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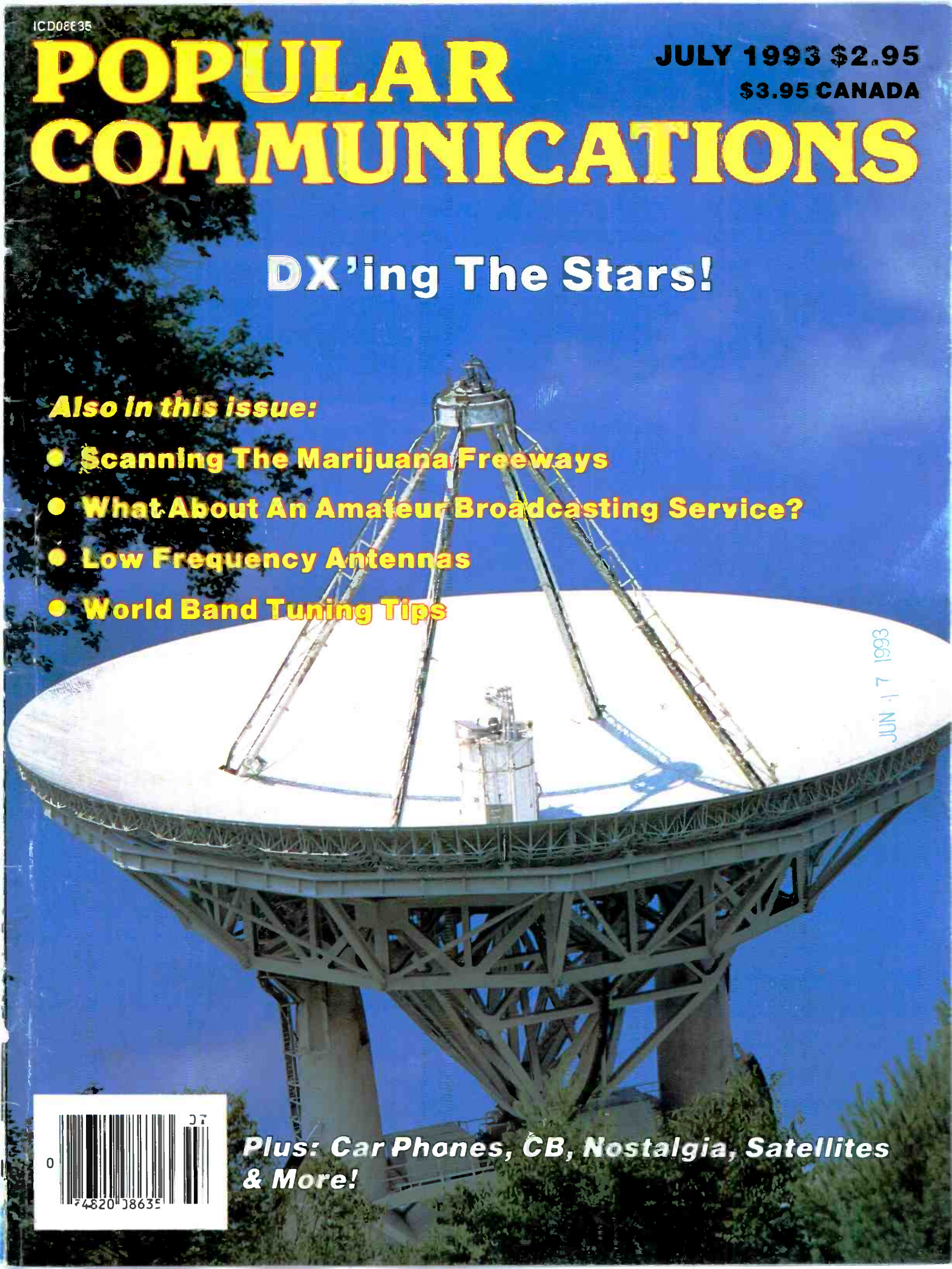

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JULY 1993 **VOLUME 11, NUMBER 11**

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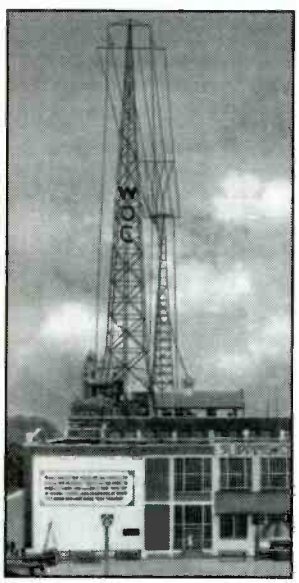

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FEATURES

COLUMNS

DEPARTMENTS

***This month's cover**: USA: The 140 foot radio telescope at the National Radio Astronomy Observatory at Green Bank, WV. Photo by Larry Mulvehill.*

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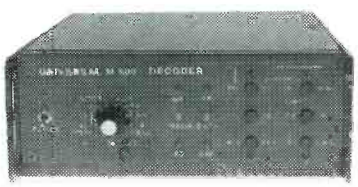
- ✦ Packet Messages
- ✦ Radio Bulletins

● **Universal M-900**



If you are only *listening* to your shortwave radio you are missing half the fun. With the addition of a Universal decoder and monitor you can *see* the world. The shortwave spectrum is filled with interesting text messages and photos that you can intercept and display. If this sounds interesting to you, request our two free pamphlets: *Listening to Radioteletype* and *Receiving FAX on Your Shortwave Radio*. Shown above is the Universal M-900 ($429.95) which decodes: Morse code, Baudot RTTY, Sitor A/B, FEC-A and FAX. Contact us today for information on the full line of Universal decoders.

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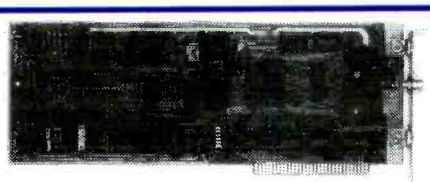

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BEAMING IN

BY TOM KNEITEL, K2AES

AN EDITORIAL

Thoughts For A Summer Night

It's one of those summer nights when there's static on the shortwave bands and reruns on TV. A night when I wait until the wee small hours of the morning. I drag out that big old AM receiver, the one with all of the tubes, knobs, and the panel meters that read out things like microhenries and microjoules. I tune in some distant station, then take out the yellow pad to jot down assorted observations on the state of mass communications. I've devoted recent editorial space to Congressional frequency giveaways, the status of shortwave broadcasting, FCC activities, anti-scanner activities of the cellular phone industry, and like that. Yet, I keep telling myself that it's time again to scribble down some comments on domestic broadcasting. Now's that time.

For one thing, I notice that our language is changing. Yes, I know language changes with time, but these changes are just awful. They're on the ham and CB bands as well as broadcast frequencies, so I guess we are stuck with them.

I wince when I hear people mean, "I said to him," and yet it comes out, "I go to him." Of course, the reply from the other person is invariably described as, "So, he goes to me..." Why have people decided not to talk, but, instead, to "go"?

Can't understand where people have picked up the atrocious term "Alls I need..." Is there really a plural form of the word "all"? Why does anybody need one? I believe the mystery lies in the reason why some require a plural for the word "you." This word is "yiz," as in, "When will yiz be on the repeater again?"

Has anybody noticed the grotesque way use of the word "fun" has evolved lately? You can now use it in creative new ways. Very common on TV and in radio. Things are now "so fun," "very fun," "funner," and "the funnest." Fun? I'll tell you about fun! I've had plenty of fun my life, but nothing has yet happened that would permit me to tell about it in these terms.

What about people who want to describe a conversation they had. They announce, "I was like..." and then repeat the conversation. Why were they like something instead of simply telling you what they said? When you hear this, you should suspect you're dealing with a heavy hitter. I usually reply, "I was like confused." Let them deal with whatever that means.

People who freely toss around the terms "not a happy camper," "as it were," or "reference is made," soon become tiresome. Those who make an inquiry by prefacing it with "Question:" eventually reveal themselves to be full-blown dweebs. These are excellent advance warning signals to rely upon, regardless of whether you encounter them on radio or TV, on ham or CB bands, or in person.

"Fun? I'll tell you about fun! I've had plenty of fun in my life..."

Other observations about TV and radio.

No matter what a TV reporter is sent into city streets to do a remote about, have you noticed that they never fail to be surrounded by a phalanx of laughing local area residents shouting, jumping, waving, and happily gesturing to the camera? Since the reporter is usually describing some horrible accident or crime, the reaction of the others on-camera makes me wonder why the reporter is so serious when the event is apparently being happily observed there in a carnival atmosphere.

Did you ever notice that network Special Bulletins never break into commercials, but freely interrupt programming? One wonders why the networks can't wait a few minutes and just add these bulletins to the natural storyline pause during a commercial break. I can't think of one I have witnessed in the past year or two that couldn't have waited a few minutes until the next commercial. At the very least, when the network interrupts a program with a bulletin they determine will interest you, they should stop running the program material during the bulletin and then resume it afterwards so the audience doesn't miss out on portions of a program.

Sometimes local TV stations are thoughtful enough not to break into programming with important bulletins. Instead, they put the information in lettering on a moving ribbon that travels across the screen from right to left while the programming continues. However, keep in mind that this moving banner of informa-

"The R8 is a highly sophisticated receiver. We'd call it professional grade, or about as close to it as receivers get these days."

Staff review
Popular Communications

"The R8 is like a breath of fresh air, with its ground-up engineering and up-to-date digital control from the front panel. I am very pleased to see a quality HF receiver of American manufacture that should successfully compete on the world market."

Bill Clarke
73 Amateur Radio Today

"Overall, the Drake R8 is simply the best radio we have ever tested for quality listening to programs... There's nothing else quite like it."

Lawrence Magne
Monitoring Times

"The best of the best for high-quality listening to news, music and entertainment from afar. Superb for reception of faint, tough signals, too."

Editor's Choice
Passport to World Band Radio
Tabletop Receivers for 1992

The ears have it!

When we introduced the American-made R8 Worldband Communications Receiver, we knew it would be judged by some very discerning ears, experts accustomed to the finest in short-wave listening equipment from around the world. After listening to the world on the Drake R8 loud and clear, they have delivered a decisive verdict.

They appreciated the R8's sensitivity, clarity, simplicity, and all-around versatility so much that many of them declared the R8 simply the best of its class. High praise, indeed, from very well-traveled ears.

But why take the word of mere experts? Put the Drake R8 to the test yourself with a 15-day money-back trial period on factory direct purchases, and let your ears be the judge. If you're not impressed by Drake's quality, performance and ease of operation, all in a receiver costing less than $1,000.00, return the R8 Receiver within 15 days, and we'll refund your money in full, less our original shipping charge. To order your R8 factory direct, for more information, or for the dealer nearest you, call **1-800-937-2538** today. We're confident that once you've listened to the R8, your ears will hear of nothing else.

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DRAKE
In touch with the world.

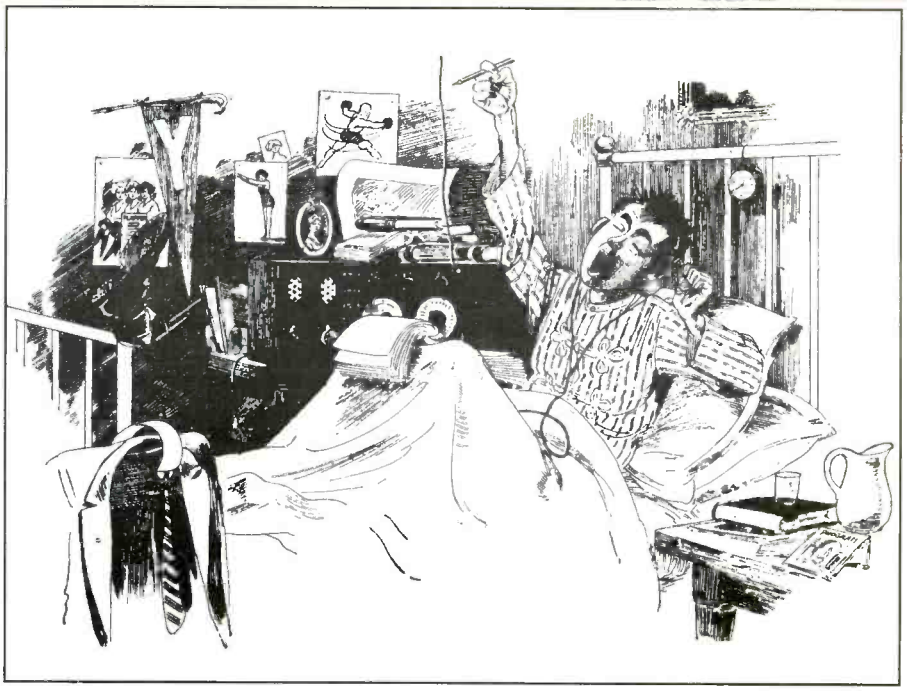
CIRCLE 142 ON READER SERVICE CARD

tion has never notified you about anything important enough to be superimposed over a commercial.

Ultimately, with the exception of a tornado, severe thunderstorm warning, flash flood, or other emergency weather advisories, there are few things sufficiently urgent that can't wait a few minutes. They could hold off for a commercial break, or for a program to end, to break the news to the audience.

Speaking of TV commercials, has anybody noticed that so many of the new cars are being touted about their anti-lock brakes? These brakes are important because they can prevent the vehicle from going into a potentially dangerous spin. Yet, oddly enough, many car commercials on TV also seem strangely eager to show you the vehicle's lousy traction on a wet road surface. Car commercials show the vehicles spinning out, skidding sideways, and barely under control on wet surfaces. Amusing, but strange.

There are far too many cable channels. Some don't seem to have much reason to exist. And isn't it ridiculous that so many of them feel the need to almost continuously, or at least to the point of overkill, display their logos in the lower right corner of the screen? Very distracting. I can see a reason for using a logo while running proprietary news coverage, but it's preposterous to have to see this on the Sci-Fi Channel, CNBC, VH-1, The Family Channel, USA, E!, and others. The logo on the "E!" channel is so large and bright that it draws your attention away from the programming.



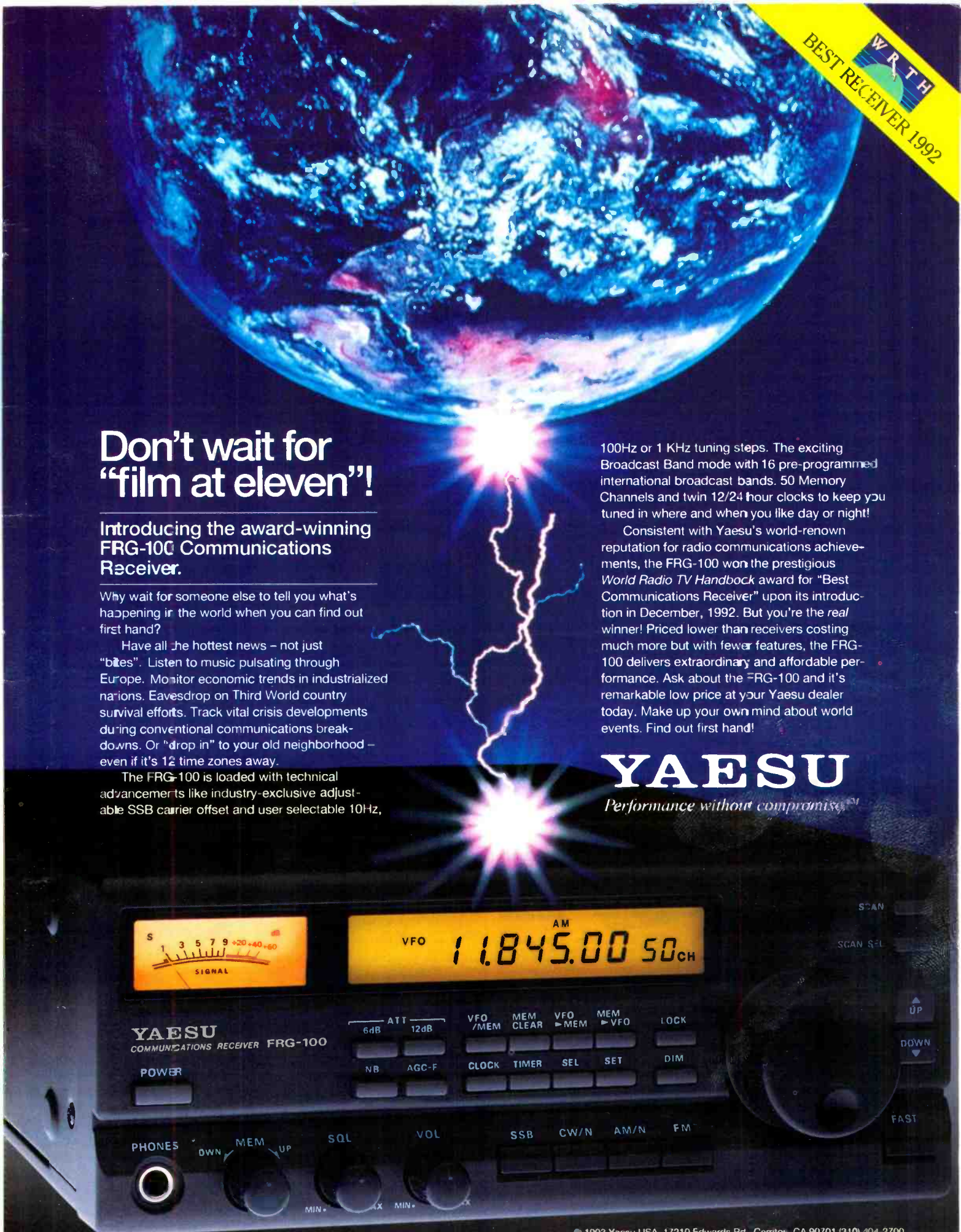
"It's when I turn on the big old AM radio in the wee small hours and jot down some assorted observations..."

What about all of the so-called celebrities and stars that are fawned over on TV talk and tabloid shows? Donald Trump, Madonna, Michael Jordan, and Martina Navratilova are celebrities. Stars are people the caliber of Michael Jackson, Clint Eastwood, Liz Taylor, Robert De Niro, and Jodie Foster. Get it? But because every boob in North America now has their own TV talk show, these programs have become desperate for celebrity and star guests. As a result, second and third string TV talk and tabloid shows have created a genus of ersatz celebrities comprised of anybody who has ever taken a shot at someone, as well as the people they shot. To be introduced as a "star," a talk show guest can be someone whose biggest engagement was with the Marrakesh corn exchange.

Why do people in all food TV commercials need to make odd ecstasy faces when they taste the sponsors' products? Do sponsors think that's what you and I look like while partaking of their fried chicken, spaghetti sauce, candy, pizza, coffee, margarine, yogurt, cereals, fast food, and frozen low calorie dinners? I have yet to display anything beyond a poker face when sampling this stuff. OK, I'll own up to the time I sampled a frozen dinner. My look of shock, together with accompanying gasp, caused the poor cat to cough up a hair ball and send him hiding under the couch for two days.

Annoying TV commercials notwithstanding, I am buzzed by the lengthy interruptions in programming to periodically plead and beg for audience pledges to sup-

(continued on page 72)



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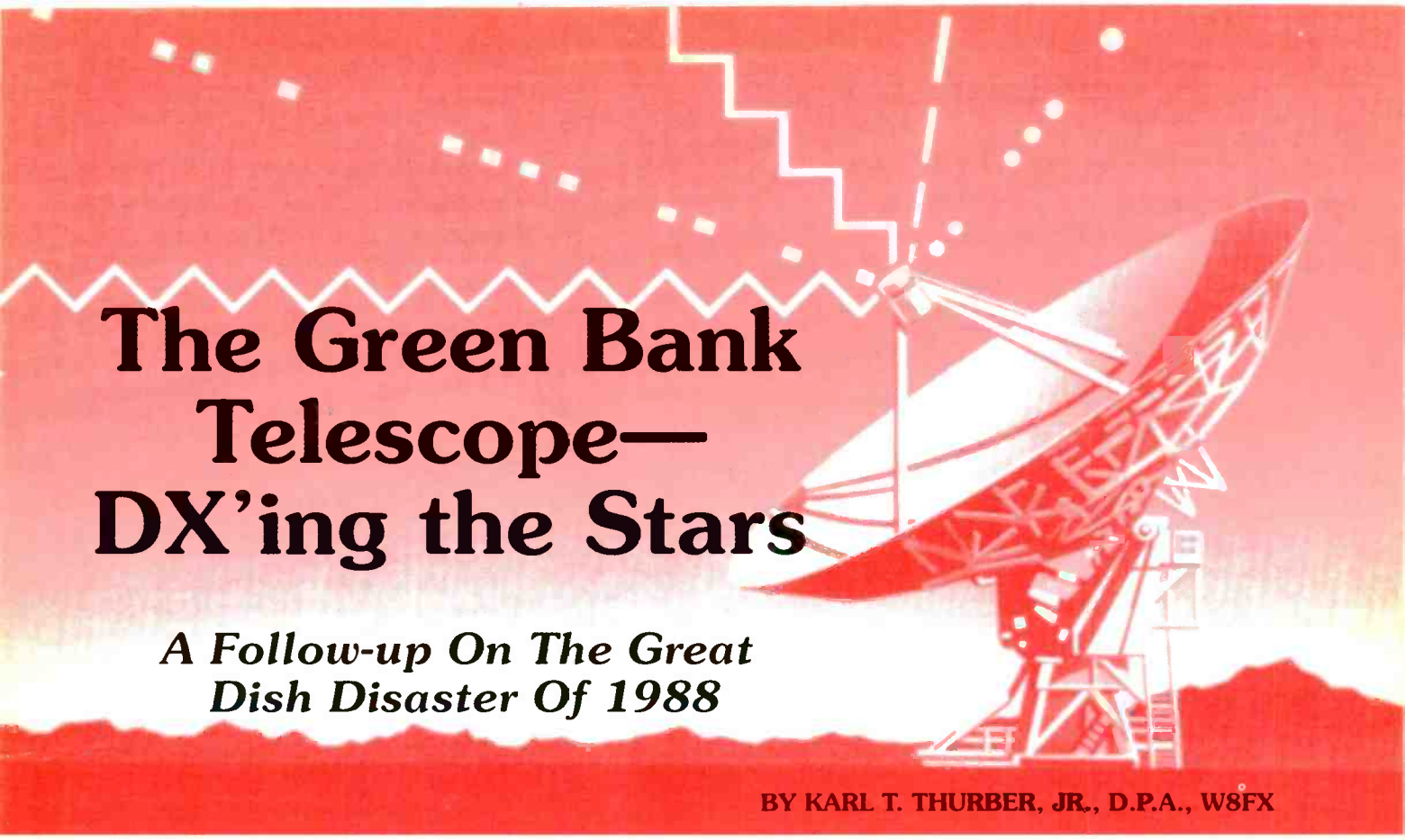

The Green Bank Telescope— DX'ing the Stars

A Follow-up On The Great Dish Disaster Of 1988

BY KARL T. THURBER, JR., D.P.A., W8FX

Where were you on the evening of Tuesday, November 15, 1988? If you're a radio astronomer, you know that on that date the 300-ft. diameter, 78,000 square foot radiotelescope dish at the National Radio Astronomy Observatory (NRAO) Green Bank, West Virginia site collapsed. While no one was injured, the failure also collapsed a lengthy list of research proposals to put a crimp in America's radio astronomy research program and its capability to probe deep space. It's a crimp that won't be overcome until a new instrument is ready in 1995.

This article is about the new Green Bank Telescope (GBT), which will be the largest steerable radiotelescope in the world when completed. Leading up to its construction was the 1988 disaster, when the 300-ft. dish collapsed. Included is a discussion of the telescope's background and mission, reasons why the old telescope failed, and the new telescope's future.

A Little Background

The failed telescope was in a sparsely populated area shielded by mountains from most radio interference, letting it capture the faint signals emitted naturally by extraterrestrial objects. First used in September, 1962, it was built for $900,000; a more accurate, $500,000 surface was put on in 1970. NRAO is operated by the nonprofit Associated Universities, Inc. (AUI), for the National Science Foundation (NSF).

The 300-foot telescope was the largest in the United States and one of the most powerful in the world: it could survey the entire northern sky. In fact, it was capable of listening to stellar objects billions of light-years away. The dish was a parabolic-shaped bowl 300 feet in diameter with an aluminum mesh surface supported by a steel backup structure on two 87-foot steel towers. The telescope had an area of 78,000 square feet (about 1.8 acres), and its moving total weight was about 500 tons. The surface reflected radio waves and focused them to a point 225 feet above ground, where they were intercepted and sent down cables to the control building.

The telescope was operated 24 hours a day, every day, except for maintenance and holidays. The instrument was open for any qualified scientist. In a typical year, about 50 astronomers used the telescope for projects that ranged from the study of relatively nearby clouds of interstellar gas to the study of very distant objects. Since 1962, more than 1000 astronomers used it to study galaxies, quasars, stars, pulsars, the sun, and the planets. The most complete surveys of cosmic radio sources were made by it.

One of its most famous discoveries was that the gas in a galaxy such as the Milky Way could occupy a much larger volume than the stars, and could even form a bridge through intergalactic space to connect with another galaxy. The telescope also discovered a rapidly pulsating radio source in the Crab nebula, the remnant of the star that exploded to create the spectacular nebula, to help unlock the puzzle of the pulsars as the logical products of stellar evolution.

D-Day: November 15, 1988

The Disaster. At 9:43 p.m. on November 15, 1988, the 300-foot dish collapsed. The disaster reverberated throughout the scientific community as the loss affected a long list of research projects aimed at picking up the faint, super-DX (distant) radio signals emitted by various objects and radio sources. At the time it collapsed, the telescope was mapping the northern sky in search of quasars and other sources of radio waves, and it was soon to begin studying the magnetic field in the Milky Way.

Although the collapse of the 300-foot instrument was a major scientific loss, it was only one of five telescopes operated by the NRAO. The others included a smaller, 140-foot telescope at Green Bank; the 12-m., millimeter-wave telescope on Kitt Peak near Tucson, Arizona; the Very Large Array instrument, an array of 27 antennas, each 25-m. in diameter, west of Socorro, New Mexico; and the Very Long Baseline Array, an under-construction array of 10 antennas, each 25-m. in diameter, located at several sites. Fortunately, the 140-foot Green Bank telescope was not of the same construction and was not affected by the disaster. The two were of different design and served different needs.

How and Why?: Stress loads led to the disaster. The collapse likely resulted from the fracture of a single high-stressed steel

plate, according to a panel appointed by NSF and AUI.

The 300-ft. telescope was built at minimum cost over 2 years according to then-current engineering standards. It was expected to have a useful life of about 10 years, but because an updated telescope wasn't built, the 300-footer remained in operation until its collapse.

Investigators concluded that the collapse was not the result of poor maintenance or improper operation. A metallurgical analysis suggested that the fractured plate, which joined the dish support structure to the bearing near the top of one of the two towers, broke in two where small cracks had been developing for years. The cracks, due to fatigue brought about by high stress loads—especially while the telescope was moving—were obscured by other structural elements and remained undetected during routine inspections. According to a computer stress analysis, the plate's sudden failure was sufficient to cause the entire telescope to collapse. The telescope failed while the dish was being moved from one position to another.

The New Green Bank Telescope

Fortunately, a replacement is on the horizon. The new GBT, to be ready in 1995, will be the world's largest fully steerable radio telescope. It will be useful over a much greater band of radio wavelengths than any telescope of comparable size—from several meters (a few feet) to several millimeters (about 1/10"). Under laser control, the GBT will have a pointing accuracy approaching 1 second of arc, about the angle subtended by a dime when seen from a distance of one mile. Considering the previous experience, the new GBT will be subjected to wind tunnel testing.

Users will come from universities and laboratories around the world. Their proposals will be reviewed by their peers, whose ratings will determine which proposals compete successfully for available telescope time. The instrument will be in use at all hours, day and night, every day of the year. If radio astronomy's past is a valid predictor of its future, the new telescope will discover objects and phenomena that we can't predict today.

Technical Details On The Telescope

The National Radio Astronomy Observatory (NRAO) has been a center for radio astronomy research since 1958. The Green Bank Telescope, or GBT, ushers in a new era for cosmic research. Since most of the telescope's lifetime will be spent in the 21st century, its precise scientific mission can't be predicted. But the design emphasizes versatility: the GBT itself will be capable of continuous improvement throughout its lifetime.

Goals for the Green Bank Telescope

High sensitivity. The GBT will have an immense collecting area, a clean beam, and low-noise electronics combining to produce an unprecedented ability to detect weak signals.

A greater wavelength range. The primary mirror will be adjusted continuously to maintain a parabola accurate enough for receiving radio waves only millimeters in length.

Wide sky coverage. The telescope's full steerability will provide access to eighty-five percent of the sky.

Greater versatility. A suite of receivers and detectors can, in minutes, be interchanged in response to reprioritized scientific opportunities and weather changes.

Good discrimination against interference. No structures block the main reflector; their absence eliminates scattering of signals into the path of the radiation being observed.

High resolving power. Electronic and computer links will connect the telescope to other sensors, including those in earth orbit, to sharpen the angular detail that can be revealed.

Key Specifications of the GBT

The GBT's primary reflector dimensions will be 100 x 110 meters, for an aperture of 100 meters and a focal length of 60 meters; the subreflector is 7.55 x 7.95 meters. The instrument is useful over an azimuth range of -270 degrees to +270 degrees and an elevation range of 5 degrees to 95 degrees. It will have a surface accuracy of as little as 0.22 mm. and a pointing accuracy as small as 2". The telescope's moving weight is 14,000,000 lbs.

Conducting Fundamental Science with the GBT

Investigating the structure of interstellar space. Surveys of hydrogen emission from distant galaxies will help map the distribution of matter in the universe.

Examining the nature of time. Precision timing of rapidly spinning pulsars can help test predictions of Einstein's General Theory of Relativity.

Studying the chemistry of space. The many molecules that occupy the spaces between stars in the Milky Way and other galaxies can be studied by the sharp signal each radiates.

Seeking out the origin of space time. The "radio hiss" filling interstellar space since the beginning of time can be mapped for hints as to the seeds from which galaxies developed.

Probing energy sources. Violent activity at the hearts of galaxies and quasars can be monitored and probed in search of evidence for the existence of black holes and other phenomena.

Conducting a census of the radio universe. The GBT can rapidly scan the sky, detecting and mapping hundreds of thousands of radio sources billions of light-years from our galaxy.

Unique Features of the GBT

An unblocked aperture. The arm supporting the receivers at the focal point is outside the path of incoming radiation. Thus, few extraneous signals are scattered into the receivers so that most of the energy they accept comes from astronomical objects.

An adjustable surface. Each of the instrument's 2204 panels can be moved in or out by computer controlled actuators, eliminating distortions of the dish surface.

A precision pointing capability. Lasers on the telescope beamed at reflecting cubes on its surface determine its shape to a tenth of a millimeter, while lasers on the ground circling the telescope determine where it's pointing to a few seconds of arc.

Selectable receivers. One receiver can be swung into position at the prime focal point; or a receiver on a turntable at the secondary focal point can be rotated into position.

About the author: Dr. Karl Thurber has been writing electronics, computer, and amateur radio articles since the mid-1970s. He is a contributing editor and monthly columnist for CQ, the premier publication for amateur radio operators. He's also the author of articles in ComputerCraft, Popular Electronics, Radio Electronics and other leading industry publications. ■

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Scanning The Marijuana Freeways

Our Interstate Highways Are Combat Zones In The War On Drugs! A Scanner Lets You Listen From A Safe Distance.

BY CHUCK ROBERTSON

Now, more than ever before, state troopers and sheriff's deputies are patrolling the US Interstate highway system looking for narcotics couriers. Their efforts have proven to be worthwhile. Stats show that drug, cash, and vehicle confiscations on the Interstates have reached an all-time high. For police, it was like finding the Big Rock Candy Mountain.

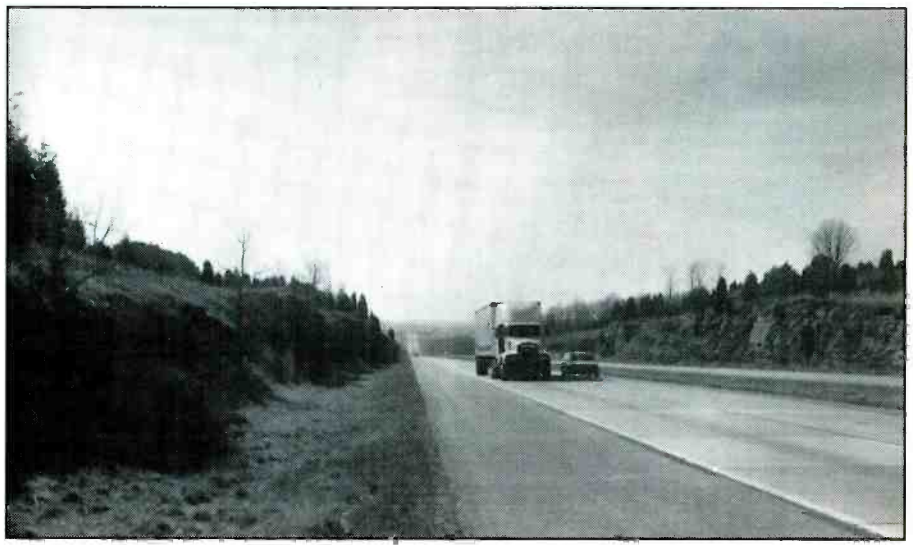
Perhaps not well-known, but the zero-tolerance drug laws passed during the Reagan era permit money and property to be confiscated based solely upon probable-cause that a drug crime has taken place, or will take place. For instance, if a driver has more than $1,000 in cash, it could be assumed that the money is to be used for a drug purchase. A large amount of cash is, in itself, probable cause to suspect criminal activity.

In effect, it's the property that is being arrested. Property possesses no human rights, so it's not necessary to prove that a crime has or would have taken place. No trial by jury is required.

The property owner, in some cases, has as few as twenty days to file for return of the seized materials. Otherwise, it is automatically forfeited and divided up among the agencies involved in the confiscation. To agencies feeling the pinch of budget constraints, this has been a boon, and the agencies are all within their legal rights.

In about 80% of all federal money/property confiscation cases, no criminal charges are ever brought against the property owner. In Florida, it runs at 75%, and confiscations include luxury yachts and limos, trucks, aircraft, and charter boats. If it's suspected that a vehicle has been used in drug trafficking, it may be confiscated at any time within eight years of the alleged incident—no matter how many times it's been legally resold as a used car since then.

This has helped turn the Interstates into that war zone.



Interstate highways crisscross the continent. Heavily used by tourists and truckers, they are equally convenient for drug couriers.

Cat & Mouse

Interstate highways are the pipelines often used for drug shipments. Couriers head for the Gulf or Mexican border areas to pick up loads of drugs such as cocaine or marijuana. Then they truck their cargo towards final destinations like Chicago.

One popular method of courier operation is to arrange for several "drops" along their route. Setting up temporary offices at motels near the Interstates, they use pay phones to arrange for local sales. After a few days, they move on to another community along the line.

Recently, Illinois State Police detectives were noted on 154.95 MHz while staking out a courier operating from a motel near I-57 at one of the Marion exits. After a couple of days of following him around to pay phones and delivery points, they made their arrest. Motel personnel helped the police. It made for great listening.

High on the suspect vehicle list are long-haul semi-tractor trailers, commonly known as "18-wheelers." Although the majority of the thousands of semi-trailers that travel the Interstates daily are perfectly legit, police feel the need to look for those that might be hauling drugs. Semis that travel between drug cities come under particular scrutiny. At weigh stations, or when they are pulled over for routine inspections or a traffic violation, they might get checked out by drug-sniffing dogs.

Business As Usual

Police often use profiles of typical drug couriers to help them in determining which cars and drivers are more likely than others to be transporting contraband along the Interstates. As has been reported on national TV, and in several books, these profiles involve several factors, including ethnic considerations, especially in combination with certain out-of-state license plates. The practice has had its strong critics, to be sure. Yet, it remains in popular use in many areas.

Suspicious vehicles may be pulled over and the drivers questioned. Perhaps the vehicle will be searched, the driver given a warning ticket, and then let go. I spoke to several drivers at a fast-food place near I-57. They complained that they all fit a courier profile, and had been stopped by police several times. Unfortunately, they were all still a long way from home.

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Automotive Adventures, USA: 151.625
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Wheels On Wheels, Mundelein, IL: 855.5375

A vehicle might be pulled over or searched for all sorts of odd reasons ranging from improper lane usage, failure to use signals when changing lanes, following too closely, driving too slowly, crooked or dirty license plate, etc. A driver has a right to refuse the vehicle search, however this could cause the driver to be detained until a search warrant is obtained. Refusal does arouse suspicions.

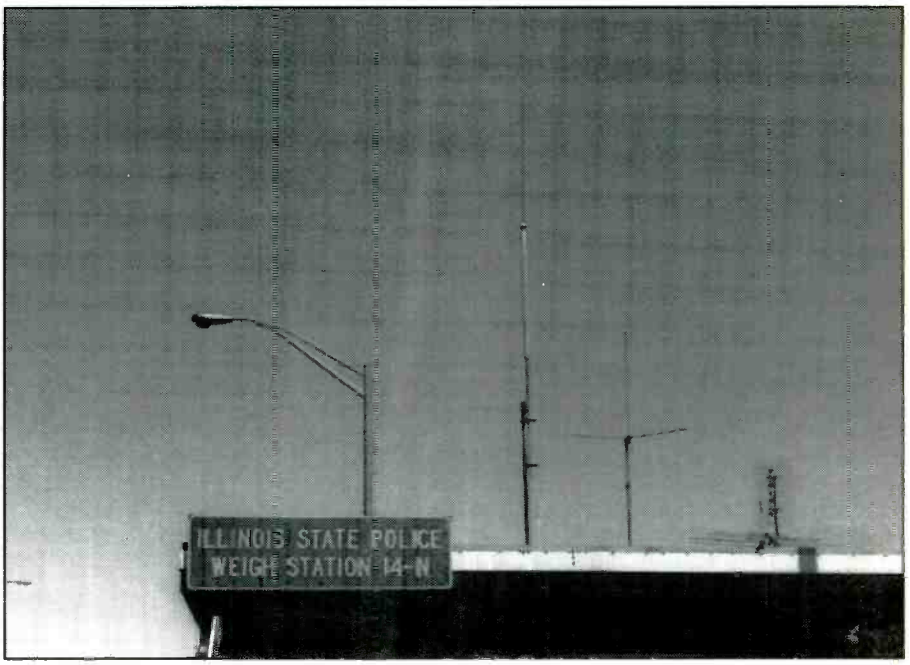
Of course, there are many profiles. Anybody who looks like they are returning from a Grateful Dead concert might be asked for a roadside interview. Even people who look "too normal" may look so out of place that they attract the attention of police. Large gold and diamond rings worn on many fingers, plus numerous gold wrist and neck chains is certain to fit someone's profile.

Peeling bills off a large roll to pay for gas on the Interstate is going to have the police on your case as soon as the attendant can get to a phone to call up his cousin, the sheriff. Nervously gawking at a nearby patrol car driving past your red sports car with out-of-state plates is sure to earn you an invitation to pull over.

The Bear Facts

If you have the right frequencies, you can listen in to the strategy of the officers as they try to pick the rotten apples out of the barrel. Listen in on all state and county law enforcement agency frequencies used in your area. Don't forget that some agencies use aircraft to spot cars, and radio the information down on frequencies like 122.9, 122.975, 123.3, or 123.5 MHz.

In my own area of Illinois, state troopers speak candidly to one another by switch-



Truck weigh stations are effective check points for drug traffic. This one in Illinois operates on several frequencies.

ing away from their own frequencies and using simplex on 155.535 MHz. This is the output frequency of the county sheriff's repeater! Sheriff's deputies here (Williamson County, Illinois) sometimes talk privately by switching off their PL tones and operating simplex on 156.09 MHz, which is their repeater's input frequency. Without the PL tones, they don't kick the repeater on the air.

You can forget about finding where the best action is by simply looking it up cold in a beginner's low-cost frequency guide. These directories are OK, but best suited to Uncle Rudy, who is hoping to log every dog catcher and building inspector in the state. And Auntie Martha. The high point of her entire week is when she monitors a new station checking into the Sunday afternoon rescue team roll call.

When it comes to monitoring exotic police comms on the truly *hot* channels used on the Interstates, the agencies like to do creative things with frequency usage. You are going to need better data, plus putting your imagination, experience, and monitoring skills to the challenge.

In addition to the law enforcement frequencies, Interstates offer all sorts of other frequencies of interest to the avid scannist. Don't forget CB Channels 9 and 19 (27.065 and 27.185 MHz, AM mode), or 462.675 MHz, which is used by many REACT groups for their operational comms. A listing of selected frequencies licensed for comms users that might turn up on the Interstates is provided here for informational purposes. ■

This "plain wrapper" (unmarked police car) is parked in front of a law-enforcement agency. Note the antenna on the trunk-lid. The vehicle is used for patrol work on the nearby Interstate.

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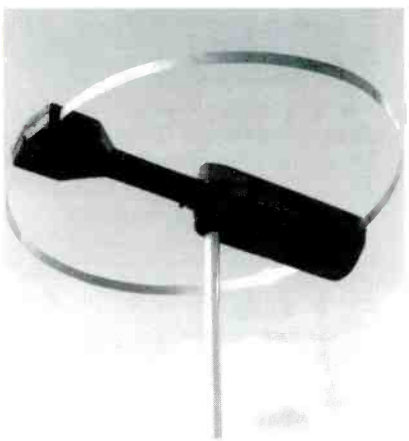
ISOLOOP 10-30 HF PORTABLE ANTENNA.
This is the one that gives you freedom of speech, whether you have to deal with restrictive covenants at home or in your apartment or condo, or if you are traveling in your boat, car, or RV. It features 150 watts, continuous coverage from 10 to 30 MHz, narrow bandwidth to suppress out-of-band signals. The IsoLoop antenna comes fully assembled with no mechanical joints. There is simply no better value in antennas!



PK-232MBX DIGITAL MULTI-MODE CONTROLLER.
It can receive eight different types of data signals, including Morse code, Baudot, ASCII, Time Division Multiplex (TDM), WEFAX, NAVTEX, Packet and AMTOR. Also featured is SIAM which automatically identifies many types of digital signals, excellent software support for PC compatibles, Macintosh and Commodore 64 & 128 computers. This unit is essential for the serious digital listener.

AEA-FAX.
Here's the superior way to decode multi-level gray fax images received by your general coverage receiver. Featured is AEA's exclusive on-screen tuning scope that allows you to simultaneously tune and receive. There is also Autolist for unattended image capture and save-to-disk, "daisy-chain" external RS-232 input allowing AEA-FAX to share a COM port with PK-232 MBX, up to 16 gray levels (VGA), support for EGA, CGA and Hercules formats. AEA-FAX prints to HP LaserJet or Epson compatible printers and includes hardware demodulator, 3 1/2" and 5 1/4" software disks plus a comprehensive instruction manual. AEA-FAX is a must for your set-up!

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The Secret Lives of Call Letters

Many AM & FM Broadcast Stations Now Have Callsigns That Once Led Far Different Lives. Uncover Their Hidden Pasts & You'll Be Very Surprised!

BY ALICE BRANNIGAN

Not long ago we devoted coverage to call letters and their role in broadcasting. This brought in a considerable amount of comment from readers, including suggestions that we should have begun at the beginning, explaining the origins of call letters as they are presently used. Good idea!

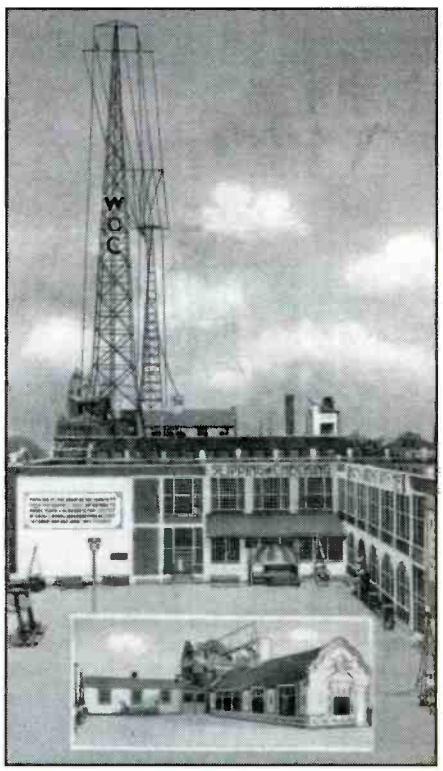
Essentially, in the earliest days of wireless, there was no formal call sign system. In the era before 1908, stations used whatever callsigns or letters they found convenient, descriptive, or distinctive. For example, the Massie commercial station at Point Judith R.I. used *PJ*, and the DeForest station in New York City was simply *NY*. But problems arose as duplications started cropping up. The callsign PJ was also being used by the Belgian vessel *S.S. Princess Josephine*. The callsign *UA* was used by both the elegant Cunard passenger liner *RMS Umbria* and the United Fruit Company's scruffy banana freighter, *S.S. Ellis*.

As maritime wireless became increasingly popular, there were numerous confusing instances of the same identification being used by several coast and ship stations. This wasn't a viable system. Wireless was being installed on ships as a safety device to summon aid, so any station sending out a distress call would require its own completely unique identity signal.

The best approach was for all stations to have officially issued identity letters in order to avoid duplication and possible confusion. The international radio convention in Berlin held in 1906 proposed such a system, which became effective in 1908. Canada was allocated the use of all call letters VAA through VGZ.

During the winter of 1909, the *RMS Republic* was rammed by the Italian passenger liner *SS Florida*. This was in heavy fog off of Nantucket, Mass. Jack Binns, the radio operator of the *Republic* began sending out distress calls on the ship's wireless. Although the *Republic* sustained severe damage, Binns' calls for help on the wireless summoned the steamer *Baltic* to the scene in time to save 1,650 passengers from both the *Republic* and the *Florida*. Although 6 lives and the *RMS Republic* were lost in the incident, Binns was hailed around the world as a hero. Wireless was given credit as being a life-saving miracle. It had been the first use of wireless at sea to save a large number of lives. Many ships began installing wireless.

Yet, our own government had not taken action in joining most other world nations in approving the Berlin convention. However the vital and dramatic role of wireless again in *RMS Titanic* disaster in April of 1912 brought this continuing and unexplained delay to the attention of the media and the public. The public demanded answers. Washington suddenly moved with deliberate haste. The Berlin convention was ratified by the USA in 1912. Also, that



WOC was the callsign of the Wilson Bros. steamer SS Oregon before it was reassigned for broadcast station use by Dr. Palmer's school of chiropractic in Davenport, Iowa.

VERIFICATION CARD FROM

KGW-PORTLAND, ORE.

483 Meters 1000 Watts 620 Kilocycles

It is a pleasure to be able to verify your report of reception from this station by means of this card.

The program you heard at 11:30 to 12:00 PM on October 14.

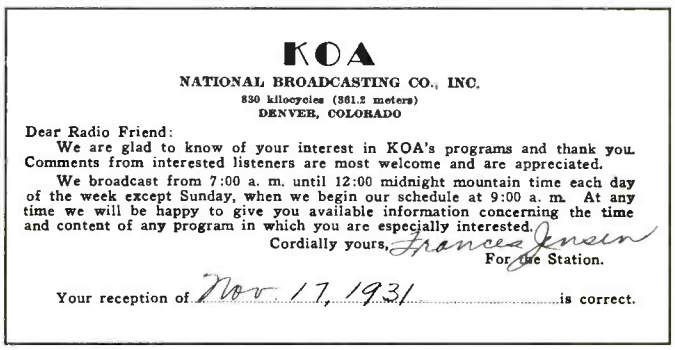
was Dr. Poyntz Science Talk & Bagdad Organ

THANK YOU FOR THE COURTESY OF YOUR LETTER

THE OREGONIAN STATION

Associated With the National Broadcasting Company

KGW became a well-known broadcaster in Portland, Ore., after it went on the air in 1922. Before that, the call letters belonged to the SS Isabela.



KOA

NATIONAL BROADCASTING CO., INC.

830 kilocycles (361.2 meters)

DENVER, COLORADO

Dear Radio Friend:

We are glad to know of your interest in KOA's programs and thank you. Comments from interested listeners are most welcome and are appreciated.

We broadcast from 7:00 a. m. until 12:00 midnight mountain time each day of the week except Sunday, when we begin our schedule at 9:00 a. m. At any time we will be happy to give you available information concerning the time and content of any program in which you are especially interested.

Cordially yours, Frances Jensen

For the Station.

Your reception of Nov. 17, 1931 is correct.

KOA was originally the callsign of the SS Hamilton. In 1924 it was given a new lease on life after being reissued for broadcast station use in Denver, Colorado.

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Emergency Operations Center

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400 Channels · 20 Banks · Turbo Scan
Rotary tuner feature · Auto Store · Auto Sort
Size: 2-3/4" Wide x 1-1/2" Deep x 7-1/2" High

Frequency Coverage	*Default Steps*
25.000 - 25.995 MHz. (AM)	5.0 KHz
26.000 - 28.995 MHz. (AM)	5.0 KHz
29.000 - 53.995 MHz. (NFM)	5.0 KHz.
54.000 - 71.995 MHz. (WFM)	50.0 KHz
72.000 - 75.995 MHz. (NFM)	5.0 KHz.
76.000 - 107.995 MHz. (WFM)	50.0 KHz.
108.000 - 136.995 MHz. (AM)	12.5 KHz.
137.000 - 173.995 MHz. (NFM)	5.0 KHz.
174.000 - 215.995 MHz. (WFM)	50.0 KHz.
216.000 - 224.995 MHz. (NFM)	5.0 KHz.
225.000 - 399.995 MHz (AM)	12.5 KHz.
400.000 - 511.995 MHz. (NFM)	12.5 KHz.
512.000 - 549.995 MHz. (WFM)	50.0 KHz.
760.000 - 823.995 MHz (NFM)	12.5 KHz.
849.0125 - 868.995 MHz (NFM)	12.5 KHz.
894.0125 - 1,300.000 MHz. (NFM)	12.5 KHz.

Signal intelligence experts, public safety agencies and *Popular Communications* readers have asked us for a world class *handheld* scanner that can intercept just about any radio transmission. The new Bearcat 2500XLT is just what you've been waiting for. It can store frequencies such as police, fire, emergency, race cars, marine, military aircraft, weather, and other broadcasts into 20 banks of 20 channels each. The new rotary tuner feature enables rapid and easy selection of channels and frequencies. With the AUTO STORE feature, you can automatically program any channel. You can also scan all 400 channels at 100 channels-per-second speed because the Bearcat 2500XLT has TURBO SCAN built-in. To make this scanner even better, the BC2500XLT has AUTO SORT – an automatic frequency sorting feature for faster scanning within each bank. Order your scanner now.

For more information on Bearcat radio scanners or to join the Bearcat Radio Club, call Mr. Scanner at 1-800-423-1331. To order any Bearcat radio product from Communications Electronics Inc. call 1-800-USA-SCAN.

Great Deals on Bearcat Scanners

NEW! Bearcat 890XLT-E base/mobile	$254.95
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NEW! Bearcat 350A-E info mobile	$119.95
NEW! Bearcat 700A-E info mobile	$169.95
NEW! Bearcat 148XLT-E base	$94.95
Bearcat 800XLT-E base/SUPER SPECIAL	$199.95
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200 Channels · VFO Control · 10 banks
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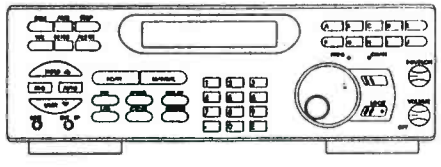
Size: 5-1/4" Wide x 6-15/16" Deep x 1-5/8" High

Frequency Coverage	*Steps*
29.000 - 53.995 MHz. (NFM)	5.0/12.5/25.0 KHz.
108.000 - 136.995 MHz. (AM)	5.0/12.5/25.0 KHz.
137.000 - 173.995 MHz. (NFM)	5.0/12.5/25.0 KHz.
216.000 - 224.995 MHz. (NFM)	12.5/25.0 KHz.
225.000 - 399.995 MHz (AM)	12.5/25.0 KHz.
400.000 - 511.995 MHz. (NFM)	12.5/25.0 KHz.
806.000 - 823.995 MHz (NFM)	12.5/25.0 KHz.
849.0125 - 868.995 MHz (NFM)	12.5/25.0 KHz.
894.0125 - 956.000 MHz. (NFM)	12.5/25.0 KHz.

The Bearcat 890XLT gives you pure scanning satisfaction with amazing features like Turbo Scan. This lightning-fast technology enables the Bearcat 890XLT to scan and search up to 100 channels per second. Because the frequency coverage is so large, a very fast scanning system is essential to keep up with the action. That's why Uniden's latest technology, *Turbo Scan* is built into our new Bearcat scanners. Other features include ***VFO Control*** – (Variable Frequency Oscillator) which allows you to adjust the large rotary tuner to select the desired frequency or channel. ***Weather Alert*** – Lets your scanner function as a severe weather warning radio. ***Auto Store*** – Automatically stores all active frequencies within the specified bank(s). ***Auto Recording*** – This feature lets you record channel activity from the scanner onto a tape recorder. You can even get an optional ***CTCSS Tone Board*** (Continuous Tone Control Squelch System) which allows the squelch to be broken during scanning only when a correct CTCSS tone is received. ***10 banks*** – Each bank contains 20 channels, useful for storing similar frequencies in order to maintain faster scanning cycles. For maximum scanning enjoyment, order the following optional accessories: **PS001** Cigarette lighter power cord for temporary operation from your vehicle's cigarette lighter $14.95; **PS002** DC power cord - enables permanent operation from your vehicle's fuse box $14.95; **MB001** Mobile mounting bracket $14.95; **BC002** CTCSS Tone Board $54.95. Order your BC890XLT from CEI today.



CB/GMRS Radios

The new Uniden GMR100 is a handheld GMRS UHF 2-way radio transceiver that has these eight frequencies installed: 462.550, 462.725, 462.5875, 462.6125, 462.6375, 462.675, 462.6625 and 462.6875 MHz. This one watt radio comes with flexible rubber antenna, rechargeable ni-cad battery, AC adapter/charger, belt clip, F.C.C. license application and more.

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ICOM R7000-E base (add $39.00 shipping)	$1,149.95
ICOM R7100-E base (add $39.00 shipping)	$1,199.95
ICOM R9000-E base (add $89.00 shipping)	$4,699.95
Grundig Satellit 700-E portable	$459.95
Grundig Satellit 500-E portable	$359.95
Grundig Cosmopolit-E with tape recorder	$179.95
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Public safety agencies responding to hazardous materials incidents must have accurate, up-to-date weather information. The Davis Weather Monitor II is our top-of-the-line weather station which combines essential weather monitoring functions into one incredible package. Glance at the display, and see wind direction and wind speed on the compass rose. Check the barometric trend arrow to see if the pressure is rising or falling. Our package deal includes the part #7851-E Rain Collector, and the external temperature/humidity sensor, part #7858-E. The package deal is order #DAV1-E for $449.95 plus $15.00 shipping. If you have an IBM PC or equivalent, when you order the optional Weatherlink computer software part #7862-E for $149.95, you'll have the world's most powerful computer weather station at an incredible price.

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year the US Radio Act was passed, and American wireless stations started being issued and first began using official government-assigned call letters.

Ratification of the Berlin convention gave the USA exclusive international use of the distinctive call letters KDA to KZZ, NAA to NZZ, and WAA to WZZ. Our government elected to reserve the use of the N prefix for stations operated by the US Navy and Coast Guard. In addition, the call letters WUA through WVZ, and WXA through WZZ were set aside for use by the US Army.

During radio's infancy, practically all commercial land stations were on the coast and all communications were with ships. Most of the early US call letters assignments were for 3 letters. By 1914, these combinations had been exhausted making it necessary to also use 4-letter callsigns. The international radio conference in 1927 took away the call letter bloc KAA to KCZ from Germany and reallocated it to the USA to meet the nation's growing needs. Four-letter calls were assigned to ships and fixed stations in domestic point-to-point service. As of the mid-1920's, US ships holding 3-letter callsigns were all being assigned new ones with the 4-letter format. Five-letter calls prefixed with KH were being issued to aircraft.

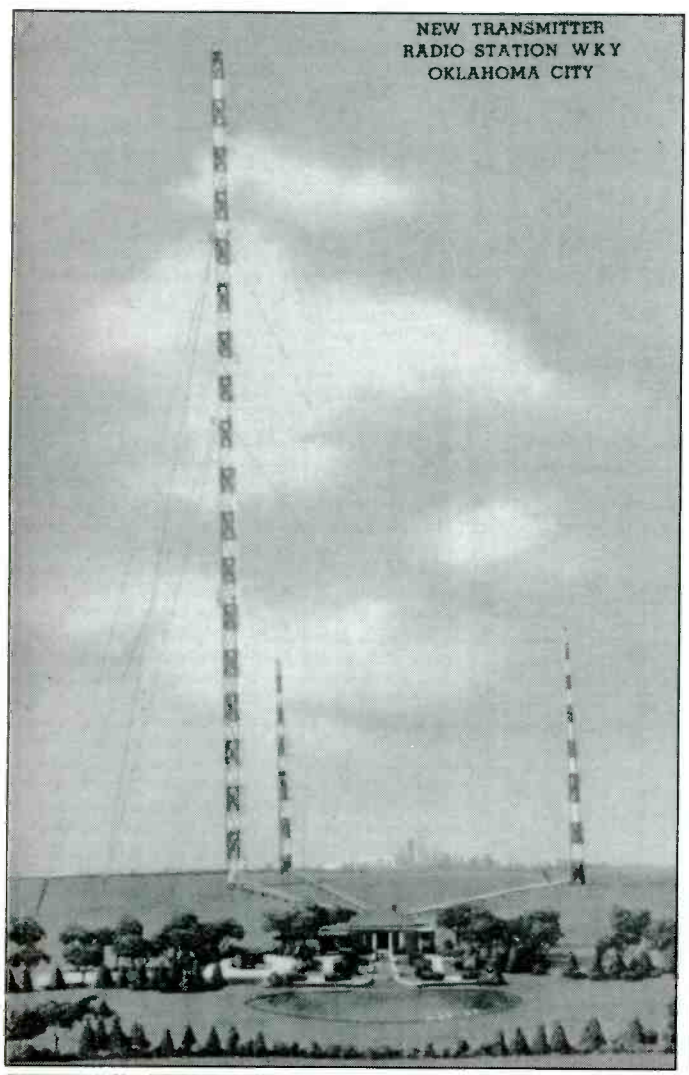
Experimental stations used the prefix letter W (or K, if outside the continental USA), followed by a number designating the radio district, the letter X, and then not more than 2 letters. Amateur station callsigns were similar, although the letter X was replaced by any letters *other than* X. Amateur stations in territories and possessions were each given a special distinctive 2-letter prefix beginning with the letter K.

After inland commercial radio developed, the Mississippi River was made the dividing line for the assignment of the K and W prefixes. Stations in the east used the W prefix, western stations used the K prefix. A number of early broadcast stations (such as WRR in Dallas, or KDKA in Pittsburgh) were assigned call letters before this policy went into effect.

With few exceptions, expired or otherwise discontinued call letters are and have been recycled and reissued. As of the past few years, ham radio calls have not been reissued. When oceangoing civilian ships are lost due to accident or act of war, when they are transferred to a foreign flag, sold for scrap, or otherwise go out of US documentation, their call letters are reissued. In the USA, very often such discontinued maritime call letters are recycled for broadcast station use.

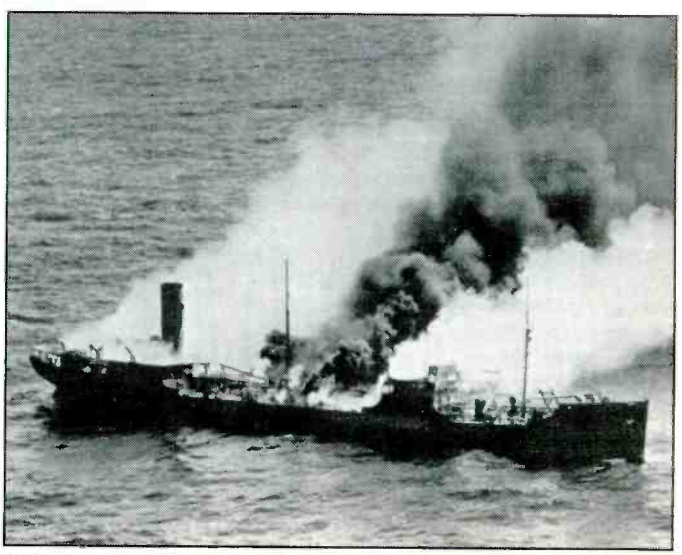
Beginning in 1921, ship call letters that had been assigned for the first time in 1912, were being almost instantly reissued to stations commencing operations in the newly created broadcast service, as well as in various commercial services. These call letters had still been actively in use by ships as late as 1920.

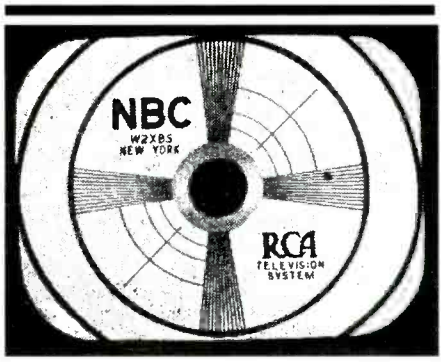
Early ships' wireless call letters that later went on to make history after being put into use by pioneer broadcast stations include (selected examples): KOY, KZN, KFOA, KMO, WSOE, KFAE, WDAE, WDZ, WSUI, WCAO, WDAU, WEW, WIL, WCAU, WCAE, WFAA, KDB, KEX, KFH, WMT, WOW, KGW, KFI, KGU, KOY, KMA, KOH, WGR, WJW, WKY, KXL, KLO, KGY, KXA, KXO, KIT, KGY, WSB, WWJ, WIP, WOC, KNX, KLZ, KMJ, KHJ, WWL, WLS, WOR, KWG, WBAA, WBZ, KQW, WSM, WGN, WGY, WHO, WRR, KYW, and KOA. Though some of the broadcasters eventually changed several of these calls in later years, virtually all of the



The SS Montoso once held the call letters WKY. In 1921, the call was reissued to experimental broadcaster 5XT in Oklahoma City, Oklahoma, when the station upgraded to commercial broadcaster status. The WKY callsign is still used by this station.

The tanker Henry F. Sinclair was torpedoed by an enemy U-boat during WWII. The vessel's call letters, KGOK, are now assigned to an FM broadcast station in Oklahoma.





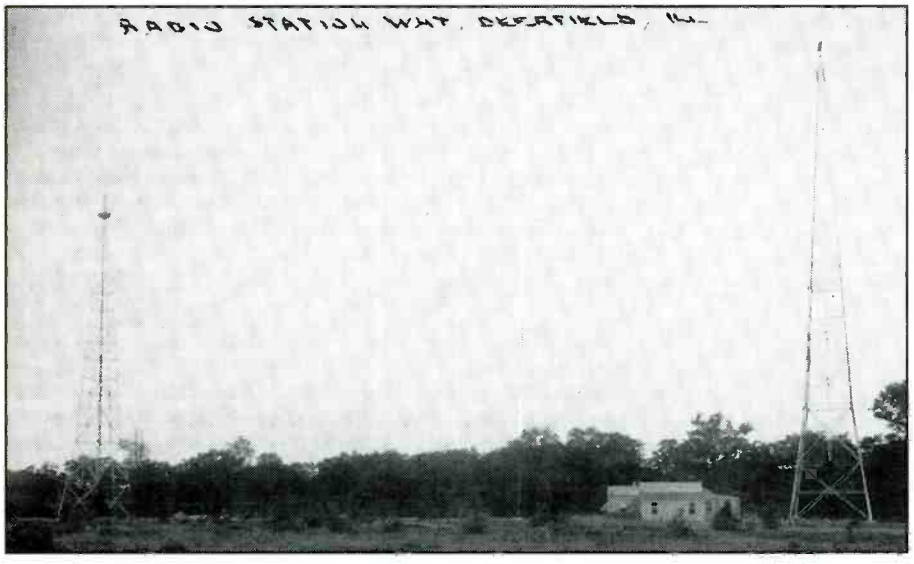
W2XBS (shown beneath the letters NBC in the upper left quadrant) was a typical old-style experimental call, similar to those assigned to ham operators. W2XBS was RCA's TV station in New York City during the 1930's.

stations listed here are still operating in one form or another! It's doubtful that these stately stations realize their first broadcast call letters were actually reincarnations from earlier existences as gristly old salts that spent years prowling the world's seas.

Trace the history of a given broadcast station's retread ship's wireless call letters and you're likely to uncover high adventure. Many of the recycled maritime call letters given to broadcasters had been inherited from ship stations that made headlines through tragedy. Some examples?

In 1923, the call letters KGB were assigned to an obscure and short-lived broadcaster in Tacoma, Wash. By 1927, the call letters were assigned again, this time to another broadcaster who made them famous. In 1927, KGB was put into use by the former KFBC, San Diego (now known as KPOP on AM, but still KGB on FM). But before all of this, KGB had originally been issued to the steamship *D.H. Luckenbach*. This ship was torpedoed and sunk by a German U-boat off the coast of France in 1917.

In 1922, the call letters KOB were assigned to a new broadcaster in Albuquerque, N.M. (now known as KKOB on AM, but still KOB for TV). These call letters had been recycled. KOB had originally been the callsign of the Old Dominion Line's beautiful passenger steamer *SS Princess Anne*. On February 6th, 1920, while traveling from Norfolk to New York, the 3,629 ton luxury vessel encountered a blizzard. Lost in the strong winds, blinding snow, and heavy seas, the ship ran hard aground on treacherous Rockaway Shoals, three miles south of Fort Tilden. This is west-southwest of New York Harbor.

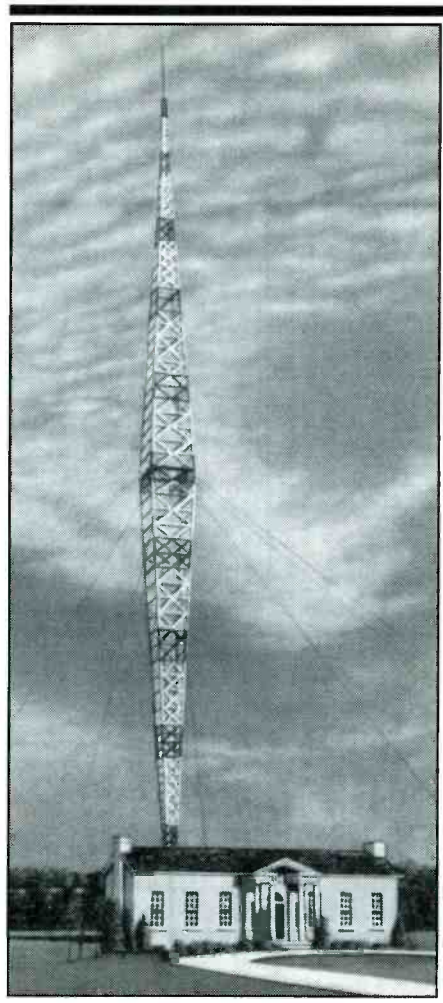


WHT was originally the callsign of the SS Whittier. In 1924, the call letters were issued to a coastal telegraph station in Rogers City, Mich. By 1925, the call WHT had been reissued again, this time for broadcast use by a Chicago station that (in 1930) evolved into WCHI, then went dark two years later.

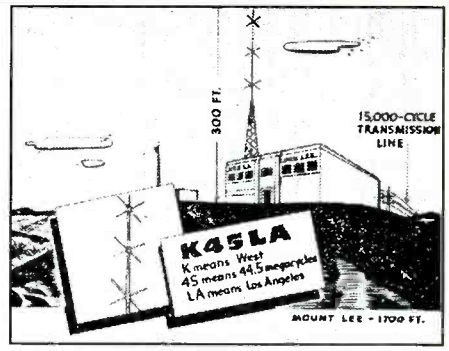
The ship radioed for help. USCG cutters and police launches responded the following day when the storm began to subside. They removed 60 shivering and hungry passengers and crew members. Twenty crew members remained on the ship to help in efforts to refloat the vessel. Unfortunately, the hull had been damaged. Hold 3 was filled with water. The Coast Guard was unable to dislodge the *Princess Anne*. A few days later the abandoned ship broke in two and was pounded to pieces by the ocean. It was a total loss.

The call letters KOB had suddenly become ready for reassignment. On April 5, 1922 the callsign KOB was first put into use by Dr. Ralph Goddard, Albuquerque, N.M. This was because he was upgrading 5XD, his experimental broadcasting station (operating since 1920) to commercial status. Retired to shore duty after its harrowing nautical sea experience, the callsign KOB went on to become a well known fixture on the mediumwave band from Albuquerque for more than 60 years!

World War II sea losses and disasters made many additional ship call letters avail-



WSM was once the callsign of the SS Fair Oaks. But it didn't become nationally famous until after it was reissued in 1925 for use by the National Life and Accident Insurance Company's new broadcasting station in Nashville, Tenn.



This 1941 QSL from Los Angeles FM broadcast station K45LA explains its startling new call letters. It says that K means west; 45 means 44.50 MHz; LA means Los Angeles. In a bureaucratic sort of way, this does make sense.

able to lead calm new lives after being retired to the broadcast service. A few typical examples:

WSCY was the call issued to the 5,992 ton Socony-Vacuum Oil Co. tanker, *Tiger*. In April of 1942, the *Tiger* was torpedoed and sunk by the Nazi U-boat U-754 near Cape Henry, Va. One crew member died, 41 other persons on board were saved. In 1961 the call letters WSCY were reissued to an FM broadcaster on 100.9 MHz in North Syracuse, N.Y. (present call letters WKZX).

KDWN was the call of the 7,953 ton Tidewater Oil Co. tanker *Byron D. Benson*. In April of 1942, while transporting 100,000 bbl. of crude oil, she was torpedoed by the Nazi U-boat U-552. In the ensuing fire, 10 members of her 37-member crew were lost. In 1975, the call letters KDWN were assigned again—this time to the broadcast station in Las Vegas, Nevada on 720 kHz.

The call letters KGOK had belonged to the 6,151 ton tanker *Harry F. Sinclair, Jr.* In April, 1942, while carrying 68,000 bbl. of fuel oil and gasoline, the vessel was torpedoed off the coast of North Carolina by the Nazi U-boat U-203. Ten of the crew died. In 1978 the call letters were reissued to an FM broadcaster on 97.7 MHz in Pauls Valley, Okla.

WQCC was the call of the 7,117 ton freighter *Santore*. In June, 1942, the *Santore* struck a submerged mine near Chesapeake Bay. That caused the vessel to sink, taking 3 members of the crew down with her. These call letters were reissued in the early 1980's to the station on 1540 kHz in Charlotte, N.C. that first went on the air on 1964 as WRPL, and which is presently known as WOGR.

What with 3-letter and 4-letter US callsigns having been used by maritime, broadcast, police, fire, and other services since the 1912-1914 era, these calls have racked up exciting stories about themselves, mostly forgotten. All it takes is a bit of digging through their genealogies to pry loose their deepest secrets.

Callsign formats have changed in many ways over the decades. Experimental call letters now use a two letter prefix, beginning with K, followed by 2X, then 2 letters. And, does anybody remember the evolution of FM broadcast station call letters?

The first FM broadcasters had standard Experimental station call letters, but that changed. In 1941, their callsigns moved into a new format where listeners were greeted with callsigns like W47C, W69PH, and K45LA. These were later modified to a traditional call letter format.

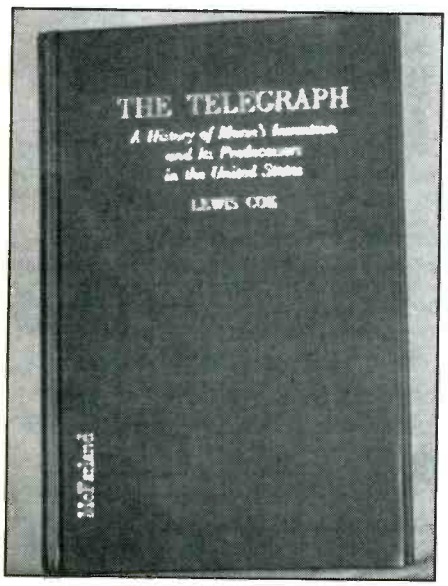
Hope this answers most or all of the questions raised in the aftermath of the previous coverage of call letters. Or have we now opened up other cans of peas? Either way, please let us know!

We Will Return

Join us again! Thank you for your help, questions, comments, suggestions, and contributions of old radio QSL's, picture postcards, stories, station rosters. Your support is very much appreciated. ■

BOOKS YOU'LL LIKE

BY R.L. SLATTERY



About The Telegraph

Lewis Coe's new book, *The Telegraph: A History of Morse's Invention & Its Predecessors in the United States* is a 184-page exploration of a revolutionary communications development.

Samuel Morse's invention marked a new era in the ability to send messages because it permitted them to traverse great distances in both directions very quickly. Prior to that, important messages and business messages had required days or weeks to reach their destination after being dispatched by courier. Then, an equal amount of time was required for a reply to be received. The telegraph therefore had an amazing impact on people's lives, as well as on business and industry.

In this book, which contains 40 historic photos, Morse's invention is covered in great detail. The book's coverage begins in 1832, and it covers the establishment of the first intercontinental telegraph line in the USA, also the military implications of the invention on the Civil War. Coe discusses how the telegraph interacted with the railroads, and then how the advent of the wireless affected the telegraph.

Morse's telegraph was such a useful invention that it served the world in essentially its original form for more than 100 years. Recent advances in telegraph technology and its continued influence on communication are also examined in Coe's book.

Lewis Coe, who now lives in Indiana, is a former Morse telegrapher. He has written many previous pieces on the history of the telegraph and radio. Coe has done justice to Morse and his telegraph here with this well-researched and fine book.

The Telegraph, by Lewis Coe, is available from McFarland & Company, Inc., Box 611, Jefferson, NC 28640. The book is $25.95, plus $2 postage.

Shiver Me Timbers

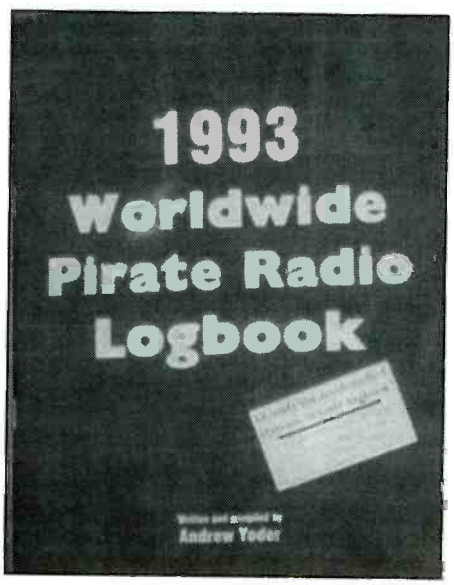
The movie *Pump Up The Volume* was as inaccurate a view of pirate broadcasting as there is, but it fit the public's image of the young, unlicensed, rebel broadcaster. Whatever. It directed a considerable amount of interest towards pirates. Made many people want to tune them in. Possibly the film inspired several people to try pirate broadcasting, despite the many penalties to befall any who get caught operating a pirate broadcast station.

There has been no shortage of pirate radio activity on the air, despite much FCC rattling of sabers, and an occasional citizen alleged by the FCC to be a pirate. Some of the pirates are so dreadful that you hope it won't be much longer before they're made to walk the plank. Others are so good that they rival many commercial stations.

The 1993 Worldwide Pirate Radio Logbook, by Andrew Yoder, is a 92 page directory of the shortwave pirates that are currently logged in North America, Europe, and Oceana. Information provided includes frequency and sked data (as observed). Stations are sorted by frequency and by identification. Pirate station address information is provided, so far as it is known.

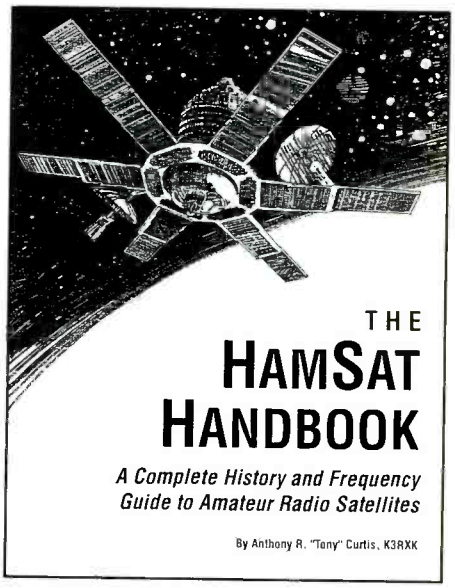
Yoder has also offered an overview of what's taking place within pirate broadcasting around the world, along with his thoughts on trends he sees for the future. There are thousands of listings in this book. It's a useful reference for all who pursue this aspect of DX'ing.

The 1993 Worldwide Pirate Radio Logbook is $10, plus $2 postage and tax, from Snallygaster Press, Box 272, Springs, PA 15562.



HamSats

The HamSat Handbook, by Tony Curtis, K3RXK, is a 152 page comb-bound book that provides the information needed to monitor or use ham radio satellites. It contains the uplink/downlink frequencies, modes, specs, and orbit data for each



of the satellites launched by the various nations of the world.

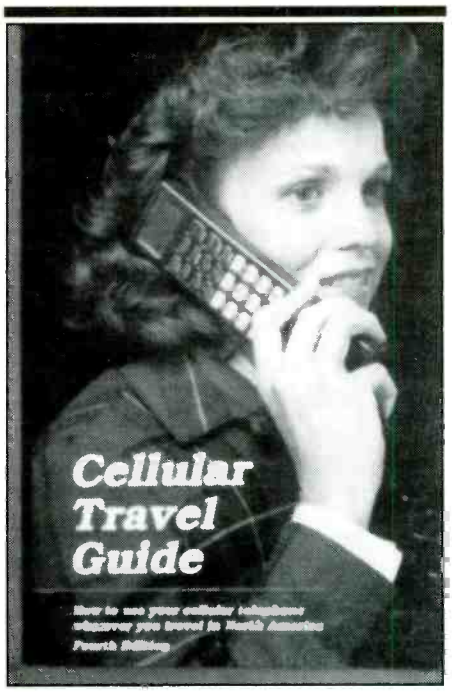
Curtis covers the history of ham satellites, discussing the fate of every one ever launched. More than that, he has information on Oscars that will be coming up for launches encompassing the next several years.

Coverage is also given to hams in the Space Shuttle, as well as ham radio as it relates to orbiting space stations, moonbounce, balloons, and meteor scatter.

When you look back at the first humble OSCAR satellite that operated for 3 weeks some 31 years ago, then see what lies ahead for 1997 and beyond, you can appreciate the strides that have been made. *The HamSat Handbook*, by Tony Curtis, is $19.95, plus $2 shipping/handling ($3 foreign). Order from Tiare Publications, P.O. Box 493, Lake Geneva, WI 53147. VISA/MC accepted. Phone (414) 248-4845.

Cellular Telephone Information Update

The new *Cellular Travel Guide, 4th Edition* is out. Formerly called *The Cellular Telephone Directory*, this is a



complete guide to all cellular service companies. If you are a cellular user, it will show you how to receive calls from home in every city you visit. How to place roamer calls. How to obtain service. Know which company charges the lowest visitor rates. Maps show the extent of each company's signal coverage area.

This giant new 1,184 page 4th Edition weighs more than 2 lbs. It includes many new cities and features. There are more than 500 maps, some 1,800 indexed cities, and 59 pages of listings of cellular systems in more than 115 nations. There are 66 pages of information showing roaming agreements, and a 28 page user's guide.

As you may know, wireline cellular service companies operate on exactly all of the same frequencies. Non-wireline cellular service companies also operate on their own group of the same frequencies. But that's where the similarity ends. Rates, available services, signal coverage, billing practices, and how they deal with roamers, varies widely between companies. Here's the one complete reference book that sorts out these variables and gives you a clear picture of where you stand.

Naturally, the names, addresses, and telephone numbers of all service suppliers are provided, along with all other relevant information.

No matter what your interest is in the 869 to 894 MHz wireline/non-wireline cellular bands, here's a lot of very useful information.

The Cellular Travel Guide, 4th Edition, is $19.85, plus $4.00 shipping/handling ($5.00 to Canada). NY State residents add $2.03 tax. Order from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. VISA/MC welcomed. Order Line 1-(516) 543-9169; 24-hour FAX: 1-(516) 543-7486. ■

ANTENNAS & THINGS

BY JOE CARR, K4IPV

SIMPLE ANTENNAS AND ACCESSORIES FOR SIGNAL IMPROVEMENT

Low Frequency Antennas: Part 1

The low frequency bands, i.e. frequencies less than 7 or 8 MHz, pose some special problems for antenna builders. The best performing simple antennas for those frequencies are, like other bands, the quarter wavelength vertical and the half wavelength dipole. But these antennas are too long for many listeners, and must be installed too far above the ground (in the case of the dipole). For example, a vertical for 5500 kHz is 45 feet high. While not unworkable, it is still a bother to build a 45 foot high antenna. A half wavelength dipole for the same frequency is 85 to 90 feet long, and should be installed 45 feet off the ground. Clearly, some alternatives are needed.

In this month's column, and September's, we will take a look at some alternatives that give reasonable performance for people with only a moderate amount of space for antennas. Of course, you can always use a 25-meter or 31-meter band dipole, or a 50-foot untuned random wire, but sometimes performance is enhanced when other types of antenna are placed in service.

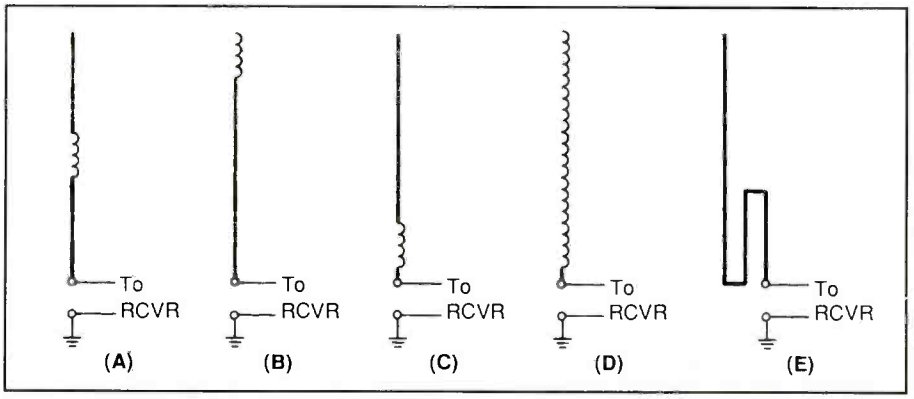


Figure 1

Shortened Vertical Antennas

The biggest problem for most low frequency DX'ers, as we have seen above, is the excessive size of antennas for those frequencies; it is not for nothing that those AM broadcast band (<1.6 MHz) towers are usually hundreds of feet tall. But there are ways to shorten an antenna—not for free for the TANSTAAFL (There Ain't No Such Thing As a Free Lunch) principle still applies—to a point where it becomes mechanically possible. Let me reiterate once again that these compensation antennas will not work as well as a properly installed full-sized antenna, but will serve to get you on the air on frequencies where it is otherwise utterly impossible. Several different compensation configurations are popular, and these are shown in Fig. 1.

The basic foundation for these antennas is a very short vertical antenna. The "standard" vertical antenna is quarter wavelength ($\lambda/4$), i.e. 90 degrees electrical length, and is unbalanced with respect to ground.

Recall that a vertical antenna that is too short for its operating frequency (i.e. less than $\lambda/4$) will exhibit capacitive reactance. In order to resonate that antenna it is necessary to cancel the capacitive reactance with an equivalent inductive reactance, such that $|X_L| = |X_C|$. By placing an inductance in series with the antenna radiator element, therefore, we can effectively "lengthen" it electrically. Of course, what is really happening is that the effects of the lower operating frequency are being accommodated, i.e., "cancelled out," of a too-short antenna.

An antenna that is reactance compensated for a different frequency is said to be loaded, or in the case of a very low frequency antenna it is inductively loaded. Three basic forms of loading are popular: discrete loading, continuous loading, and linear loading.

Discrete loading means that there is a discrete, or lumped, inductance in series with the antenna radiator (Figs. 1A through 1C). These antennas are so constructed that a loading coil is placed at the center (Fig. 1A), top (Fig. 1B) or bottom (Fig. 1C) of the radiator element.

You will recognize these configurations as being the same as are found on mobile antennas. Indeed, low-band mobile antennas can be used in both mobile and fixed installations. Note, however, that it is convenient to use mobile antennas for fixed locations (because they are easily available in "store bought" form), but are less efficient than other versions of the same concept. The reason is that the mobile antenna for low frequencies tends to be based on the standard 96 to 102 inch whip antenna used by amateur operators on 10-meters or Citizen's Band operators on 11-meters. In fixed locations, on the other hand, longer radiator elements (which are more efficient) are more easily handled. For example, a 16 to 30 foot high aluminum radiator element can easily be constructed of readily available materials. The sixteen foot element can be bought in the form of one or two lengths of 1 to 1.5 inch aluminum tubing at Do-It-Yourself outlets.

A problem seen with these antennas is that they tend to be rather high-Q, so the bandwidth is necessarily narrow. An antenna may work in the center of a band, but present a high VSWR at the ends of the band, and thus, be unusable. This problem is solved by making the inductor variable so that slightly different inductance values can be selected at different frequencies across the band. For the base loaded version at Fig. 1C this is particularly easy: a rotary inductor (perhaps motor driven for remote operation) can be used. For the other configurations, a tapped fixed inductor can be used instead. Each tap represents a different inductance value. Either clip connectors or relay connections can be used to select which tap is used.

A continuously loaded antenna has the inductance distributed along the entire length of the radiator (Fig. 1D). Typical of these antennas is the helically wound verticals in which about a half wavelength of insulated wire is wound over an insulating form (such as a length of PVC pipe or a wooden dowel); the turns of the coil are spread out over the entire length of the insulated support.

Linear loading (Fig. 1E) is an arrangement whereby a section of the antenna is folded back on itself in a manner similar to a stub. Antennas of this sort have been successfully built from the same type of aluminum tubing as regular verticals. For 75/80 meter (3.75 MHz) operation a length of 30 feet for the radiator represents 41 degrees, while a normal $\lambda/4$ vertical is 90 degrees. The difference between 90 and 41 degrees of electrical length is made up by the "hairpin" structure at the base.

So how does the TANSTAAFL principle fit into all of this mess? It's simple, compensation antennas, of which class the shortened loaded verticals are an example, do not work as well as full sized $\lambda/4$ or $5\lambda/8$ antennas. They are also somewhat narrower in bandwidth, so performance will fall off more rapidly away from the design frequency. But they also represent one factor that cannot be denied: they work as well as can be expected in cramped quarters, and where the alternative is using your 25-meter dipole "in a pinch." ■

BY DON SCHIMMEL

COMMUNICATIONS CONFIDENTIAL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Richard Baker, OH reported that "DAN, Norddeich Radio, who has in the past refused to engage in the QSL business, is now sending out QSL cards. I received one, it came in 9 days! I sent a letter in English, and a SASE with mint stamps attached.

Here are three corrected addresses for USN ships. Published FPO's are wrong. USS Vreeland (FF-1068), FRP A.E. 09590-1428; USS Simon Lake (AS-33), FPO A.E. 09536-2590; USS Valley Forge (CG-50), FPO A.P. 96682-1170.

Several reference books show 11552 kHz for Antarctic comms but perhaps that is a typo. When I received my PFC back from the USCGC Polar Star (WAGB-10) they gave me a tip to listen for such comms on 11553 kHz. I did log Palmer Station on the frequency and hear 'chat' almost every night. But except for Palmer, comms have been too weak to ID.

Next is one of the strangest QSL letters, but it was very informative. It was in response to a QSL request I sent to Cape Radio, c/o NASA, KSC. It seems that a company called CSR operates the HF radios for the eastern test range, which is really Cape Radio's primary assignment. They will not complete a PFC, but once a month, at random, they draw a lucky winner from the pile of requests that came in, and answer (and verify) by letter."

For you computer buffs, Richard has advised that he now has a SWL Special Interest Group on the Youngstown Freenet. Richard indicated he can be reached via his E-Mail address of XX159@yfn.ysu.edu for further details.

Simon Mason, England said "OLX is still active and the OM/EE station went down to 4-5 MHz for the winter but in the summer it can be heard around 12 and 16 MHz. By the way, German number stations DCF37 and DFD21 ended in Dec of '92."

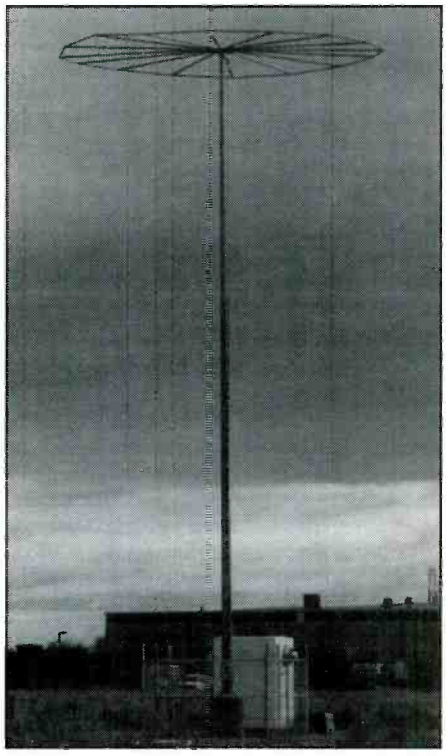
According to a Pacific Stars and Stripes article sent in by Ken Alyta, Korea, the LORAN station on Okinawa will change hands in July 1993 when the USCG turns the station over to the Japanese. The Japanese Maritime Agency personnel received training on the equipment in California at the Pataloma LORAN Transmitter School. Other LORAN stations, Iwo Jima, Hokkaido, and Marcus Island are also to be turned over to Japanese control in 1993.

Donald Tomkinso, CA wrote, "After seeing the NDB's that Vaage, CA submitted, I thought I would expand the Southern California loggings somewhat so I am sending in some of mine. Ten days of rain really cleaned off the hi-voltage insulators out here and lowered the noise level making for better reception of beacon signals.

Ken Sooy, Sr., NJ has been a SWL off and on since the '40's. "I have read *POP'COMM* since the first issue and just recently started to devote some time to the Ute's and I find it interesting. I used a Radio Shack DX-440 and a longwire antenna to get these loggings and I will continue to use this arrangement until I can spare some permanent space for a shack as I can presently set up and tear down in short order."

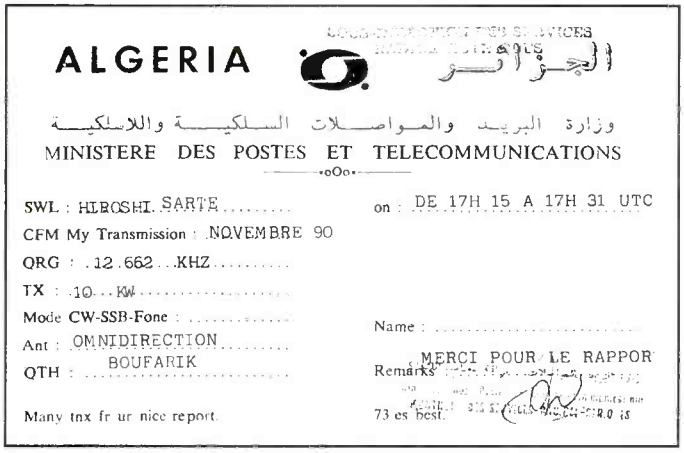
Henry Johnson, VA has added some information regarding the photo taken by R.C. Watts (see Feb. '93 column). "R.C. pointed out that the wires of the antenna on the British Admiralty building could not be seen in the picture. I thought readers might be interested in what I saw when I observed the same installation back in 1976 while I was on business in London. I recognized the antennas as the old style 'cage' antenna of some large diameter."

Cage antennas are still in use today and some readers may recall the series of photos in the column from time to time that were provided by Professor Desmond Ball of Australia. The photos showed the antenna installations on the roofs of Soviet Embassies in various Capitals.



Patrick Griffith, CO provided this photo of Non-Directional Beacon TOT which is located about 10 miles north of Denver Stapleton AP. TOT operates on a frequency of 281 kHz.

Ralph Craig, OH described an interference problem that was a mystery until it was tracked down. "I was an Engineer with the FAA trying to commission a landing



ALGERIA

الجزائر

وزارة البريد والمواصلات السلكية واللاسلكية

MINISTERE DES POSTES ET TELECOMMUNICATIONS

SWL : HIROSHI SARTE ..... on : DE 17H 15 A 17H 31 UTC

CFM My Transmission : NOVEMBRE 90

QRG : 12.662 KHZ .....

TX : 10 KW .....

Mode CW-SSB-Fone : .....

Ant : OMNIDIRECTION .....

QTH : BOUFARIK .....

Name : .....

Remarks : MERCI POUR LE RAPPOR

Many tnx fr ur nice report. 73 es best.

QSL received by Hiroshi Saito, Japan.

COAST GUARD
CORPUS CHRISTI, TEXAS
GROUP (NOY8)

QSL

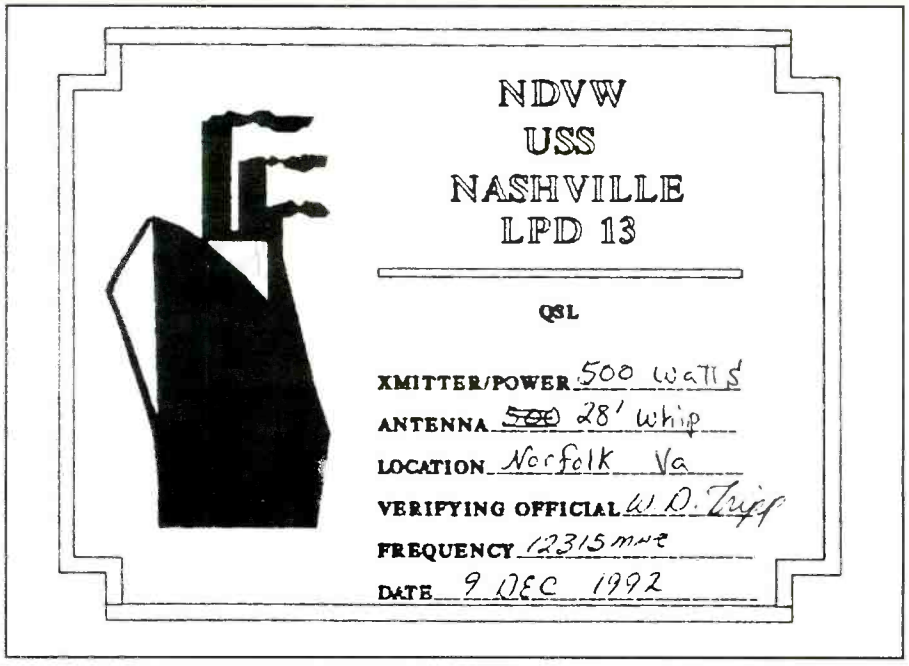
DATE : 23MAR92 27-42 N

FREQ : 2670 KHZ 97-16 W

Ed Rausch, NJ shares this Coast Guard QSL with readers.

Abbreviations Used For Intercepts

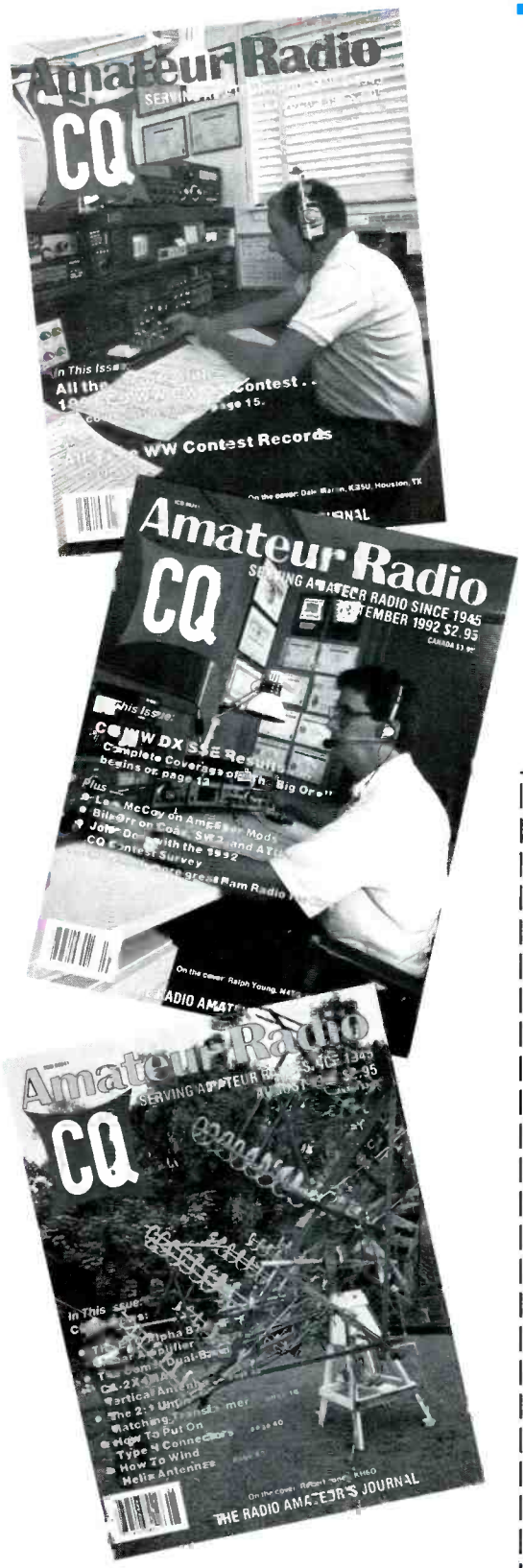
AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identification/Ied/location
LSB	Lower Sideband mode
OM	Male operator
PP	Portuguese
SS	Spanish
tfc	Traffic
USB	Upper Sideband mode
w/	With
wx	Weather report/forecast
YL	Female operator
4F	4-figure coded groups (i.e. 5739)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



Joe Galante, NY used this PFC to obtain his reception verification.

aid. The flight check aircraft reported QRM on the frequency—108.9 MHz. When a receiver on the ground was tuned to the frequency a broadcast station could be clearly heard on the frequency whenever the transmitter for the aid was turned off. Using a vehicular mounted receiver we traced the signal to the broadcast station. The station engineer simply did not believe that his signal (1210 kHz) was being received at 108.9 MHz. Listening on our receiver and on another he was able to obtain, convinced him. We then went to the transmitter site to check and there it was discovered that there were two antennas on the tower. The steel tower of some 300 feet high carried a FM antenna at the top, and running up the tower on 12 inch insulators was an AM antenna. The tower just being a support mechanism. When the engineer turned off either the AM transmitter on 1210 kHz or the FM transmitter on 107.7 MHz the QRM went away. Obviously, the FM and the AM signals were mixing and being reradiated on our frequency of 108.9 MHz. I do not know what the engineer did to correct the situation as the QRM ceased shortly after our visit. The stations were some 20 miles from the airport so the mixing product was fairly strong.

If you enjoy Amateur Radio, you'll enjoy CQ.



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UTC	FREQ	STATION	CALL	REMARKS
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0033	2670.0	USCG, GROUP ASTORIA, OR	NMW	WX, NTM
0103	2670.0	USCG, GROUP FORT MACON, GA	NMN37	WX, NTM
0133	2670.0	USCG, GROUP CAPE HATTERAS, NC	NMN13	WX, NTM
0203	2670.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
0203	2670.0	USCG, GROUP HAMPTON ROADS, VA	NMN80	WX, NTM
0203	6501.0	USCG, COMMSTA KODIAK, AK	NOJ	OFFSHORE WX,
0233	2670.0	USCG, GROUP EASTERN SHORE, VA	NMN70	WX, NTM
0303	2670.0	USCG, GROUP HUMBOLT BAY, CA	NMC11	WX, NTM
0303	2670.0	USCG, GROUP MONTERREY, CA	NMC6	WX, NTM
0305	2670.0	USCG, GREATER ANTILLES SECTION, SAN JUAN	NMR1	WX, NTM
0320	2670.0	USCG, GROUP ST PETERSBURG, FL	NMA21	WX, NTM
0330	13089.0	USCG, COMMSTA GUAM	NRV	OFFSHORE WX,
0350	2670.0	USCG, GROUP MIAMI BEACH, FL	NCF	WX, NTM
0400	4426.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
0400	6501.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
0400	8764.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
0420	2670.0	USCG, GROUP CHARLESTON, SC	NMB	WX, NTM
0430	4426.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
0430	8764.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
0430	13089.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
0440	2670.0	USCG, COMMSTA BOSTON	NMF	MARINE INFOR
0530	2670.0	USCG, STATION CHANNEL ISLAND, CA	NMQ8	WX, NTM
0530	4426.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
0530	6501.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
0530	8764.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
0533	2670.0	USCG, GROUP ASTOROA, OR	NMW	WX, NTM
0545	2670.0	USCG, COMMSTA HONOLULU	NMO	O/S WX, F/CA
0545	6501.0	USCG, COMMSTA HONOLULU	NMO	O/S WX, F/CA
0545	8764.0	USCG, COMMSTA HONOLULU	NMO	O/S WX, F/CA
0550	2670.0	USCG, GROUP NEW ORLEANS, LA	NMG2	WX, NTM
0603	2670.0	USCG, GROUP NORTH BEND, OR	NOE	WX, NTM
0615	2670.0	USCG, GROUP PORT ANGELES, WA	NOW	WX, NTM
0620	2670.0	USCG, GROUP MAYPORT, FL	NMA10	WX, NTM
0705	2670.0	USCG, COMMSTA GUAM	NRV	OFFSHORE WX,
0930	6501.0	USCG, COMMSTA GUAM	NRV	OFFSHORE WX,
1000	4426.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
1000	6501.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
1000	8764.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
1020	2670.0	USCG, GROUP MOBILE, AL	NOQ	WX, NTM, REM
1030	4426.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
1030	8764.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
1030	13089.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
1040	2670.0	USCG, COMMSTA BOSTON	NMF	MARINE WX
1040	2670.0	USCG, GROUP CORPUS CHRISTI, TX	NOY8	WX, NTM
1050	2670.0	USCG, GROUP GALVESTON, TX	NOY	WX, NTM
1050	2670.0	USCG, GROUP NEW ORLEANS, LA	NMG2	WX, NTM

This list, prepared by Richard Baker of Ohio, is the first installment of marine and Notice to Mariners schedules conducted by US Coast Guard CommSta's or Groups.

Sometimes the 'intermod' isn't in the receiver."

When low-band VHF skip is in, Dave Wiechman, CA, can copy WTVM, Columbus, OH on 26250 kHz and WLW, Cincinnatti, OH on 26450 kHz. "Incidentally, these are narrowband FM signals. There once were many such channels in use by broadcasters in my area; but most here have now moved to allocations in the 900 MHz portion of the spectrum."

I have metioned *Jane's Military Communications* publication several times in the column and as a result I have received queries concerning a source for the book. I presently only know of two places that offer slightly outdated volumes at reduced prices. When a particular volume is first published it is expensive. The 1990-1991 edition for example had a price tag of $170. However, the edition has been available every so often from Barnes & Noble, 126 Fifth Avenue, New York, NY 10011 and from Edward R. Hamilton, Falls Village, CT 06031-5000. Write to those addresses for additional information.

Richard Baker, OH reports he has had several of his PFC's returned marked, "Unit Decommissioned." Since the callsigns have been noted in use they have apparently been reassigned. NNN0CMA is not the John L. Hall; NNN0CYV is no longer USNS Dutton, T-AGS-22; NNN0CTD is no longer USS Henry Wilson; and NNN0CSA is no longer USS Lawrence, DDG-4; NNN0CRJ is no longer USS Talbot, FFG-4; NNN0CUL no longer USS Semmes, DDG-18.

Richard also noted NNN0ERA and

NNN0XRA in casual comms advising re notice from AAA9A Chief Army MARS, that their units prohibited from using Navy MARS unless extreme emergency.

Wellington Radio/ZLW is owned and operated by Telecom International, a subsidary of Telecom Corporation of New Zealand Limited. The station operating room is located within the city of Wellington in position 41.16.26S 174.45.55E (these are the co-ordinates of our MF tx used for maritime mobile Distress and Safety services).

The station occupies a 22 hectare site some 300m above sea level and enjoys a panoramic view of the harbour, city and environs. Wellington Radio antenna towers have been a feature of the Wellington skyline since August 1912. Operating staff numbers are 10.

We provide Maritime Mobile Distress, Safety and Message services on frequencies from 2mHz to 22mHz utilising voice, telex and morse modes. We also provide HF fixed point services to Campbell Island, Raoul Island and Pitcairn Island which are simplex USB circuits offering voice comunication only.

All of ZLW HF tx are at Himitangi in position 40.23S 17518E, some 70 km north of Wellington. All receivers are at Makara 6.5 km North West of the operating room. Remote control is extensively employed.

This ZLW information was received without the name of the contributor. Thanks to whoever sent in this item.

UTE Loggings. All Times UTC.

71.43: Decca Station Zeven (Frisian chain), Germany w/carrier at 0802. (Boender, Netherlands)

77.50: DCF77, Time Signal Station Mainflingen, Germany w/time signals at 0805. (Boender, Netherlands)

85.72: Decca Station Finstwolde (Frisian chain), Holland w/carrier at 0838. (Boender, Nethelands)

122.3: OUA23, Aarhus Naval, Denmark in CW at 1650 w/VVV DE OUA23 mkr. (Boender, Netherlands)

175: KRY, Lowfer, Chardon, OH at 1034. (Crabill, VA)

190: TH, Lowfer, Colts Neck, NJ at 1048. (Crabill, VA)

203: Beacon NSI, San Nichols Island, CA at 1330. (Polhamus, CA)

205: Beacon CQA, Celina, OH at 0200. (Vylasek, OH); Beacon COR, Corcoran/Sayler Farms, CA at 1455. (Tomkinson, CA)

209: Beacon IKB, Wilkesboro, NC at 1213. (Crabill, VA); Beacon HCD, Hutchinson, MN at 0434. (Vylasek, MN)

210: Beacon MY, Montgomery Field, San Diego, CA at 0910. (Tomkinson, CA)

212: Beacon SSQ, Shell Lake, WI at 0438. (Vylasek, MN)

227: Beacon SJY, San Jacinto, CA. (Polhamus, CA)

245: Beacon TLR, Tulare, CA at 1221. (Vaage, CA)

253: Beacon UR, Burbank, CA at 0658. (Vaage, CA)

257: Beacon LKA, Chino (Swan Lake), CA. I hear this 24 hrs per day. (Tomkinson, CA)

269: Beacon AHX, Athens, TX at 1846. (Low, TX)

275: Beacon ING, Philadelphia, PA at 1234. (Crabill, VA)

277: Beacon CHT, Chiltern, UK at 0609. (Sevart, England)

279: Beacon Y, u/i at 0327. (Sooy, Sr., NJ) Wonder if this is Scatarie Island, NS, Canada which was on 286 & then moved to 300 kHz and perhaps has now moved again?? (Ed.)

289: Beacon MR, Marina Del Rey Light 3, CA at 0702. (Vaage, CA)

293: Beacon PH, Penzance, UK at 0611. (Sevart, England)

298: Beacon HL, Cape Henlopen, DE at 0333. (Sooy, Sr., NJ)

308: Beacon UTS, Huntsville, TX at 1820. (Low, TX)

311: Beacon OE, Heathrow Airport, London, UK at 0619. (Sevart, England)

316: Beacon AC, Atlantic City, NJ at 0335. (Sooy Sr., NJ)

319: Beacon RB, Redondo Beach West Jetty Light 3, CA at 1242. (Vaage, CA)

322: Beacon LCY, London City, UK at 0624. (Sevart, England)

333: Beacon STT, Mountain Home, ID. I used to live 2 miles from this beacon. It threw harmonics above 2 MHz. (Tomkinson, CA)

335: Beacon PV, Providence, RI at 0230. (Sooy, Sr., NJ); Beacon RWN, Winamar, IN at 0503. (Vylasek, OH)

338: Beacon GE, Gatwick Airport, London, UK at 0636. (Sevart, England) Beacon LH, Lancaster, OH at 0500. (Vylasek, OH)

346: Beacon PCM, Plant City, FL at 1141. (Crabill, VA)

350: Beacon RG, Oklahoma City, OK. Wx on voice at 1205. (Crabill, VA); Beacon DF, Deer Lake, Nfld., Canada. (White, ME)

363: Beacon RNB, Millville, NJ at 0354. (Sooy, Sr., NJ)

363.5: Beacon CT, Coventry, UK at 0652. (Sevart, England)

367: Beacon HA, Hao Atoll/Tuamotu Island, Fr. Polynesia at 0825. Almost a 'regular' due to its hi-power output, 5kW! (Tomkinson, CA)

370: Beacon Paicoma (Barton Heliport), CA. (Polhamus, CA)

373: Beacon EP, Estevan Pt., BC, Canada at 0842. (Tomkinson, CA)

379: Beacon CM, Channel Head (Mouse Is.) Nfld, Canada. (White, ME)

380: Beacon ML, Milledgeville, GA at 0604. New freq; ex-359 kHz. (Crabill, VA)

386: Beacon GMA, Dalton, NH. (White, ME)

388: Beacon MCR, Manchester, UK at 0703. (Sevart, England)

395: Beacon XEN, Xenia, OH at 0210. (Vylasek, OH)

397: Beacon MXO, Monticello, IA at 1112. (Crabill, VA); Beacon SB, San Bernadino (Norton AFB), CA at 1321. (Vaage, CA); Beacon J, St. John, NB, Canada. (White, ME)

403: Beacon AXA, Algona, IA at 1109. (Crabill, VA)

407: Beacon RIE, Rice Lake, WI at 0605. (Vylasek, MN); Beacon H, Montreal, PQ, Canada. (White, ME)

408: Beacon MVV, Moses Lake, WA at 1327. (Vaage, CA)

414: Beacon OEG, Yuma Proving Grounds/ Golden Eagle, AZ. Ex-LGF. Hrd at 0900. (Tomkinson, CA)

417: Beacon HHG, Huntington Municipal, IN at 0550. (Vylasek, OH)

444.5: PCH, Scheveningen, Holland in CW w/tfc list at 1650; FFB, Boulogne-Sur-Mer, France in CW at 2235 w/navigational wrngs. (Boender, Netherlands)

489: VCM, St. Anthony, Nfld, Canada w/Canadian CG wx bcst. (White, ME)

517: Beacon CWA, u/i, vy weak at 0429. (Sooy, Sr., NJ) Cud this be YWA, Petawawa, Ont., Canada on 516 kHz?? (Ed.)

526: Beacon RWE, Camp Roberts/San Miguel, CA. (Polhamus, CA)

1148: CHU, Canadian time station at 1149. (Sooy, Sr., NJ)

2182: Various vessels checking in w/Pusan, S. Korea radio at 1350 in USB. (Sabo, S. Korea)

2278.9: U/i OM/EE outbander on freq in USB at 0022. Was singing songs then started screaming & later back to singing. He then played the harmonica. (Sevart, England)

2598: VOJ, Canadian CG, Stephenville at 0704 w/wx, foll by VOO Comfort Cove at 0811 and VCP, St. Lawrence at 0821. All in USB. (Baker, OH)

2670: USCG CAMSPAC, San Francisco, w/wx & various District 11 notices to mariners. USB 1405-1411. (Sabo, S. Korea)

2702: Coastal Control wkg Golf Kilo (Royal Navy) in USB at 0037. (Sevart, England)

2749: VCN, Cap-Aux-Meules, CG, Canada in USB w/marine wx advisories in FF then EE at 0507-0510. (Caldicott, MA)

2870: Russian VOLMET stns Novosibirsk at 0213, Kuibyshev at 0215, Sykvytar at 0230, and Yekaterinburg at 0235. All USB. (Boender, Netherlands)

2941: Moscow Volmet in USB at 0140 w/wx in RR. (Sevart, England)

2998: Naha, Okinawa Aeradio wkg Northwest 94 in USB at 1356. (Sabo, S. Korea)

3228: YL rptng Echo Lima from 1930-1935, then 5F GG text for 063 and 928. (Mason, England)

3251: U/i CW stn sending 5F grps w/unusual characters at 0347. (Sevart, England)

3252.5: U/i CW stn w/5F grps w/unusual characters at 0210. // with 3641 kHz. (Sevart, England)

3253: NIKI, USCGC Tampa (WMEC-902) wkg NRZI, USCGC Sorrel (WLB-296). Tampa relaying comms to USCG Group Woods Hole from Sorrel re distressed F/V Sea Grass (?). Pumps not keeping up w/water, unable estimate water per hour, it's coming in too fast. Group Woods Hole req F/V activate EPIRB (Emer. Position Indicating Radio Beacon). At 2328 Tampa relays further sitrep, engine room flooding, adv Sorrel Helo will be airborne shortly. Req position of F/V every 10 mins. USB mode. (Baker, OH)

3262: New 2L station. YL/GG rptng Romeo Delta w/electronic tones from 2000-2005. 5F traffic was for 041/12, 116/40, 208/33, and 457//24. Rptd next day at 1900 on 4543 kHz. (Mason, England)

3270: YL/EE Mossad stn rptng KPA2 at 0214. (Sevart, England)

3455: Tokyo Aeradio wkg Singapore 11 in USB at 1404; Philippine 104 to Tokyo w/position report at 1413. (Sabo, S. Korea)

4024: At 2000 CW NNN being sent. Then at 2005 YL/GG w/Gruppe 30 x2 & into 5F grps. (Mason, England)

4030: YL/SS in SSB at 0515 w/4F grps til 0520. (Sooy, Sr., NJ)

4032: U/i stn in MCW at 0406 w/5F grps. Ended w/AR, sent GR 30 & rptd msg. (Sevart, England)

4149: Two OM/EE in USB at 0527 w/maritime comms. (Low, TX)

4373: Bravo Whiskey & Alpha Alpha in SSB at 0535 w/military comms, possibly ground troops. (Sooy, Sr., NJ)

4384: VAI, Canada CG, Vancouver w/wx for Ber-

ing Sea, Gulf of Alaska, and offshore waters west coast. USB mode. (Baker, OH)

4420: "Dripping Water" sound at 2125. Signal occupied 4415 to 4450 kHz. (Sevart, England)

4463: YL/EE Mossad stn FTJ at 0200. (Sevart, England)

4538: YL/EE w/1-0 count and '885' from 2100-2110. After ten tones 'count 70' and into 3/2F grps. (Mason, England)

4543: YL rptng Papa Zulu from 2100-2105 then 5F grps in German for 625 and 374. (Mason, England)

4560: At 0505 CanForces Naval Station, Halifax Military W/HMCS Toronto (FFH-333), helicopter fast frigate, using id Warship Toronto. Comms re encoded msg. Also hrd at 0556. USB mode. (Baker, OH)

4580: OM/EE w/RR accent rptng 152 form 2100-2105. Then 485 x2, 95 x2 and into 5F grps. Ended w/00000. (Mason, England)

4603: SLHFM 'P' at 2010 w/unusual format. Letter P sent in pairs, i.e., P-1 sec gap-P, P-2 sec gap-P, P-1 sec gap-P, etc. (Mason, England)

4663: Khabarovsk VOLMET in USB from 1137-1140. YL opr w/heavily accented EE. (Sabo, S. Korea)

4746: USAF comms at 0545. OM/EE w/status & time of tankers requested, also rendezvous area wx. Dover mentioned & it suspected that Dover AFB was the ground stn for above comms. (Sooy, Sr., NJ)

4870: Warbling jammer at 0249 moving back & forth from this freq & 4880 kHz. (Sevart, England)

4880: At 1900 YL/EE w/ULX at quite a fast delivery. When YL said 'Message x2, Group 106 x2' her voice went very deep and slow but speeded up when the 5L text was sent. (Mason, England); ULX & JSR on same freq at 1800. Later, JSR stopped and ULX sent a msg. (Sevart, England)

5000: RCH, Tashkent, USSR. Time signal stn in CW at 2359. (Sevart, England)

5301: OLX, Prague w/5F msg in CW at 0000. Had faulty xmtr. OLX has moved back to original freqs of 5301, 6758, and 8142 kHz. (Sevart, England)

5310: MB (Control stn) in USB at 2305 wkg A9F, X1E, 4GS and 5AO w/comms concerning boarding and diversion of u/i motor vessel. A9F and X1E were to board vessel and 5AO was to escort vessel to Brindisi, Italy. MB opr had UK accent, A9F French, X1E & 4GS American and 5AO Italian. Active almost every evening. (Rausch, NJ)

5315: YL/GG rptng 435 x3, 08712, 027 from 1900-1905. After 5 tones into 5F grps. Also on 7830 kHz. (Mason, England)

5367: 437, u/i stn in CW w/5F grps. Msg header: 1 555 85. Hrd at 2045. (Boender, Netherlands)

5413: At 2003 CW stn sending VVV DE VOE, u/i. (Mason, England)

5502: YL/Chinese w/short recorded phrase of 4 syllables rptd x3. Preceded by a rush of white noise. Hrd 2000-2005. (Mason, England)

5503: 234 rptd in CW at 2218. At 2220 sent BT 91 43 and into 5F grps. At end of msg rptd 234 call msg. Signed down w/000. (Sevart, England)

5526: At 0628 American 956 wkg Maiquetia Aeradio, Venezuela (NE-SAM), w/position & flight info. At 0636 American 904 w/same, foll by American 950 at 0637. All USB. (Baker, OH)

5598: French Line 647 w/Santa Maria at 0830, leaving FL 290 for 350; Martinair 652 (Punta Cana-Amsterdam) w/S. Maria giving position report at 0837; Lufthansa 499 wkg S. Maria at 0900 w/position report. All USB. (Boender, Netherlands)

5643: Qantas flight 3 wkg Honolulu w/position check at 0838. (Spurway, Australia)

5651: At 2000-2004 OM/EE w/897. Then 452 x2 61 x2 and into 5F grps. Ended w/00000 and rptd at 2100 on 4660 kHz. (Mason, England)

5673: Beijing VOLMET in USB from 0927-0930. Voice of YL computer-generated in CC. (Sabo, S. Korea)

5680: Scrambled speech in USB at 2315. At 2330 Edinburgh Rescue wkg Rescue 177. (Sevart, England)

5690: At 1920 CW stn sending 748 x3, 000000. Zero was cut to T. This was machine sent CW. (Mason, England)

5696: USCG 1501 w/pp to D5 Ops at 1613. A/ was asked to search for a 67' schooner type sailing vessel w/name of Rachael B. Jackson. D5 said vessel may have radio probs. Known to have probs in past. 1501 was also asked what the best detection device was onboard a/c. Pilot responded he had been searching assigned area w/normal 5 mile track space but can provide wider sweep w/radar if requested. According to pilot, radar can even detect wooden hull quite adequately. 1501 terminated comms w/mgs that he leaving for next southern quadrant. (Caldicott, MA)

5758: YL/SS in SSB at 0409 w/5F grps. Off at 0420. (Sooy, Sr., NJ)

6224: Marine comms in SS at 0434, discussing VHF CH to use, fog & river conditions. Other marine comms on other nights in various languages. (Sooy, Sr., NJ)

6236: Comms on this freq believed be by units involved in USCG Haitian Ops. Hrd CG 1719 (C-130), NRPM, USCGC Legare (WMEC-912), NJOR, USCGC Gallatin (WHEC-721), NICB, USCGC Forward (WMEC-911), CG 1710 (C-130) CG 1720, u/i a/c, NROS, USCGC Spencer (WMEC-905). Spencer advised use this freq as primer, "3C7" as secondary. All in USB mode. (Baker, OH)

6507: Swedish Rhapsode tune at 2001 on AM. Rptd until 2005. Then YL/GG 5F grps. (Sevart, England)

6679: Hong Kong VOLMET. YL opr in USB 1246-1250. // w 8828 kHz but copy on 6679 was much better. (Sabo, S. Korea)

6730: Contender clg Outplay (both USAF tactical callsigns) on "X903." Then requests he go secure. Outplay advised QSY to "X904." USB at 0441. (Baker, OH)

6736: U/i OM/SS in SSB at 0441. Freq listed as drug running/smuggling activities. Next night OM/SS w/short transmissions then into EE military type comms (Xray Alpha Foxtrot, etc.) w/short trnsms sounding like surveillance setup. Next night at 0413 hrd similar comms w/phonetic ltr & nbr calls for more than 1/2 hour. (Sooy Sr., NJ)

6738: Offutt to MAINSAIL w/EAM bcst in USB at 0823. // w/11176 and 13201 kHz. (Sabo, S. Korea)

6773: Nbr stn 378 in CW at 2157. Header: 1 154 27. 5F grp text. 1=nbr of msgs. 154=key. 27=GR count. (Boender, Netherlands)

6798: YL/SS at 0600 w/Attencion 753, 02. Then 02, 130 & into 5F grps until 0619. Then two "Final's" and immediately more 5F grps. At 0628 one "Final" and off. (Mazanec, OH)

6840: YL/SS in AM at 2235 w/4F grps. (Sevart, England)

6853: YL rptng Whiskey Lima w/electronic tones from 1900-05. At 1905 026 026 42 Gruppen und 22 Gruppen, 522 522 22 Gruppen. Then into German 5F grps. YL/EE rptng Mike Delta 2000-05. Then Message for 241/29 331/44 017/36. 'Attention' then into EE 5F grps. (Mason, England)

6995: 5F grps in CW at 0511, ended w/AR. (Sevart, England)

7375: YL/GG at 1702 in AM rptng 170 170 170 61376 031. At 1710 five tones and into 5F grps. (Sevart, England)

7421.5: USCGC Naushon wkg COMMSTA New Orleans at 0622 re poor comms poss due to heavy tx. Naushon has a listed homeport in Alaska. (Rausch, NJ)

7425: YL/SS in AM at 0425 w/4F grps. Vy weak w/QRN due to storm. (Dutcher, NY)

7450: YL/EE rptng 4161, 9528, 5505 at 0030. Next night YL/EE rptng 0014, 8353 at 0030. (Soderlund, RI)

7495: YL/EE rptng 2539, 9101, 5171 at 0030. (Soderlund, RI)

7535: Following ships hrd on USN Norfolk SESEF primary. At 1559 u/i sub using call "In Port Navy Unit" for xmtr test; 1609 radio test w/NGHY, US Peterson (DD-969); 1700 NTGS, USS Spartanburg County (LST-1192), xmtr tests; 1821 NIHI, USS Opportune (ARS-41) radio ck then to UHF to ck xmtr; 1854 w/u/i ship using tac call 3 Charlie Juliet, xmtr tests; 1921 clg USS Posse??; 1936 wkg u/i USN ship using tactical call of Quebec 7 Whiskey; all comms USB. (Baker, OH)

7635: Norfolk, VA SESEF in USB at 1922 wkg NGGD, USS Mississippi (CGN-40). (Margolis, IL)

7875: In here at 1950 when OM/EE was sending 5F grps. Ended w/328 x2 51 x2 00000. (Mason, England)

7887: YL/EE in USB at 0605 rpts 50472 + Vive la Compagnie tune. At 0610 hi-lo tones sent foll by 5F grps w/each grps twice. Poss tape splice at 0613? "2-(pause then short tone) 9929" and continues msg. (Margolis, IL)

7918: YL/EE Mossad stn rptng YHF2 w/unid OM mocking it on the same freq. (Sevart, England); YL w/5L grps in USB at 1627. Mossad YHF channel. (Sabo, S. Korea)

8136: YL/SS in AM at 0504 w/"Atencion" rptd. 0508 5F grps w/o beeps or Grupo beforehand. She sounded as if she had a speech impediment. Her voice hrd on every freq between 8125 & 8156 kHz. (Margolis, IL)

8240: Yacht Nuclear Electric w/Portishead Radio at 0649 conducting phone interview re leading in race. All w/very English accents. Electric being picked to win race. (Baker, OH); British aircraft carrier "Warship Ark Royal" (GCDG, R07) w/rptd calls to Portishead in USB from 2026-2033. (Sabo, S. Korea)

8294: Two OM (prob Greek) in SSB at 0443 w/fishing conversation, catch mentioned, some EE conversation. (Sooy Sr., NJ)

8298.5: USB Net at 2217 w/New England, Sea Lab, Laptop Alfa & Morning Light. All u/i. Net switched to 6 MHz band at 2230. (Margolis, IL)

8300: Chinese numbers station "New Star Radio Station Number 4" signing on, then into YL/CC 4F grps, each x2. AM mode at 1103. Similar, but non-parallel best noted on 11430 kHz in AM at 1108. (Sabo, S. Korea)

8562: PCH40, Scheveningen, Holland in CW at 1445 w/DE PCH40 mkr. (Boender, Netherlands)

8604: DZJ, Bulacan, Philippines at 1320 in CW clg CQ 6/12/16 MHz. (Caldicott, MA)

8641: YL rpts MIW2 in USB at 2018. (Sabo, S. Korea)

8690: 3DP, Suva, Fiji Islands w/CW mkr CQ DE 3DP...at 0920. (Dos Anjos, Brazil)

8719: At 2403 Cape Town, S. Africa starting 2nd R/T call for u/i vessel advises him ch. 1221 best days. At 2108 USS Opportune (ARS-41) w/COMSUPRON 8 for rdo ck on USN primary "Salvage" channel, Little Creek, VA. USB mode. (Baker, OH)

8739: YL/EE in SSB at 0523. Has strong accent. Reading freq list then into SS at 0525 with freq list. (Sooy Sr., NJ)

8752: KVH, NOAA Atlantic Marine Center w/ WTER, NOAA Ship Malcolm Baldrige (R-103) at 1801 in USB re admin comms. (Baker, OH)

8849: Beijing VOLMET in USB at 0115. Was computer-generated OM voice in EE. // w/13285 kHz. (Sabo, S. Korea)

8873: YL/SS in AM at 0914 w/5F grps. (Lundquist, IA)

8888: Luanda, Angola in USB at 0350 in contact w/Namibia 662. (Dos Anjos, Brazil)

8894: Algiers Air in USB at 0147 wkg Lufthansa flt. 569 at flight level 390. 569 requested Algiers provide 'Bravo Kilo' (tone). When signal rcvd, 569 stated eta at 0203. At 0150, Alitalia flt 812 requested permission for level 330. (Caldicott, MA)

8903: N'Djemena, Chad Air rdo & Niamey, Niger Air rdo in USB wkg several flts across Africa. Hrd 0005-0035. Luanda, Angola can also be hrd this freq. (Caldicott, MA)

8933: Jo'berg Radio hrd wkg various Springbok flights in USB between 1959 & 2005. Good copy on Jo'berg, tho I could barely make out the a/c. (Sabo, S. Korea)

8967: Reach 2103 wkg Dhahran, Saudi Arabia metro via PP from Andrews AFB in USB at 2308. (Rausch, NJ)

9013: Aerolineas Argentinas, Bs. Aires in contact w/Argentina 319 at 1221 in USB. (Dos Anjos, Brazil)

9106: British Antarctic Survey, tfc between Signy & Faraday in USB at 2345. (British Bases in Antarctica). (Dos Anjos, Brazil)

9130: YL w/5L grps in USB at 1737, strong sigs & //6840. Hrd on other days at 1627 & 2009 w/similar tfc. (Sabo, S. Korea)

9222: YL/SS in AM w/928(x3), 1-0 count, rptd at 0303. (Low, TX)

9831: YL/EE in AM at 1429 w/3+2F grps, non-parallel YL/EE w/2+3F grps noted on 10723 kHz at 1432. (Sabo, S. Korea)

10046: 4XZ, Haifa, Israel w/VVV mkr at 0238. (Low, TX)

10066: A/c EWW-802 reports position WINSLOW, flight level 370 to Kunming, PRC Aeradio at 1147. Kunming advised a/c to make contact via VHF 133.6 MHz. A/c carried Reg. N791FT & headed for Hong Kong. Calcutta Aeradio took over & wrkd a/c at 1148. All USB mode. (Sabo, S. Korea)

10177: YL/GG in USB at 0145 w/3-2F grps. (Margolis, IL)

10262: YL/EE in AM at 1422 w/4+2F grps, //13906 kHz. (Sabo, S. Korea)

10940: YL/EE in AM at 1134 w/4F grps. YL/EE w/3+2F grps hrd most often so this was quite out of the ordinary. (Sabo, S. Korea)

11002: VVV DE OLX in CW from 1455-1500 foll by YL/Czech rptng '374' until 1505 then into 5F grps. Also on 6758/5301 kHz. Unable to QSL this former CETEKA Press station. (Mason, England)

11176: USAF in Mogadiscio, Somalia asking for contact at 2320 in USB. (Dos Anjos, Brazil)

11300: Addis, Ethiopia in contact w/Mauritius 057 in USB at 0050. (Dos Anjos, Brazil)

11345: Transavia PH-HVJ (Las Palmas-Amsterdam) w/Stockholm in USB at 0000 w/pp to Transavia Ops. A/c delayed due strong head wind & has insufficient fuel reach Amsterdam. Wants to divert to Rotterdam or Brussels. At 1240 VJ calls again telling that it will divert to Brussels, eta 1340. At 1303 VJ checks into cancel Brussles, they cannot make it and are now heading for Paris, De Gaulle. At 1310 Transavia Ops calls VJ to confirm the fuelstop at Paris. (Boender, Netherlands)

11397: Lineas Aereas Paraguayas Company freq. Asuncion wkg LAP 242 w/altitude position report at 0109 in SS. (Rausch, NJ)

11470: YL/EE in AM at 1209 rpts "989 989 989" and 1-0 counts til 1210, then 10 beeps, "Count 225" x2 and into 3/2F grps. Noted //16198 kHz at 1250. (Sabo, S. Korea)

11553: At 0204 weak comms, OM/EE's believed be Palmer Station, Anarctica wkg other u/i & weaker stn. At 0501 same comms, 0602 Palmer w/u/i stn, poss McMurdo re pack ice, ie patrol, & msg for worker in water plant. USB mode. (Baker, OH)

12070: WUG, Army Corps of Engineers, Lower Mississippi Valley wkg WUE6, COE Nashville, TN in USB at 1705. (Margolis, IL)

12221: YL/EE in AM at 1230 w/3+2F grps; rptng w/typical "count 225" at 1231. Strong, clean sigs and //13555 kHz. (Sabo, S. Korea)

12356: KZU, Gulf Mississippi Marine Co., Harvey, LA wkg vessels w/callsigns of WYT8732 & WBE5863. (Margolis, IL)

12800: HSA3/24, Bangkok, Thailand in CW at 1245 clg CQ foll by rptd tfc list at 1250. Note: This stn scheduled to xmit lists on HR+00. (Caldicott, MA)

12829.5: XFM, Manzanillo, Mexico in CW w/ wsx. Heavy side-band QRM from WNU, Slidell, LA. (Caldicott, MA)

13077: Voice mirror w/id of BA, Taipai in USB in EE &CC from 0258-0300. Anyone have a QSL address for this station? (Sabo, S. Korea)

13446: Rich Lady, USAF Tactical callsign, wkg FEMA WGY908, Denver, CO in SUB at 1607. (Margolis, IL)

13543: LBL1, Norwegian Forces w/UN in Beirut, Lebanon in USB at 1358. OM Opr w/Norwegian language comms. (Margolis, IL)

13775: YL rptng Golf Charlie w/electronic tones from 1130-35. Then 5F GG msgs for 334 & 808. (Mason, England)

13974: USN MARS, at 2149 NNN0CNA, USS Tripoli (LPH-10) wkg NNN0PSX w/pp tfc. Tripoli is off coast of Somalia in Op Restore Hope. At 2206 NNN0CVN, USS Briscoe (DD-977) wkg NNN0PSX w/pp tfc in USB. (Baker, OH)

14772: RIW, Khiva Navrad, Uzbekistan in CW at 1237 w/cut nbr tfc using ANDUWRIGMT. (Margolis, IL)

14945: YL rptng Lima Uniform between 1130-35 foll by 5F GG for 031 of 91 grps length. (Mason, England)

15015: USAF/GCCS. At 1715 AGAR 94 heavy clg McClellan w/no joy. USB mode. (Baker, OH) AGAR +# listed as EC-139 a/c. (Ed.)

15920: CFH, Halifax, NS, Canada in CW at 1830 w/NAWS (Notice to all Allied Warships) information. (Low, TX)

15970: KKN50, US Dept of State w/QRA/QSX mkr at 2234. (Low, TX)

15980: YL/EE rpts Echo Zulu India in USB at 1802. At 1804 into 5L msg using phonets. (Margolis, IL)

16084: YL/EE rpts 59687 & 'Vive la Compagnie' tune. At 1610 hi-lo tones octave apart, foll by 5F grps. All hrd at 1734 on another day. (Margolis, IL)

16180: NMN, USCG Portsmouth, VA in CW at 2240. (Low, TX)

17190: LSA, Boca, Argentina in CW at 0017 w/nx in SS. Down at 0042. (Margolis, IL)

17245/16363: At 1700 Portishead, GKT62, advising u/i vessel C6HJ7 he was #1, MNLM is #2, and ELDM9 is #3 on freq for R/T tfc. At 1717 Portishead wkg GQIM, HMS Herald (A-138), Royal Navy Survey vessel for R/T tfc, also u/i ves ZJL4743. At 1804 hrd KMI, Dixon, CA wkg ves Navigator for R/T tfc. (Baker, OH)

17485: YL/EE hrd w/3+2F grps in AM from 0138-0140. (Sabo, S. Korea)

18434: U/i CW stn at 1532 w/TD TR RIW rptd several times then TD UT TD UT TD UT BT BT BT and into 5L (cut nbrs) groups. (Ed.)

18630: CLP1, MFA, Havana, Cuba in CW at 1456 w/tfc in SS. (Margolis, IL)

18660.2: U/i CW stns at 1940. UP DE AT in CW then shifts to voice (u/i language) w/brief callup then back to CW w/UP UP DE AT QSA 4/5. Nil more hrd. (Ed.)

19005.2: CLP44, u/i Cuban Embassy DE CLP1, MFA, Havana, Cuba at CW at 1835. CLP1 tells 44 to QSV. Nil more hrd. (Ed.)

19113: USB at 1458 a 440 Hz tone every two secs; 1459 every sec w/double tones every 10 secs. 1501 every sec but 440 Hz tone on odd secs & 880 Hz tone on even secs. 1504 back to 440 Hz tone every two secs & rpts above pattern. Hrd during periodic checks throughout the day. (Margolis, IL)

20186: USB at 1525 phone ringing, YL/EE answers "Patrick AFB, Operator." (Baker, OH)

20192: OM's/EE w/comms 1549 "General wants to move on this" re team ck'ing for QRM from FM radio transmissions. At 1600 phone rings & is answered "Patrick AFB, Opr #16" & call routed to "Depot at 1549 Research Wing" after OM gives number. LSB mode. (Baker, OH)

20368: YL/EE in AM at 0326 w/3+2F grps. //22970 kHz. (Sabo, S. Korea)

21395: WA3NAN in USB at 1857 w/relay of STS-54 (Endeavor) comms w/Mission Control. (Low, TX)

21984.9: Honolulu Aeradio in USB at 0031 wkg u/i re Continental flights 905 & 906 departing Truk at 0011 and 0023. (Sabo, S. Korea)

22609.2: U/i CW stn w/nx in SS at 1958. (Ed.)

22696: EHY, Madrid, Spain wkg u/i vessel in USB at 1710 for R/T calls in SS. (Baker, OH)

28195: IY4M Amateur Beacon in Bologna, Italy hrd at 1615 on CW. (Dos Anjos, Brazil) ■

WASHINGTON PULSE

FCC ACTIONS AFFECTING COMMUNICATIONS

Unlicensed Ham Radio Operator Receives Second Felony Conviction

Richard A. Burton, an unlicensed radio operator, was found guilty of unlicensed operation for a third time in Federal District Court in Los Angeles. A jury found the defendant had violated Sections 301 and 501 of the Communications Act regarding unlicensed amateur radio operation. The latest conviction is Mr. Burton's second felony conviction. Burton had been convicted of similar violations in 1982 and 1990.

Mr. Burton made unlicensed radio communications in the two meter Amateur Band from his vehicle in Redondo Beach, California, in July 1992.

The FCC had suspended Mr. Burton's radio operator's license in September 1981 for violation of several FCC Rules and Regulations. Shortly thereafter, evidence of his continued radio operation was obtained by the FCC's Los Angeles Office. At the time of his first conviction he was sentenced to six months in prison and placed on probation for five years. He was convicted again on July 20, 1990, and was fined $2,000 and placed on probation for one year.

For his latest offense, Burton was sentenced on February 22, 1993, to seven months in custody by U.S. District Judge Ronald S.W. Lew. Mr. Burton also was given a one year probation period and has to perform 500 hours of community service and undergo psychological counseling.

Licensee Denied Review Of Request For Withdrawal and Expunction of Documents

The Commission denied John Joseph McVeigh, Esq., on behalf of his client, Richard A. White Jr., review of an action by the Field Operations Bureau which dismissed McVeigh's petition for reconsideration. McVeigh, on behalf of his client, requested withdrawal and expunction of documents from White's files. White is the licensee of amateur station KA3T.

This proceeding began when the Engineer-In-Charge (EIC) of the FCC's Norfolk, VA, office notified White of an apparent violation of the rules by retransmitting to another amateur station a packet radio message that appeared to facilitate the business activity of an organzation known as "The Coalition to Stop U.S. Intervention in the Middle East." After an exchange of correspondence, the EIC advised McVeigh that no further action would be taken in the matter because it appeared that steps had been taken to assure that no packet message addressed to all amateur stations in the United States emanated from White's station without prior screening for compliance with the rules. McVeigh was further advised that, because of the corrective action taken, nothing in the record would be prejudicial to the licensee in any future regulatory proceeding and that there would be no expunction from the record of the correspondence exchanged.

McVeigh sought reconsideration of that decision and his request was subsequently dismissed because such petitions lie only where a final action has been taken. Seeking review, McVeigh argued that the Bureau's refusal to withdraw and expunge the record was a prejudicial procedural error. McVeigh believes the EIC erred by stating that the matter was closed because corrective action had been taken and that the question would arise again concerning whether the prohibition against transmission of business messages was violated previously. McVeigh also argued that it was irrelevant, for purposes of reconsideration, whether there was a final action or not and that his client was entitled to an untainted record free of any question concerning the operation of his station.

Denying review, the Commission stated that White had given assurance that no packet message address to all amateur stations in the United States emanates from his station without prior screening for compliance with the rules. His response was considered satisfactory and the matter closed.

The Commission stated further that McVeigh's request to withdraw the original letter and to expunge it and all related correspondence from the record is unwarranted. The FCC does not consider a licensee's file contaminated merely by the presence of an exchange of correspondence between the Commission and the licensee. In this case, the Commission noted that the exchange had been fruitful in that it shows White as a licensee who takes seriously the responsibility for station control and that no useful purpose would be served by expunging the Commission's files.

Reduced Forfeiture Amount Assessed

The Commission issued an $8,000 forfeiture against Donald W. Bishop, Overland Park, KS, for operating an unauthorized station.

This amount was reduced from $10,000 which was initially proposed in the Commission's April 1992 Notice of Apparent Liability. The Commission found that, although Bishop violated the Commission rule prohibiting broadcasting without a license, his prior history of compliance with Commission rules warranted a downward adjustment to the forfeiture amount.

The 219-220 MHz Band For Use By The Amateur Radio Service

In response to a request by the American Radio Relay League (ARRL), the FCC proposed to establish a secondary allocation for the amateur service in the 219-220 MHz band to be used for amateur auxiliary station (point-to-point) packet backbone networks and other amateur point-to-point fixed communications. The Commission also proposed operating limits and other measures to ensure that such amateur operations do not cause interference to primary operations in and adjacent to the 219-220 MHz band.

Packet radio networks are used to transmit digital data in groups or packets using a specified format. Radio channels used by these systems are occupied only during the time individual packets of data are actually being transmitted. Upon completion of a transmission, the channel becomes available for other traffic. Amateurs use packet radio for transmitting a variety of information, including 1) graphic images, 2) computer programs 3) messages and 4) data bases. These systems can be used in times of emergency when other communications facilities are out-of-service or overloaded to efficiently carry a large volume of messages. Amateur radio operators plan to use wideband backbone packet radio networks to provide intercity links of their local packet radio systems.

In its petition, ARRL asked the Commission to authorized access by amateurs on a secondary basis to the 216-220 MHz band for amateur wideband packet networks and other point-to-point fixed communications services. They argued that crowded conditions on their existing bands, particularly in urban areas, prevented completing a nationwide backbone packet network.

The Commission is proposing to authorize amateur wideband packet point-to-point communications and other point-to-point fixed communications on a secondary basis in the 219-220 MHz band. The commission believes this will foster technological experimentation and innovation, particularly with higher data rates, and facilitate the construction of a nationwide packet data backbone network. The Com-

mission expects that this action will relieve congestion in the 222-225 MHz band in certain geographic areas. The Commission said the amateurs' ability to perform interference analysis, the directional nature of the proposed services, and the secondary status of this proposed allocation should adequately protect all primary and existing secondary operations in and adjacent to the 219-220 MHz band. The Commission invites comment on these assessments and proposals.

Changes In Message Forwarding System Proposed

The Commission proposed establishing a compliance policy for amateur stations participating in automatic message forwarding systems to hold the licensee of the station originating a message and the licensee of the first forwarding station primarily accountable for violative communications.

Under this approach, licensees of stations that only retransmit messages within a high speed message forwarding system would not be held accountable for communications they forward or their stations retransmit unwittingly.

Under the current rules each amateur licensee is fully responsible for assuring that the contents of every transmission from his or her station complies with the rules. This requirement was not a burden when licensees sent each message manually. With the availability of digital technology, however, some licensees have tied their stations together into high volume, high speed message forwarding systems. The stations are configured so that each message is instantly retransmitted to its destination through a series of stations.

Because message screening is difficult with these automatic systems and because screening at each station in these systems diminishes the advantages of high speed, the Commission proposed holding accountable only the licensee of the originating station and the licensee of the first station in a high speed message forwarding system.

New Experimentals

The Commission, by its Office of Engineering and Technology, Frequency Liaison Branch granted the following experimental applications:

KM2XOJ, State of Alaska, new experimental to operate on frequencies 151.00-151.990 for wildlife tracking using telemetry. MO: Region II, AK.

KM2XOK, State of Alaska, new experimental to operate on frequencies 151.00-151.990 for wildlife tracking using telemetry. MO: Region III, AK.

KO2XAH, Motorola, Inc., new experimental to operate on frequencies in 18820-18920 MHz and 19160-19260 MHz for development and testing of preproduction and production of Wireless-In-Building Network (WIN) system and for Beta testing FX&MO: Conus; Alaska; Hawaii.

LO2XAM, AT&T Bell Laboratories, new experimental to operate on frequencies 5725-5850 MHz for development of electronic shelf labels. FX&MO: Chicago, IL.

KO2XAQ, AT&T Bell Laboratories, new experimental to operate on frequencies 5725-5850 MHz for development of electronic shelf labels. FX&MO: Holmdel, NJ.

KM2XPF, Capital Cities/ABC, Inc., new experimental to operate on frequencies 1636.5-1645 MHz for use of TCS-9000 INMARSAT terminal for news gathering. MO: Continental U.S.

KM2XPV, MCQ Associates, Inc., new experimental to operate on frequencies 1626.5-1646.5 MHz for use of INMARSAT Standard-C equipment. MO: Continental, U.S.

KM2XPO, Bechtel, Corp., new experimental to operate on frequencies 1636.5-1645.0 MHz for use of INMARSAT system to provide emergency communication in the event of a natural or manmade disaster. MO: Continental, U.S.

KM2XQM, COMSAT Land Mobile Services, new experimental to operate on frequency 1639.250 MHz for use of INMARSAT system. MO: Continental U.S.

KM2XQD, Scientific-Atlantic, Inc., new experimental to operate on frequencies 1626.5-1660.5 MHz for use of an INMARSAT Standard-M communications terminal used to assist in research and development program of new uses or applications for terminals.

KM2XQA, State of Alaska, new experimental to operate on frequencies 1635.5-1645.0 MHz for emergency communications in remote areas. MO: Within State of Alaska.

KM2XPQ, International Organization For Migration, new experimental to operate on frequencies 1636.5-1645.0 MHz for use of INMARSAT for communication in areas where no other means of communications are available. MO: Continental U.S.

KM2XOM, AI International, new experimental to operate on frequencies 1636.5-1645.0 MHz for use of an INMARSAT system and for demonstration purposes. MO: Within State of New York. KM2M2XPS, Marconi Communications, Inc., new experimental to operate on frequencies 1636.5-1645 MHz and 1535-1543 MHz for technical demonstrations via INMARSAT system. MO: Continental U.S.

KM2XRH, Able Communications Company, Inc., new experimental to operate on frequencies 1636.5-1654 MHz for demonstration of INMARSAT terminal to prospective customers. FX: Pearland, TX.

KM2XRD, Adroit Systems, Inc., new experimental to operate on frequencies 15355-16450 MHz to fulfill U.S. Government contract (USAF).

KM2XQV, Union Oil Company Of California, new experimental to operate on frequencies 1636.5-1645.0 MHz and 1535.0-1543.4 MHz to provide emergency communication when no other means of communications are available. MO: Continental U.S.

KM2XQS, U.S. Newswire, new experimental to operate on frequencies 1626.5-1645.5 MHz and 1530-1545 MHz for use of INMARSAT-C terminal for mobile communications for American news media where conventional communication methods are unavailable. MO: Overseas; U.S.; and Wash., DC.

KM2XRC, Victory Marine, Inc., new experimental to operate on frequencies in the 1600 MHz range for INMARSAT earth station to allow communication with vessels at sea. FX: Seattle, WA.

KM2XPW, Trimble Navigation, Ltd., new experimental to operate on frequencies 1626.5-1646.5 MHz for marketing, testing, and demonstration of INMARSAT-C equipment. FX&MO: Sunnyvale, CA.

KM2XRJ, Alaska Clean Seas, new experimental to operate on frequencies 1636.5-1645.0 MHz for use of INMARSAT system to provide emergency communication in the event of an oil spill. MO: Within State of Alaska.

KM2XRK, BP Exploration, new experimental to operate on frequencies 1636.5-1654 MHz and 1535.0-1545.5 MHz for use of an INMARSAT system for emergency communication in the event of an oil spill or other types of disasters. MO: Contnental U.S.

KM2XRL, NAV COM, Inc., new experimental to operate on frequencies 1635.0-1645.0 MHz and 1535.0-1545.5 MHz for use of an INMARSAT system for demonstrations and factory testing. MO: Continental U.S.

FCC Upholds Action Denying Proposed Amendent For 800 MHz SMR

The Commission denied a Petition for Reconsideration submitted by the National Association of Business and Educational Radio, Inc. (NABER), thus, upholding the Private Radio Bureau's (PRB) action. PRB denied NABER's request to amend rules to specify that channels only be recovered from a licensee in the 800 MHz Specialized Mobile Radio (SMR) service for failure to load its system to 70 mobiles per channel if the waiting list for that SMR system's area includes at least one licensee applying for channels to expand an existing SMR system.

The Private Radio Bureau dismissed NABER's petition because NABER failed to justify its conclusion that there will be a

large, unwarranted surge in demand for SMR channels after the Commission eliminates the current loading requirements. The Bureau found, in fact, that NABER's conclusion is contrary to the Commission's finding that the SMR service has matured sufficiently to justify elimination of the channel recovery program, thereby allowing market forces to dictate the use of SMR channels.

NABER contended that recent developments confirmed its belief that speculative applications would be filed in areas where the demand for service does not justify the number of applications filed and that this trend will worsen in the future. Accordingly, NABER requested reconsideration of the Bureau's dismissal of the NABER petition and adoption of rules previously requested.

The Commission found the arguments presented by NABER are insufficient to justify reconsideration of the Bureau's dismissal of NABER's Petition for Rule Making. Although NABER has based its Petition for Reconsideration on circumstances that occurred after NABER filed its Petition For Rulemaking, the Commission found that these circumstances have not significantly altered the FCC's perception of the public interest.

Therefore, the Commission found that a rule making is not warranted due to the speculative nature of NABER's arguments. The FCC's current constructing and operation requirements, furthermore, provide the means for deterring speculators and for recovering any channels that are not used.

Propose Amending Rules Governing The Private Radio Services

The Commission proposed to either relax or eliminate certain rules that impose an unnecessary regulatory burden.

First, the Commission has proposed to modify the rules to provide a 10 year license term for ship and aircraft station licenses. Currently, FCC rules provide that licenses for stations in the maritime and aviation services will normally be issued for a term of five years from the date of original issuance, major modification or renewal. The Communications Act, however, authorizes a 10-year term for such licenses. The Commission stated that no purpose is served by restricting ship and aircraft station licenses to a five year term and extending the license term would save the public approximately $2,900,000 per year.

Second, Section 94.85 of the Commission's rules requires that licenses in the Private Operational Fixed Microwave Service perform specified measurements to ensure that their transmitters are maintained within the frequency tolerances required by the rule. However, the records specified in the rule are not currently used by the Commission. Licensees must comply with the Commission's frequency tolerance rules at all times, thus a one-time measurements serves little purpose and there appears to be no need for a rule that requires licensees to follow a predesignated set of steps to prove compliance. Consequently, the Commission proposed eliminating the procedures outlined in Section 94.85.

Finally, Sections 94.113(a), (b), (d), (e), (f) and (g) of the rules require that licensees in the Private Operational Fixed Microwave Service maintain numerous records on statin maintenance, including transmitter measurements and antenna inspections. Because licensees are required to maintain their systems in conformance with the FCC's rules, it is unnecessary to require specifically that they retain maintenance records. Therefore, the Commission proposed eliminating the unnecessary and burdensome obligations imposed by the rules.

FCC Adds San Francisco Port Area To Coast Guard Vessel Traffic Service Systems.

In response to a request from the United States Coast Guard, the Commission changed Part 80 of its rules to add the San Francisco, CA, port area to the Coast

Guard designated radio protection areas for mandatory Vessel Traffic Services (VTS), and to establish marine VHF channel 14 (156.700 MHz) as the VTS frequency for the San Francisco port area.

A VTS system is used as an advisory service to coordinate vessel movement and prevent collisions in large, busy port areas. Vessels report information related to position, course speed, and conditions affecting their ability to navigate to the Coast Guard, which then tracks the movement of these vessels. VTS systems use VHF marine radiotelephone equipment to exchange voice communications on channels dedicated to VTS operations in Coast Guard designated VTS areas.

As a result of the Oil Pollution Act of 1990, the Coast Guard has initiated a rulemaking proceeding to require certain vessels to participate in a VTS system in the port of San Francisco. The San Francisco VTS system is designed to protect the marine environment by preventing vessel collisions and groundings. By designating San Francisco as a radio protection area for VTS communications, this Commission action will allow the Coast Guard to manage vessel traffic in that area more efficiently.

Additionally, the Commission designated marine VHF channel 14 exclusively for VTS operations with the specified geographic area. This channel is already allotted for VTS communications in other ports. The Commission will permit private coast stations currently authorized to operate on channel 14 within the VTS area to continue operation until the end of their current license terms.

Further, it was brought to the Commission's attention that currently its rules do not appear to authorize ship-to-ship Narrow Band Direct Printing (NB-DP) communications. The Commission stated that this omission in Part 80 of the rules was inadvertent and amended Part 80.361 of the rules to clarify that ship-to-ship NB-DP is authorized.

Finally, with respect to Part 80 the Coast Guard asked the Commission to clarify the Channel 16 (156.800 MHz) watch requirement contained in Part 80. The Coast Guard noted that certain vessels required by Coast Guard regulation to carry radio equipment, such as fishing vessels, should be required to monitor channel 16 while the vessel is underway. Commission rules requires all compulsory VHF ship stations to maintain a watch on channel 16 during its hours of service. The Coast Guard believes that this requirement would be clearer if it were amended to read that compulsory vessels must maintain a watch "while underway." The Commission agreed and clarified the watch requirements contain in Section 80.148.

Co-Channel Protection Criteria For Private Land Mobile Stations Operating Above 800 MHz

The FCC proposed revising the interference protection criteria and distance separations for co-channel private land mobile stations operating above 800 MHz.

Specifically, the Commission proposed eliminating the current disparity between the rules governing co-channel interference protection for Specialized Mobile Radio (SMR) and non-SMR systems. The Commission said that having the same protection criteria for all Part 90 systems operating above 800 MHz will be simpler and will reduce the burden upon applicants and the FCC.

This proceeding was initiated by the National Association of Business and Educational Radio, Inc. (NABER). Because SMR and non-SMR systems above 800 MHz are becoming technically and operationally similar, NABER requested that the same interference protection criteria apply to all 800/900 MHz systems operating under Part 90 of the rules.

The Commission agreed and noted that there is a narrowing of differences in the technical and operating parameters of these systems. The Commission concluded therefore, that having separate rules governing separation distances for SMR and non-SMR systems is no longer appropriate.

Accordingly, the FCC proposed a number of technical changes that include: 1) establishing a 40/22 dBu protection ratio for all co-channel stations operating above 800 MHz; and, 2) using a Table to determine co-channel station separations. The Commission emphasized that until this proceeding is terminated, applicants for 800/900 MHz systems will not be accepted unless they meet the co-channel separation criteria specified in 47 C.F.R. Section 90.621 (b). ■

YOU SHOULD KNOW

BY HARRY HELMS, AA6FW

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

An Idea To Get Your Blood Boiling

This month I'm going to throw out an idea that I think is really neat. Odds are that a healthy percentage of you will hate it, but hopefully enough of you will find it intriguing enough not to dismiss it out of hand, and will instead seriously consider the possible benefits and problems that could result from it.

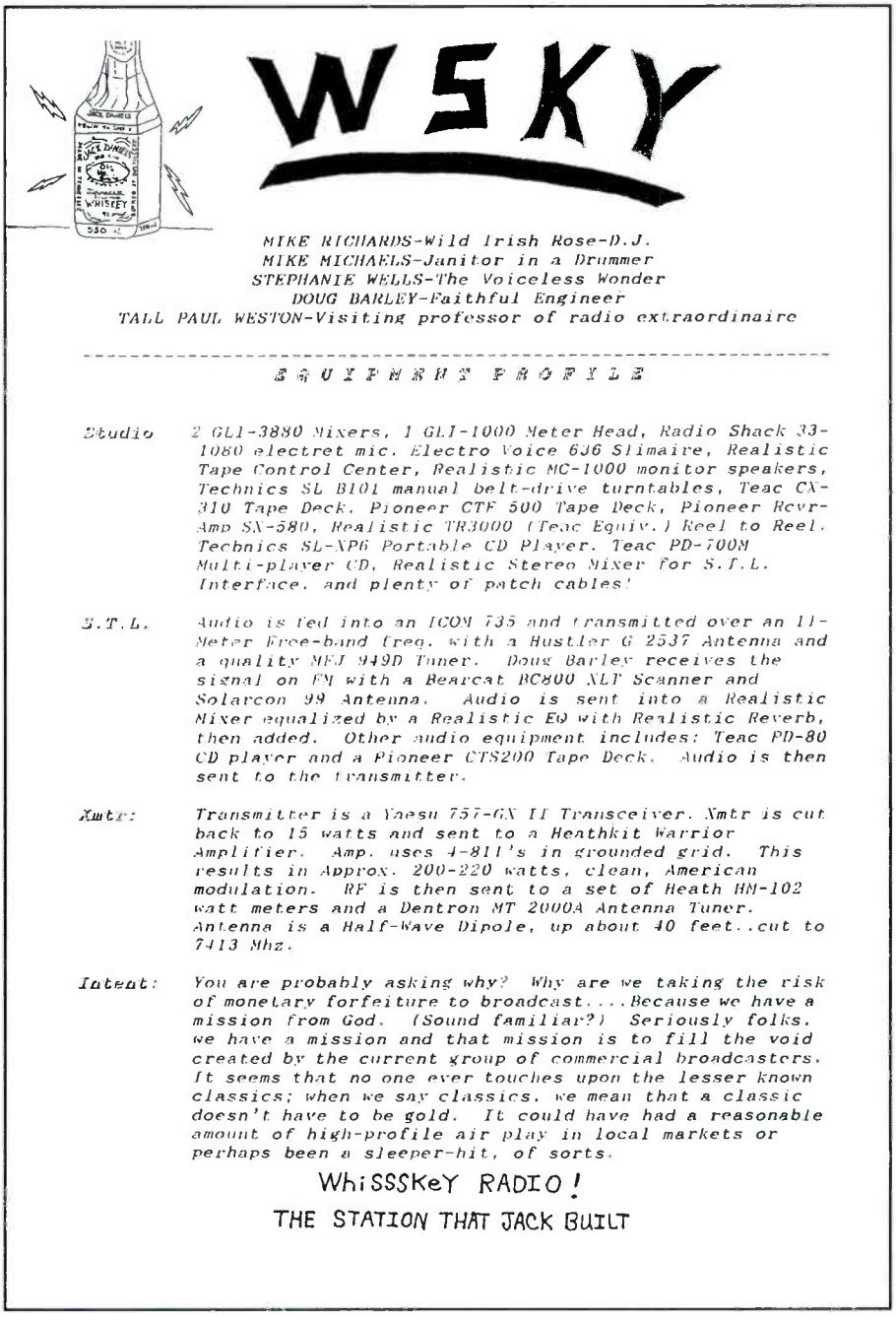
Long Overdue—An Amateur Broadcasting Service

I love Ed Teach's pirate column each month in *POP'COMM*, and I look forward to the latest pirate reports in "The ACE," the bulletin of the Association of Clandestine Radio Enthusiasts (for a sample bulletin, send $2 to PO Box 11201, Shawnee Mission, KS 66207-0201). The number of pirate stations continues to grow despite FCC enforcement efforts, leading me to a brainstorm that's probably going to provoke a strong reaction in some readers: maybe it's time for some sort of private non commercial broadcasting service structured somewhat along the lines of CB or ham radio.

Those of you who have been involved in hobby communications for a long time (like that guy named Kneitel) remember the CB radio service as it existed in the early 1960's. Back then, the FCC maintained that CB was intended as a sort of land mobile service for individuals and small businesses to use primarily for intrastation communications—a husband using the CB set in his car to talk to his wife back at home, for example.

Communications between stations of different licensees was supposed to be a rare event, and restricted to emergencies, requests for assistance, or for such purposes as radioing ahead to a motel to make room reservations. But too many CB'ers found it was fun to talk to other CB'ers on the air and ignored the FCC's CB rules (including some very restrictive ones imposed in the mid-1960's) in large and growing numbers. The FCC tried fining some stations big, and even threatened a test on FCC rules to get a CB license. But by the mid-1970's, the FCC was overwhelmed by the flood of CB license applications and rules violations, and as a result the FCC finally came to its senses. It legalized the sort of hobby communications people were doing anyway and did away with licensing altogether. The FCC got rid of a major headache and CB'ers were able to enjoy what they had been doing all along—talking to each other as a hobby—without the threat of arbitrary and capricious fines and other enforcement actions. And when the FCC finally caved in, the world didn't come to an end, as some predicted. Things continued as they always had, and CB'ers and the FCC were both a lot happier.

So what does the history of CB radio have to do with pirate broadcasting? Simple—history is repeating itself. It's clear that there are growing numbers of people



Stations such as WSKY show the demand for a "people's broadcasting" service.

POP'COMM's World Band Tuning Tips

July—1993

Freq.	Station/Country	UTC	Notes
2390	La Voz de Atitlan, Guatemala	0230	SS
2967v	R. Runacunapac, Ecuador	1030	SS
3200	R. 9 de Abril, Bolivia	0100	SS
3205	R. Ribeirao Preto, Brazil	0900	PP
3215	R. Oranje, South Africa	0300	EE/Afk
3231	R. Madagasikara, Madagascar	0330	unid lang.
3250	R. Luz y Vida, Honduras	0200	
3260	R. Madang, Papua New Guinea	1100	
3270	Namibian Bc Corporation	0300	
3275	R. So. Highlands, Papua New Guinea	1200	
3285	LV del Rio Tarqui, Ecuador	0900	SS
3300	R. Cultural, Guatemala	0200	
3316	SLBS, Sierra Leone	0600	
3320	R. Orion, South Africa	0245	
3330	CHU, Canada		time stn
3335	TWR, Swaziland	0300	PP
3360	La Voz de Nahuala, Guatemala	0305	close, SS
3370	R. Tezulutlan, Guatemala	0130	local langs
3384	Icelandic State Broadcasting Service	0330	Icelandic
3395	Channel Africa, S. Africa	0400	
3980	VOA via Germany	0600	
4000	R. Cameroon, Bafoussam	0430	FF
4040	R. Yerevan, Armenia	0300	Arm.
4331	R. Horizonte, Peru	1100	SS
4460	CPBS-1, China	1300	CC
4600	R. Villamontes, Bolivia	1000	SS
4635	R. Dushambe, Tadzhikstan	0200	local lang.
4705	Estacion Laser, Peru	0900	SS
4760	Yunan PBS, China	1130	CC
4760	R. Frontera, Venezuela	0130	SS
4765	RTVC, Congo	0355	s/on, FF
4770	R. Nigeria, Kaduna	0500	
4770	R. Centinela del Sur, Ecuador	1030	SS
4775	Radio Exterior de Espana, Spain	0530	SS
4800	R. Lesotho	0330	
4810	R. Orion, S. Africa	0200	
4833	R. Buenaventura, Colombia	0100	SS
4845	RTM Malaysia	1200	Malay
4850	R. Luz y Vida, Ecuador	0300	SS
4870	ORTB, Benin	0530	FF
4875	V of Jinling, China	1100	CC
4875	La Cruz del Sur, Bolivia	1030	SS
4885	R. Clube do Para, Brazil	0100	PP
4890	R. France Int'l, Gabon relay	0400	FF
4895	LV del Rio Aruca, Colombia	0200	SS
4910	Zambia National Broadcasting Svc	0300	
4915	R. Cora, Peru	1030	SS
4915	GBC, Ghana	0600	
4920	R. Quito, Ecuador	0300	SS
4935	R. Capixaba, Brazil	0300	PP
4950	R. Bahai, Ecuador	1030	SS
4950	Voice of Jinling, China	1200	CC
4960	R. Cima Cien, Dominican Republic	0100	SS
4976	Ondas del Ortegueza, Colombia	1000	SS
4980	Ecos del Torbes, Venezuela	0200	SS
4985	R. Brazil Central	0100	PP
4990	R. Nigeria, Lagos	2230	
5004	R. Nacional, Eq. Guinea	2130	SS
5025	R. Journal Transamazonica, Brazil	0900	PP
5025	R. Rebelde, Cuba	0200	SS
5030	R. Continente, Venezuela	0330	SS
5035	Rdf. Centrafricaine, Cent Af Rep.	0430	FF
5047	RTV Togolaise	0524	s/on, FF
5055	RFO, French Guiana	0700	FF
5075	Caracol Bogota, Colombia	0400	SS
5097	R. Eco, Peru	0200	SS
5800	R. Nueva Cajamarca, Peru	1000	SS
5882	Vatican Radio	0030	Italian
5900	R. Vlaanderen Int'l, Belgium	0600	(ex-BRT)
5945	VOA via Russia	1400	CC
5950	V of Free China via WYFR	0230	
5960	Swiss R. Int'l	0330	
5975	R. Macarena, Colombia	1100	SS
6005	RIAS, Germany	0700	GG
6020	Radio Netherlands	0100	
6030	CFVP, Canada	1100	
6050	R. Canada Int'l	0600	
6060	Radio Havana Cuba	0600	
6070	R. Ukraine Int'l	0130	
6095	Radio Free Europe, Germany	0600	Lithuanian
6105	R. Yucatan, Mexico	1200	irr., SS
6120	R. Japan	1130	via Canada
6130	CHNX, Canada	1000	
6130	GBC, Ghana	0700	
6135	R. Santa Cruz, Bolivia	0900	SS
6135	Swiss Radio Int'l	0230	
6145	HRTV, Croatia	0800	
6155	Radio Austria Int'	0830	
6165	R. Netherlands, via Bonaire	0030	
6170	La Voz de la Selva, Colombia	0300	SS
6195	R. Metropolitana, Bolivia	1000	SS
6205	HCJB, Ecuador	0800	
6219	Radio Bosnia-Hercegovina	0200	irregular
6220	R. Sofia, Bulgaria	2130	Bulg.
6250	R. Nacional, Equatorial Guinea	0500	SS
6270v	R. Patria Libre, Colombian clandestine	0030	SS
6305	La Voz del CID (anti-Castro)	0800	SS
6560v	Iraqi Radio	0330	AA
6900	Voice of Meterology, Turkey	0530	TT
7100	Voz Res. Galo Negro, clan	2300	PP
7105	REE, Spain	0430	SS
7115	V of Pujiang, China	1130	CC
7140	R. Italia Int'l	0700	
7150	R. Vilnius, Lithuania	0000	
7170	ORTS, Senegal	0600	s/on, FF
7175	RAI, Sicily	0700	Ital
7180	R. Ukraine Int'l	0100	
7195	R. Sofia, Bulgaria	0700	
7215	R. Denmark via R. Norway	0530	DD
7235	Deutsche Welle, Germany	0400	AA, via Malta
7250	Vatican Radio	0600	//6245
7255	V of Nigeria	0500	
7260	R. Netherlands via Russia	0930	
7265	VOA Relay, Botswana	0300	sign on
7275	ELBC, Liberia	0700	
7285	RT Malienne, Mali	0700	FF
7315	BBC via Uzbekistan	0100	
7345	R. Prague (& Slovensko R. at 0130)	0100	
7365	KNLS, Alaska	0800	sign on
7370	R. Flanders Int'l, Belgium	0030	
7385	R. Neg-Maaron, via RFPI, Costa Rica	0230	
7445	V of Asia, Taiwan	1400	CC
7465	Reshet Bet HS, Israel	0100	Hebrew
7510	KTBN, Utah	0400	
7550	R. Korea, S. Korea	2230	
9170	R. Omdurman, Sudan	0255	sign on, AA
9275	Icelandic State BC	2300	Icelandic
9345	R. Pyongyang, N. Korea	1300	
9435	Kol Israel	0500	
9445	Voice of Turkey	2330	TT
9455	KHBI, No. Marianas	1000	
9475	R. Cairo, Egypt	0200	
9490	R. Nadezhda, Russia	1530	RR
9505	R. Tacna, Peru	1030	SS
9510	R. New Zealand	0930	
9510	R. Australia	1100	
9535	Swiss Radio Int'l	0700	
9540	R. Rajo (Hope), Somalia	1200	close
9545	Solomon Is. Bc Corp.	0700	
9555	R. Veritas Asia, Philippines	1430	
9560	Radio Finland	0230	
9560	R. Jordan	1600	
9565	R. Universo, Brazil	0900	PP
9570	R. Portugal	0230	
9575	Radio Medi Un, Morocco	0730	FF
9575	Voice of America	0245	s/on, Somali
9580	R. Tirana, Albania	0230	
9590	R. Georgia, Georgia	0430	
9600	HCJB, Ecuador	0500	
9600	R. UNAM, Mexico	1300	SS
9605	UAE Radio, Abu Dhabi	2200	s/on
9615	R. Cultura, Brazil	0700	PP

Freq.	Station/Country	UTC	Notes
9625	CBC Northern Service, Canada	0300	
9640	VOIRI, Iran	1500	sign on, Farsi
9645	Faro del Caribe, Costa Rica	0400	SS
9665	Radio Marumbi, Brazil	2300	PP
9675	Channel Africa	0300	
9695	Channel Africa, S. Africa	0500	
9695	R. Sweden	0200	
9700	R. New Zealand	1030	
9705	R. Nacional, Brazil	2300	PP
9715	RFI via Fr. Guiana	0130	FF
9718	SLBC, Sri Lanka	0100	
9730	Channel Africa, S. Africa	0159	s/on
9735	R. Nacional, Paraguay	2300	SS
9740	R. Canada Int'l	0630	
9746	R. Bahrain	2000	AA , QRM-HCJB
9750	R. Korea, So. Korea	1200	
9750	R. Canada Int'l	0530	
9760	R. Tirana, Albania	0130	Albanian
9765	V of Mediterranean, Malta	0600	
9770	China R. Int'l, via Mali	0000	
9805	R. France Int'l	1230	
9815	Radio Havana Cuba	0200	SSB
9830	KHBN, Palau	1300	
9835	R. Budapest, Hungary	0200	
9840	R. Kuwait	2100	AA
9845	FEBC, Philippines	1600	
9860	R. Netherlands via Russia	1100	
9880	R. Galaxy, Russia	2300	RR
9885	Swiss Radio Int'l	0200	
9942	Voz del CID, anti-Castro	2300	SS
9977	R. Pyongyang, N. Korea	1100	s/on
10059	V of Vietnam	1500	VV
11402	Icelandic State Bcstng	2300	Icelandic
11550	RTT Tunisia	1800	AA
11587	Kol Israel	2245	
11603	Kol Israel	2230	
11620	All India Radio	2000	
11650	China Radio Int'l (R. Beijing)	1500	RR
11685	BSKSA, Saudi Arabia	2130	AA
11690	FEBC, Philippines	1100	
11695	Radio France Int'l	0530	FF
11700	R. Art, Russia	1600	RR
11705	R. Sweden	2330	
11710	RAE, Argentina	0100	
11715	R. Korea, S. Korea	1030	via Canada
11720	R. Sofia, Bulgaria	0400	
11725	R. Korea, S. Korea	1000	SS
11735	R. Monte Carlo, Uruguay	2300	SS
11740	R. Portugal	1900	
11745	Channel Africa, S. Africa	0200	
11755	R. Finland Int'l	0130	
11765	R. Sofia, Bulgaria	2300	
11780	R. Nacional Amazonia, Brazil	2345	PP
11790	VOIRI, Iran	1200	Urdu/EE
11795	UAE Radio, Dubai	1600	
11795	R. Norway	2300	
11800	RAI, Italy	0100	
11800	Channel Africa, South Africa	0430	
11805	R. Globo, Brazil	0830	PP
11820	R. Sweden	0100	
11825	R. Tirana, Albania	2200	
11830	Voice of Russia	1230	RR
11835	R. El Espectador, Uruguay	0100	SS
11840	R. Tirana, Albania	0230	s/on
11855	R. Canada Int'l	1330	
11860	R. Iraq Int'l	0400	
11870	R. Yugoslavia	0040	
11880	R. Australia	1600	
11890	R. Exterior Espana, Spain	0630	SS
11920	BSKSA, Saudi Arabia	1500	AA
11925	R. Bandeirantes, Brazil	0100	PP
11938	V of People of Cambodia	0030	
11940	R. Romania Int'l	1300	
11955	R. Nacional, Angola	0600	PP
11960	RTV Malienne, Mali	0900	FF
11965	V of the UAE	1800	AA
11970	R. Havana Cuba	0130	
11980	R. Ukraine Int'l	0230	Ukrainian
11985	R. Prague, Czech Republic	0400	
11985	UAE Radio, Dubai	2100	AA
11995	R. Sweden	2200	
12015	Radio France Int'l, via Gabon	1600	
12050	R. Cairo, Egypt	0300	AA
12060	R. Yerevan, Armenia	2230	FF
12085	R. Damascus, Syria	2005	
13605	Radio Australia	2300	
13620	R. Kuwait	2000	
13615	R. Bangladesh	1300	
13630	RFPI, Costa Rica	2300	
13635	Swiss Radio Int'l	2130	
13650	R. Pyongyang, N. Korea	0000	
13655	R. Flanders Int'l, Belgium	2300	Dutch
13660	R. Havana Cuba (USB)	0200	USB, EE
13675	UAE Radio, Dubai	1630	
13685	Swiss R. Int'l	0700	
13715	R. Prague, Czech Rep.	0400	
13750	Kol Israel	1500	Heb.
13755	R. Australia	1200	
13785	R. Pyongyang, N. Korea	1500	
15010	V of Vietnam	1230	
15020	All India Radio	1400	local langs.
15084	VOIRI, Iran	0430	Farsi
15090	Vatican Radio	2245	s/on
15100	FEBC, Philippines	1400	EE, others
15110	REE, Spain, via Costa Rica	1900	
15120	R. New Zealand Int'l	0530	
15130	R. Pyongyang, N. Korea	0000	
15140	R. Veritas Asia, Philippines	1500	Filipino
15170v	Radio Tahiti	0500	FF/TT
15185	R. Finland Int'l	2300	
15200v	R. Bangladesh	1230	EE
15220	Channel Africa, S. Africa	0600	(ex R. RSA)
15240	R. Australia	0900	
15250	Iraqi Radio	1400	EE
15265	Radiobras, Brazil	1800	
15270	Deutsche Welle via Rwanda	2330	GG
15295	WINB, Pennsylvania	1830	
15325	R. Japan via Fr. Guiana	0300	
15335	R. Romania Int'l	1430	
15340	R. Japan, via Gabon	2000	RR
15345	RAE, Argentina	2130	
15345	RTM, Morocco	1400	Berber
15345	RAE, Argentina	1300	SS
15355	R. Japan via Gabon	1500	
15360	Deutsche Welle, Germany	2100	
15400	UAE Radio, Dubai	0345	
15415	Libyan Jamahiriya Broadcasting	1500	AA
15420	BBC via South Africa	1745	sign on
15425	SLBC, Sri Lanka	1330	
15445	SLBC, Sri Lanka	2330	
15465	R. Tashkent, Uzbekistan	1200	
15475	Africa Number One, Gabon	2100	FF
15505	Swiss Radio Int'l	1500	
15505	R. Kuwait	2245	AA
15555	R. Pakistan	1620	slow EE
15570	R. Ukraine Int'l	1500	
15575	BBC via Cyprus	1300	
15615	Rashuth Hashidur service, Israel	1700	Hebrew
15635	V of Greece	1230	
15725	KCBI, Texas	2200	
16000	VNG, Australia (time stn)	0800	
17440	R. Kiribati	0600	
17490	HCJB, Ecuador	1900	USB
17535	HCJB, Ecuador	0000	USB
17550	R. Flanders Int'l, Belgium	1400	
17595	R. Cairo, Egypt	1200	
17605	R. Vilnius, Lithuanaia	0000	
17650	R. France Int'l	1400	
17670	R. Cairo, Egypt	1800	AA
17690	R. Ukraine Int'l	0100	
17690	R. Yerevan, Armenia	0345	
17730	Vatican Radio	0628	s/on
17740	R. Yugoslavia	1200	
17740	R. Sweden	1300	EE
17745	Radio Portugal	1330	PP
17745	R. Tashkent, Uzbekistan	1200	
17750	Radio Nacional	1800	PP
17760	R. Filipinas, Philippines	0230	
17765	Deutsche Welle, Germany	1330	
17770	R. New Zealand Int'l	0445	
17815	RTV Morocaine	1700	
17860	R. Moscow	2330	
17860	Qatar Bc Service	1300	AA
17870	R. Sweden	1500	
17875	R. Canada Int'l	2130	
17880	R. Finland Int'l	1300	
17900	R. Pakistan	1115	
21490	Radio Austria Int'l	1430	
21455	HCJB, Ecuador	1900	
21460	R. Ukraine	1430	RR
21505	BSKSA, Saudi Arabia	1600	AA
21605	R. Yugoslavia	1230	
21625	Radio Sweden	1330	
21675	R. Kuwait	1500	AA
25750	R. Australia	0800	
25820	R. France Int'l	1430	F

who want to broadcast to other people, not just talk to them. Each year, more people are doing it and getting away with it. The FCC is losing control of the situation, and maybe it's time for the FCC to wise up and permit some form of broadcasting service to open to the public with minimal restrictions.

Who Needs It—And Why?

There are a lot of good reasons for an amateur broadcasting service besides the FCC's inability to control current pirate broadcasters. Perhaps the biggest is the simple fact that the radio spectrum within the United States is supposedly the property of the people of the United States, yet the use of that spectrum is largely restricted to well-financed corporations or educational institutions. And those organizations often don't do too much that's creative or of service to local communities. For example, commercial broadcasters have been steadily moving toward satellite-fed music programming and network talk shows, resulting in a very real loss of programming diversity and innovation.

This restriction of broadcasting to commercial or education institutions shuts out significant segments of the population from the programming and information that might be of interest to them. Only a fraction of the religious, ethnic, and political groups that make up American society have access to the airwaves, and existing commercial and educational broadcasters have so far convincingly failed to accommodate such segments of the population. In fact, the massive expansion of AM and FM broadcasting stations that took place in the 1980's only resulted in more stations carrying Larry King or some satellite music service, not in any real innovation in programming.

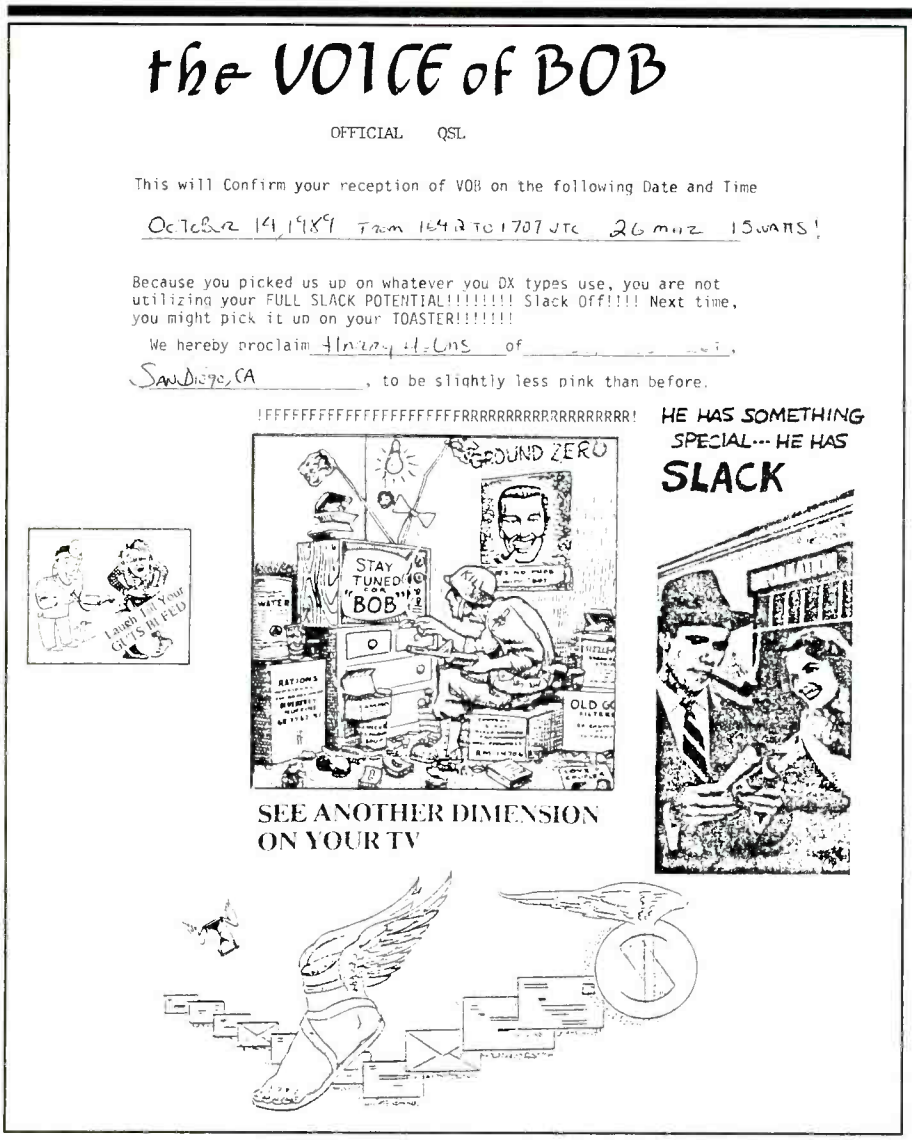
Since the radio spectrum in the United States supposedly belongs to the people, why don't average citizens have some portions of the airwaves available to them so they can broadcast their thoughts, opinions and programs to their fellow citizens? After all, you can stand on a street corner and proclaim your thoughts to passers-by, and I can tell you what's on my mind each month here in *POP'COMM*. What is so different—or dangerous—about someone doing the same thing via radio instead of by voice or print?

Think for a second about what amateur broadcasting could mean. Smaller towns and areas overlooked by big city stations could have stations devoted to news and events in their local communities. High schools might have their own stations, as might a variety of civic, social, and fraternal organizations. Different parts of cities might have their own local stations (New York City might have a real "Village Voice"!). And talk about free-spirited debate on major political and social issues!

I know some people will say this entire idea is impractical because some individuals will abuse any amateur broadcasting privileges. Such people are right—a certain percentage will indeed abuse any broadcasting privileges. But such abuse is the cost of any freedom, and I think the benefits of allowing citizens to broadcast will far outweigh any abuses. Why should access to an electronic means of disseminating news and opinions be restricted to a moneyed or educational elite.

Where Should I Go?

Another objection might be that there is no room for such amateur broadcasting. While this is true for the AM and FM broadcasting bands, there are some large chunks of frequency space that could easily be reallocated to or shared with amateur broadcasting, particularly above 25 MHz. In fact, try tuning from 25 MHz to the beginning of the CB band at 26.965 MHz. Even during the daytime in the winter DX season, this is a largely unpopulated range filled mainly with bootleg two-way radio communications. There is an 11-meter international broadcasting band from 25.67 to 26.1 MHz, but this was seldom used by international broadcasters even during the peak of the last sunspot cycle. The rest of



Some pirate operators, like the Voice of Bob, are already making use of 26 MHz.

the range from 25 to 27 MHz is allocated to land mobile stations, but many users have left for the VHF and UHF ranges to escape disruptions in communications due to interference propagated by sporadic-E.

In fact, there is something of a precedent for allowing lower power broadcasting in this range. The 25.87 to 26.47 MHz range is home to a handful of broadcast auxiliary stations operating in FM with 40 kHz channel spacing (25.87, 25.91, 25.95, etc). These stations are used for cueing and relay purposes during remote broadcast operations, such as helicopter traffic reports. Sometimes these stations can be heard at surprising distances. WFLA is a station in Tampa, FL, that operates a broadcast auxiliary station on 25.87 MHz; this station was heard throughout North America during late 1992 and early 1993. The number of these stations from 25.87 to 26.47 MHz has been steadily dropping in recent years as broadcasters move to UHF for their auxiliary transmitters.

Another possible location for amateur broadcasting might be somewhere in the VHF low band (30 to 50 MHz). Many users of that range are moving up past 800 MHz to trunked repeater systems for more reliable coverage, greater privacy, and freedom from sporadic-E interference. The FCC has been putting several devices on the VHF low band recently—such as cordless telephones, walkie-talkies, and room monitors—and the continued migration of users to UHF will open up more frequencies from 30 to 50 MHz in the future.

Who Should We Let Do It?

A broadcasting service like I'm thinking of should be restricted to two segments of the public: everybody and the technically competent. Let me explain.

The issue of the interference that could result if everyone was allowed to go out and use as much transmitter power as they want is a legitimate one. That's why a two-tier solution might make sense: a low-power service open to everyone (like CB) and a higher power service restricted to people who have demonstrated some form of minimal technical competency, such as through obtaining a FCC ham radio or commercial radio telephone license.

Let's suppose the "open" service could be placed somewhere around 48 or 49 MHz, where we have cordless telephones, walkie-talkies, remote control devices, and similar items. We could restrict operation to five watts or less using FM, using non-directional antennas of a fixed length, and allocate several fixed frequencies for operation. The gear would be "plug and play" type that anyone could operate with little training or expertise. The more restricted band would be somewhere in the 25 to 27 MHz range, possibly even in the 11-meter broadcasting band, and allow for different methods of modulation (opening the possibility of experimentation), allow higher powers (say 50 or 100 watts), and let people experiment with antennas. Again, you would need at least a Technician class ham license or a general commercial radiotelephone license to operate in that range.

Licensing? Obviously, none would be required for the "open" service. How about the more restricted one? Let's get really bold and say none would be required there either! Why add to the FCC's administrative burdens? Maybe I'm being too optimistic about human nature, but I really think that it would be possible for operators in this service to coordinate and sort things out among themselves. Don't laugh—there are quite a few private frequency coordinating groups that do so for the land mobile radio services.

Would such a service at 26 MHz be in conflict with international regulations? Possibly, but there are ways to handle this, such as filing for an exception with the International Telecommunications Union or classifying such stations as being in the "fixed" or "mobile" services. After, the CB service is a de facto code-free ham band and it's classified as being part of the mobile service by the FCC.

It's true that most people don't have receivers for either band, but such receivers aren't expensive. Most people don't have receivers capable of tuning 1600 to 1700 kHz either, and yet the FCC is planning to move some AM broadcast stations there.

What's Next?

Obviously, I can't bring this into being all by myself. A lot of other people are going to have to think it, or some variation thereof, is a terrific idea for this to fly.

You can start by writing your congressional representatives and expressing your support of some form of "people's broadcasting." You might want to include a copy of this article with your letter. You might also want to contact manufacturers and dealers of radio gear and tell them you'd buy a lot of stuff to do your own broadcasting if such a service were available.

Hey, that's my big idea for the year. Is it smart one or a dumb one? I'd like to hear from readers who feel either way. ■

SCANNING VHF/UHF

BY CHUCK GYSI, N2DUP

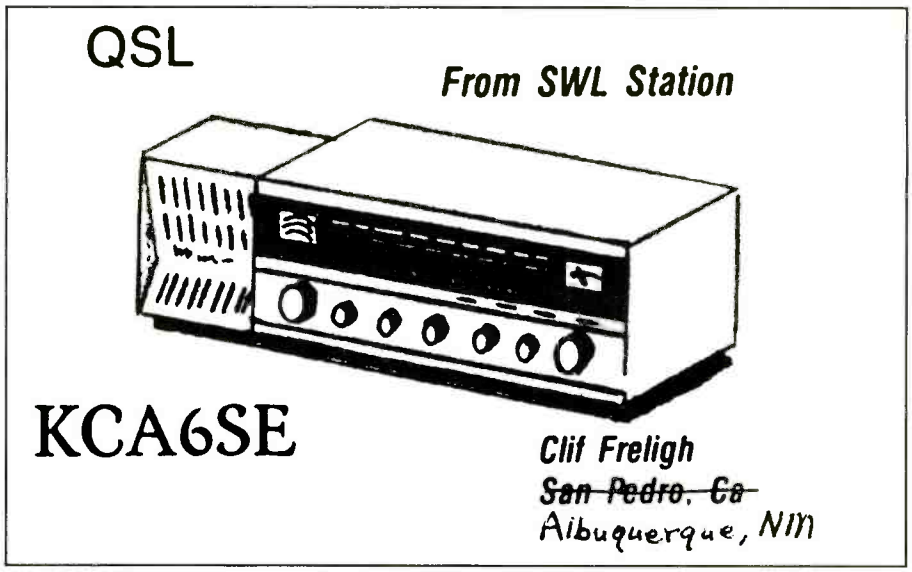
MONITORING THE 30 TO 900 MHz "ACTION" BANDS

The favorite time of year for scanner hobbyists is here. You carry around your handheld scanner to amusement parks, downtowns and anywhere else the scanning may be exciting. It is a time of year when there is not only plenty of skip on VHF low band frequencies, but also plenty of inversion on VHF and UHF frequencies that allows you some nights or mornings to listen to communications up to hundreds of miles from your listening post. If strange stations start coming in on your scanner, it's a good chance that there is an inversion trapping those signals and ducting them all the way to your receiving location. Enjoy listening to those distant stations while you can; it won't last more than a few hours at best.

Ray Gromek of Ortonville, Michigan, says his employer uses walkie-talkies on 154.570 and 154.600 MHz. He wants to know what other companies use these special low-power channels. The two frequencies are used on a local basis with a maximum power output of 2 watts. They typically are used for on-site communications and security purposes. I'd love to be able to provide listings for these frequencies, but it would go on for pages. Even within your own area of the state, the listing might prove exhaustive.

It also should be noted that for every licensed user on these frequencies, there probably are as many unlicensed stations using these channels. Because most over-the-counter business-oriented walkie-talkies might include one of these two channels, there are plenty of buyers who never bother to license their units. In fact, there have been teen-agers who have used 154.600 in several areas of the country with excessive power (typically 25 watts or more) to chit-chat among each other. They often use cop-like talk and even have their own CTCSS tone to keep their receivers silent from legitimate users they are interfering with. Keep an ear on these two low-power channels because you never know who may show up on the channels.

Mitchell R. McElveen of New Zion, South Carolina, says he recently subscribed to *POP'COMM* and enjoys this column. He works for the Manning, S.C., Fire Department as a firefighter (engineer) and also is a volunteer for the Clarendon and Williamsburg County Fire Departments in South Carolina on the days he isn't working. Mitchell's listening equipment consists of a Uniden Bearcat BC140 scanner at home, a Uniden Bearcat 560XLT scanner in his truck , Motorola Minitor pagers for fire calls, a Motorola Radius GP300 walkie-talkie issued by the city, a Realistic Pro-27 two-channel receiver and a new Uniden Bearcat 200XLT handheld scanner.



Staton card of Clif, Registered Monitor, KCA6SE.

Mitchell asks why the range from 868.9875 to 894.0125 is eliminated from his Bearcat 200XLT scanner. He wants to know if these frequencies are in use, and if so, why they are eliminated from his scanner. He also wants to know whether this range can be restored to his receiver. First, the range from 869-894 MHz is used for the base side of cellular phone calls (the mobile side is 45 MHz lower and also is eliminated from your receiver - 823.9875 to 849.0125). This range can be restored to Bearcat 200XLT and the similar BC-205XLT scanners, but the Electronics Communications Privacy Act of 1986 prohibits persons from listening to cellular phone calls. You might be able to find a dealer who is willing to make the modification to your receiver. While some versions could be modified by simply snipping a diode, other versions require additional procedures to make the modification. There also are modification books available from many scanner dealers that detail how to make such modifications to your scanner.

Mitchell McElveen also sends along these frequencies for his area: 154.370, Clarendon County and Manning fire; 155.190, Clarendon County police; 154.325, Williamsburg County fire; 155.310, Williamsburg County police; 158.835, Manning city government; 154.340, Sumter County fire; 154.875, Sumter County police; 154.800, Sumter city police.

Paul Godshall of Perkasie, Pennsylvania, writes to say that he has heard that the police departments in eastern Montgomery County have switched from VHF low band to UHF over the past few years and he would like a listing of the new frequencies. These towns are just outside of Philadelphia. Here are the new assignments: Abington Township, 460.025; Cheltenham Township, 460.100; Hatboro Borough, 500.9375; Horsham Township, 506.3125; Lower Moreland Township, 460.500; Plymouth Township, 453.875; Upper Dublin Township, 460.550; Upper Moreland Township, 460.050; and Whitpain Township, 453.675.

Hatboro's use of 500.9375 caused some trouble at first. It seems that there was a cab company in Philadelphia that had been using the frequency for a number of years in the business radio service. Well, their license accidentally lapsed and the frequency became available for assignment. Hatboro police received the frequency for their new UHF system and apparently no one listened to the frequency before setting up the system. Well, the police in Hatboro started using their new radios, but they were plagued with interference from the cab company. The police stopped using the frequency and went back to their old frequency of 39.08 in the interim. Instead of telling the cab company, which was a major firm, to get off the air, they worked with their supplier, the Federal Communications Commission—and each other—to remedy the situation. In fact, when the matter finally was resolved, the cab company had a new frequency. Hatboro police were using their new radios on 500.9375, and the owner of the cab com-

Todd Wiese of Fairfield, Ohio, relaxes in his listening post. His receivers include a Uniden Bearcat 800XLT scanner, a Midland tunable VHF/UHF receiver, a Regency 8-channel scanner, a DAK shortwave receiver and an Atari computer. Todd hopes to get on the ham bands, including packet, soon since he holds a ham license.

pany had nothing but glowing comments for Hatboro's police chief. And the Hatboro Police Department was presented with a new UHF walkie-talkie from the cab company as a token of its appreciation in cooperation. Too bad most radio conflicts aren't handled in this manner.

Bob Rossini of Tiltonsville, Ohio, says he's been listening to the Yorkville, Ohio, Police Department, which seems to operate a telephone system on one of its frequencies, 39.84. He wonders how it works. Apparently whenever someone calls the department on the phone, a ringing sound goes out over the frequency and then he can usually hear both sides of the conversation. Apparently, a police officer is answering the phone call from the patrol car. This means there is a phone patch unit at the department's base station radio that sends out the alert signal whenever the phone at headquarters rings. Then the patrol car answers the phone by transmitting on the frequency. Sometimes, Bob says that the phone rings over the air for two or three rings, but he isn't able to hear the conversation. That only means that someone probably is in the station and is answering the phone on the office phone. Because the radio is connected to the phone line, you'll hear it ring over the air, but because the call is being answered on the office phone and not over the radio, you won't hear the call over the air.

Bob listens with a Realistic Pro-2006 scanner and he is searching for other frequencies used by Yorkville police. You may want to try 39.30, 39.52 and their dispatch frequency, 39.58, which is shared with the Jefferson County Sheriff and other departments throughout the county.

Brian Webb, editor of *VHF LOW BAND NOTES*, sent along a sample of his publication. The seven-page newsletter included recent VHF low band loggings and details of the intercepts. In addition, there was information on maximum usable frequency, which helps low band DX'ers figure when the 30-50 MHz band might be hot. In the back of the publication are full-page QSL letters received from various users of VHF low-band radio systems that were heard via skip. It's interesting to see what these QSL letters say and are valuable in terms of names and addresses for others who are also interested in getting QSL letters for hearing the same stations.

There was no subscription information in the copy of the newsletter received, and it wasn't indicated how often the newsletter is published. If you are interested in low-band skip, write to the editor, Brian Webb, at: 3329 Silver Spur Court, Thousand Oaks, Calif. 91360-1041.

John Basley of Hopewell, New Jersey, says that he is familiar with the itinerant business radio frequencies of 151.625, 464.500, 464.550, 469.500 and 469.550. These frequencies are used by businesses that move around from area to area a lot, and are an effort to minimize interference to normal business radio users on their everyday frequencies. (It should be noted that 27.49, in the AM mode, and 35.04 also are itinerant business frequencies, however, these aren't used much.) John says that he has heard that there are similar itinerant frequencies used by for instance, construction crews and farms, however, he hasn't been able to find these frequencies. These frequencies, which are licensed under the special industrial radio service, are 43.04, 151.505, 158.400, 451.800 and 456.800 (mobile only). The 151.505 MHz channel probably is the most popular one of the bunch, with 158.400 and 451.800 also getting a fair amount of use. The 43.04 frequency is used in some rural areas where VHF low band works best. Stick these frequencies into your scanner and you may hear some heavy construction crews on a major project or a road-paving job. You never know who might be using these frequencies.

If you have a question relating to VHF or UHF frequencies, we'll try to answer them in this column. We also welcome your reception reports, frequency lists, photos of your listening posts or mobile installations, QSL letters, and photos of dispatch centers and antenna sites. Send your information to: Chuck Gysi, N2DUP, Scanning VHF/UHF, Popular Communications, 76 N. Broadway, Hicksville, N.Y. 11801-2909.

BROADCAST DX'ING

BY ROGER STERCKX, KVT1JH

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

Switcheroo: Boston/Framingham, Mass. station WVBF/105.7 dropped its soft-rock format. It turned into WCLB with a country music format and is now known as "The Country Club." This information submitted by Harvey Novack, Somerville, Mass.

Surprise Welcoming: The community of Bay Shore, N.Y. anxiously awaited the opening of WBSI/103.5 (*B-103*), its new (and only) broadcasting station. B-103 is female-owned, and the format is classic rock from the 1960's. After a few days of equipment tests, WBSI was ready to officially open and its full schedule.

Before this could happen, WBSI found itself in court at the behest of adult contemporary music format station WBLI/106.1, Medford, N.Y. The stations are about twenty miles from one another and can be heard by listeners in the same general area. WBLI complained that WBSI's call letters were too similar to the WBLI call letters. They claimed WBLI was their trademark. WBSI explained that their frequency and format was different than WBLI's, that their station was to be promoted as *B-103*, and the BSI in their call letters represented Bay Shore/Islip, which was their location.

Pending a later court hearing, the judge told WBSI to temporarily announce its call letters as, "WBSI, not to be confused with WBLI." After two weeks of this, WBSI changed its call letters to WBZO. Some fans of the new station felt they should have put up more of a scrap and not caved in.

Are FCC-issued call letters actually trademarks? Hard to believe that this could be a valid point in court since call letters are subject to cancellation, revocation, and change by the FCC. If that should happen, what becomes of the so-called trademark?

Our appreciation to Harry Pernecone for letting us know about this.

Down The Tubes: An anonymous reader in San Jose, Calif., brings up the point of TV stations that sign off, but then remain on the air for the rest of the night running a test pattern. Once in a while it would seem necessary to tune things up. However, doing it every night for about 6 to 8 hours seems like it must get expensive when it comes time to paying the electric company for the large amount of power used.

Think about it on a different level. The gigantic high-power transmitting tubes used by TV stations are not only very costly, they are quite temperamental. What they particularly dislike is going through the cycle of being repeatedly shut off, getting cold, then turned back on again and

Applications Filed For New FM Stations

AL	Palmer	95.5 MHz	51 kW
AL	Guntersville	88.5 MHz	2.2 kW
AZ	Bisbee	88.1 MHz	400 watts
CA	San Luis Obispo	88.5 MHz	3 kW
CA	Willits	91.5 MHz	6 kW
CA	Yreka	91.3 MHz	450 watts
CO	Leadville	88.9 MHz	3 kW
FL	Marathon	97.7 MHz	
IA	Indianola	88.9 MHz	1 kW
IL	Breese	97.5 MHz	6 kW
IL	DeKalb	88.5 MHz	280 watts
IL	Fairfield	105.9 MHz	6 kW
IL	Mt. Olive	105.3 MHz	6 kW
IL	Teutopolis	102.3 MHz	6 kW
MN	St. Charles	107.7 MHz	1.16 kW
MS	Hattiesburg	93.1 MHz	
MT	Ft. Belknap Agency	88.1 MHz	90 kW
NC	Hickory	90.3 MHz	150 watts
NC	Lenoir	103.3 MHz	3 kW
NY	Corning	91.1 MHz	12.6 kW
NY	Jewett	97.9 MHz	1.5 kW
NY	Whitesboro	97.9 MHz	1.7 kW
OH	N. Madison	93.7 MHz	
OR	Ashland	107.5 MHz	
OR	Eagle Point	106.3 MHz	
PA	Kane	90.1 MHz	17 kW
SD	Little Eagle	89.5 MHz	90 kW
TN	Murgreesboro	88.3 MHz	200 watts
TX	Dilley	98.9 MHz	50 kW
TX	Plainview	106.9 MHz	31.5 kW
TX	Victoria	90.7 MHz	30 kW
UT	Ephraim	89.5 MHz	100 watts
VA	Monterey	91.9 MHz	200 watts
VI	Charlotte Amalie	89.1 MHz	10 kW
VI	Frederiksted	103.5 MHz	6 kW

Permits Issued To Construct New FM Stations

CA	Middletown	98.7 MHz	Low Power
GA	Unadilla	99.9 MHz	6 kW
IN	New Washington	88.3 MHz	1 kW
IN	Princeton	100.5 MHz	3 kW
MN	Sleepy Eye	107.3 MHz	1.13 kW
MT	Great Falls	90.9 MHz	100 kW
NY	Binghamton	91.5 MHz	560 watts
OH	Sandusky	89.5 MHz	2.12 kW
PA	Clarendon	106.9 MHz	4.7 kW
SC	Blackville	97.9 MHz	6 kW
TN	Clinton	89.9 MHz	200 watts
TX	Temple	101.7 MHz	3 kW
WV	Ravenswood	93.1 MHz	3.3 kW

Applications Filed For New AM Stations

MT	Great Falls	1490 kHz	300 watts
OR	Waldport	1060 kHz	1 kW
WV	Parkersburg	1570 kHz	1 kW/250 watts

Permit Issued To Construct New AM Station

FL	Palm Shores	1100 kHz	1 kW

Applied To Change AM Facilities

KIEV	Glendale, CA	870 kHz	Seeks increase to 20/3 kW.
WWCS	Canonsburg, PA	540 kHz	Seeks drop to 5 kW days.
WYSH	Clinton, TN	1380 kHz	Seeks drop to 250 watts nights.

A wonderful sticker from WHOT/101.1, of Youngstown, Ohio. It was sent in by Jim Viele, N8IRL, who's on the WHOT staff.

brought back up to operating temperature. The idea is that the cost of leaving the transmitter running is going to be less than paying for the consequences of turning it off every night.

One school of thought says that even a TV receiver would rather stay on continuously than repeatedly go through on/off recycling. Don't let your kids know.

New University Station: WUSR/99.5 was recently opened by the University of Scranton. This station plays music that explores everything from rap to Rachmaninoff, and just about every category in between. Features cover sports, women's issues, and other specialty areas.

WUSR runs 700 watts from its transmitter on Bald Mountain, 2 miles west of Scranton. The studio is on the third floor of Jefferson Hall, with the signal to the transmitter via microwave.

FM Call Letters Changed

New	Was	
KAWV	KCKC-FM	Lake Arrowhead, CA
KAKT	KQLH	Riverside, CA
KBDR	KZZQ	Mirando City, TX
KBKL	KIOB	Grand Junction, CO
KBUZ	KZKH	Topeka, KS
KCFE	KOUO	Eden Prairie, MN
KCRL	KVTO	Rayne, LA
KDIL	KKYX-FM	Terrell Hills, TX
KDKS-FM	KZWB	Haughton, LA
KDNW	KQUH	Duluth, MN
KEDJ	KONC-FM	Sun City, AZ
KEEH	KAAR	Spokane, WA
KFAD	KDKS-FM	Alexandria, LA
KFBI	KUDA	Pahrump, ID
KFRO-FM	KLSQ	Gilmer, TX
KINK-FM	KINK	Portland, OR
KISF	KXXR	Lexington, MO
KKJZ	KLON	Long Beach, CA
KKNU	KSND	Eugene, OR
KKUZ-FM	KKID-FM	Sallisaw, OK
KMEO	KFMA	Wickenburg, AZ
KMGI	KSEI-FM	Pocatello, ID
KMPH-FM	KCML	Hanford, CA
KNKN	KGRQ	Pueblo, CO
KONE	KTEZ	Lubbock, TX
KPFX	KSMM	Fargo, ND
KPMW	KWYA	Haliimaile, HI
KPNT	KFXB	St. Genevieve, MO
KRHS	KRSH	Overland, MO
KRUU	KIAB	Boone, IA
KTLI	KBUZ	El Dorado, KS
KVLR	KDTP	Twisp, WA
KVRI	KCPX-FM	Salt Lake City, UT
KWMX-FM	KRXY-FM	Lakewood, CO
KXPT	KYRK-FM	Las Vegas, NV
KYXK	KGAP	Gurdon, AR
KYZX	KZKG	Pueblo, CO
KZDG	KDHT	Greeley, CO
WAGW	WYFA	Waynesboro, GA
WAKT	WSEA	Panama City Beach, FL
WBOZ	WBSI	Bayshore, NY
WCLB-FM	WVBF	Framingham, MA
WDCZ	WLMF	Webster, NY
WDKK-FM	WHUM	Avis, PA
WGGC	WPRX	Glasgow, NY
WGL-FM	WQTX	Roanoke, IN
WGZM	WGGA-FM	Cleveland, GA
WIKX	WQLM-FM	Punta Gorda, FL
WKFM	WEQL	Fulton, NY
WKJZ	WYHE	Hillman, MI
WKNB	WJST	Pt. St. Joe, FL
WLWZ-FM	WLWZ	Easley, SC
WMBH-FM	KKUZ	Joplin, MO
WMGG	WGTR-FM	Gallipolis, OH
WMJM	WBZD	Bowling Green, KY
WMNC-FM	WQXX	Morganton, NC
WNCK	WHTK	Port Royal, SC
WNMR	WATQ-FM	New Martinsville, WV
WOGY	WODZ-FM	Germantown, TN
WOJG	WYDB	Bolivar, TN
WORD-FM	WPIT-FM	Pittsburgh, PA
WQKB	WMXP	New Kensington, PA
WRNG	WZQQ	Hyden, KY
WRZE	WNTX	Nantucket, MA
WSPI	WXMH	Mt. Carmel, PA
WTCX	KZPZ	Lakeville, MN
WVRT	WBSB	Baltimore, MD
WVVY	WKXK	Ft. Valley, GA
WWEZ	WLOT	Trenton, TN
WWOC	WXNJ	Avalon, NJ
WWYC	WHRS-FM	Winchester, KY
WXRB	WORD-FM	Pittsburgh, PA
WYFA	WAGW	Waynesboro, GA
WYGY	WZRZ	Hamilton, OH
WYUL	WEEP-FM	Chateaugay, NY

FM Call Letter Changes Requested

Now	Seeks	
KGRQ	KNKN	Pueblo, CO
KJFK	KASR-FM	Perry, OK
KJLF	KAAR	Butte, MT
KVTY	KTJX	Mission, TX
KWCS	KBOC	Bridgeport, TX
WCNA	WSLT	Clearwater, SC
WECQ-FM	WFLK	Geneva, NY
WRRH	WJUX	Franklin Lakes, NJ
WVBS-FM	WKXB	Burgaw, NC
WWNZ-FM	WTKS	Cocoa Beach, FL

Changed AM Call Letters

New	Was	
KCRR	KRBE	Houston, TX
KIFO	KIPO	Pearl City, HI
KINK	KGW	Portland, OR
KJLA	KIDZ	Independence, MO
KJOC	KSTT	Davenport, IA
KJQI	KGIL	San Fernando, CA
KKTR	KBOS	Fresno, CA
KOJY	KJQI	Costa Mesa, CA
KONJ	KZVE	San Antonio, TX
KTNO	KSGB	Ft. Worth, TX
KTOC	KDKS	Jonesboro, LA
KUOL	KSBL	San Marcos, TX
KWMX	KRXY	Lakewood, CO
KWSN	KFLI	Eureka, CA
KXNO	KLUC	N. Las Vegas, NV
KYYD	KORQ	Abilene, TX
WAMX	WIQB	Saline, MI
WBCR	WMDR	Alcoa, TN
WCTS	WMIN	Maplewood, MN
WDIS	WJCC	Norfolk, MA
WGBN	WKPA	New Kensington, PA
WKDL	WNTR	Silver Springs, MD
WKXK	WIBB	Macon, GA
WLLO	WMLX	Florence, KY
WLWZ	WELP	Easley, SC
WREJ	WRBN	Richmond, VA
WSHF	WXLR	Hahira, GA
WTKA	WPZA	Ann Arbor, MI
WTMM	WTMZ	Richmond, VA
WVTJ	WHYM	Pensacola, FL
WWAM	WAPO	Jasper, TN
WYCK	WTSW	Wilkes-Barre, PA

AM Call Letter Changes Requested

Now	Seeks	
KRAD	KASR	Perry, OK
KBDX	KCPX	Centerville, UT
KPLA	KCBC	Riverbank, CA
WAAJ	WLOR	Huntsville, AL
WWAX	WMXH	Olyphant, PA

Changed AM Facilities

KMIS	Portageville, MO	1050 kHz	Dropped to 600 watts.
WAMN	Green Valley, WV	1040 kHz	Dropped to 2 kW nights.
WCPT	Alexandria, VA	730 kHz	Increased to 950 watts nights.
WHJM	Knoxville, TN	1180 kHz	Added nights with low power.
WIAC	San Juan, PR	740 kHz	Dropped to 3 kW nigths.
WMCA	New York, NY	570 kHz	Increased to 50/30 kW.
WWLX	Lawrenceburg, TN	590 kHz	Dropped to 600 watts.

Applied To Change FM Facilities

KBST-FM	New Madrid, MO	106.3 MHz	Seeks move to 106.5 MHz, 50 kW.
KTIG	Pequot Lakes, MN	100.1 MHz	Seeks move to 102.7 MHz, 40 kW.
KQXA	LeSeur, MN	96.1 MHz	Seeks move to Glencoe, MN.
KZBK	Brookfield, MO	97.7 MHz	Seeks move to 96.9 Mhz, 27.5 kW.
WMMY	Solana, FL	105.3 MHz	Seeks move to 104.9 MHz, 6 kW.

Changed FM Facilities

KLBQ	El Dorado, AR	99.3 MHz	Moved to 98.7 MHz, 14 kW.
KMIS-FM	New Madrid, MO	106.3 MHz	Moved to 106.5 MHz, 50 kW.
WJGF	Romney, WV	89.7 MHz	Moved to 88.1 MHz.

We appreciate this information from Howard Johnson III, Hazleton, Penna.

Please Remit: The owners of Chicago AM'er WLUP were notified of an apparent liability to the FCC in the amount of $33,750. This resulted from the FCC's claim that the station had broadcast indecent language at 11:30 a.m. and 5:30 p.m.

The agency said that these times of day "there was a reasonable risk that children may have been in the audience," which therefore caused the language to be legally actionable.

Normally, the basic dirty word fine is $12,500 per violation. In this case it was increased because the FCC said it was repeated and because the FCC claimed that the licensee's "past compliance history includes similar apparent misconduct."

What ever became of putting 25 cents into the coffee can any time someone said a "bad word"?

Present FCC policy does not permit broadcasting anything that the agency determines to be "indecent programming" between 6 a.m. and 8 p.m. Other hours have become known as the "safe harbor" period. These hours could possibly be changed, pending a hearing in the D.C. Circuit Court of Appeals this fall. Let me mention that this relates only to indecent programming. The FCC advises that, in any event, "obscene broadcasts are prohibited at all times." There is a world of difference between indecent and obscene. Dirty words are only indecent. Censorship and abridgment of free speech could be considered obscene.

Steeltown News: WMXP/100.7, in Pittsburgh, Penna., was known as *Mixed Jams 100.7*, playing rap, hip-hop, and some top-40. It changed briefly to an all Garth Brooks format, but has now become WQKP ("K-Bear") with a country music format.

WAMO/105.9, *Hot 106* must have decided to try to gather up the abandoned former WMXP listeners. They made some slight changes in the station's format, and now call the station *Hot 106 Jams*. This station has a very potent signal.

Pittsburgh's WRRK, which was *97 Rock*, playing new rock and heavy metal, has made some changes. Now it is *Magic 97* and runs a classic rock format. Several air personality changes have been a part of the format switch, according to Jason Reighard, Toronto, Ohio.

Wide Area AM'casting: A technique known as Dual Synchronous Transmission now in use on 1340 kHz in Kansas City could be something to watch for in other areas. With DST, several low power AM'ers in one region, using the same frequency, link up to simulcast. This small network provides signals over a desired region, yet offers less unwanted long-range coverage than a single high power transmitter.

In Kansas City, KNHN is networked with Pittsburg's KSEK, which is 120 miles distant. In the middle of the two, there is a third transmitter, operated as an unmanned slave, to fill in the central area.

Decal from "Radio 7," on 73.4 in Moscow. Put this on the bumper of your Ford and see how they look at you at the McDonald's drive-up window. (Thanks to Doug Marsh, Onida, S.D.)

Decades ago Boston's WBZ (50 kW) and synchronized WBZA (1 kW) in Springfield, Mass. were operated like this on 1030 kHz. It means more than just placing several transmitters on the same frequency. That would merely invite heterodyning problems. The transmitters of the networked AM stations in the same region must be carefully synchronized in order to operate simultaneously on a single frequency.

Hit The Jackpot: A $250,000 Notice of Apparent Liability was sent to the licensee of 6 Texas FM stations, and a hearing was designated regarding the renewal applications of the stations. We think he hit the jackpot.

The FCC claims that their investigation showed that he built and operated 3 noncommercial educational FM stations in Texas "without appropriate authorization." These were KLMN (Amarillo), KAMY (Lubbock), and KENT-FM (Odessa). Also, the agency claimed he "misrepresented facts and/or lacked candor" about

New FM Call Letters Issued

KCVN	Faribault, MN
KGOZ	Gallatin, MO
KNJP	Sargent, NE
KNJS	Belle Plaine, IA
KNJT	Eunice, NM
KNJU	Raton, NM
KNJV	Royal City, WA
KOUY	Belle Plaine, KS
KOUZ	Alexandria, LA
KPRG	Agana, GU
KYFF	Fort Smith, AR
KZBE	Pleasant Hope, MO
WAYL	St. Augustine, FL
WEJS	Bar Harbor, ME
WFMV	S. Congaree, SC
WHPL	W. Lafayette, IN
WLGD	Columbia, FL
WLGE	Ocean City, MD
WLGG	Woodville, MS
WLGJ	Manchester, NH
WLGK	S. Waverly, PA
WLGU	Keene, NH
WLGV	Murrysville, PA
WLGX	Carolina Beach, SC
WLGZ	Pattersonvile, NY
WLJI	Summerton, SC
WLJJ	Union City, TN
WLJL	Charlottesville, VA
WLJO	Lacross, WI
WLJQ	Colonial Hts., TN
WLJR	Birmingham, AL
WLJU	Brookfield, WI
WLJW	Jamestown, NY
WPVQ	Turners Falls, MA
WQVA	Semora, NC
WSJD	Princeton, IN
WTKO	Samsula, FL
WWMC	Lynchburg, VA
WWSG	Sylvester, GA
WZLC	Oglesby, IL

Oldies station KARA/105.7 is in San Jose, Calif.

his activities when be submitted documents to the FCC.

These matters brought about the NAL. The FCC wants to review whether he is qualified to hold a license. The FCC is also looking into an existing permit he holds to construct KBTT in Bridgeport, Texas. The agency wants to think about an application he has filed to obtain a permit to construct a station in Stanton, Texas.

Time to make some entries in the station log, so we will be signing off for July. Back with you soon. Keep those letters, questions, bumper stickers, decals, news clippings, station photos, and format changes pointed in our direction. ■

TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

Reports continue to surface concerning illegally cloned cellphones used to make free calls. With minimal effort, cellulars are being provided with false electronic identities that are good enough to get calls passed. It may take about a month before fraud is detected for any given cellphone, and by then the bogus phone may have been used to run up as much as $50,000 in worldwide toll calls.

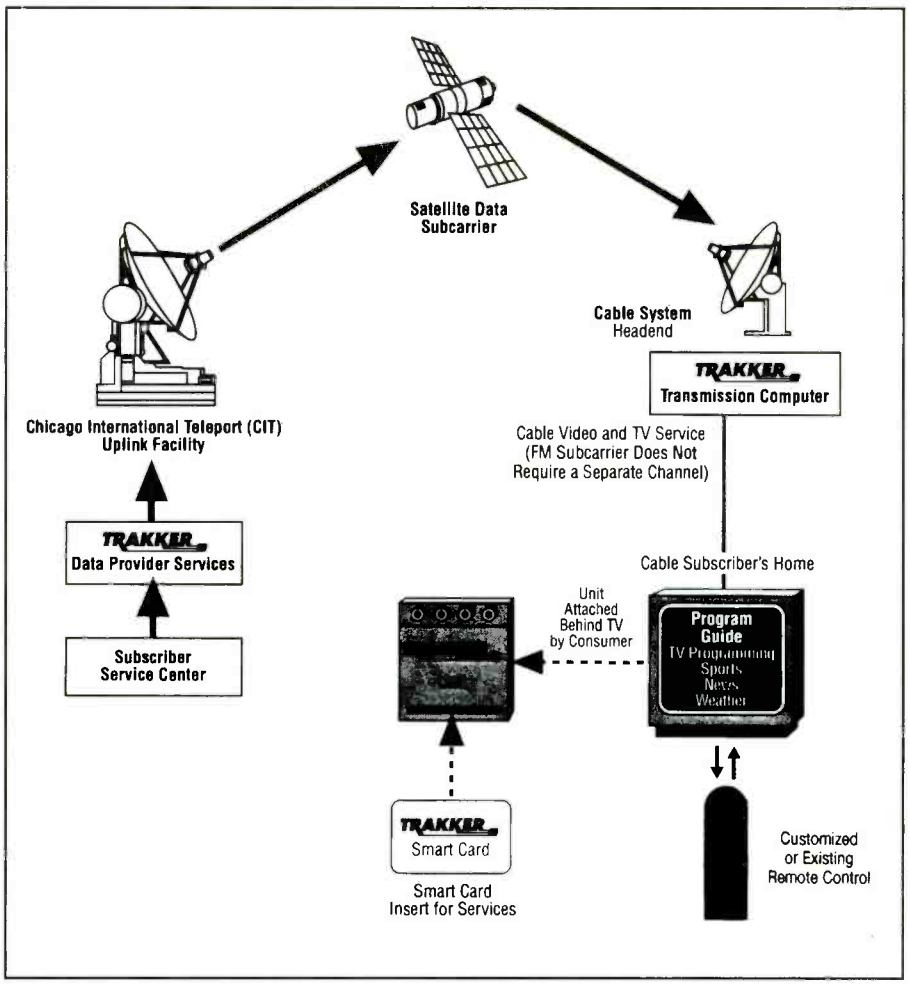
The latest techniques can be used with virtually any home computer loaded with software available to professional cellular hackers, who then sell the cloned phones to drug dealers and others seeking untraceable numbers.

The trick is for the cellular hacker to acquire operational data for many legitimate cellphones. The vital data needed to be stolen is the "NAM" (telephone number assigned to the subscriber), and the "ESN" (permanent factory-issued electronic serial number of the specific phone). These two pieces of data are automatically transmitted with each call, then matched with current data in the cellular service company's computer. If the match is good, the call goes through.

Cellular hackers have receivers that can read this data when it is transmitted. As cellular calls are placed, the hackers acquire valid NAM and ESN data, then record it for cloning into bogus cellphones. The actual cloning is so easy that it requires nothing more than having the right software, then feeding new data into a cellphone through a cable plugged into its battery connector.

The old cellular hacking method of replacing microchips with pirate chips required far more technical skill, time, effort, parts, and expense. It didn't even have the success rate of this newer method.

This is a growing criminal problem, and is spreading quickly. Arrests have been made, but the underground folks performing this work find a ready market eager for their services. If you open your monthly bill to find your toll charges especially high, you must consider the probability of your number having been ripped off by professional cellular hackers. Complain immediately to the cellular company, demanding your NAM be changed at no additional cost to you.



Here's a pictorial of how Trakker Interactive Services reaches a subscriber's home.

Digital Phone News

NYNEX Mobile Communications and Qualcomm Incorporated are testing digital cellular tests using Qualcomm's Code Division Multiple Access (CDMA) equipment. The equipment will be installed in Motorola's headquarters in Orangeburg, N.Y.

Tests will verify CDMA's ability to meet critical digital cellular and Personal Communications Services (PCS) requirements such as high mobility, low power transmission, high quality, capacity, and signal coverage.

Motorola's SC-9600 base station equipment can support a wide variety of both analog and digital modes (AMPS, NAMPS, TDMA, CDMA) within the same cabinets. Versions are available for the 800 and 1500 MHz frequency ranges. The high frequency band is used in some Latin American nations.

Kenwood Corporation concluded a contract with Tokyo Digitalphone Co., Ltd. (TDP) to develop digital portable mobile telephones. These units will operate in the 1500 MHz band.

Dual Mode

Keeping alert to the coming digital market while remaining operational in the existing analog cellular format, the Murata/Muratec CT-150 cellphone is a dual-mode device.

With its dual-mode capability, the CT-150 operates with analog AMPS systems as well as the new digital Time Division Multiple Access (TDMA) systems. That makes it suitable for every cellular market or system in existence now or those being phased into use.

Although it is a small handheld, the CT-150 has many features. For instance, it will accept five different NAM's, and automatically recognize which one to use in the area where the phone is being used. It has a built-in answering machine that allows callers to leave voice messages. The low-battery warning lets you know in *minutes* how much time is left before a recharge is needed. There is an optional PC link interface. You can program 200 roam access numbers and cities into its memory.

Nickel-metal hydride batteries offer 70

minutes of talk-time in analog mode, or 95 minutes in digital mode. You get 12 hours of stand-by on a single battery charge.

This radio is extremely user-friendly, and looks like it encompasses many clever concepts.

For more information, contact Muratec, 5560 Tennyson Parkway, Plano, TX 75024-3099.

Trakker Interactive

The new TV Trakker system is an interactive concept that provides information to consumers on their TV screens. Sports, news, entertainment, weather, business, and other updated data can be accessed by the viewer. Other information and services can be summoned upon demand by a subscribing viewer, who follows an on-screen menu to select exactly what is needed.

Shopping-at-home, VCR programming, polling, surveys, banking, and many other conveniences are things that are within the realm of interactive TV. The TV Trakker system makes use of satellite technology and the subcarriers of cable TV signals. It has been in use on the Cox Cable system in Omaha, Nebraska, since November of last year.

This service is available at relatively low cost to individual subscribers. It has been extremely successful in Omaha and will soon be available in other areas.

The service is offered by Trakker Interactive Services, 7130 South Lewis, Suite 410, Tulsa, OK 74136.

Cellular Etiquette

PacTel offers ideas for cellular phone etiquette that are worth remembering.

1. If you let people know that you are reachable, then be sure to keep your cellular on stand-by so they can get through to you.

2. Always ask the person you are with if they mind if you take or make a cellular call, and excuse yourself when you do.

3. Don't use the phone in a theatre, formal business meeting, child's recital, or place of worship. If you use your phone in any public place, make certain that others won't be disturbed.

You no doubt can think of about a dozen other suggestions, but wouldn't you settle for most cellular users carrying the ball with even two of these three?

New US/Canadian Cellular Service

Fifteen cellular companies announced a new service to offer constant levels to improved cellular calling across both nations. Called *MobiLink*, cellular service is promised to be easier and accessible to more people.

It will allow people to more easily make and receive calls using standardized dialing codes in major metropolitan areas. Also provided will be 24-hour customer service, repair centers, and loaner phones.

The Murata/Muratec CT-150 is a dual-mode analog/digital cellular that offers some clever features.

In the USA, *MobiLink* will be available only through wireline cellular operators. In Canada, it will be offered by Mobility Canada.

Cellular subscribers belonging to *MobiLink* will be able to dial *611 (Star-611) on their cellular, or an 800 telephone number, that will connect them directly back to their local carriers' customer service.

The service will be available in the last quarter of this year and will be announced through local cellular carriers. Membership will be available through those local carriers. Watch for announcements, which will most likely be included with monthly bills.

Up In The Air

GTE Airfone tells us that they have now logged more than 25-million air/ground telephone calls via their in-flight service. There are now 1,965 airliners operated by twelve companies using the GTE Airfones.

Another company, The In-Flight Phone Corp. (IFPC), tells us that ABC Radio Networks will be the major supplier of programming for FlightLink On-The-Air. The live airborne audio system will digitally transmit up to twelve channels of stereo programming to passengers aboard commercial and corporate aircraft.

A network of 50 ground stations will continuously transmit multiple channels of programming to the aircraft. Aircraft will pick up the signals and digitally distribute the stereo throughout the cabin. Passengers can select the channel desired to monitor. Most programming will be free, although some special sports or premium entertainment events will be available at extra cost (and may be paid for with a charge card).

The technology for this system was developed by Harris Corp. In-Flight Phone Corp. which is headquartered in Oakbrook Terrace, Illinois.

Timed Out For June

Looking for your news clippings and thoughts on cellphones, pagers, and other personal communications. We are also seeking new product data, and information on new personal communication services.

CB SCENE

BY BILL SANDERS, SSB-295

27 MHz COMMUNICATIONS ACTIVITIES

To those who always ask why they don't make those great SSB base station rigs any longer, I would say not to forget the trusty Cobra 142GTL. This excellent AM/SSB transceiver has been continually in production for several years, ranking up there with the best of them. Certainly, the Cobra 142GTL is intended for the serious sideband operator who demands quality and performance.

The 142GTL features modular design. The receiver has a six-pole lattice-filter. The selectivity is 6 dB at 4.2 kHz and 60 dB at 7 kHz. Adjacent channel rejection is 60 dB on AM, 65 dB on SSB. The clarifier tunes 1.5 kHz above and 1.5 kHz center slot. Sensitivity is better than 0.5 uV.

The transmitter has a logarithmic speech processor to deliver powerful and clear modulation with no flat-topping or splatter.

Among the features are dual backlit panel meters to measure SWR/modulation percentage, and S/RF power; variable mike output; RF gain control; switchable ANL and NB, and transmit/receive indicators.

As you can see, this is a marvelous machine. It even looks wonderful sitting in a radio room. Comes from Cobra Communications Div. of Dynascan Corp., 6460 West Cortland, Chicago, IL 60635. Many dealers carry Cobra radios.

This clever 1962 CB'er built his customized CB rig to overcome common problems like transmitters having too few channels, and receivers with poor selectivity.

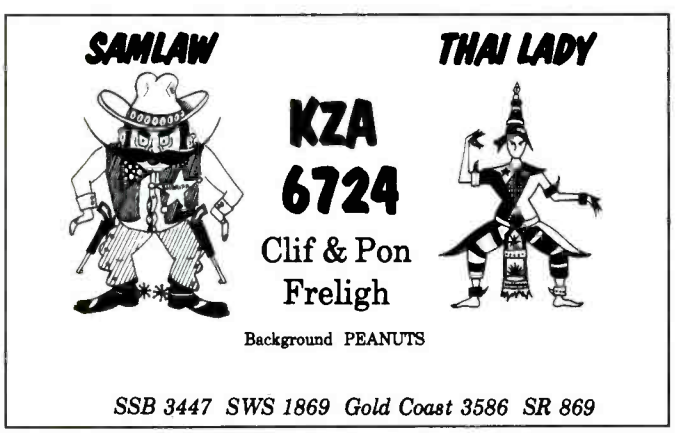
Customized Pioneers

In the very early days of CB radio the selection of commercial equipment was somewhat slim. CB radios tended to lean towards the dinky rather than the deluxe. Many operators bypassed this problem by assembling their own customized deluxe CB transceivers. These were usually made from converted military surplus radios, or built up with existing CB radios as their cores.

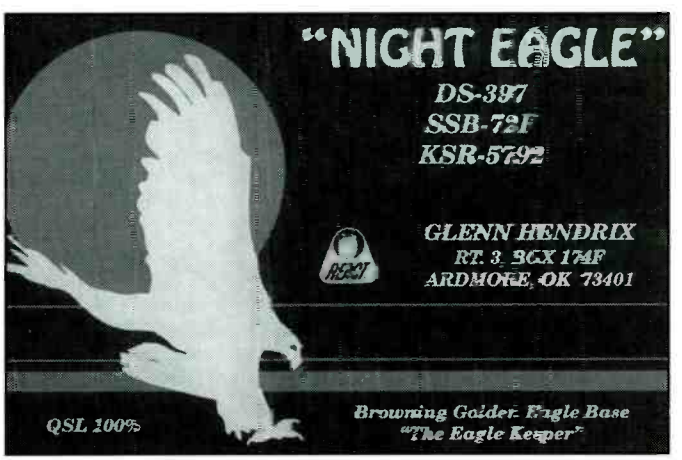
We can show you two, although there were many other one-of-a-kind customized deluxe CB transceivers in use 30 years ago.

In 1961, a California CB'er named Frank Baker had what he called a "Collins" CB radio. The beautiful rig even bore the Collins label. It actually was somewhat of a Collins set. It had 12 transmit channels, a tunable receiver, squelch, front panel antenna tuner as well as peaking for both buffer stages and the final, front panel antenna tuning. Baker had customized this radio from a U.S. Navy type NBF transceiver, which had been made by Collins.

In 1962, Clifford Smith, of West Virginia, said he thought that CB transmitters were OK, except they didn't offer enough transmit channels. Primarily, he didn't like existing CB receivers. They tuned so broadly that he could never hear less than three channels at one time.



New Mexico's Clif, SSB-3447, is a veteran sideband operator. He tells us that he never misses our column! His famous QSL hangs on radio room walls from Albuquerque to the Alps.



This QSL from Glenn, SSB Network member SSB-72F, of Oklahoma, runs a 20-plus over 9 on our meter!

A Collins CB rig? In a way, it was. But that was a long time ago.

Clifford then designed his own customized CB radio around a modified commercial CB transmitter. He added provisions for transmitting on all 23 channels, plus peaking and metering the transmitter output. The CB receiving functions were handled via an automobile radio which fed the CB signals at its 455 kHz IF frequency. This offered excellent selectivity. The receiver was also given an S-meter. The entire rig was completely repackaged by Clifford, then topped off with a great Astatic D-104 crystal mike. Beautiful job in every respect.

These are two examples of early CB radio equipment that were colorful and unique.

Happy Birthday, "Lollypop"!

Let's mention here that 1993 marks the 60th anniversary of Astatic's famous D-104 mike design, which has lovingly become known to hams and CB operators around the world as The Lollypop. Easily the most famous comms microphone ever made, it began its career in 1933 as a crystal mic. These days, they are made in amplified crystal, ceramic, or dynamic designs. They offer superb talk power and utilize that unique stand with the grip-to-talk bar, and a heavy base that resists toppling.

To mark the special occasion, this year (only) Astatic is producing a Limited Edition 60th Anniversary Diamond Eagle version of the D-104. This is a fully functional amplified crystal mic, custom plated in bright brass (looks like shiny gold). There is a full cut 8-point diamond mounted in the engraved eagle backplate. A nameplate is provided for engraving the owner's name or ID. A certificate of authenticity comes with each of these mikes.

These impressive commemorative mics are available from Astatic dealers, who also carry other fine products from this worthy company. For more information, contact Astatic, P.O. Box 120, Conneaut, OH 44030, or circle 101 on our Readers' Service.

A Peek Into The Mail Sack

We heard from Clif, SSB Network member SSB-3447, of Albuquerque, New Mexico. He monitors 38-Lower, and each Sunday he runs a roll call on 16-Upper. Clif tells us that he remembers our scribblings in the old *S9 Magazine,* and asks if we can figure out how long he has been one of our loyal readers. We figure that's got to be sometime in the mid-1970's, Clif.

Cobra's venerable 142GTL AM/SSB base station radio.

Clif remembers the old Small World Society, as he is member SWS-1869. He wonders how many other SWS members are still around. Hey Clif, our SWS certificate still hangs on the wall here. Always good to hear from old friends.

A lengthy letter from Scott Moore berates operators who refuse to accept helpful technical advice from other operators relating to how to improve their signals. He also gets annoyed with people who never have conversations but, instead, ask for radio checks every couple of minutes. Lastly, Scott would like to see SSB manufacturers add features like Roger Beep, selcall, and a notch filter. He points out that a ham rig such as the RCI-2950 sells in the $250 price range and yet contains many more fancy operating features than SSB CB rigs selling for about the same price. Yet those features could easily, and legally, be added to the CB radios by manufacturers.

A reader purchased a used CB base station radio carrying the ID Handic USA Model 2305. There was no documentation with this radio, but on the rear of the radio there was an address in Miami Lakes, Florida. His letter to that address was returned from Hialeah stamped with a notice that the forwarding time had expired. He needs an instruction book or service manual in order to service the squelch, which has a minor problem. Can any reader help with information on the current address of this company, or with photocopies of documentation? The chap looking for info is Hal Brooke, SSB-84U, 1663 East Fork Road, Sula, MT 59871.

Emblem of the Triangle Area CB Network, North Carolina.

Handic was (and may still be) a leading Swedish CB manufacturer. The company was active in the US market during the late 1970's, but we haven't heard anything about it in years.

Mark Ke'koa is originally from Hawaii, but presently lives in Ohio. Mark tells us that Hawaii is very active on Channel 11 for AM'ers, with SSB'ers on 36 through 40 LSB and USB. In the area of Steubenville, Ohio, which is where Mark now yaks, he monitors AM on Channel 17, and all the usual SSB frequencies.

Thanks to Albert Nunnery, SSB Network member SSB-67U, of Cary, N.C. for sending along the baseball cap and great-looking shoulder patch from the Triangle Area CB Network. The Triangle group operates in Albert's local area, and he is a charter member. Really appreciated, Albert.

Sitting here in the depths of summer, it's good to hear from Brian, 33-DV-158, who lives in a remote area of comfortable and cool Alaska. Brian tells us that in the remote wilderness area where he is located, his radios are the only contact he has with the outside world. They are his lifeline. He runs a President Grant and a Cobra 142GTL. Both have been hacked to enhance and add features.

Brian wants the FCC to open up the frequencies between 27.405 and 27.995 MHz for legal CB use, allowing more than 4 watts, additional transmission modes, and a certain amount of home-built equipment. He feels it will add to the enjoyment of communications, while not taking anything away from anybody. While waiting for this to happen, Brian monitors the upper side of 27.555 MHz.

A goodly stack of mail, and we hope to hear from you, too. Send along your shack photos, your QSL's (or any DX QSL's you want to share with our readers), your opinions, newspaper clippings regarding CB, questions, or whatever. ■

HOW I GOT STARTED

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. The person whose entry is selected will receive a one-year gift subscription (or one-year subscription extension) to *Popular Communications*.

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

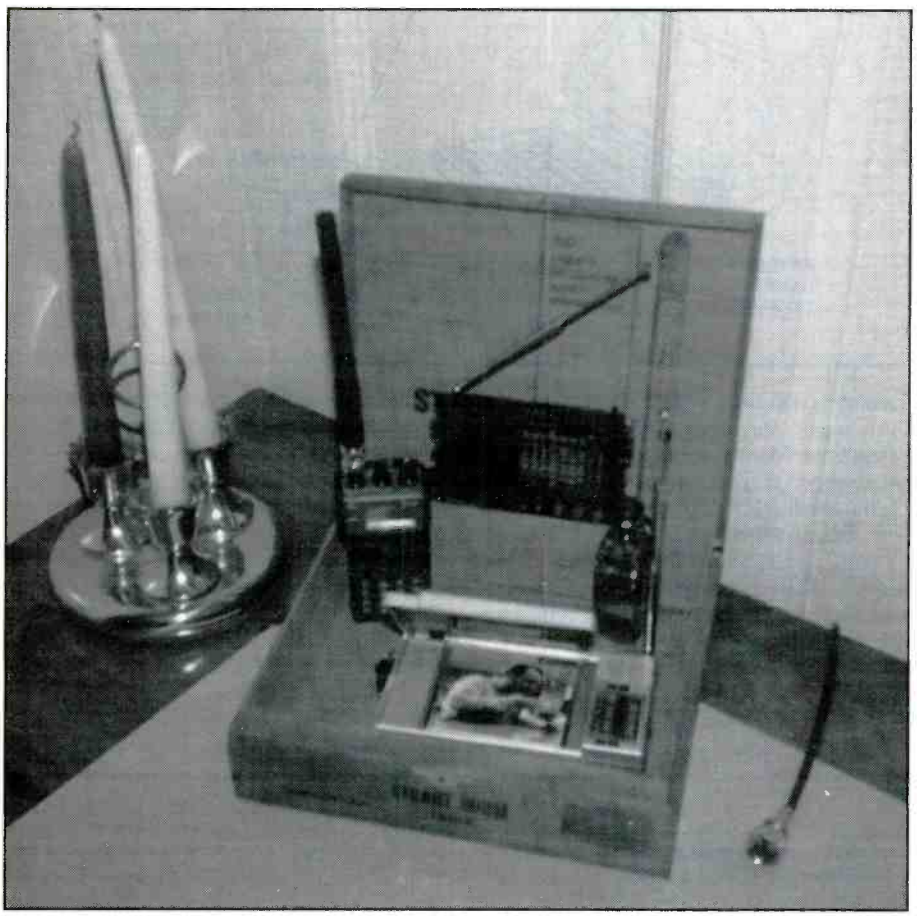
Our July Winner

This month our winner is Richard G. Johnson, Pittsburgh, Pennsylvania. Richard told us:

"My first experience with radio was in Virginia during the summer of 1961 when, at age 3, I figured out how to get into my father's red 1960 Ford. I managed to press the button on the microphone button of the Viking Messenger I CB transceiver and—to the horror of several family members—send my voice through the base station CB radio in the house. I don't think I used the callsign, but it was KCJ4731.

"Eventually, I grew old enough for the FCC to issue me a CB license, and I became KKL9951. That Viking Messenger is still working flawlessly!

"I recall putting together a demonstration of a relay station for my 7th grade classmates. Using CB frequencies, my line-of-sight relay spanned two classrooms, and carried voice and microphone-click transmissions using coat-hanger antennas." ■



Rick Johnson describes this as his "cigar-box" radio. It's a cigar box outfitted with two shortwave portables and two scanners. Havana good time with it, Rick?

SATELLITE VIEW

BY DONALD E. DICKERSON, N9CUE

INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

AMSAT—The Future

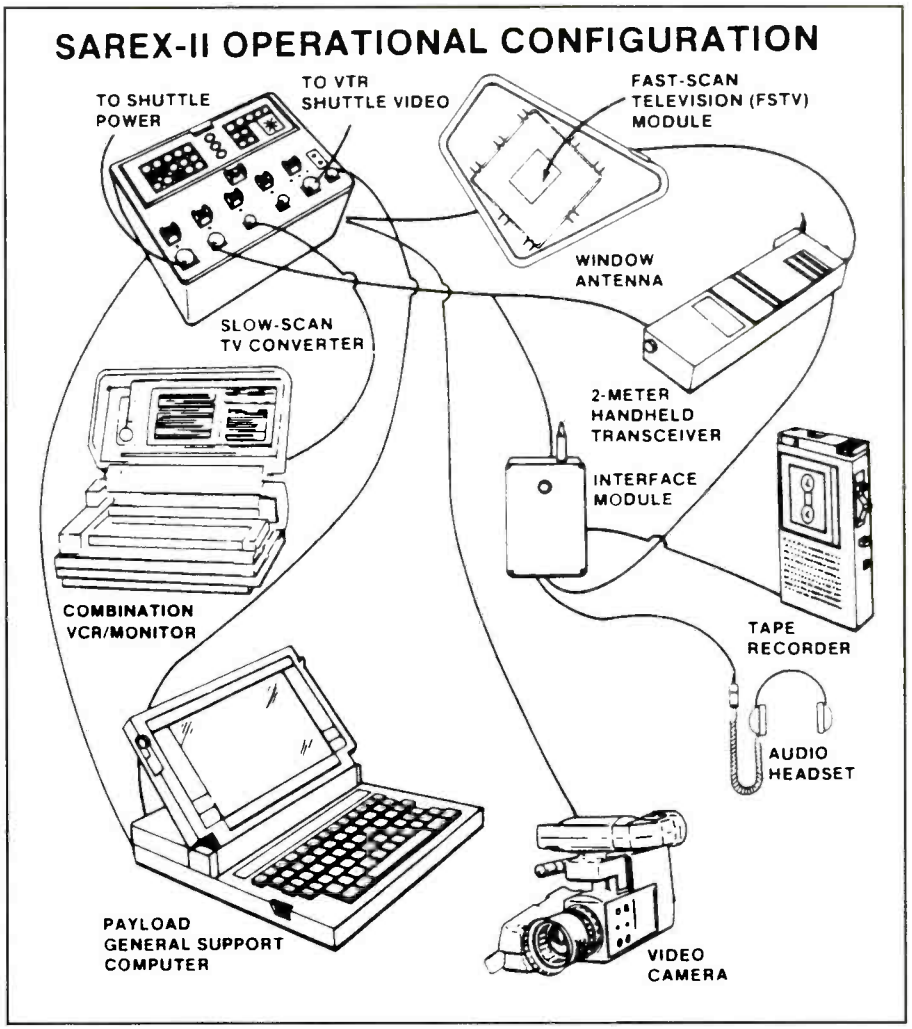
AMSAT is an acronym for the Radio Amateur Satellite Corporation. The Amateur Space Program (ASP), under the leadership of President Bill Tynan (W3XO), is always looking to the future. Amateur Radio has become a regular part of NASA programs through the Shuttle Amateur Radio Experiments (SAREX), which include voice, packet and ATV operations. This along with AMSAT's current International fleet of digital (Packet) and analog (SSB/CW/ATV) satellites has shown once again that Amateur Radio is on the cutting edge of new satellite technology. We now continue our conversation with Bill Tynan:

What are Packet satellites (PACSATS)?: "They are flying computers with large memory and radio transponders. The concept is to upload a message at one point and download a message at another point on the earth. The ground stations check the satellite's memory for messages much like a VHF or telephone BBS. The low earth orbit packet satellite concept has been picked-up by both government corporate interest. It is a cheap way to send information anywhere in the world if you don't need real-time communications."

How is satellite packet different from regular packet?: "The satellites are farther away and of much lower power than regular packet. Most packsats (AO-16, DO-17, WO-18, LO-19) use 1200 baud and Phas Shift Keying (PSK or BPSK) instead of AFSK like VHF packet. The English UOsat (UO-22) is really a second generation satellite. It uses 9600 baud rate. A second UOsat (UO-14) has been given over to commercial use as a medical satellite. Both spacecraft were built by AMSAT-UK and the University of Surry. Both carry commercial equipment onboard. Our next packet satellite will likely be a 9600 baud."

What can you tell me about the French RSAT?: "It uses AFSK at 1200 baud. It was built in 1986 and has been waiting for a launch vehicle. It was scheduled for launch in April and should be an interesting experiment. It will have a high orbit and will be seen by a lot of people at once."

What are gateway stations?: "Well, there are digital and voice gateways. There are several Packet (digital) gateways in the US. You would need to contact your local SYSOP for the nearest station. These stations are simply satellite stations that operate as a relay for other stations by taking their digital or voice signal and uplinking and downlinking it through the satellites. The voice gateways were largely experimental in nature. Satellite signals are relatively weak, something less than S9 most of the time. Many people today are not satisfied with that. They think they need a telephone quality FM signal or it is not copyable. Many operators have lost the ability to copy under difficult conditions. They seem to have been spoiled by our extensive high quality network of FM repeaters here in the US."



Does AMSAT have non-amateur members? "Yes, we welcome everyone. We have two missions if you will. One is to educate people about satellites and space communications and second, we encourage people to consider the advantages of getting their Amateur Radio license. And with the no-code that is not difficult to do.

We are always looking for people with special skills who would be willing to contribute to the over-all success of our mission. We always need people with technical and administrative skills. One of the things I am doing for the next copy of the AMSAT Journal is an inventory list. We want to know what special skills our organization needs the most. We need everything from accountants to electrical engineers. Many of our volunteers are educators, engineers, scientists, and hobbyists. Their contributions make a difference."

Will space station Freedom be amateur equipped?: "Well, the proposal has been made and updated a couple of times. We are still pushing for that and SAREX (Shuttle Amateur Radio Experiment) program is a precursor to that. Amateur Radio has become quite popular with the astronauts. As more and more get licenses there is not enough time available for all of them to take part in a SAREX mission. It looks like two types of amateur shuttle missions are developing. The official SAREX missions, with pre-planned experiments and a

AMSAT

Radio Amateur Satellite Corporation
850 Sligo Ave., Silver Spring, MD 20910
301-589-6062

CURRENTLY ACTIVE AMATEUR RADIO SATELLITES

Satellite	Mode	Uplink (MHz)	Downlink (MHz)
PACSAT (AO-16)	1200 bps PSK AX.25	145.900/920/940/960	437.025 437.050 (Sec.) 2401.100
DOVE (DO-17)	1200 bps AFSK/digital voice [4]		145.825 2401.220
WEBER (WO-18)	1200 bps PSK AX.25		437.075 437.100 (Sec.)
LUSAT (LO-19)	1200 bps PSK AX.25	145.900/880/860/840	437.150 437.125 (Sec.)
JAS-1b (FO-20)	JA (Analog) JA Beacon JD (1200 bps PSK AX.25) JD Beacon	145.900-146.000 145.850/890/910 	435.900-435.800 435.795 CW 435.910 435.910
OSCAR 21 (RS-14) Transponder #1 (Primary)	B (Linear)	435.102-435.022	145.852-145.932
	(Digital)	RX-1 435.016 RX-2 435.115 RX-3a 435.193 RX-3b 435.193 RX-4 435.041	145.983
Transponder #2 (Secondary)	B (Linear)	435.123-435.043	145.866-145.946
UO-22	9600 BPS FSK	145.900	435.120

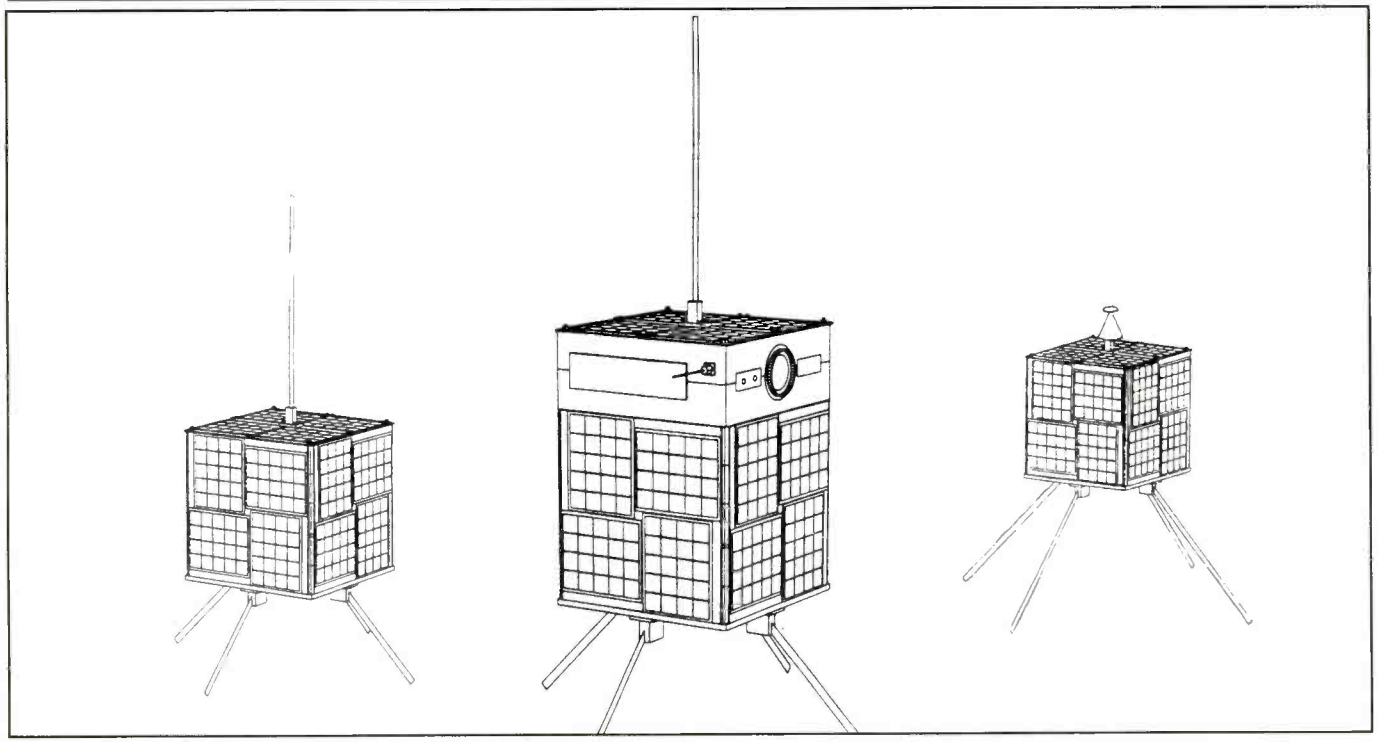
Notes:

[4]DOVE will not have user access uplink. Instead, it provides AFSK AX.25 telemetry and digitized voice messages (when activated).
[5]The AO-21 RUDAK uplinks are as follows:
RX-1 1200 BPS NRZIC Bi-phase M
RX-2 2400 BPS BPSK Bi-phase S
RX-3a 4800 BPS RSM, NRZIC Bi-phase M
RX-3b 9600 BPS RSM, NRZ (NRZ-S) and scrambler
RX-4 (digital AFC) RX for RTX-DSP experiments
Note: Output signals of RX-4 are in-phase and quadrature components I (I) and Q (I), which are sent to the DSP RTX immediately after analog/digital conversion with 8-bit resolution. This supports various modulation modes, depending upon the software. All other receivers provide data (D) and clock (C) signals at their outputs.
[6]The AO-21 downlink can be switched to the following modes:
Mode 1: 1200 BPS BPSK, NRZI (NRZ-S) (PACSAT and Fuji compatible)
Mode 2: 400 BPS BPSK, Bi-phase-S
Mode 3: 2400 BPS BPSK, Biphase-S
Mode 4: 4800 BPS RSM, NRZIC (Biphase-M) (like 4800 bit/s uplink)
Mode 5: 9600 BPS RSM, NRZI (NRZ-S) + Scrambler (like 9600 bit/s uplink)
Mode 6: CW keying (only for special events)
Mode 7: SK (F1 or F2B), eg RTTY, SSTV, fax etc. (only for special events)
Mode 8: FM modulated by D/A signals from DSP-RISC processor (speech)

second type in which licensed astronauts operate in their spare time for fun. SAREX is now an official NASA program. "

What does the future look like?: "I hope that the powers in Washington put enough resources into space exploration. I think it is something us humans simply have to do. There are always spin-off in terms of unexpected benefits that could not have been foreseen. We cannot always justify expenditures on space exploration by saying specifically what benefits we will reap from a program, but we usually get far more than we could have expected. When you consider TV satellites, telephone, amateur and the world-wide communications network they provide, you could not have foreseen any of this when Goddard was trying to launch a rocket.

We plan to build a space station and we plan to go to Mars and build a space station on the Moon. I think it is pretty clear that Amateur Radio will be a part of that somehow. The SAREX program has shown the value of Amateur Radio on space missions. I think the work the Amateur community has done, including AM-



MicroSat Designs from left to right: MicroSat/PackSat, AO-16 & LO-19 (AMSAT); WeberSat, WO-18 (AMSAT-NA); and the DOVE, DO-17 (BRAMSAT).

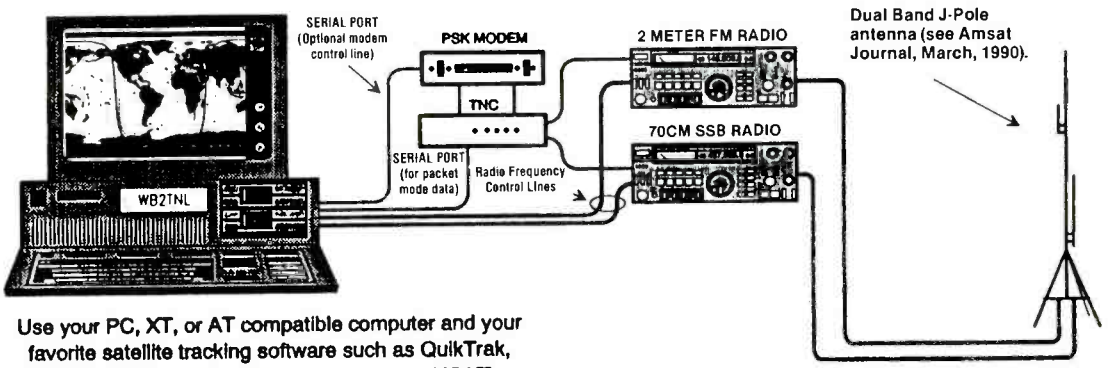
SAT internationally, has also shown the utility of relatively small inexpensive low earth orbit satellites. A few years ago commercial interest would never have considered low earth orbit spacecraft for anything. Everything had to be geo-stationary or forget it. Now low earth orbit systems are common again even among commercial interest. This type of system also allows you to keep the ground station equipment simple and inexpensive which is always a plus. Again this is something that amateurs demonstrated first."

I want to thank you, Bill, for taking the time to talk with us and sharing your knowledge of the Amateur Space Program and your hopes for its future.

Write to AMSAT for membership information at 850 Sligo Ave., Silver Spring, MD 20910 or call (301) 589-6062. ■

Amateur Radio Satellite Communications

Typical Configuration for AO-16, DO-17, WO-18, and LO-19

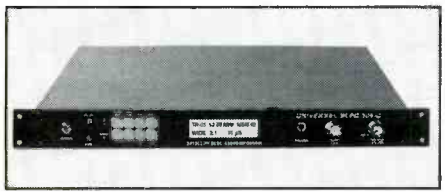


Use your PC, XT, or AT compatible computer and your favorite satellite tracking software such as QuikTrak, InstantTrack, ORBITS (all available from AMSAT).

NOTES:
1. Use the best coax possible (9913 or hardline).
2. The computer interface to the radios provides real-time dopler correction via the Kansas City Tracker/Tuner package. Contact L.L. Grace, 41 Acadia Drive, Voorhees, NJ 08043.
3. Suitable PSK modems are the PacComm PSK-1, the TAPR PSK modem, and the G3RUH 1200bps modem.

NEW PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS



Commercial SCPC Audio Receiver

The all-new Universal SCPC 300-C is a high-quality, microprocessor-controlled audio broadcast receiver, which incorporates every needed feature for broadcast use. There are no costly extra frequency boards needed to put you on any SCPC frequency, as the SCPC 300-C is fully frequency agile and fully transponder agile with a push of a button. No coding schemes are used for selection of its many parameters and features.

Full readout of SCPC frequency, transponder, bandwidth, de-emphasis, companding and memory channel in use are prominently displayed on easy-to-read, super-twist LCD display of two lines with 20 characters per line. All companing boards, 3:1, 2:1, 1:1 are built in and are standard features.

The SCPC 300-C has 50 non-volatile memories, which are recalled at the touch of a single button to select any SCPC channel in the set 50 to 90 MHz area. Now, one SCPC receiver can receive many SCPC channels with any transmission parameter now in use.

The new SCPC 300-C receiver has two high-quality phase lock loop synthesized frequency converters to achieve stable reception. There are two outputs, a 600 Ohm balanced line out and a 4 to 8 Ohm speaker out, plus front panel headphone monitoring jack.

The input frequency of the unit is 950-1450 MHz and can be used with any modern stable LNB or LNA with a suitable downconverter. The SCPC 300-C is fully C Band and Ku Band compatible and furnishes LNB/LNA DC voltage, plus polarity control.

Standard rack mounting of 19″ wide, 10″ deep, 1.75″ high or a standard shelf case cabinet 17″ wide, 10″ deep, 1.75″ high with 115 VAC, 60 cycle power requirements—other power requirements available.

Call for full information: Universal Electronics, Inc., 4555 Groves Road, Suite 13, Columbus, Ohio 43232. Phone: (614) 866-4605. FAX: (614) 866-1201.

New GMRS Two-Channel Handheld Transceivers

New Realistic® PRS-100 Two-Channel FM Handheld Transceivers from Radio Shack® are a convenient and affordable way for family members to stay in touch.

The radios are especially useful for family outings such as hiking, camping or ski trips.

The PRS-100 is a lightweight, portable 2-way radio manufactured to commercial-grade standards for reliability and durability. It operates on the General Mobile Radio Service Band, available for limited range non-business communication.

The transceivers provide clear transmission and reception for distances up to several miles depending on the terrain. Two channels are available so users can choose the clearest radio frequency.

Each radio comes with a rechargeable 8-hour battery, battery charger, detachable antenna, a convenient belt clip and 462.7125 and 462.6375 crystals.

A valid GMRS license from the Federal Communications Commission is required to operate the radio (an application form is included with the unit). All members of the licensee's immediate family residing in the same household are eligible to operate the radio under license.

The Realistic® PRS-100 sells for $249.95 and is available at nearly 6,700 participating Radio Shack® stores and dealers nationwide. ■

RTTY

BY ROBERT MARGOLIS

THE EXCITING WORLD OF RADIOTELETYPE MONITORING

On Feb. 27, Secretary of State Warren Christopher met with NATO foreign ministers in Brussels, Belgium, in an unsuccessful attempt to get European members to lend logistical support to the American military operations in parachuting food and medicine into remote areas of Bosnia.

Several hours before the meeting took place, I saw a lot of RTTY traffic in French and German pertaining to this meeting being sent by NATO on 10404.5 kHz at 0709 UTC, 425/50. The text, from RFQBA in Brussels, was given the classification "NATO unclas" at the top of each page.

From time to time readers send in printouts of RTTY#transmissions in Spanish upon which they underline the capital letters "CIA" they've found in the texts. They view the texts with suspicion but wrongly believe the letters refer to the Central Intelligence Agency.

The letters are an abbreviation of the Spanish word "compania," meaning "company." In Telexes I frequently monitor on 8001.5 and 9001.5 kHz from Bogota, Colombia, "CIA" is extensively used, along with a host of other abbreviations.

Some other abbreviations are "CIA ANTIN," for "compania antinarcoticos," "TX" for "transmitir," "RX" for "receptor," "SEPER" for "seccion personal" (personnel section), "INTEL" for "inteligencia," and "CDTE" for "comandante" (Major). "Jefe" is the Spanish word for "commanding officer."

With this in mind, if you see, "CDTE XIV CIA ANTIN," it means it's addressed to a Major in the 14th antinarcotics company, and "JEFE SEPER ANTIN" means it's from the commanding officer of the antinarcotics group's personnel section.

From St. Lys Radio, France, comes word that it closed FFT82 on 16820.5 kHz on Jan. 11, and replaced it with FFT83 on 16821.0 kHz, working ships on 16698.0 kHz.

Cruise news: 10 cruise ships have recently made their maiden voyages or will be doing so in the near future. They are Fascination (2,600 passengers) and Sensation (2,600), both of Carnival Cruise Lines; Maasdam (1,266), Ryndam (1,266), and Statendam (1,266), all of Holland America Line; Costa Romantica (1,350) of Costa Cruise Lines; Windward (1,246) of Norwegian Cruise Line; Crown Dynasty (820) of Crown Cruise Line; and Silver Cloud (314) and Silver Wind (314) of Silversea Cruises.

Ary Boender of The Netherlands notifies us that he recently monitored the net of outbanders I've written about on a couple of occasions using 6681.0 kHz for their chatter. When I tuned in on their transmissions they were on 27538.5 kHz. They call themselves the IPRNET, or International Packet Radio Net.

Ary says he listened to them at 1020 UTC and caught numerous stations from Belgium, France, Italy, and Luxembourg. They shared propagation info, and beacon and satellite news, he reports.

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vv99+1804+0++++++
vv99+1806+0++++++
vv99+1808+0++++++
vv99+1810+0++++++
vv99+1812+0++++++
vv99+1814+06++++
vv99+1816+0++++++
vv99+1818+0++++++
vv99+1820+0++++++
vv99+1822+0++++++
vv99+1824+0++++++
vv99+1826+0++++++
vv99+1828+0?:.9++
vv99+1830+0++++++
vv99+1832+0++++++
vv99+1834+0++++++
vv99+1836+0++++++
vv99+1838+0++++++
vv99+1840+0++++++
vv99+1842+0++++++
vv.9+1844+0++++++
vvv99+1846+0++++++
vv99+1848+0++++++
vv99+1850+0++++++
v99+1852+0++++++
vv99+1854+0++++++
vv99+1856+0++++++
vv99+1858+0++++++
vv99+1900+0++++++
vv99+1902+0++++++
vv99+1904+0++++++
vv99+1906+0++++++
vv99+1908+0++++++
vv99+1910+0++++++
vv99+1912+0++++++
vv99+1914+0++++++
vv99+1916+0++++++
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After monitoring stuff like this for months, Ary Boender of the Netherlands says he still hasn't a clue to its meaning. Can you help him? This ran at 50 baud on 5416.0 kHz, current time was indicated at UTC plus one hour.

In a recent transmission by CLP1, MFA, Havana, Cuba, personal telegrams in Spanish and Prensa Latina news in French and English were sent to the Cuban Embassy, Vientiane, Laos. The Laotian mission was identified with the callsign CLP-21. This callsign is listed, however, in a frequency guide as belonging to the embassy in Phonm Penh, Cambodia. Further monitoring is needed to determine which location is CLP21.

It sounds like SWED-ARQ and seems to have the characteritics of it, but none of my RTTY decoders will sync to it. It's frustrating to hear this RTTY mode on frequencies used by amateur radio operators and utility stations alike and not be able to decode it. Interestingly, those using the mode on fixed station frequencies turn out to be the military MARS stations. In other words the mode is used by amateur radio operators both in and out of the military. It was while listening in on the upper sideband voice comms of a couple of U.S. Navy MARS stations that I eventually learned what the new mode was called—PACTOR. The frequencies on which I've heard it as of this writing are 3351.3, 7076.7, 12127.5, 14072.0, 14078.5, and 14079.0 kHz.

My ham radio buddies tell me the mode was devised in Germany a few years back and has traits of both AMTOR (a.k.a. ARQ-TOR, ARQ, and Sitor-A) and Packet Radio. It's supposed to correct transmission errors in messages faster than Packet Radio does under adverse propagation. It runs at 100 and 200 baud and comes on computer software. Two companies offering PACTOR are Advanced Electronic Applications Inc. of Lynnwood, WA, and Kantronics Inc. of Lawrence, KS.

Stax of Fax Dept.: Returning to the air this past winter after a brief respite was AZG641, Buenos Aires, Argentina, on 11480 kHz, and LRO64, also Buenos Aires, on 9241.5 kHz. AZG641 sends news photos from Agence France-Presse and Noticias Argentinas, between 2100 and 2300 UTC; and LRO64 from Telam between 2300 and 0100 UTC, 60/288.

LRO84, Buenos Aires Meteo, Argentina, changed frequencies during the past winter. It moved to 18621.5 kHz from 18093.0 kHz, where it was camped for many years. ITU files list 18621.5 kHz as assigned to LRO84, Gen. Pacheco Radio, Argentina, whose transmitter was being used by the weather station. Not only did LRO84 change frequencies, it also changed its transmission schedule. I've written a letter to the station and hope they reply with details of its new operations.

On 10967.5 kHz at 0420 and 0432

Radiofax notices sent by NAM, U.S. Navy, Norfolk, VA at 1530 UTC (top) and 1700 UTC (bottom), both on 10865 kHz, 120/576. (From Robert Margolis)

UTC, an unidentified station transmitted weather charts of NPM, Pearl Harbor Naval Base, HI, at 120/576, on a Sunday in March. The station went QRT at 0445 UTC. NPM's weather charts were also seen on 21733.0 kHz at 1810 UTC, 120/576, in February. On 11485.0 kHz, an unidentified station sent a satellite weather chart at 1801 UTC, late in February, 120/576.

Possibly fulfilling a request from a cruise ship's radio officer, WLO, Mobile Radio, AL, sent a Gulfmex surface analysis weather chart on 2574.0 kHz at 0238, 120/576. The frequency is not normally used for radiofax transmissions. A short time later, WLO provided a ship-to-shore phone patch to the ship on 2572.0 kHz USB.

Retired meteorologist William Hodge of Mississippi used his sharp eyesight to answer a recent question of mine. In February's column there was illustrated a weather chart which I monitored on 26285 kHz. Few features were seen because of bad interference caused by single sideband voice comms on the same frequency. Bill says he saw two maps side by side showing similar state boundary lines. "I can make out two Nevadas, Utahs and Colorados," he says. Rechecking the illustration, I saw he was absolutely correct. I saw through squinting eyes those states plus two Californias in the middle of the illustrations. It became easy once I knew what to look for.

Bill says the charts appear to be a retransmission of Naveastoceancen's NMC 36/48 hour significant weather broadcast. Thanks for the solution, Bill. Now I know why my mother wanted me to eat lots of carrots when I was a little boy.

RTTY Intercepts

3229.2: AFS, Offutt AFB, Elkhorn, NE, w/KAWN wx data at 0310, 75 baud. (Ed.)

4173.0: ITDP, Agip Monfalcone (Italian cargo ship—Ed.). w/ETA Malta msg, ARQ at 1930. (Ary Boender, NLD)

4177.5: LITO3, M/V Helen (Norwegian liquid propane gas tanker), w/a Telex at 1843, ARQ. (Boender, NLD)

4788.0: TJK, ASECNA, Douala, Cameroon, w/coded wx, 50 baud at 0147. (Ed.)

5076.0: LASV2, Echo Pioneer (Norwegian dry cargo ship— Ed.). w/a msg to "Unimar Hamburg," ARQ at 1935. Not a ship freq. (Boender, NLD)

5117.5: TYE, ASECNA, Cotonou, Benin, w/RYRY, 50 baud at 0137. (Ed.)

5233.3: AJE, USAF, Croughton AB, England, w/wx, 75 baud at 2338. (Ed.)

5345.0: RDH77, Arkhangelsk Meteo, Russia, w/RYRY, 50 baud at 2045. (Boender, NLD)

5416.0: Un-ID w/"vv99+1808+0++++++" at 1708, 50 baud. Xmtd every two mins. w/the time at UTC + one hour. (Boender, NLD)

5740.0: HZN, Jeddah Meteo, Saudi Arabia, w/coded wx at 2052, 50 baud. (Boender, NLD)

5887.9: IMB32, Rome Meteo, Italy, w/coded wx, 50 baud at 0358. (Robert Hall, RSA)

5904.1: 9GC, ASECNA, Accra, Ghana, w/RYRY at 0415, 50 baud. (Hall, RSA)

6435.0: British Royal Navy w/encrypted msgs separated by RYRY + vmgtcnjbh, 100 baud at 1625. (Boender, NLD)

6775.0: XTU, ASECNA, Ouagadougou, Burkina

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/Ied
MFA	Ministry of Foreign Affairs
nx	News
PP	Portuguese
RYRY	"RYRY . . ." test tape
SS	Spanish
tfc	Traffic
w/	With
wx	Weather

Faso, w/wx msgs, ARQ-M2/96, channel A, at 0115. (Harold Manthey, NY)

6835.1: GFL22, Bracknell Meteo, England, w/coded wx, 50 baud at 0420. (Hall, RSA)

6919.8: RGC70, Kiev Meteo, Ukraine, w/coded wx at 0307, 50 baud. (Ed.)

6972.0: YOG58, Rompress, Bucharest, Romania, w/nx at 1655, 50 baud. (Boender, NLD)

7498.9: OZU25, MFA, Copenhagen, Denmark, w/encrypted msgs at 1640, Twinplex/100. (Boender, NLD)

7685.2: NNN0ASG, USN MARS, Great Lakes Naval Training Center, North Chicago, IL, w/tfc for region 4 stas at 1922, ARQ. (Ed.)

7715.0: RCU71, Novosibirsk Meteo, Russia, w/coded wx at 1230, 50 baud. (Ed.)

7863.0: BJZ21, Wuhan Meteo, China, w/coded wx, 75 baud at 1225. (Ed.)

8001.5 & 9001.5: Colombian drug busting ARQ tfc in SS runs almost daily after 0000. (Ed.)

8020.0: HMF85, KCNA, Jungsan, North Korea, w/nx in EE, 50 baud at 1820. (Boender, NLD)

8033.5: Un-ID Romanian diplo w/encryption at 0658. ROU-FEC/164.5. (Ed.)

8098.0: Un-ID w/ARQ msgs in EE at 1600. Gave selcal of 81111. (Ed.)

8122.8: Un-ID w/RYRY + "vmgtcnjbh" between encrypted msgs, 75 baud at 2150. (Ed.)

8284.5: Un-ID w/an unknown synchronous TTY mode at 96 baud at 0431. (Ed.)

8420.0: FFT41, St. Lys R., France, w/navareas & wx in FF at 0912. FEC. (Ed.)

8420.6: 9VG78, Singapore Radio w/a tfc list, FEC at 2138. (Hall, RSA)

8421.0: OXZ, Lyngby R., Denmark, w/a tfc list, ARQ at 0730. (Ed.)

8432.5: WOM, Fort Lauderdale R., FL, w/a radiotelephone tfc list in FEC at 0932. (Ed.)

8454.0: UJY, Kaliningrad R., Russia, w/a tfc list, 50 baud at 1530. (Boender, NLD)

8493.0: Un-ID w/encrypted msgs separated by RYRY + "vmgtcnjbh." 100 baud at 0145. (Ed.) Same at 1538. (Boender, NLD)

8500.3: VTH, Bombay Navrad, India, w/RYRY + "RBSL BNR" ID, & 4 A/N grps, 50 baud at 2116. (Hall, RSA)

8672.7: MTO, Rosyth Navrad, Scotland, w/availability tape at 0853, 75 baud. At 0859 appeared, "0570859 de MTO LF state A2/8/9 D1 H3 I11 O4 W1." (Ed.)

9153.8: Un-ID w/a brief msg that was somewhat garbled. It ended w/"mata nouchi hodo," which might be JJ. Was ARQ at 1425. (Ed.)

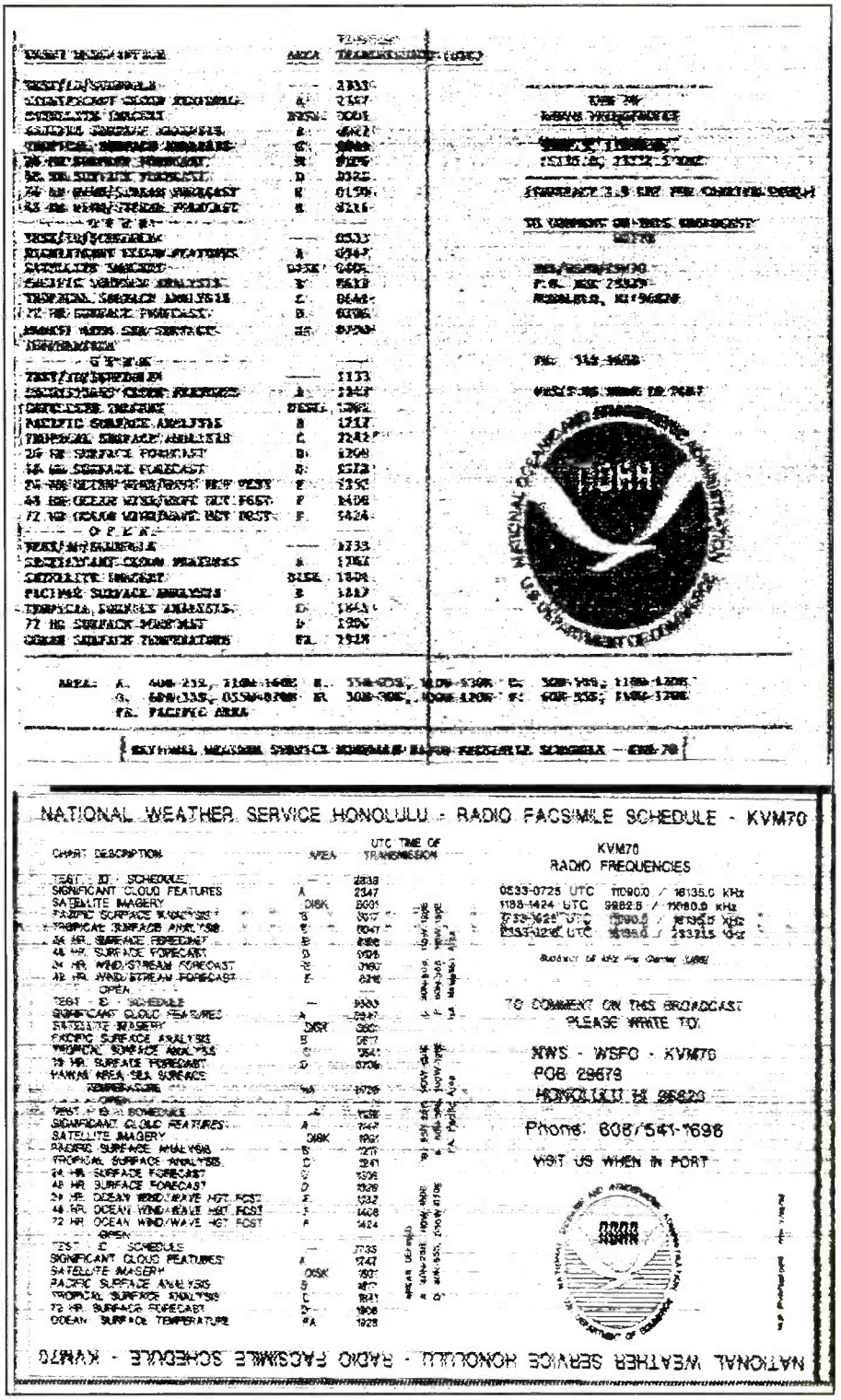
10150.2: SUA246, MENA, Cairo, Egypt, w/nx in AA, 75 baud at 1751. (Hall, RSA)

10298.8: HSW62, Bangkok Meteo, Thailand, w/coded wx, 50 baud at 1916. (Hall, RSA)

10385.7: BAA21, Tianjin Meteo, China, w/coded wx at 1913, 50 baud. (Hall, RSA)

10407.0: 6VY56, ASECNA, Dakar, Senegal, w/RYRY at 0743, foll by wx at 0800, 50 baud. (Ed.)

10416.5: ETS, Addis Ababa Air, Ethiopia, running its RYRY test tape backward (STE STE STE ED YRYRYR...), 0408-0459, before catching the error.



KVM70, Honolulu Meteo, Hawaii, recently redesigned the radiofax schedule it broadcasts on shortwave radio. The one at the top is from early 1992 and the other appeared earlier this year.

10523.2: HMF45, KCNA, Bosong, North Korea, w/nx in FF, 50 baud at 1330. (Ed.)

10600.0: XVN37, VNA, Hanoi, Vietnam, w/nx in FF, 50 baud at 1424. (Ed.)

10753.8: RPFN, Monsanto Navrad, Portugal, w/5L msgs, 75 baud at 0748. (Ed.)

10871.3: AJE, USAF, Croughton AB, England, 0507: "final tfc ch for 24/02/93" & a few aviation wx msgs. Was 50 baud. (Ed.)

w/EGWR wx data, 75 baud at 0803. (Ed.)

10893.9: Telam, Buenos Aires, Argentina, w/nx in SS at 2040, 50 baud. (Hall, RSA)

10960.0: 3MA28, CNA, Taipei, Taiwan, w/nx in EE at 1340, 50 baud. (Ed.)

11063.0: LZU2, Sofia Meteo, Bulgaria, w/coded wx at 1653, 50 baud. (Boender, NLD)

11078.0: CCX, un-ID of the Chilean Navy, w/5L grps at 0015, foll by its ID at 0017, 50 baud. (Manthey,

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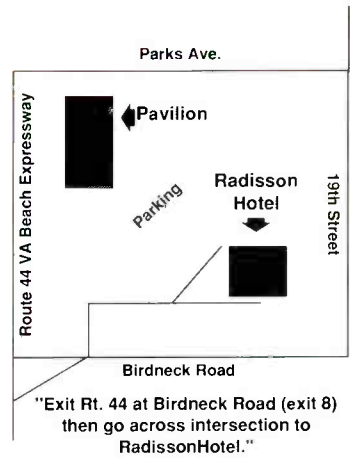
RAFFLES

FLEA MARKET

DEMOS



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NY)

11133.0: BZG41, Xinhua, Yuryumqi, China, w/nx in FF, 50 baud at 1514. (Boender, NLD)

11331.5: "Golf Siete Zulu" w/very garbled tfc in SS to "Quebec Uno Echo" at 0053, 50 baud. (Ed.)

11470.0: RNK33, Moscow Meteo, Russia, w/coded wx at 1235, 50 baud. (Ed.)

11476.0: HMF52, KCNA, Bosong, North Korea, w/nx in EE at 2319, 50 baud. Usually seen with fax news photos at this time, but they were delayed until 2339 on this day. (Ed.)

11541.7: RFLI, French Navy, Fort de France, Martinique, w/"control de voie" to Papeete, Tahiti at 1352, ARQ-E3/96. (Ed.)

12096.0: XVH56, Hanoi Meteo, Vietnam, w/coded wx, 50 baud at 0052. (Manthey, NY)

12204.8: NBA, USN, Balboa, Panama, w/"Exercise Flame River 93" tfc, 75 baud at 1621. (Ed.)

12223.5: RPFRK, Portuguese Air Force, Porto Santo, Madeira, w/msgs, "confidencial" tfc & 5L grps to RPTTA, "Basequatro." (PAF, Ponta Delgada, Azores), at 1954, ARQ. (Ed.)

12227.3: AFS, Offutt AFB, Elkhorn, NE, w/KAWN wx data at 1600, 75 baud. (Ed.)

12477.5: ZSUY, S.A. Waterberg (South African cargo ship), w/wx obs to Portishead Radio, ARQ at 1843. (Ed.)

12484.0: WGWA, Omi Willamette (USA tanker), w/AMVER msg, ARQ at 2024. (Ed.)

12490.0: NRLW, USNS Hayes (T-AGOR-16), oceanographic research ship, w/ARQ tfc at 2146. (Ed.)

12580.0: GKE5, Portishead R., England, w/wx forecasts issued by Bracknell Meteo. FEC at 2130. (Ed.)

13365.9: CSY46, Santa Maria Air, Azores, w/aviation wx, 50 baud at 0600. (Hall, RSA)

13416.8: CCS, Santiago Navrad, Chile, w/RYRY & SGSG, 1202-1206, foll at 1208 w/op msgs, 75 baud. (Ed.)

13440.0: YZT5, Tanjug, Belgrade, Yugoslavia, w/RYRY & nx in EE, 50 baud at 0604. (Hall, RSA)

13530.0: RVW53, Moscow Meteo, Russia, w/coded wx at 1445, 50 baud. (Ed.)

13542.0: ZRO3, Pretoria Meteo, RSA, w/coded wx, 75 baud at 0517. (Hall, RSA)

13801.4: RPTTA w/mgs in PP & 5L grps to RPFRJ & RPFRW, ARQ at 1622. (Manthey, NY) RPTTA is Portuguese Air Force, Ponta Delgada, Azores— Ed.

14481.7: RFFA, Mindefense, Paris, France, w/5L msgs & "non protege" tfc, at 1933, ARQ-E3/48. (Ed.)

14452.0: HMF57, KCNA, Jungsan, North Korea, w/nx in FF at 1400, 50 baud. (Ed.)

14454.8: Un-ID w/coded wx, 50 baud at 1250. (Ed.)

14497.8: CSY66, Santa Maria Air, Azores, w/aviation wx, 50 baud at 0746. (Hall, RSA)

14518.0: OEC, MFA, Vienna, Austria, w/5L "zirkulars" to Tel Aviv, Israel, at 1302, & nx in GG to Delhi, India, at 1324, ARQ-S5/96. (Ed.)

14785.0: MEA, Delhi, India, w/nx in EE at 1455, 50 baud. (Manthey, NY)

14880.3: JMG4, Tokyo Meteo, Japan, w/coded wx, 50 baud at 1611. (Hall, RSA)

14937.5: Un-ID w/RYRY, ARQ-E/96 at 0625. (Hall, RSA)

14941.7: FJY3, Dumont d'Urville, Antarctica, w/msgs in FF & EE, ARQ-E3/96 at 0803. (Ed.)

14943.7: MFA, Cairo, Egypt, w/tfc in AA, ARQ at 0618. (Hall, RSA)

16074.0: MFA, Oslo, Norway, w/tfc in Norwegian, SWED-ARQ at 1358. (Ed.)

16228.0: "YBU" w/RYRY & coded msgs at 1400, 75 baud. ("Bunky," IL)

16332.0: "V5G," MFA, Bucharest, Romania, w/circulars in Romanian, ROU-FEC/164.5 at 1353. (Ed.)

16701.0: JYGA, Jordan 1 (Jordanian cargo ship), w/Telexes to Amman, ARQ at 1750. (Ed.)

16710.0: P3HR2, Belgrano (Cypriot cargo ship), w/msg that a stowaway was found aboard ship, ARQ at 2106. (Ed.)

16813.0: KPH, San Francisco R., CA, w/tfc list foll by ad for the nx/info services of KPH & WCC, ARQ at 1502. Both coastalstas are owned by MCI. (Ed.)

16814.5: HEC17, Berne R., Switzerland, w/msgs, ARQ at 1450. (Ed.)

16822.5: HPP, Panama R., Panama, w/sailing sked for 3EIN9, Chiquita Tower (Panamanian cargo ship), ARQ at 1444. (Ed.)

16831.5: FFT83, St. Lys R., France, w/Telex tfc at 1525, ARQ. (Ed.)

16836.0: DCF, Norddeich R., Germany, w/a Telex to the German ferry "Natal," ARQ at 1430. (Ed.)

16838.5: 9AR, Rijeka R., Croatia, w/msgs to YTTY, Kamnik (Yugoslav cargo ship), ARQ at 1414. (Ed.)

16870.0: KMI, Dixon R., CA, w/tfc list, FEC at 1556. (Ed.)

17051.8: Un-ID w/encrypted msgs separated by RYRY & "vmgtcnjbh," 100 baud at 1704. (Ed.)

17444.8: AFS, Offutt AFB, Elkhorn, NE, w/KAWN wx data, 75 baud at 1548. (Ed.)

17445.0: 5YE, Nairobi Meteo, Kenya, w/ID & coded wx, 100 baud at 2125. (Manthey, NY)

17459.0: OEC, MFA, Vienna, Austria, w/nx in GG + a "zirkular" w/5L grps to Paris, + 2 Telexes to Moscow, ARQ-S6/96 at 1322. (Ed.)

17471.8: RPFN, Monsanto Navrad, Portugal, w/RYRY, SGSG, foxes, & 10 count to RPTI, foll by op msgs & encryption, 75 baud at 1503. (Ed.)

18128.0: "GMN" w/RYRY & a 5F msg, 75 baud at 1650. ("Bunky," IL)

18196.0: "KRN" w/RYRY & a 5L msg at 1735, 75 baud. ("Bunky," IL)

18230.0: GFL25, Bracknell Meteo, England, w/coded wx, 50 baud at 1725. ("Bunky," IL)

18242.2: ZRO4, Pretoria Meteo, RSA, w/coded wx, 50 baud at 0708. (Hall, RSA)

18291.5: German Emb., Accra, Ghana, w/tfc in GG & crypto to Bonn, ARQ-E/96 at 1144. (Hall, RSA)

18450.0: Un-ID w/5L grps, 50 baud at 1444. (Ed.)

18526.0: ORI37, RTT, Brussels, Belgium, w/msgs in FF, ARQ at 1435. (Ed.)

18547.0: "V5G," MFA, Bucharest, Romania, w/encryption at 1530, ROU-FEC/164.5. (Ed.)

18571.4: 2 Un-ID stas working each other in ARQ at 1354. One sta. had a very weak sig that couldn't be decoded. Stronger sta. told the other in FF to reorient his antenna because of bad propagation. (Ed.)

18592.5: CLP12, Cuban Emb., Lima, Peru, w/tfc on a Sunday, 50 baud at 1610. (Ed.)

18597.5: EAE220, MFA, Madrid, Spain, w/encryption or service msgs to Managua, Nicaragua, at 1727, ARQ. (Ed.)

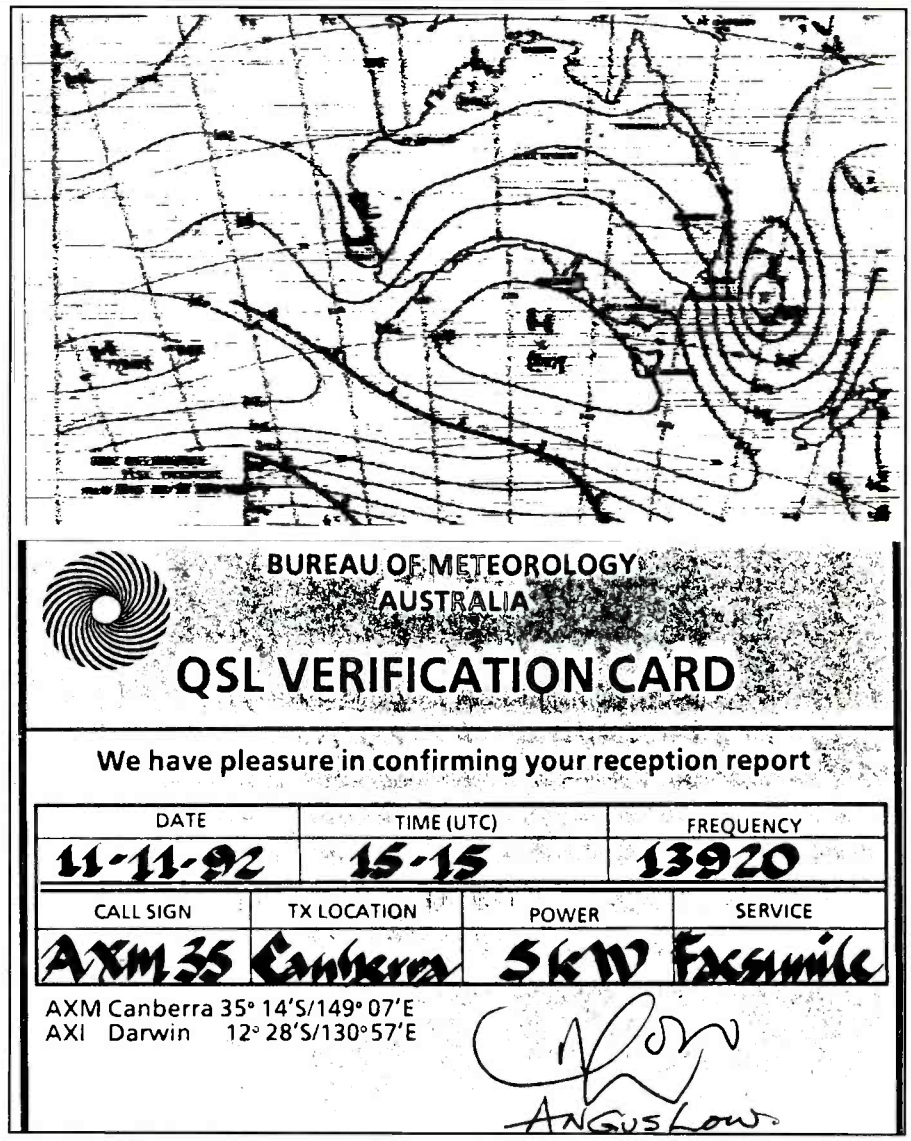
18648.5: SOT265B, PAP, Warsaw, Poland, w/nx in Polish at 1803, FEC. (Ed.)

18702.3: DFS70, PIAB, Bonames, Germany, w/nx in GG, FEC-A/96 at 1449. (Ed.)

18746.7: Un-ID idling in ARQ, 1651-1659. (Ed.)

18760.0: "P6Z," MFA, Paris, France, w/5 pages of 5L grps, FEC-A/192 at 1810. (Ed.)

18762.0: "V5G," MFA, Bucharest, Romania,



A copy of a weather chart (top) was sent to AXM35, Canberra Meteo Australia, by the RTTY column editor, along with a reception report. In return, AXM35 sent an QSL card printed on green stock (bottom).

w/nx in Romanian at 1807, ROU-FEC/164.5. (Ed.)

18810.0: Swedish Emb., Buenos Aires, Argentina, w/lengthy text re Argentine economy, SWED-ARQ at 1237. (Hall, RSA)

18845.0: Un-ID w/"SPK 2/343" + RYRY, foll by 2 5F msgs. Was 50 baud at 1615. (Ed.)

18886.7: CLP1, MFA, Havana, Cuba, w/encryption & nx in EE & SS to African & Asian Embs, 50 baud at 1912. (Ed.)

18972.0: "DFZG," MFA, Belgrade, Yugoslavia, w/nx in SC at 1520, 75 baud. ("Bunky," IL)

19190.0: Un-ID French diplo idling 1609-1614. ARQ6-90/200. (Ed.)

19350.4: Un-ID w/crypto after RYRY, 75 baud at 1245. (Hall, RSA)

19418.5: RFFA, Mindefense, Paris, France, w/"non protege" msgs & 5L msgs to Cayenne, French Guiana, ARQ-E/96 at 1640. (Ed.)

19576.0: ORI59, RTT, Brussels, Belgium, w/tfc, ARQ-M2/96, channel A, at 1408. (Ed.)

19640.6: MFA, Rome, Italy, w/5L grps to Riyadh, Saudi Arabia, ARQ at 0610. (Hall, RSA)

19845.1: CLP1, MFA, Havana, Cuba, w/tfc in SS & 5L grps. 50 baud at 0635. (Hall, RSA)

19931.7: French Emb., Fort de France, Martinique, w/sev. 5L msgs at 1958. ARQ6-90/200. (Ed.)

20101.7: MFA, Cairo, Egypt, w/tfc in AA. ARQ at 1348. (Ed.)

20132.0: DFZG, MFA, Belgrade, Yugoslavia, w/Tanjug nx in EE, 75 baud at 1545. ("Bunky," IL)

20156.5: Un-ID w/msgs in FF at 1458. ARQ. (Ed.)

20157.2: HCE24, Quito, Ecuador, & PTO2, Brasilia, Brazil, working each other in SS, FEC & 45 baud, at 1545. (Ed.)

20243.5: PWS, Salvador Navrad, Brazil, w/"exercicio" msgs to PWX, Brasilia Navrad, Brazil, 1353-1400, 75 baud. Msgs marked "fm ERMSAL to ERMBRA." (Ed.)

20326.5: RFFA, Mindefense, Paris, France, w/"non protege" msgs. ARQ-E/96 at 1610. (Ed.)

20342.0: Un-ID w/what appeared to be nx in an un-ID lang., 75 baud at 1330. Saw "NA" & "PO" often in text. ("Bunky," IL) One possibility is "V5G," MFA, Bucharest, Romania. My database shows "VB5G" on sev. freqs around this one in ROU-FEC mode, but I've seen "V5G" use 75 baud RTTY— Ed.

20401.8: YWM1, Maracaibo Navrad, Venezuela, w/unclas IANTN msgs to CCS, 75 baud, 1429-1445. (Ed.)

20584.0: Salini Costruttori SPA, Rome, Italy, w/msgs, ARQ at 1505. (Ed.)

20758.0: RFLIG, French Marines, Cayenne, French Guiana, w/"non protege" msgs & 5L msgs to Paris, ARQ-E/96 at 1527. (Ed.)

21831.4: Un-ID w/30 character per line encrypted msg, ARQ at 1625. ("Bunky," IL) It's either MFA, Madrid, Spain, or one of its embs— Ed.

21856.0: Un-ID French diplo idling, 1526-1529, then w/a s/off msg in FF, ARQ6-90/200. (Ed.)

22289.0: LXCR, Transport Maas (Luxembourg containers ship), w/Telex tfc at 1737, ARQ. (Ed.)

22353.0: Y5EN, Stassfurt (German bulk carrier), w/nx in GG at 1715 & 1915, FEC. (Ed.)

22378.0: FFT91, St. Lys R., France, w/plaintext wx in FF at 1810, FEC. (Ed.)

22387.5: SVT7, Athens R., Greece, wkg M/V Angelic Faith, ARQ at 1425. (Boender, NLD)

22394.5: LPD88, Gen. Pacheco R., Argentina, w/tfc list at 1055, FEC. (Ed.)

22407.5: UAT, Moscow R., Russia, wkg M/V Patia Zelenko at 1418, ARQ. (Boender, NLD)

22425.5: WOM, Fort Lauderdale R., FL, w/tfc list & service info, FEC at 1037. (Ed.)

22862.0: CLP1, MFA, Havana, Cuba, w/personal telegrams in SS to CLP21, Vientiane, Laos, 50 baud at 1656. (Ed.)

23006.7: MFA, Cairo, Egypt, w/Telexes in AA, ARQ at 1435. (Ed.)

23045.2: CLP1, MFA, Havana, Cuba, w/RYRY w/o ID foll by a circular w/5F grps. 50 baud at 1428. On another day, at 1434, sent nx in FF. (Ed.)

23052.5: CLP1, MFA, Havana, Cuba, w/nx & telegrams to CLP4, 50 baud at 1440. Tfc included circular 251 (nx in FF), the same circular sent 15 min. earlier on 23085.3 kHz. (Ed.)

23085.3: CLP1, MFA, Havana, Cuba, w/5F msgs to various embs + nx in FF to embs that are in countries that were former French colonies. Was 50 baud at 1420. (Ed.)

23116.7: MFA, Cairo, Egypt, w/Telexes in AA & 5L grps to Conakry, Guinea, ARQ at 1408. (Ed.)

23251.7: MFA, Cairo, Egypt, w/a test tape in FEC at 1513, going to ARQ at 1514 w/a 5L msg & a Telex in AA to numerous embs. (Ed.)

23322.5: Un-ID French diplo idling 1331-1354, then w/"to PO rcvd 103 109 qru 73s." ARQ6-90/200. (Ed.)

23355.0: CLP18, Cuban Emb., Dar-es-Salaam, Tanzania, w/RYRY & tfc, 50 baud at 1800. ("Bunky," IL)

23357.6: Un-ID w/some tfc in EE, ARQ at 1150. (Hall, RSA)

23366.1: Un-ID w/ARQ pulses only at 1215. (Hall, RSA) This might be HGX21, MFA, Budapest, Hungary, in DUP-ARQ— Ed.

23392.0: LOL, Buenos Aires Navrad, Argentina, w/ice obs msg to NBA for relay to RULKSKD, Navpolar Oceancen, Suitland, MD. Was 75 baud at 1628. (Ed.)

23556.0: IPG20, MFA, Rome, Italy, w/5L grps & msgs in II, ARQ-E/96 at 1527. (Ed.)

23561.7: PCW1, MFA, The Hague, NLD, w/msgs in Dutch, ARQ at 1640. (Ed.)

23691.2: DGX69, PIAB, Elmshorn, Germany, w/nx in GG at 1216, FEC-A/96. (Hall, RSA)

23715.3: CLP1, MFA, Havana, Cuba, w/5F msgs to Nigeria, 50 baud at 1517. (Ed.)

23976.7: Egyptian Emb., Accra, Ghana, w/tfc in AA to MFA, Cairo. ARQ at 0805. (Hall, RSA)

24021.7: Un-ID Egyptian diplo w/a msg in AA, ARQ at 1440. (Ed.)

24871.8: RFHJ, French Navy, Papeete, Tahiti, w/"controle de voie" to RFLI, ARQ-E3/96 at 1819. (Ed.)

25271.5: ISX25, ANSA, Rome, Italy, w/nx in FF at 1459, 50 baud. (Ed.)

25420.7: Un-ID idling 1240-1411, ARQ-E/96, then to CW for s/off. (Ed.)

25422.5: German Emb., Luanda, Angola, w/tfc in GG to MFA, Bonn, ARQ-E/96 at 1108. (Hall, RSA)

LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

Three years ago the idea that Radio Moscow facilities would serve as a Voice of America relay would have been laughable—looked upon as the ravings of someone whose brain had a loose antenna connection. Well, guess what, gang? You can now pick up VOA broadcasts via transmitters at three different Russian sites. The current VOA/Russia schedule shows transmissions at 1400 to 1500 on 5945 in Chinese, via Irkutsk; 1400 to 1600 in Chinese from Novosibirsk on 5925; 2130 to 2200 in Korean on 7300 via Petropavlovsk-Kamchatsky and 2200 to 2300 in Chinese on 5925 via Irkutsk. The schedule is not optimum for summertime reception in North America but we should have some good shots at this come fall and winter.

Incidentally, anyone having problems getting a QSL out of the Voice of America can probably get a quicker response by writing to Janice Davis, VOA/B/BE, Room 1547, 330 Independence Avenue SW, Washington DC 20547. Or try care of John Vodenik, P.O. Box 227, Mason, OH 45040. He's a transmitter engineer at the VOA Bethany site.

Slovak Radio's foreign service has settled on a schedule of 0130 to 0200 on 5930 and 7345, 1400 to 1500 on 6055, 7345 and 9505 and 1900 to 1930 on 9580. Reports go to 81290 Bratislava, Slovakia. At other times these frequencies are used by the Czech Republic Radio, which is now calling itself Radio Prague.

The long-running "Austrian Shortwave Panorama" program on Radio Austria International has been discontinued, at least temporarily. The program was removed from Radio Austria International's schedule after the retirement of David Herges, the fellow who presented the program. If you want to see the show continue you should write to Paul Lendvai, Radio Austria International, A1136, Vienna, Austria.

The former Soviet Republic of Azerbaijan now has its own foreign service although, as presently scheduled, it's only intended for Europe, at 1700 to 1800 on 6175. The full name is Radio Dada Gorgud, the Voice of Azerbaijan.

One very interesting appearance on the shortwave bands is Radio Raju (Hope) in Somalia. The station calls itself the Voice of the United Task Force and was heard in Europe running tests on 9540 to 1200. This is one of those shortwave situations which appear to be very temporary so the station may be gone by now.

Radio Miami International has experienced further delays in getting its own transmitter on the air. The station has to move its antenna to prevent interference to a local mediumwave station and that, in turn, meant getting a new lease arranged for the land. As of then RMI did not yet have its antenna installed or tested, nor had the transmitter building been constructed, although the transmitter is sitting in a warehouse, ready to go.

R.C. Watts of Louisville, KY took some photos on a visit to China Radio International. This building houses CRI, China People's Broadcasting and the Ministry of Radio, Film and Television.

French Guiana's RFO: Cayenne is reported to be active again. It was noted, in French, around 1000 on 5055.

Christopher Holt in Massachusetts provides a US address for the Voice of Free China: P.O. Box 192793, San Francisco, CA 04119-2793, and notes the current schedule to North America is 0200 to 0400 on 5950, 9680 and 15345 and 0700 to 0800 on 5950.

CRI's Studio 13, where a taped program in Chinese is aired. (Thanks R.C. Watts)

MAIL NOTES: David Gasque of Orangeburg, South Carolina checks in after an absence and, in so doing, solves the mystery of the unidentified DX'er shown in last December's column. David says he wonder's how many people gave up the hobby after seeing his picture!

Stephen C. Behrendt of Lincoln, Nebraska, also returns after being silent for a time. Steve wonders about the "non-QSL" replies he's getting from Mexican stations Radio Mil and Radio Educacion. He says he's getting form letters, schedules, thanks and such but "nothing resembling a QSL." It's hard to say without seeing the replies, Steve, but it's possible that what you're receiving is what the station intends as a QSL. Not all stations have QSL cards as such and sometimes even the letters they send aren't very specific about verifying reception.

Clark R. Badie of Glendale, Arizona is returning to the hobby after many years away. He's wondering whether Radio Iraq International is responding to reception reports. We've seen no QSL's reported in quite some time, Clark. Even long before the war Baghdad was not very reliable in the QSL department. For all that, it may well be there's no mail service to Iraq.

Tom Robertson in New Albany, Mississippi says Radio Pakistan wants reports from US listeners on their slow speed news bulletin, which is aired at 1105-1120 on 17900 and 21520. Also for the station's English service between 1700 and 1800 on 9418 and 11570. Address reports to Mr. Anwer Inayet Khan, Frequency Management Controller's Office, Radio Pakistan, Broadcasting House, Constitution Avenue, Islamabad.

Miss Velichka Cholakova, from Bulgaria, is a DX'er now studying political science at Northeast Missouri State University and would like to meet any other DX'ers in that area. You can contact her at CH 447, NMSU, Kirksville, MO 63501.

Shortwave listeners (as well as ham operators and scanner enthusiasts) who live in the Cincinnati or Dayton, Ohio areas are invited to join "Monix," an informal group which meets on the second Saturday of each month at the VOA Bethany relay station in West Chester, Ohio. They are active in many areas, including operating a local VHF SWL net and a listening post bulletin board service. For more information contact Mark Meece, N8ICW, 7917 Third St., West Chester, OH 45069-2212.

Virginia Beach is getting closer. Well, actually Virginia Beach hasn't moved a centimeter, but the date for the big *Pop'Comm* Worldwide SWL Conference there is getting closer and closer. We're looking forward to seeing you there October 2 and 3! Look elsewhere in the magazine for more information!

Remember to "keep those cards and letters coming." Loggings should by country, be double spaced (at a minimum) and have your last name and state abbreviation after each item. Sorry, but if you don't follow these simple guidelines we just can't use your logs. We also need station schedules and literature, station photos, shack photos, spare QSL's you don't need returned and, of course, your letters, comments, questions and so on. Thanks for your continuing participation!

Here are this month's logs. All times are in UTC (0000 = 7pm EST, 6pm CST, etc.) Language broadcast is assumed to be English unless otherwise noted as SS (Spanish), AA (Arabic) etc.

SWBC Loggings

Albania: Radio Tirana, 9580 at 0130 to 0155 close. (Behrendt, NE) 0230. (Holt, MA)

Algeria: Radio Algiers International on 15208 at 2002. (Holt, MA)

Angola: Radio Nacional Angola, 7245 at 0522 in PP with songs, commentary, time checks, ID at 0532.(Robertson, MS)

Antigua: Deutsche Welle relay, 6160 at 0900. (Behrendt, NE) 9670 at 0502 (Gentry, IL)

BBC Relay, 17840 at 1515. (Tucker, GA)

Argentina: RAE, 11710 at 0126 to 0200 with news, ID, guitar music. (Sooy, NJ)

Ascension Island: BBC relay, 11750 at 0103. (Pappas, SD) 21660 at 1515. (Moser, PA)

Austria: Radio Austria Int;l, 6155 and 13730 at 0436. (Sooy, NJ) 9870 at 0310 in GG, into EE at 0328. (Pappas, SD) 11780//13730 at 1553. (Zamora, CA)

Australia: Radio Australia, 5880 at 1850, 6060 at 1906, 6080 at 1924, 9700 at 0730 and 9710 at 0815. (Crook, Guam) 5995 at 1229. (Pappas, SD) 6020//6080//7240//9710 at 0916 in Tok Pisin. Also 11910 at 1643 sign on. (Lamb, NY) 9510 at 1120. (Gasque, SC) 9580 at 1527. (Low, TX) 9870 at 0115, 11855 at 2307, 15240 at 2250 and 15365 at 2205. (Sooy, NJ) 11800 at 1530. (Gentry, IL) 11880 at 1656. (Vaage, CA) 13755 at 1600. (Badie, AZ) 17795 in FF at 0025, into EE at 0030. (Zamora, CA) 21740 at 2300 in FF. (Cohen, ON)

ABC, Perth, 6140 at 1417. (Zamora, CA)

VNG time station, 8638 with CW ID at 0829. (Morgan, UT)

Belgium: Radio Vlaanderen (Flanders) Int'l, new 7370, parallel 9930 at 0028 with IS, ID. (Lamb, NY) 15540 at 1902. (Holt, MA) 21810 at 1409. (Moser, PA)

Benin: Radio Parakou, 5025 at 2139 in FF with rock, ID, local music, anthem and off at 2200. (Lamb, NY)

Botswana: Voice of America relay, 7265 at 0323 with "Daybreak Africa" and African news. (Zamora, CA)

Brazil: Radio Cultura do Para, Belem, 5045 at 0150 in PP with pops. (Behrendt, ME)

Radio Bandeirantes, 6090//11925 at 0228 in PP with pops, ID, jingles, commercials. (Lamb, NY)

Radio Nacional Amazonia, 11780 at 0830 with IDs, pops, fado music. (Lamb, NY)

Radio Aparecida, 11855 at 0209 in PP with IDs, Brazilian and Johnny Mathis music. (Lamb, NY)

Radio Universo, 9565 at 1037 in PP with mostly PP pops. (Gasque, SC)

Radio Novas de Paz, 9515 at 0915 in PP with continuous PP pops, then woman announcer. (Gasque, SC)

Radio Nacional, 15445 at 1253 with music, ID in PP. (Moser, PA)

Bulgaria: Radio Sofia, 7225 at 2302. (Holt, MA) 9700 at 0100; 0435. (Robertson, MS; Sooy, NJ) 11720 at 1945 (Behrendt, NE)

Canada: Radio Canada Int'l, 6150 (via Japan) at 1430 sign on in RR. (Zamora, CA) 11855 at 1343. (Pappas, SD) 13670 at 1805. (Low, TX) 15260 at 1818. (Badie, AZ) 15325//17820 at 2014. (Gentry, IL)

Radio Monte Carlo Sackville relay, 5960 at 0402 in AA. (Lamb, NY)

CHNX, relay CHNS on 6130 at 1005 with oldies. (Pappas, SD)

CKZU, relay CBC network on 6160 at 1357. (Pappas, SD) 1414. (Zamora, CA)

CKZN., 6160 at 1049 with "Weekend Arts Magazine." (Pappas, SD)

Abbreviations Used in Listening Post

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

CFVP, relay CFCN, 6005 at 1240, ID 1246. (Pappas, SD)

CIQX, relay CIQC, "Country Coast to Coast" at 1153. (Pappas, SD)

CFRX, relay CFRB, 6070 at 1245. (Tucker, GA)

China: China Radio Int'l, 7405 at 1523. (Badie, AZ) 9655 at 1248, off 1254. (Tucker, GA) Here and //15440 at 1205. (Moser, PA) 9690 (via Spain) at 0326. (Sooy, NJ) 9770 (via Mali) at 0008. (Cohen, ON) 11715 (via Mali) at 2100. (Behrendt, NE) 11755 at 0900. (Crook, Guam) 11895 at 2330. (Holt, MA) 15130 to South Africa (via Mali) at 1638. (Zamora, CA)

Colombia: Ondas del Meta, Villavicencio, 4885 at 0949 in SS with Latin music, IDs, time checks, "informe oficial" and news. (Robertson, MS)

Radio Bucaramanga, 4845 at 0205 in SS with pops. (Behrendt, NE) (Only active occasionally. Editor)

La Voz del Rio Arauca, Arauca, 4895 at 0200 with SS pops. (Pappas, SD) 1045 with news. (Robertson, MS)

La Voz del Cinaruco, Arauca, 4865 at 1049 in SS. (Robertson, MS)

Caracol, 5075 at 0415 and 6150 at 0522, all SS. (Sooy, NJ)

Congo: RTV Congolaise, 4765 at 2120 in FF with drums, news, interview. (Lamb, NY)

Costa Rica: TIFC, 5055 at 0115 in SS with classical music, religion. (Behrendt, NE)

Radio Exterior de Espana relay, 17870 at 2146 in SS. (Lamb, NY)

Radio For Peace Int'l, 7375 at 0200 with ID, address. (Robertson, MS) 15030 at 2218. (Holt, MA)

Cuba: Radio Havana Cuba, 5965 at 0359 in SS. (Vaage, CA) 6010 at 0437 and 9815USB at 0000. (Tucker, GA) 9550 at 0509 and 9815USB at 0134. (Lamb, NY) 9510 at 0631. (Sooy, NJ) 9550 at 1059 sign on to Latin America in SS. (Gasque, SC) 9655 at 0245. (Behrendt, SD) 15165 at 2100 to Europe. (Cohen, ON)

Radio Rebelde, 3365 at 2230 in SS. (Robertson, MS)

Cyprus: BBC relay, 21470 at 1303. (Moser, PA)

Czech Republic: Radio Prague, 5960//6055//7345//9605 at 2108. (Lamb, NY) 5930 at 0000 and 0300. (Holt, MA) 7345 at 0315, ID as Czech Republic. (Sooy, NJ) 9605 at 1809. (Moser, PA)

Denmark: Radio Denmark, via Norway, 9560 at 0330 with EE ID, into Danish to 0358 close. (Vaage, CA) 11795 at 2303 in Danish with EE ID. (Sooy, NJ)

Ecuador: HCJB, 6205 at 0533 in SS. (Sooy, NJ) 9745 at 0805. (Crook, Guam) 9745//15155 at 0030. (Robertson, MS) 11925 at 0557. (Vaage, CA) 17790 at 1655. (Badie, AZ) 21455USB at 1930. (Gentry, IL)

Radio Popular, 4800 at 1100 in SS with organ music, ID, religious program. (Robertson, MS)

Egypt: Radio Cairo, 9745 at 0200. (Moser, PA) 0099 at 2215. Closed 0245. (Behrendt, NE)

England: BBC, 3955 at 0401; 6195 at 0730;

Another of the many attractive QSL cards from Radio Japan.

Thom McAdams, KCA6YU, of Lancaster, California does his SWL'ing from this post. His mediumwave, scanner and CB equipment is operated separately.

9640 (via Antigua) at 0730; 9915 at 0231; 11940 (via Lesotho) at 0444; 15390 (Ascension) at 2230 and 15400 (Ascension) at 2305. (Sooy, NJ) 7325 at 2244. (Holt, PA) 9600 (Ascension) at 0329. (Vaage, CA) 11750 (Ascension) at 2300 (Zamora, CA) and 15260 (via Canada) at 1615. (Gentry, IL)

Radio Japan via England, 7230 at 0556. (Lamb, NY)

Ethiopia: Voice of the Broad Masses of Eritrea, 7380 at 0323 with IS, drums, sign on and ID by woman in presumed Amharic at 0324. (Robertson, MS)

Finland: Radio Finland Int'l, 9560 at 0247. (Sooy, NJ) 0755. (Crook, Guam) 15400 at 1430. (Badie, AZ) Here and 21550 at 1411. (Moser, PA)

France: Radio France Int'l, in FF at 0239. (Sooy, NJ) 11670 at 1236. (Moser, PA) 11705 at 1945 to Africa. (Behrendt, NE) 12015 (via Gabon) at 1652. (Vaage, CA) 15530//17620//17795 at 1645. (Holt, MA)

Gabon: Africa Number One, 9580 at 0700 in FF. (Robertson, MS) Here at 0500 and 17630 at 1520. (Morgan, UT)

Radio Japan via Gabon, 11925 at 2122. (Moser, PA) 15355 at 1511. (Zamora, CA)

Germany: Deutsche Welle, 5960 at 0515; 6045 at 0505; 6100 at 0400; 6115 at 0501; 6120 at 0300; 9545 (Antigua) at 0305; 9690 (Antigua) at 0658 and 9695 at 0301. (Sooy, NJ) 6040 (Antigua); 6145 and 11865 at 0100; 21600 at 1530. Holt, MA) 6085 (via Canada) at 0430 and 13780 at 1700, in GG. (Vaage, CA) 9750 at 0700 in GG. (Crook, Guam) 13790 at 1917. (Moser, PA)

Ghana: GBC Radio One, 4915 at 2245 with press review to 2206 sign off. (Robertson, MS) 0545-0630 in EE with classical music before and after 0600 news. (Behrendt, NE) 6130 at 0705 with African music, ID "This is Accra." (Lamb, NY)

Greece: Voice of Greece, 9395//9420//1645 at 0335 with Greek music, EE news 0335, back to Greek 0350, off 0352. (Sooy, NJ) 9395//9420 at 0230. (Behrendt, NE) 17525 at 1536. (Moser, PA)

Guam: KTWR, 11805 at 0957 sign off. (Morgan, UT) 15200 at 0845 with religious program. (Crook, Guam)

Adventist World Radio-KSDA, 11980 at 1610 with religion. (Moser, PA) 15610 at 2307. (Low, TX)

Guatemala: Radio Cultural, 3300 at 0000 in SS with religion. (Robertson, MS)

Radio Chortis, Jocotan, 3380 at 1059 sign on in SS with ID and prayers. (Robertson, MS) 0320 in SS with IDs. "Musica de Hoy" program. (Lamb, NY)

Radio Buenas Nuevas, 4800 at 2358 in local language with religion and music program. (Robertson, MS)

Radio Tezulutlan, Coban, 4835 at 1050 in SS with religion, ID 1057. (Robertson, MS)

Honduras: La Voz de Mosquitia, Puerto Lempira, 4910 at 0120 in SS with religion and sermon in local language. (Robertson, MS)

Radio Luz y Vida, 3250 at 0200 in SS with religion. (Robertson, MS)

La Voz Evangelica, 4820, SS with music at 0000. (Robertson, MS)

Hungary: Radio Budapest, 9835 at 0220; 0300. (Sooy, NJ; Moser, PA)

Iceland: INBS, 11402 at 1848 in Icelandic with reggae and classical music. IDs, bells, news and off 1930. (Lamb, NY)

India: All India Radio, 7412 at 1327 with Indian music. (Morgan, UT) 9910 at 1350. (Northrup, MO) Here and parallel 10330 at 1532 with news, ID. 1545 into different language. (Zamora, CA) 11620 at 1800. (Holt, MA) 1950 in Hindi. (Behrendt, NE) 2030. (Gentry, IL)

Indonesia: Radio Republik Indonesia, Ujung Pandang on 4753 at 1315 in Indonesian with ID, songs, talk by woman. (Robertson, MS)

Iran: VOIRI, 9022 and 11790 at 0030. (Holt, MA) 15084 in Farsi at 0430. (Sooy, NJ)

Iraq: Iraqi Republic Broadcasting, 6560 at 0256 in presumed Kurdish with Koran, ID, news. (Lamb, NY)

Radio Iraq International, 15250 at 1506 with commentary, some AA music. (Badie, AZ)

Israel: Kol Israel, 7465 at 2239 with news. (Gentry, IL) 11587 at 1805 with news. (Badie, AZ))

Rashuth Hashidur service in Hebrew on 15165 at 1635. (Low, TX)

Italy: RTV Italiana, 9710 at 2200 with news, music. (Crook, Guam)

Japan: Radio Japan, 5960 (via Canada) at 0316. 9645 (via Gabon) at 0359 with ID, into JJ. (Sooy, NJ) 9535 at 1555, into JJ at 1600. (Low, TX) 11875 at 1900 and 15170 at 0750. (Crook, Guam) 17825 at 0315. (Vaage, CA)

Radio France Int'l relay, 17710 at 2336 in FF to 0358 sign off. (Lamb, NY)

Kazakhistan: Radio Moscow, 9610 at 2300 in SS. (Low, TX)

Kuwait: Radio Kuwait, 13620 at 1900. (Holt, MA)

Lebanon: Wings of Hope, 11530 at 1755 with AA music. (Bade, AZ)

Lithuania: Radio Vilnius, 7150 at 0015 to 0029 close; 0024. (Tucker, GA; Moser, PA)

Luxembourg: Radio Luxembourg, 15350 at 1757, all GG on this frequency now. (Lamb, NY)

Madagascar: Radio Netherlands relay, 15150 at 1550. (Moser, PA)

Malagasy: RTV Malagasy, tentative on 3232 at 0347 with music, man in presumed Malagasy. (Robertson, MS)

Malaysia: Radio Malaysia, Sarawak, 5030 at 1348 with US pops, Malay. (Zamora, CA)

Mali: Radiodifusion Television du Mali, 5995 at 0700 with news in FF and vernaculars, native music. (Behrendt, NE)

China Radio International relay, 9770//11715 at 0011. (Moser, PA) 11715 at 0348. (Sooy, NJ)

Malta: Deutsche Welle relay, 9545 at 1102 in GG. (Gasque, SC) 11865 at 0104. (Moser, PA)

Mexico: Radio Mil, 6010 at 1330 in SS with commercials, presumed news. (Northrup, MO)

Radio Educacion, 6185 at 2230 in SS, running to 0700. Also 1200 to 1330 fade out. Lots of good music. (Robertson, MS)

Morocco: RTV Morocaine, 15345 at 1800 in AA with ID, north African music. (Robertson, MS)

Radio Medi Un, 9575.9 at 1015 in FF with lots of talk, occasional music. ID and frequency at 1023. (Gasque, SC)

VOA Tangier relay, 9530 at 0610 and 9740 at 0530 sign on. (Lamb, NY)

Namibia: Namibian Broadcasting Corp., 3290 at 0430 with news, weather. ID in EE. (Lamb, NY)

Netherlands: Radio Netherlands, 6020 at 0021. (Sooy, NJ) 9605 (via Madagascar) at 1918. (Crook, Guam)

Netherlands Antilles: Radio Netherlands Bonaire relay, 6165 at 0015. (Cohen, ON) 9590 at 0335. (Sooy, NJ) 11720 at 0337. (Vaage, CA) 11835 at 0045. (Hoft, MA) 17605//21590 at 1934. (Zamora, CA) 21515 at 1753; 1830. (Gentry, IL; Badie, AZ)

New Zealand: Radio New Zealand Int'l, 9700 at 0710; 0910. (Gentry, IL; Moser, PA) 15120 at 0359 with bellbird IS, ID at 0400. "Sports Roundup" (Tucker, GA) 17770 at 2334. (Zamora, CA) 0100 with cricket match. (Cohen, ON)

Nigeria: Voice of Nigeria, 7255, 2128 in FF. (Lamb, NY) 0518 with "Morning Flight" (Gentry, IL) 0630 with news, press review. Into FF at 0700. (Robertson, MS)

Radio Nigeria, Kaduna, 4770 at 0445 with music. "News Nationwide" at 0500. (Behrendt, NE)

North Korea: Radio Pyongyang, 6560//7580 at 0938 in JJ and 11335//13760 at 0030 in EE to 0047 sign off. (Lamb, NY) 11335 at 0002. (Sooy, NJ) 11335 at 0003 and 11700 at 2302. (Holt, MA) 13760 at 0017. (Moser, PA) 15180 at 0830 and 15340 at 0705. (Crook, Guam)

Northern Marianas: KFBS, 11650 in RR with ID. Fade out by 0940. (Morgan, UT)

KHBI, 9530 at 1410 with religious interview. (Moser, PA)

Norway: Radio Norway Int'l, 9560 at 0100 to 0129 close and into Denmark relay. (Behrendt, NE) 9650 at 0400 with sign on, EE ID, into Norwegian. (Vaage, CA) 11795 at 2300 sign on. (Zamora, CA) 25730 at 1259 with sign on. (Moser, PA)

Oman: BBC Masirah Island relay, 15310 at 1301. (Moser, PA)

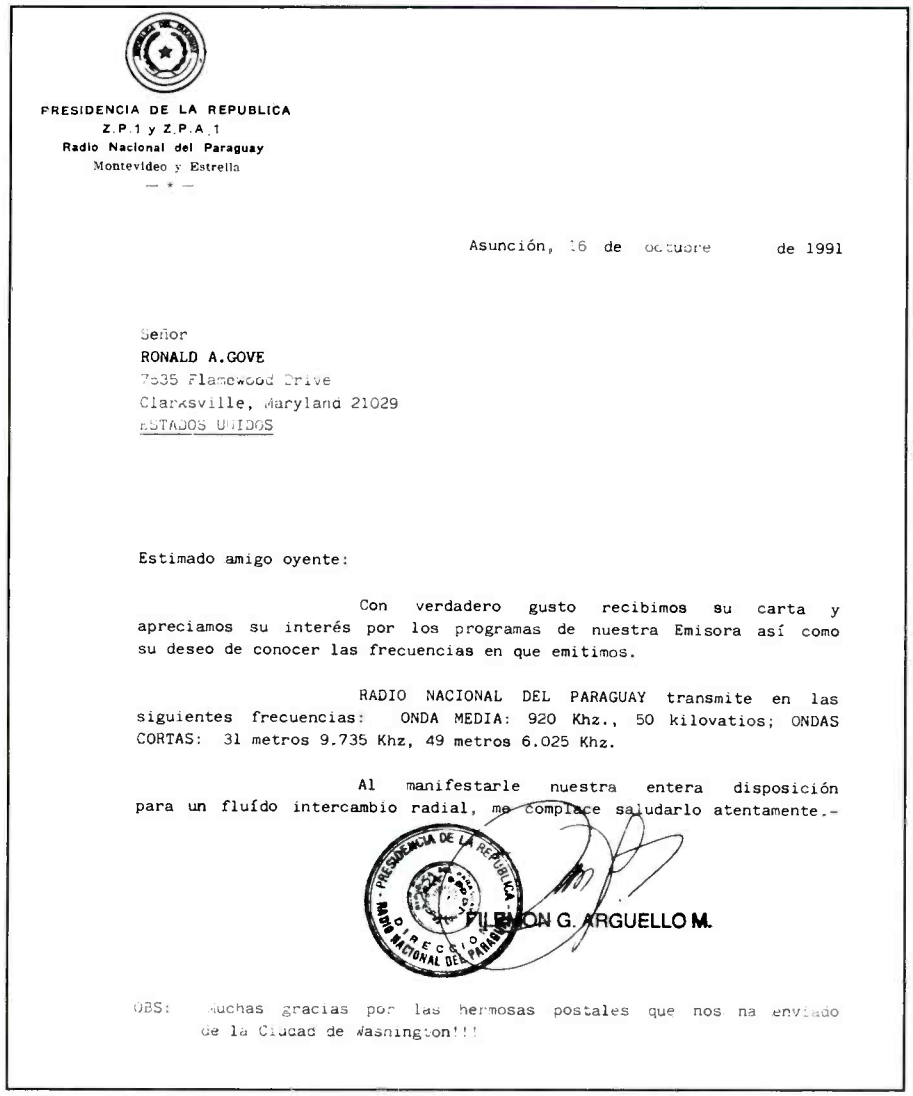
Palau: KHBN, 9830 at 1157 with ID "This is KHBN, the Voice of Hope for All Asia." (Lamb, NY

Paraguay: Radio Nacional, 9735 in SS at 2355; 0100. (Sooy, NJ; Behrendt, NE)

Peru: Radio Tacna, tentative, 9504.9 with fast-paced SS morning show, lots of sound effects, bits of pop. Buried by VOA at 1130. (Gasque, SC)

Philippines: VOA relay, 11805//15205 in Indonesian at 2303 to sign off at 2359. Also 9770//11760//15185//15290//17735 at 2310. (Lamb, NY) 17820 at 2302. (Low, TX)

FEBC, 9420 at 1523 in presumed CC to IS at 1559 and off. 9820 at 1209 in listed Cantonese. 15450 at 2358 in EE. (Lamb, NY) 11995 at 1500. (Pappas, ND)



PRESIDENCIA DE LA REPUBLICA
Z.P.1 y Z.P.A.1
Radio Nacional del Paraguay
Montevideo y Estrella
— * —

Asunción, 16 de octubre de 1991

Señor
RONALD A.GOVE
7635 Flamewood Drive
Clarksville, Maryland 21029
ESTADOS UNIDOS

Estimado amigo oyente:

Con verdadero gusto recibimos su carta y apreciamos su interés por los programas de nuestra Emisora así como su deseo de conocer las frecuencias en que emitimos.

RADIO NACIONAL DEL PARAGUAY transmite en las siguientes frecuencias: ONDA MEDIA: 920 Khz., 50 kilovatios; ONDAS CORTAS: 31 metros 9.735 Khz, 49 metros 6.025 Khz.

Al manifestarle nuestra entera disposición para un fluído intercambio radial, me complace saludarlo atentamente.-

PRESIDENCIA DE LA REPUBLICA
DIRECCION
RADIO NACIONAL DEL PARAGUAY

FILEMON G. ARGUELLO M.

OBS: Muchas gracias por las hermosas postales que nos ha enviado de la Ciudad de Washington!!!

This form letter QSL from Radio Nacional in Paraguay was received by Ronald Gove in Maryland. Radio Nacional can often be heard in the evenings on 9735, playing some excellent local music.

Radio Veritas, tentative, 9520 in CC or dialect at 1116. (Gasque, SC)

Poland: Polish Radio Warsaw, 9525 at 1810; 1950. (Moser, PA; Holt, MA)

Portugal: Radio Portugal, 9570 at 0230 with ID, news. (Tucker, GA) 9705 at 0230. (Badie, AZ) 11840 at 2150 with multi-lingual sign on and opening at 2200. (Behrendt, NE)

Radio Free Europe on 7255 at 0548 in Polish. (Lamb, NY)

Romania: Radio Romania Int'l, 5990 at 0400 and 6155 at 0230. (Holt, MA) 9690 at 1931. (Moser, PA) 11810 at 0645 to 0715 closing EE to the Pacific. (Behrendt, NE)

Russia: Radio Moscow (various sites) 5950 at 1900, 17570 at 0725. (Crook, Guam) 7110 at 0329. (Sooy, NJ) 7150//7180 at 2240. (Holt, MA) 7180 at 2243. (Cohen, ON) 15540//17730//21755/-/21785 at 1457. Kremlin chimes, ID, news. (Tucker, GA)

Radio Moscow home sevice via Yakutsk, 7200 at 0955 in RR. (Robertson, MS)

Radio Galaxy, 9880 in EE at 2030 with pops, many ID's and frequency announcements, IS at 2056 to 2100 off. (Behrendt, NE)

Radio Ala, 7400//11685//11965 in RR with folk music, news, IS. (Lamb, NY)

Magadan Radio, 9530 in RR with RR pops 0930, IS and time signal 1000, assumed news. (Gasque, SC)

Radio Yunost, 7473.1 in RR. Usual canned ID and EE message asking for advertising. RR pops. Not heard next night or since. (Gasque, SC)

Rwanda: Deutsche Welle relay, 7225 at 0435. ID at 0500. (Sooy, NJ)

Saudi Arabia: BSKSA, 9780 at 2000 in AA with ID, news. (Robertson, MS) 9870 at 1846 in AA. (Pappas, SD)

Seychelles: FEBA, 11810 at 0345 in Swahili; 15145 at 0329 with IS, ID, Amharic religious program. (Lamb, NY)

Singapore: Radio Singapore, 6155 at 1400 with time check, news in Malay. (Zamora, CA)

Solomon Islands: SIBC, 9545 at 1000 to 1130 with National Service. Closing and anthem at 1126. (Behrendt, NE)

South Africa: Channel Africa, 15430 at 1748; 0622. (Lamb, NY; Moser, PA)

Radio Orion, 4810 in EE/Afrikaans at 0200 with soft pops. (Behrendt, NE)

BBC Meyerton relay, 11940 at 0425 with IS, sign on in PP. (Moser, PA)

South Korea: Radio Korea, 7550 at 0800 with news. (Crook, Guam) 9570 at 1400 sign on, frequency schedule, news. (Zamora, CA) 15575 with 0025 sign on with IS, ID, news. (Lamb, NY)

Spain: Spanish Foreign Radio, 9530 at 0000. (Robertson, MS) 0100. (Hall, MA) 0505. (Sooy, NJ)

Sudan: Radio Omdurman, 7200 at 0250 with IS, anthem, AA sign on. (Robertson, MS) tentative on 9190 at 0303 in AA. Prayer, into AA music. (Sooy, NJ)

Swaziland: Trans World Radio, 15345 at 1140. (Moser, PA)

Sweden: Radio Sweden, 11705 at 0210 with ID, sports. (Sooy, NJ) 17870 at 1605. (Gentry, IL)

Switzerland: Swiss Radio Int'l, 6135 at 0200. (Badie, AZ) 0427. (Vaage, CA) 9535 at 1113 with talk, Swiss music. (Gasque, SC) 9885 at 0201 and 12035 at 2205. (Sooy, NJ) 13635 to Africa at 1507. (Zamora, CA) 12035 at 0018. (Gentry, IL)

Syria: Radio Damascus, 12085 at 2126 with mideast news. (Moser, PA)

Taiwan: Voice of Free China via WYFR, 5950 at 0330. (Vaage, CA) 7130 at 1410 in Japanese. (Zamora) 9680, via WYFR, at 2020. (Badie, AZ) 11915 at 2213. (Holt, MA)

WYFR via Voice of Free China facilities, 9280 at 0730 fade in CC. (Robertson, MS)

Thailand: Radio Thailand, 11905 at 1115 in Vietnamese. IS, melody and anthem at 1130 and into EE. (Robertson, MS)

Togo: Radio Lome, 5045 at 0529 sign on with anthem, ID, religious service, news. (Lamb, NY)

Radio Kara, 3222 at 2230 in FF with ID, EE songs and off at 2305. (Robertson, MS)

Tunisia: RTV Tunisienne, 7475 at 0427 in AA with prayers. Off 0432. (Sooy, NJ)

Turkey: Radio Ankara, 9445 at 2350 (Badie, AZ) 0230 in TT (Behrendt, NE) 0430 sign on. (Moser, PA)

Ukraine: Radio Ukraine Int'l, 7180//7195/-/7240 at 0100. (Holt, MA)

United Arab Emirates: UAE Radio, Dubai, 11795 at 1607. (Moser, PA) 21505 at 1330 with news. (Cohen, ON)

UAE Radio, Abu Dhabi, 9605 at 2335. (Sooy, NJ) 9605//11710 at 2300. Into AA at 0000. (Sooy, NJ) 11815 at 2304. (Holt, MA)

Uzbekistan: Radio Tashkent, 9540//15470/-/17745 at 1200 with sign on, ID, news. (Moser, PA)

Vanuatu: Radio Vanuatu, 3945 at 1020 with easy listening EE music, announcer in Bislama. (Robertson, MS)

Vatican City: Vatican Radio, 5882 at 2049; 6245//7250 at 0559; 9645 at 0905. (Lamb, NY) 7305 at 0348. (Badie, AZ) 9605 at 0250. (Sooy, NJ) 15090 at 1557; 0645. (Moser, PA; Crook, Guam)

Venezuela: Ecos del Torbes, 4980 at 0900 in SS with pops, commercials, frequent IDs. (Behrendt, NE) 0417. (Low, TX)

Radio Rumbos, 4970 at 0415 in SS. (Low, TX) 0200 with pops. (Behrendt, NE)

Radio Nacional, 9540 at 1107 with interview, ID, mentions of Venezuela. (Gasque, SC)

Unidentified: 5000 with futbol play-by-play of Venezuelan teams, no ID. Heard as early as 0100 and as late as 0330. (Gasque,SC)

Yugoslavia: Radio Yugoslavia, 9580 at 0101. (Holt, MA) 17740 at 1254. (Moser,PA)

That's the end of the line. Please raise your glass to the following who did the work this month: Kenneth G. Sooy. Sr., Oceanville, NJ; William Moser, New Cumberland, PA; Larry R. Zamora, Highland, CA; Mark A. Northrup, Gladstone, MO; David A. Gasque, Orangeburg, SC; Marie Lamb, Brewerton, NY; Christopher D. Holt, Assonet, MA; Bjorn F. Vaage, Granada Hills, CA; Murray Cohen, Fonthill, Ontario; Sheldon F. Crook, Dededo, Guam; Steve Morgan, Salt Lake City, UT; Tom Robertson, New Albany, MS; Marina Pappas, Huron, SD; Clark R. Badie, Glendale, AZ; Brad Low, Jacksonville, TX; Stephen C. Behrendt, Lincoln, NE and Robert Tucker, Savannah, GA.

Thanks to all. Until next month, good listening! ■

Beaming In *(from page 6)*

port some non-commercial stations. Four times a year, and for weeks at a time, at least one FM and two TV stations run pledge drives to do this. In-progress programming is shut down for up to twenty minutes at a clip and replaced with fumbling and awkward front office geeks moaning and crying for funds to pay for the particularly worthwhile and unique programs being offered. Curiously, their pitch is how they need the funds in order to continue presenting this wonderful programming without commercial interruptions!

Who cares? The non-commercial interruptions are worse! I do support PBS, and have regularly contributed to it for years. But I'd prefer to put up with a few minutes an hour of skidding cars and ecstasy-face yogurt commercials than be subjected to this calculated and unrelenting sackcloth and ashes routine three or four months a year. I would sooner spend an hour at the mercy of my nephew, "Dr. Lenny," the sadistic Dentist from Hell, than sit through twenty minutes of this amateurish fundraiser bleating injected arbitrarily several times into a particularly worthwhile documentary, concert, film, or drama.

If the combination of corporate grants, private endowments, public funds, plus audience contributions from program subscriptions still doesn't combine to adequately support these stations, then they should severely cut back their operations, get smarter management, or else go commercial. I don't know why the FCC allows non-commercial stations to get away with this hard-sell on-the-air fund-raising anyway. Commercial products (CD's, tapes, books, T-shirts, etc.) are hawked and then offered in exchange for pledges of specific amounts. Sounds very commercial to me.

While I'm jotting down these notes, I'm listening to an AM station two states away. They are playing excellent music, but why is the deejay so determined to start playing the music while he is still talking? And he is tail-ending—not waiting until the music is finished until he begins yakking again. Don't these deejays realize how annoying that is?

I used to think that keeping up with technology would be the challenge of the 1990's. It turns out to be more of a challenge just trying to understand our own national broadcast media.

Jeeves, put away this infernal receiver and see if you can find where I left my Discman. ■

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.

He's Got Us Covered

I could not believe what you chose to put on your April issue cover. One would have thought the printer confused your publication with *Rolling Stone* Magazine. Surely, any of the Radio Luxembourg photos would have been better than the one you chose of the rock musician.

David B. Eason,
Chevy Chase

About 10 percent of my mail comes from people who begin their comments by stating that they cannot believe the existence of things they read and see. Hardly a good recommendation for taking their observations seriously. We thought the lively cover tied in appropriately with Chuck Robertson's lead story on scanning show biz. But maybe I'm just making that up. Perhaps the printer did make a mistake. Mr. Eason should have checked to see if Rolling Stone's April front cover had a photo of Radio Luxembourg before he wrote this letter.—Editor.

Comments Regarding Privacy

I have followed the comments on privacy with some interest. I agree that the ECPA is a monumental pain. The airwaves should be open to all, and those who demand security should be required to scramble. Things monitored on a scanner are a big difference from theft. Theft occurs when a hacker breaks into a computer system. It can't be excused because the system operator failed to have sufficient safeguards. That would be like saying it's OK for me to use your lawn mower because you didn't have it chained when you went in the house to get a cold drink. What became of basic honesty? Passwords to computer systems always show up on bulletin boards, so they can't be relied upon. As for human safeguards, all you have to do is flood the security ops to the system's capacity. Then the system is overloaded and it goes down. Vandalism accomplished.

Holton F. Brown,
Baltimore, MD

Observations

In May of last year I received my first Braille issue of *Popular Communications*. Although I had been interested in shortwave listening for many years, I had gotten discouraged at times because information on stations was not available to me. Your magazine has reawakened my interest and enthusiasm and I wanted to let you know how much it is appreciated. I am so pleased that it may be accessed in Braille.

I wonder if any blind people have been successful using cellular phones. In January of 1991 I bought one thinking it would be useful to me as I travel because finding a pay phone in a bus terminal is a problem for me. I thought it would work everywhere, but the unit I bought didn't seem to work anywhere. Maybe there was something I didn't know.

Arline Davidson,
Mesa, Ariz.

EMERGENCY

BY GORDON WEST, WB6NOA

COMMUNICATIONS FOR SURVIVAL

High Frequency Feedpoints

High frequency 2-30 MHz SSB communications are essential for all mobile communication command posts. Amateur radio operators may pass emergency and health and welfare messages on ham bands 10 meters through 160 meters. High frequency SSB FEMA channels using ALE (automatic link establish) protocol may take equipment, such as the SGC 2000 HF SSB, and allow it to automatically scan and seek the best FEMA SSB channel for the desired communications path.

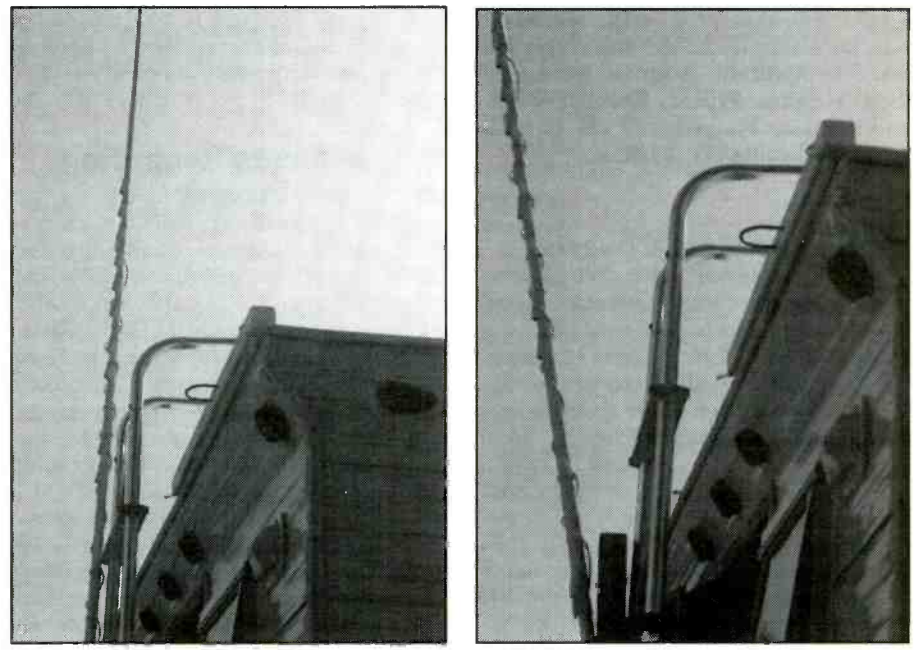
U.S. Coast Guard Auxiliary and Civil Air Patrol units also have their own high frequency SSB nets. These nets do not necessarily require that the emergency command post operator hold a valid amateur radio license. In other words, the non-ham may still have many channels to intercommunicate on HF SSB at the emergency command post.

Recent breakthroughs in equipment technology for high frequency 100-watt SSB use makes for an easy command post installation. On the SGC Model 2000, the head unplugs from the body of the gear, and can go just about anywhere including on the dash with a suction cup window mount. Multiple heads may be installed for up to 7 different command post stations. Intercom is part of the package.

The new Kenwood TS-50S ham rig is so incredibly small that it mounts in an area where the CB radio may originally have been installed. Although the Kenwood TS-50 does not have a detachable head, remote control capabilities are indeed possible with the proper interface to its communications port on the back of the unit. The Amateur Radio Engineering Ham Link (TM) might interface with the TS-50, and allow you to control everything via a cordless telephone set, up to 50 feet away from the command post.

Command post high frequency antenna systems are tied into the equipment down below via coaxial cable. Top quality coax should be used to minimize RF leakage that could interfere with other systems onboard. RG213 is a good choice, and offers less than 1 dB attenuation for most command post runs between 2 MHz - 30 MHz. It takes the standard PL-259, and is relatively flexible and has a waterproof jacket.

The HF whip antenna is usually pretuned to the desired band of operation. The taller the whip, the better its operation. Ham whips are plentiful, and the Outbacker (TM) antenna is also available on both ham frequencies as well as on ITU bands 2 MHz, 4 MHz, 6 MHz, 8 MHz, 12 MHz, 16 MHz, and 20 MHz. This gives you all of the Civil Defense, FEMA, U.S. Coast Guard, and MARS frequencies. You could also utilize the SGC QMS system which is an outside-mounted, waterproof antenna coupler that tunes the SGC 303 8-foot whip antenna to any frequency between 2 MHz - 30 MHz.



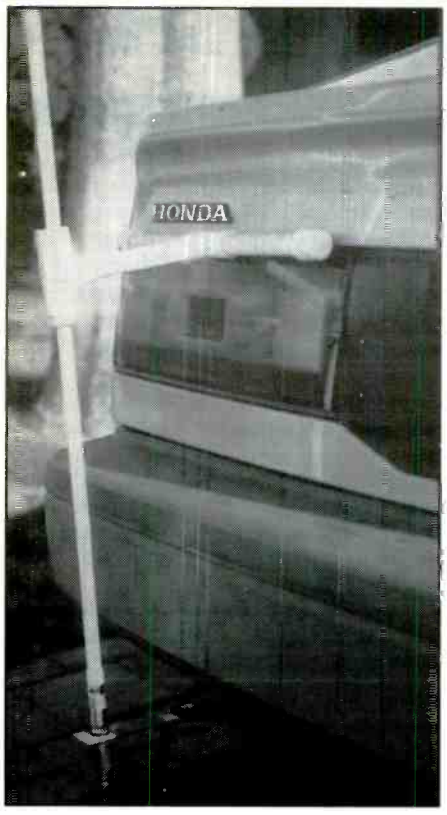
The performance of this high frequency whip improved when it was angled back away from the command post's metal ladder.

Whatever high frequency antenna system you go with, mounting the base of the whip at the top of your command post roof is essential for maximum performance. If the whip is placed just a few feet down from the top of your command post, the metal siding on your vehicle will dramatically reduce the effectiveness of the whip, and detune it to the point where SWR escalates to above 5:1. This causes your transceiver to automatically power down to protect the finals, and your resultant signal will drop well into the noise floor. Just 2 feet down from the top of the roof is enough to render most antenna systems inoperative.

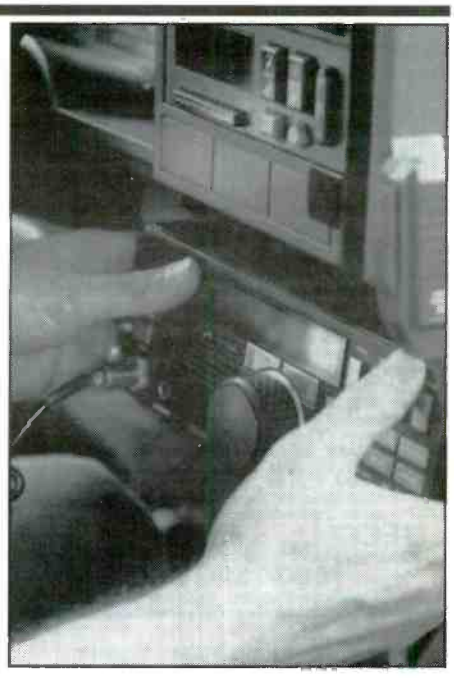
If the command post is stationary, a good place to mount the whip would be at the top of the aluminum ladder that leads to the roof level. The tip-top point on the ladder should accommodate a stainless steel marine mount, available from Valor Antenna Company. This puts the ground plane directly below the HF whip, and you will have a terrific signal and a perfect 50-ohm match.

But if the command post must be mobile, there may be a way to get your high frequency whip to perform reasonably well yet still stay below the typical 16-foot height limit for vehicles in the United States. You can mount the whip several feet down from the top, and angle it back until you hear the noise come up in the receiver, and the SWR drop to an acceptable level. A quick way to check your match is to use the portable MFJ SWR analyzer that lets you sweep the band for a minimum SWR check without actually putting your HF transceiver on the air. The milliwatt output on the SWR analyzer is sufficient to find the dip, and also drive the built-in frequency counter.

The lower you mount your HF antenna on your vehicle, the worse your high frequency on-air performance. In recent tests, you lose about one S-unit of signal strength for every 2 feet you go down the side of your mobile unit. And yes, while you could get an HF transceiver with a built-in automatic antenna tuner to resonate an HF whip down low on the bumper, your ultimate communications capability will be dramatically undermined by a poor mobile



This is NOT a good position for the base mount. The antenna is mounted too low.



Remote heads allow you to choose many locations for your high frequency radio system.

HF antenna installation. Sure, you'll probably get some signal out there on the airwaves, but nothing like the REAL signal from a top-mounted resonant whip or side-mounted automatic antenna tuner and non-resonant whip. Your choice.

Your local amateur radio dealer has all the necessary equipment and parts to outfit your command post. Seek out a sales person at that dealership that expresses an interest in working closely with you on your emergency command center. Some of the antenna installations will be trial and error until you find the right combination that's going to work for your emergency personnel station. But keep this in mind—THERE IS NO ONE BEST ANTENNA OR EQUIPMENT THAT IS RIGHT FOR EVERYONE. Work closely with your ham radio or commercial radio dealer, and set up your SSB HF communications that will best suit your operating needs. ■

Tune your whip at the base, not with a built-in tuner.

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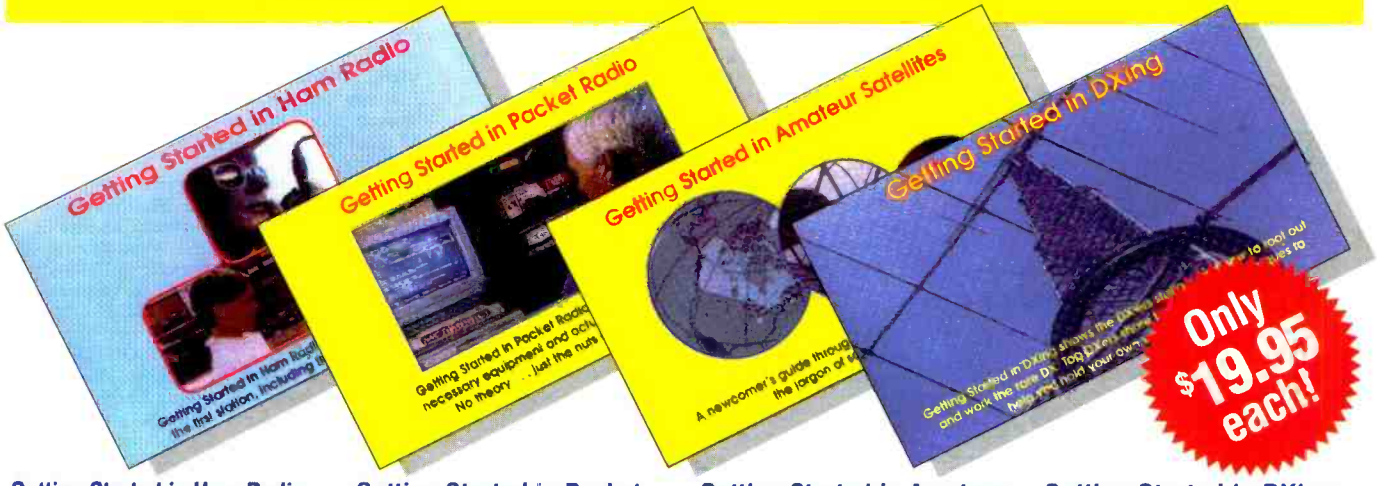

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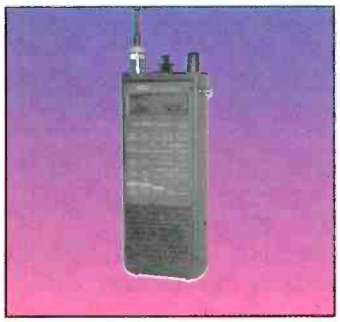

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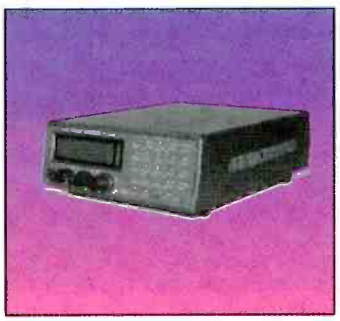

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