service

SITC /DSC Data Broadcasts

Freq. (center): 8087.0 kHz

Traffic Lists Continuously

Weather at 20 Past Odd UTC hours

Morse Data Broadcasts

Frequencies (carrier): 4402.0, 8728.0, 13,161.0, and 17,245.0 kHz

Traffic Lists Continuously

WOM AT&T Coast Station Florida

Address: AT&T Station WOM, 1340 N.W. 40th Avenue,
Fort Lauderdale, Florida 33313.

For Technical Information Call: +1-305-587-0910 (Collect)

Channel Designation	Coast Station Transmit (Carrier kHz)	Ship Station Transmit (Carrier kHz)
209	2490.0	2031.5
221	2514.0	2118.0
245	2566.0	2390.0
247	2442.0	2406.0
403	4365.0	4071.0
412	4390.0	4098.0
417	4405.0	4113.0
423	4423.0	4131.0
802	8722.0	8198.0
805	8731.0	8207.0
810	8746.0	8222.0
814	8758.0	8234.0
825	8791.0	8267.0
831	8809.0	8285.0
1205	13,092.0	12,245.0
1208	13,098.0	12,251.0
1209	13,101.0	12,254.0
1215	13,119.0	12,272.0
1223	13,143.0	12,296.0
1230	13,164.0	12,317.0
1601	17,242.0	16,360.0
1609	17,266.0	16,384.0
1610	17,269.0	16,387.0
1611	17,272.0	16,390.0
1616	17,287.0	16,405.0
2215	22,738.0	22,042.0
2216	22,741.0	22,045.0
2222	22,759.0	22,063.0

Voice Broadcast Channels: 403, 802, 1205, 1601, and 2215

UTC	TFC	WX	UTC	TFC	WX
0100	*	<input type="checkbox"/>	1300	*	<input type="checkbox"/>
0300	*		1500	*	
0500	*		1700	*	
0700	*		1900	*	
0900	*		2100	*	
1100	*	<input type="checkbox"/>	2300	*	<input type="checkbox"/>

* Traffic List of Stations with Calls Waiting

Forecasts from the National Weather Service

SITC/DSC Data Broadcasts

none

Morse Data Broadcasts

Frequencies (carrier): 4423.0 and 8746.0 kHz

Traffic Lists Continuously

WOO AT&T Coast Station New Jersey

Address: AT&T Station WOO, P.O. Box 550, End of Beach Avenue,
Manahawick, New Jersey 08050.

For Technical Information Call: +1-609-597-2201 (Collect)

Channel Designation	Coast Station Transmit (Carrier kHz)	Ship Station Transmit (Carrier kHz)
232	2558.0	2166.0
242	2450.0	2366.0
410	4384.0	4092.0
411	4387.0	4095.0
416	4402.0	4110.0
422	4420.0	4128.0
808	8740.0	8216.0
811	8749.0	8225.0
815	8761.0	8237.0
826	8794.0	8270.0
1203	13,083.0	12,236.0
1210	13,104.0	12,257.0
1211	13,107.0	12,260.0
1228	13,158.0	12,311.0
1605	17,254.0	16,372.0
1620	17,399.0	16,417.0
1626	17,317.0	16,435.0
1631	17,332.0	16,450.0
2201	22,696.0	22,000.0
2205	22,708.0	22,012.0
2210	22,723.0	22,027.0
2236	22,801.0	22,105.0

Voice Broadcast Channels: 411 and 811

UTC	TFC	WX	UTC	TFC	WX
0000	*		1200	*	
0200	*		1400	*	<input type="checkbox"/>
0400	*		1600	*	
0600	*		1800	*	
0800	*		2000	*	
1000	*		2200	*	<input type="checkbox"/>

* Traffic List of Stations with Calls Waiting

Forecasts from the National Weather Service

SITC/DSC Data Broadcasts

Frequency (center): 8051.5 kHz

Traffic Lists Continuously

Weather at 20 Past Even UTC hours

Morse Data Broadcasts

Frequencies (carrier): 8749.0

and 13,083.0 kHz

Traffic Lists Continuously

Chester J. Howarth, WA, provided these frequency lists for AT&T High Seas transmissions.

6224: VIT, Townsville, Australia in USB w/wx at H+35 during Stateside late night hours. None of my files show any station for wx bcsts on this freq. VIT was the only non-US SSB sta. using this freq. EE lang had either Australian or British accent. (Margolis, IL)

6230: WFL, Southern Towing, Memphis, TN at 2104 wkg various river boats incl: Frank Temple, Fred B. Wells, Laurel Temple, Robert Eagle, Laurel Eliz, and Scott Sweetbrier in USB. (Baker, OH)

6227: WFZ, Tidewater Marine Towing Inc., Morgan City, LA in USB at 0008 wkg towboats. AAEH, USA Vessel Macon (LCU-2003) clg AAC2. Army Transportation Corps, Ft. Eustis, VA in USB at 0507. AADV, USAV Runnymede (LCU-2001) clg AAC2 on "Channel 03." (Margolis, IL)

6382: EAD2, Madrid, Spain w/mkr DE EAD2 QX 6 MHz CG in CW at 0120. On another day same stn w/mkr of DE EAD2/EAD3/EAD4 QX 8/12 MHz CG in CW at 2332. (Mike, Germany)

6477.5: KPH, San Francisco, CA in CW at 0508. (Low, TX)

6683: SAM 682 wkg Andrews w/keyboard & modem problems, also wkg Tech Control, also SAM 682 & 683 w/interplane comms at 2315. (Pihale, MN)

6765: YL/GG w/Spanish accent. Never hrd before. Hrd at 0130 w/5F grps. Ended w/000. (Mason, England)

6815.5: M3S wkg J5F, who has "13 on board," advises boarding complete. Later QSY'd 7845 kHz. Believed to be an USN Haiti Ops freq. Hrd at 0341 in USB. (Baker, OH)

6840: YL/SS at 0230 rptng 8913/3567/9958 & then off at 0240. (Mason, England)

6959: YL/EE w/5F grps after "Lincolnshire Poacher" callup tune at 2200. Also on 6485//7337 kHz. (Mason, England)

7404: YL/EE e/Mike Delta callup from 2000-2005. Then "Message" for 241/55 groups, 331-25 groups—Attention & into 5F groups. (Mason, England)

7535: Norfolk SESEF: At 1548, NYSV, USS Kalamazoo (AOR-6) wkg SESEF for test. (Baker, OH)

7846: YL/SS in AM at 0705 w/5F grps. Ends at 0712 w/00000. Final. (Margolis, IL)

7946.8: FIC in CW at 2030 in SS to JRY on 7947 kHz. JYR sends 5L grps to FIC beginning at 2113. (Margolis, IL)

8090: LCMP2 w/NUKO NUKO NUKO in CW at 0105. USN NAWS freq. (Baker, OH)

8264: SYVL, Vessel Star of Texas at 2152 wkg WLO, Mobile, AL for R/T tfc, was refused entry at Mexican port. Passengers are upset. USB mode. (Baker, OH)

8294: GWG, Caribe Tugboat, San Juan, PR wkg vessel Sea Gull at 1245. WPE, Tug Communications, Inc., Jacksonville, FL wkg tug Century at 1245. All in USB. (Margolis, IL)

8297: OM/EE talking to "Subbase." Latter stn was a YL/EE opr. The OM asked Subbase if there sked in LSB at 0015. (Shelley, CA)

8360: Russian ship Fatezh in CW sat 0409 w/2 TG's to Mariupol, Ukraine. At 0508, also on CW, UTWV, Russian ship Ivan Pereversev clg USU. (Margolis, IL)

8646.2: FUJ, Noumea Naval, New Caledonia in CW at 1348 w/VVV mkr. (Low, TX)

8843: San Francisco ATC wkg Delta 88, Hong Kong-LA & then wrks Philippine 104 Honolulu-San Francisco at 0100. Company message: "Captain Lasano is booked at the Ramada." (Heywood, Alberta, Canada)

8846: New York ATC wkg Speedbird 292 B747 Selcal KMCH, Nuana-London & American 658 Selcal BPLH, Port au Prince-New York. (Heywood, Alberta, Canada)

8891: Cambridge Bay, Igaluit wkg Virgin 007 Selcal BKFL, London-LA. (Heywood, Alberta, Canada)

8905: Honolulu ATC in LSB at 1409. (Shelley, CA)

9017: At 1630 RETALIATE wkg OUTCRY for comms ck on X904. IRONBALL wkg u/i at 175 for voice ck. At 2020 REMEDIAL wkg HONORABLE & PUNCH HIT for comms cks. RED HANDLE wkg u/i

sta at 2134, req call him by "LL" (Land Line/or phone). All in USB. (Baker, OH)

9222: YL/SS in AM t 0002 w/624 x3 1-0 count, rptd. (Low, TX)

10050: Volmet bcst at 2325 in USB. (Shelley, CA)

10244.6: U/i w/VVV QSA NO ZZU 17558 K in CW at 1627. (Margolis, IL)

10426: YL/EE 'Lincolnshire Poacher' 5F station on new freq at 2100 w/69794 callup. Also on 6485/6959 kHz. (Mason, England)

10493: KCL22, Mississippi River Radio informing WGY912, Mt. Weather, Berryville, VA that its antenna as fixed and station back to normal. USB at 1405. (Low, TX)

10530: YL/EE sending 2/3F grps in LSB at 1312. (Shelley, CA)

11176: McClellan GHFS wkg PLATE 04 w/pp to Vance AFB, OK. A/c had student pilots on board; had to divert because runway was closed at 2112. (Pihale, MN)

11243: EAM msg from Offutt, also on 11176, 17975, 6738, 8967, 8993 kHz. (Pihale, MN)

11255: M2O advising D11 "Be advised—you are weak and unreadable. Reinitiate via termination. SNR is 2, retune transmitter." Sounded like USAF a/c. USB at 2306. (Mike, Germany)

11297: Aktyubinsk Volmet, URS, YL/RR in USB at 1338, Leningrad Volmet, URS, OM/RR in USB at 1607. (Mike, Germany)

11300: Khartoum Flight Information Center, Sudan wkg Air France 452 in USB at 0001. (Mike, Germany)

11306: Lima Radio, American Airlines LDOC, Peru wkg American 902 w/position report at 0532. Lima wkg u/i a/c at 2334. Selcal was "BMEF." USB mode. (Baker, OH)

11446.5: AAF501 wkg AAF502 in USB at 2215. Also sent data tfc via modem. (Margolis, IL)

12210: KUN50, u/i, in CW at 1347 w/QRA-QXS mkr. (Low, TX) This freq is listed as US Sept. State. (Ed.)

6YX

JAMAICAN COAST GUARD RADIO - PORT ROYAL, KINGSTON

VERIFICATION OF RECEPTION

CALL SIGN	FREQ KHZ	LOCATION - POS'N
6YX	5696.0	1755.6W 076 50.8W
DATE	TIME-UTC	ANTENNA
July 6, 1993	0315 GMT	INVERTED 'V' DIPOLE
HMTR POWER	MODE	COMMUNICATIONS OFFICE JDF COAST GUARD
400 WATTS	USB	

SIGNATURE:

OFFICIAL STAMP

Steve McDonald, Canada, indicated he had only logged 6YX once, but was fortunate to get enough info to obtain a QSL. At the time of intercept 6YX was getting a radio check with CommSta Miami.

12296: Cruise ship Nieuw Amsterdam, PJCH, wkg WOM for R/T t/c at 1710 in USB. (Baker, OH)

12317: DANO, German yacht HF Antje in USB at 2102 c/g Norddeich for ship-shore call. (Margolis, IL)

12353: WPE, Tug Communications Inc., Jacksonville, FL wkg towboats at 2244. WRW Electronics Marine Products, San Francisco, CA at 1552 telling

someone to QSY to 16 MHz. WEJ, Babun Habraham, Miami, FL ("Radio Miami"), wkg vessels in SS at 1716. WBV, Moran Towing & Transportation, Port Richmond, NY wkg company towboats at 1554. All comms USB. (Margolis, IL)

12695.5: KFS, Palo Alto-San Francisco, CA in CW at 2220 w/CQ mkr. (Low, TX)

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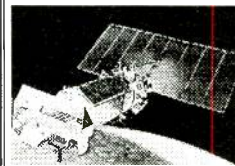


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HEADQUARTERS

J.D.F. Coast Guard

H.M.J.S. CAGWAY

Port Royal

KINGSTON 1, JAMAICA

Kingston 48873-5

Mr. Steve McDonald

Canada.

Dear Sir,

RE: YOUR LETTER DATED JULY 13, 1993

This is to confirm that your reception of this Unit's radio transmission made on 6 July 1993 is correct. We greatly appreciate your response in advising us on how far our signals are being received.

The JDF Coast Guard Communications Centre was using a 400 watt HF transceiver with an inverted "V" dipole antenna. Attached is your card with all the information you required.

Should you hear this station again we would greatly appreciate you notifying us.

Wishing you good "QSOs" in the future.

Yours sincerely,

G.S. REYNOLDS
Lieutenant Commander
Acting Commanding Officer.

This QSL letter accompanied the return of the PFC also sent by Steve McDonald.



To: Radio AA4JN
 This confirms your reception of
 radio transmissions from the
 US Coast Guard Cutter



MORRO BAY (WTGB 106)

Callsign: NRWY

Date: 30 Jun 93 Time: 2345 Z Mode: USB Freq: 8240.0 KHz

Vessel Type: WTGB Homeport: YORKTOWN, VA

Approx. Location: CAPE HATTERAS, N.C.

Remarks:

SHIP WAS RETURNING FROM PORT
 CANAVERAL, FLORIDA.

82 SH/1C/Comms Off
 (signature/initials)

Jim Navary, VA, designed this PFC for his reception verification by the U.S. Coast Guard Cutter Morro Bay.

13264: Shannon Volmet in USB at 1402. (Mike, Germany)

13285: Hong Kong Volmet at 0250 in USB. (Shelley, CA)

13374.6: YL/EE in USB at 1529 w/5F grps. S/off w/"Vive la Compagnie" tune. Tune returns at 1659, foll by rpts of 06635 & another 5F msg at 1710. (Margolis, IL)

14452.5: VXE9, CFARS sta El Gorah, Egypt wkg CIW801. CFARS Fredericton, New Brunswick for pp at 1756. Later CIW802 & 824 up on freq. USB mode. (Baker, OH)

14681: P7S tells TIC "We'll call you via 23 secure to talk abt what crypto we're on here." Prior to this

msg. a data xsmn was hrd. This may have been P7S was referring to, in which case TIC was not receiving it properly. USB at 1435. (Margolis, IL)

14695: L8H w/msgs in CW at 1440 to TZH. Romanian diplos. (Margolis, IL)

14811.6: U/i stn in FSK Morse at 1800 w/QRU TEST RTTY (pause) PSE RPT (pause) WSL NR OK QRU QSO. Extremely strong signal. Carrier off at 1805. Other end not hrd. Blvd. not on this freq. (Ed.)

15015: Strange CW xsmn first noted at 1432. Message was "BT ENINDEENIN/3 BT FOXTROT 1 BT FOXTROT (x3) 1 inch. The msg started precisely at beginning of every ten-min interval (i.e. 1440, 1450, 1500, etc) and lasted exactly four mins. Last one started at 1550

and I did not hear it at 1600 or after. (Low, TX)

15822: Sierra 1 & Sierra 5 clg each other in USB at 1413. No joy. (Margolis, IL)

16198: YL/EE in AM at 1250 w/3+2 grps. (Margolis, IL)

16664.5: Very strong CW in stn at 1440 sending press in EE to another stn this freq. Receiving stn asks for various repeats upon completion of msg. News items all seem be concerned with events in Philippine Islands. When receiving stn QSL's for tfc he goes down and another stn calls (missed call) and tfc is sent to him. (Ed.)

16873.7: U/i stn in FSK Morse at 1426 sending what sounds like "ETFNIX QAG AS." Sequence sent over and over for 4 mins. Signal off at 1430. See logging for 21865.3 kHz. (Ed.)

17430: YL/GG rptng Hotel Kilo from 1600-1605 plus electronic tones. At 1605 5F grps sent for 328 and 003 addrees. (Mason, England)

17516: CW stn at 1605 w/5L grps (cut nbrs). using ANDUWRIGMT system. S/off 1609 w/AR AR SK SK SK. (Margolis, IL)

18035: CW stn at 1436 w/info re applications & admissions to US Naval Academy. (Margolis, IL)

18990.7: USB net at 1319 w/Bolivar as NCS. He calls Oscar Uno, Balboa, Inca Peru, Punta Brava, Radio Neptuno. Did not note any tfc being passed. Seemed be merely stns checking in. At approx 1325 hrd Bolivar sign off w/"Hasta Manana." This might indicate the net has a daily sked at maybe 1300 UTC. Hrd 18550 kHz referred to as another channel. (Ed.)

19295: YL/Yiddish in USB at 1615 w/5F grps. (Margolis, IL)

21865.3: During RTTY tfc being sent to station SPK, unlocated Russian Embassy, xsmn stopped and foll sent in FSK Morse "ETFNIX TKAGAS." (Last sequence may have been QAG AS)??? After a few mins. RTTY tfc to SPK resumed. Hrd at 1602 UTC. Also see logging for 16873.7 kHz. (Ed.)

22587.5: LPD34/71. General Pacheco Radio. Argentina in CW at 1930 w/VVV-QSX mkr. (Low, TX)

23948: In USB at 1518 2 tones, short, long, of total 2 sec. duration, rptd for long period of time. (Margolis, IL)

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Handi-Chat

(from page 69)

teur radio clubs and licensing classes. The Hadley School for the Blind in Illinois has long offered correspondence courses in ham radio, but now Kentucky, Ohio, and Michigan have all launched pilot programs, and new hams are coming on the air. Any organization wishing to follow suit can contact Robert Knashak (N4TPN) 264 North Pope St., Louisville, KY 40206, Phone (502) 893- 6671.

I hope the preceding has whetted your appetite. In the time and space allotted, one can hardly begin to scratch the surface of the opportunities and resources available. But no amount of special material or adaptive technology can begin to replace contact with a real live, experienced ham—someone who can offer advice, and encouragement, someone who can, perhaps, help assemble a qualified exam team when the time is right. You probably already know at least one person who would be proud to help. If you don't, the ARRL and/ or Handi-Hams would be glad to direct you to someone in your area. So what are you waiting for?

Well, time flies when you're having fun, and the guy in the booth is signaling me that mine is almost up. Keep those questions, suggestions, and critiques coming. This is your column, and it is your input that helps create it. I hope to have the pleasure of your company in August; after all, isn't this better than watching reruns? Take care.

Beaming In

(from page 5)

credit to the scanner owner, who was not named, for having made tapes of the sales pitches and other conversations.

The US Attorney's office said a court order was not needed to make the tapes inasmuch as cordless phones aren't covered by federal privacy laws.

Jay S. Albanese, of Niagara University, is a criminal-justice professor. Albanese is an expert in the legal issues relating to wire-tapping. He agreed that the US Attorney did not need a court order in this instance, although he felt the issue was "at the cutting edge of criminal law."

Albanese felt it was commendable for a private citizen to contact the FBI about criminal activity. On the other hand, he was quoted in the press as having said he found it "a bit disturbing that a ham radio operator is out there conducting his own investigation. The guy who did this must not have had much to do."

Maybe so, but I wonder how many people hung onto their life savings, thanks to this fellow with a scanner and nothing much to do. Personally, I have always found that having nothing much to do is a good

opportunity to turn on a scanner and see what's going on. In this instance, it worked out just fine.

This public spirited scanner owner brought suspected neighborhood criminal activity to the attention of the authorities. I don't find this one bit disturbing. Furthermore, I fail to see why anybody would seek to taint the act with an implication intended to demean the person who blew the whistle on the crooks. Isn't alerting the authorities to suspected criminal activity essentially the same thing that the much-praised Neighborhood Watch program does?

But compare this with what happened in Palm Beach County, Fla. A clipping from the *Palm Beach Post* submitted by Larry Seabury tells how the Plantation (Fla.) Police purchased a scanner to randomly search for illegal activity. They intercepted a suspicious cordless phone call in which a drug deal was discussed. Police obtained a search warrant based upon the phone call. The owners of the phone pleaded no contest and were given three year's probation for cocaine possession.

Last January, an appeals court overturned the Florida convictions, saying that police cannot intercept cordless phone conversations. Police claimed that they know of about a dozen instances in the last decade when citizens have reported suspected criminal activity to police after monitoring it on cordless phone frequencies.

The Florida Attorney General's office is expected to appeal this case in the Florida Supreme Court.

Those are several sides of cordless phone monitoring. To round things off, here's an ugly little cordless phone story you may not have heard about. Did you know that some cordless phones caused hearing loss? More than 600 people in 35 states had complained that their hearing had been permanently impaired because of dangerously loud ringers in the earpieces of their cordless handsets.

The units had been assembled in Hong Kong and Taiwan, then imported here until 1986. The phones were sold nationally under several different makes and model numbers. As the result of damage claims filed by persons claiming hearing loss, the importer's product liability insurer had paid out more than \$9.5-million in claims through October, 1990.

In 1991, the product liability insurer brought suit against the importer to reimburse it for its losses. At that time, the Food and Drug Administration (FDA), and the Consumer Product Safety Commission (CPSC) pointed out that in 1983 and 1984 they had issued warnings on older model cordless phone ringers, but had not demanded a recall because no official federal standards had been established. In 1983, the Electronics Industry Association warned cordless phone owners that handset ring-

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ers were so loud that they might cause hearing loss.

By the time 44 complaints had been received (late '83), the industry agreed to change the ringer design to reduce the ringer 120 dB sound level, equal to amplified rock music.

Hearing loss is possible when noise reaches 120 dB. Neither the the FDA or the CPSC seemed to be aware of this when decided to merely issue warnings rather than demand recalls. Obviously they were more interested in the existence or non-existence of federal standards than in using basic common sense in protecting the public. Bunch of totally inept boobs.

The FCC had originally tested the cordless phones to ascertain that they met that agency's standards. They do this with all equipment utilizing RF. Primarily, the tests check possible spurious radiation, harmonics and interference, also RF power output and modulation levels, frequency tolerance and stability. The cordless phone units met the standards, and were approved.

In 1991, the FCC, in retrospect, clarified things by announcing that cordless phones having excessively loud cordless handsets weren't their problem. They didn't want to get involved in the controversy. The FCC pointed out that establishing maximum sound levels of cordless phone handset ringers was a matter beyond their authority. The agency admitted it had received complaints from the public about excessive ringer loudness.

Warning stickers about the loud ringers had been placed on new cordless phones by the importers after the complaints began arriving. The importer claimed that subsequent hearing losses alleged to have occurred were because people failed to operate the phones properly. The users, he said, had forgotten to heed the warning label, and also to utilize the switch on the handset put there to shut off the ringer after it had been activated by an incoming call. The switch needed to be shifted from "standby" to "talk."

The company complained that users put the handset against their ear before moving the switch to the proper position.

Thankfully, cordless phones being sold don't have this problem. I brought up this story because it was a murky incident that received very little public exposure when it took place. The attitude of the importer was curious. What's worse, there was too little concern shown by governmental agencies. Wouldn't you have thought they would have been busting a gut over this?

You could speculate that such dangerous cordless phones should have never been allowed to have been imported, or approved for sale here. A real screw-up, right down the line. No wonder those agencies that let such equipment slip through wanted to distance themselves from the problem, or had so little to say after the damage was done. The final score: at least 600 people with hearing loss, and nearly \$10-million in insurance claims caused by misplaced priorities and a lack of common sense.

Is there a bright side to all of this? Yes! The ability to snoop on cordless phones will probably always be with us. That's because the public still doesn't get it about what scanners are. Richard Statfield, KA2KQD, Brooklyn, N.Y., sent me a copy of a recent Ann Landers column. Ann advised her readers that, "Most scanners can pick up only one side of a conversation on a cordless or cellular phone, regardless of what kind of phone the other phone is using."

And the beat goes on. ■

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Ham Column

(from page 40)

that an antenna tuner can sometimes reduce the level of *harmonic radiation* (signals your radio generates in addition to the ones you want). If the interference is being caused by harmonics, a tuner may help. However, most interference is caused by RF energy that's picked up indirectly by cables or wires, or directly by the device itself. By using an antenna tuner, you'll probably radiate more energy at the antenna than you did before. That may make your interference problem worse!

Looking for Mr. Goodtuner

So, you've decided that you need an antenna tuner after all. Antenna tuners come in all shapes and sizes. What features should you consider?

•A built-in SWR meter. An SWR meter of some type is a must if you want to use an antenna tune. When adjusting your tuner, you need to keep your eye in the *reflected power* indicator. Your goal is to reduce the reflected power to zero—or at least as close to zero as you can get. When the reflected power is zero, the SWR is 1:1 at your transceiver.

Many tuners feature a built-in balun. If you ever intend to use an open-wire feed line, buy a tuner with a built-in 4:1 balun. These baluns often dissipate quite a bit of heat, so always choose a large

balun over a small one.

•Multiple antenna capability and dummy loads. Some tuners offer the ability to connect more than one antenna. This is handy in all sorts of applications. Built-in dummy loads are convenient, but not necessary. A dummy load is a resistor (or group of resistors) that absorbs the output of your transceiver while allowing very little energy to radiate. It's used for making transmitter adjustments and other tests. If your tuner lacks a dummy load, you can purchase one separately.

•Automatic operation. Most transceiver manufacturers offer automatic antenna tuners. These tuners are usually built inside the radios themselves, or they're offered separately. Automatic tuners are convenient when you need to change bands or frequencies quickly. You simply push a button and your tuner adjusts it coils and capacitors to achieve the lowest SWR. Some automatic tuners sense when you've changed frequency and will readjust immediately! (You don't have to lift a finger.) Automatic tuners are often expensive, so choose wisely and determine whether you really need this option!

You can send your cards, letters and photos to me at Department PCN, 225 Main Street, Newington, CT 06111. Happy tuning! ■

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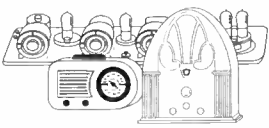
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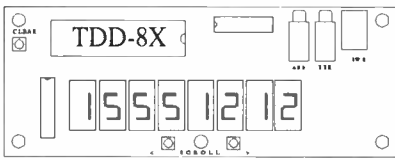
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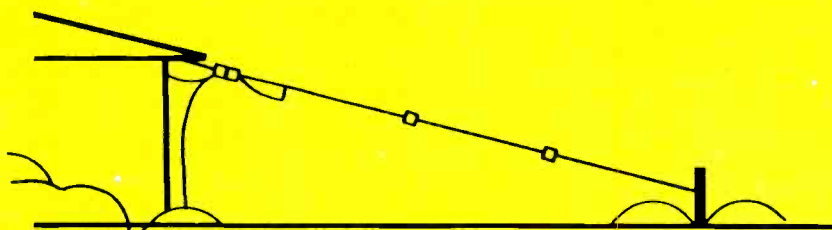
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Size: 2 1/4H x 5 5/8W x 6 1/2D.
Wt. 1lb.

Fax fact #305 **\$449.00**

TR 1500

Full Coverage with SSB and 1000 Channels.

500KHz to 1300MHz. Ten scan banks, ten search banks. Search lock and store. BFO. 2 Antennas. AM/NFM/WFM. Selectable increments. Tons of features, small size: 5 7/8 x 1 1/2 x 2.
Wt. 14 oz.

Fax fact document # 250 **\$449.00**

Continuous Coverage

New Bearcat mobile/desktop offer continuous coverage of VHF/UHF/800 bands!. The Bearcat 890XLTB covers 29-956MHz with 200 channels, Turbo scan, WX search, VFO tuning, 10 priority channels and more! The Bearcat 8500XLTC covers 25-1300MHz in AM/NFM/WFM modes with 500 channels, turbo scan, 10 priorities, VFO tuning, and more. Fax fact documents 477 & 475.

Bearcat 2500XLTA \$349.00
Bearcat 8500XLTC \$379.00
Bearcat 890XLTB \$259.00

Mobile Scanners

Bearcat 760XLTM \$229.95

100 Channel 800 MHz

Five banks of 20 channels each. Covers 29-54, 118-174, 406-512 and 806-954MHz (with cell lock). Features scan, search, delay, priority, CTCSS option, lockout, service search, & keylock. Includes AC/DC cords, mounting bracket, BNC antenna. Size: 4 3/8 x 6 15/16 x 1 5/8. Weight: 4.5lbs. Fax fact document #550

Other Mobile Scanners

BC560XLTZ \$99.95

Fax fact on above: #560

(color slide)

Trident TR-2 \$49.95

Scan/CB/Highway Patrol/ plus extra cost WX. X,K,Ka,Wide & Laser

Scans police pre-programmed by state channel plus full radar and laser alerts in one small unit. Weather, CB receive & mobile relay. Size: 5 5/8 x 4 7/8 x 1 3/4. Wt: 1.5lbs. Fax fact #580

Other pre-programmed scanning receivers

BC350AS.....\$129.00
BCT2\$149.00
BC700AS.....\$169.00

Fax fact on all above: #580

Hand Held Scanners

Bearcat 200XLTN\$209.95

200 Channels 800 MHz

Ten scan banks plus search. Covers 29-54, 118-174, 406-512 and 806 956MHz (with cell lock). Features scan, search, delay, 10 priorities, mem backup, lockout, WX search, & keylock. Includes NiCad & Chgr. Size: 1 3/8 x 2 11/16 x 7 1/2. Wt. 32 oz. Fax Facts # 450

Other hand held scanners

Bearcat 70XLTP 20Ch H/L/U..... \$139.95

Bearcat 55XLTR 10 Ch H/L/U..... \$99.95

Fax facts on all above: #475

Table Top Scanners

Bearcat 855XLTE 50Ch w/800..... \$159.95

Bearcat 142XLM 10Ch H/L/U.....\$84.95

Bearcat 147XLJ 16 Ch H/L/U.....\$89.95

Bearcat 172XM 20Ch H/L/U/Air..... \$124.95

Bearcat 210 16Ch H/L/U/Air.....\$129.95

Fax facts on all above: #675

Shortwave Receivers

ATS-818CS..... \$224.95

16 Band digital receiver with programmable cassette recorder, BFO for SSB, AM/FM Stereo, 45 preset memories LCD display with dual time. Signal & Btt. strength indicator. Sleep timer & tone control.

Fast Fax #505

ATS-818.....\$194.95

Same as 818CS but w/o cassette.

Fax Fact #506

ATS-803A.....\$174.95

The perennial best buy receiver. 16 band digital receiver with AM/FM/FM Stereo modes. 9 memory presets. Auto/Manual and Scan modes. BFO RF Gain and Dual Filter controls. Complete with adaptors and headphones.

Fax Fact #507

ATS-808.....\$184.95

Compact size, great performance in a 16 band digital receiver. AM/FM/Stereo with 45 memory presets. LCD display with dual time clock. Complete with adaptors and head phones.

Fax fact #508

(photo)

ATS-606 \$154.95

16 band ultra compact digital receiver with auto tuning and scan system. 45 memory presets cover AM/FM/Stereo. Dual time display, alarm timer, adjustable sleep timer.

Fax Fact #509.

SG-621.....\$79.95

Compact 10 band receiver with AM/FM/Stereo. Analog tuning with a digital display.

Fax Fact #513.

ATS-800\$94.95

13 band digital receiver with AM/FM/Stereo and 20 memory presets. Auto/Manual, scan clock and sleep timer.

Fax fact #510.

SG-631.....\$99.95

10 band analog tuning with digital display which shows time and day for 260 cities throughout the world.

Fax fact #511.

SG-789.....\$54.95

10 band analog tuning super compact and very economical.

Fax fact #512.

SG-700L\$49.95

12 band AM/FM compact portable analog receiver

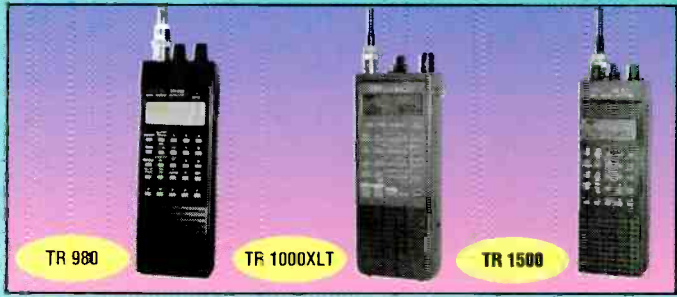
Fax Fact #514



TOTAL COVERAGE RECEIVERS



TR 2500



TR 980

TR 1000XLT

TR 1500



BC 200XLTM

SCANNERS



BC 760XLTM



TR 2

SHORTWAVE RECEIVERS



ATS 818CS

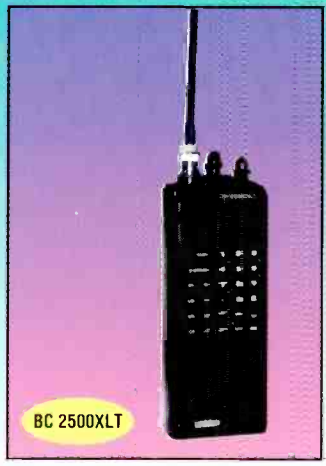


ATS 606

NEW!



BC 8500XLT



BC 2500XLT

★ Here's the fine print you've been looking for:

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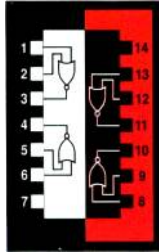


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