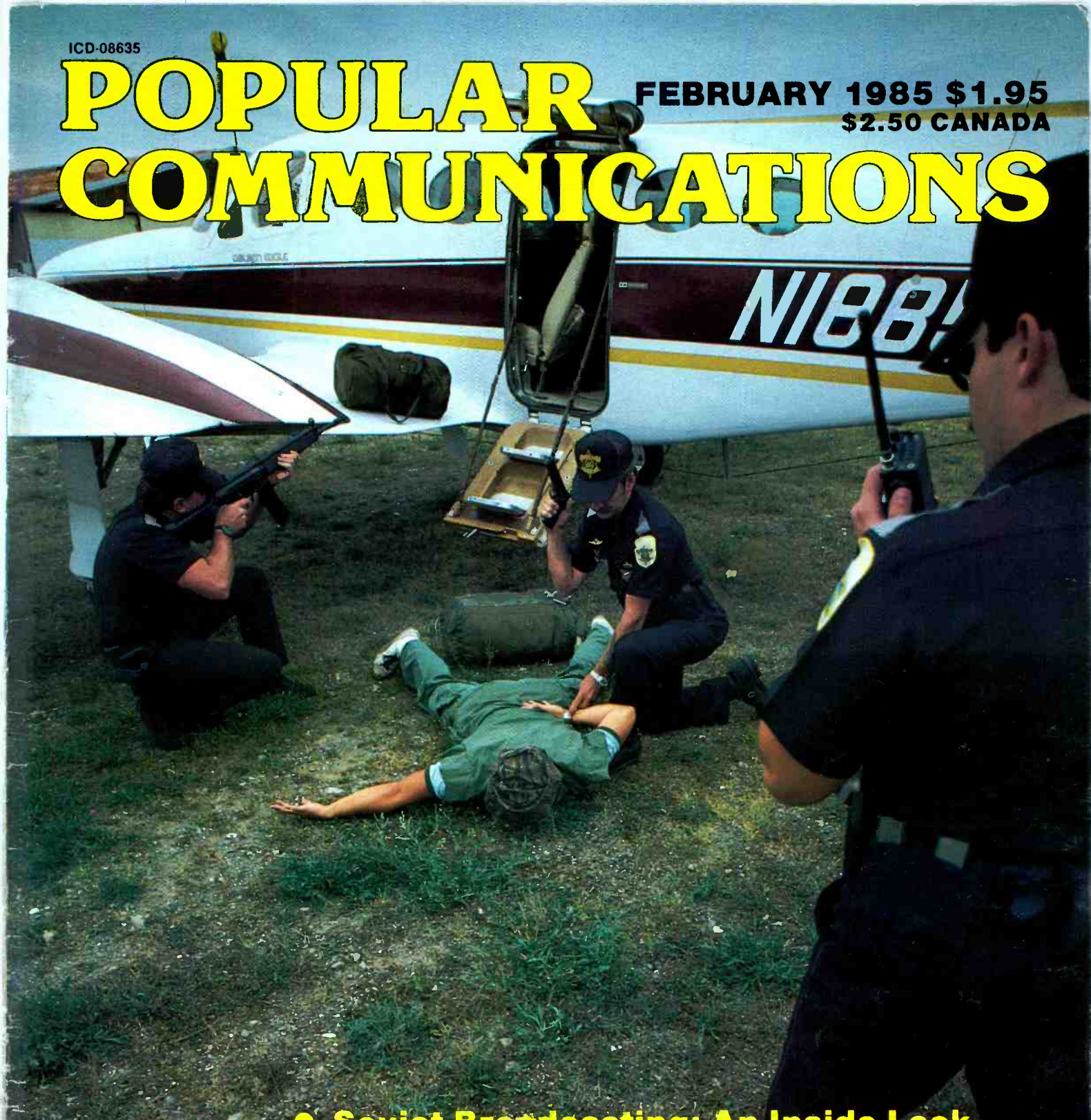
ICD-08635

POPULAR COMMUNICATIONS

FEBRUARY 1985 $1.95
$2.50 CANADA



- Soviet Broadcasting: An Inside Look
- Radio Canada International's 40th Anniversary
- "Hello World, It's KWKH!"
- Tuning In The Shadow Empire
- More On The Mysterious Cluster Beacons

0 74820 08635 02

KENWOOD

...pacesetter in amateur radio

R-11 portable receiver

R-11

Kenwood's R-11 is the perfect "go anywhere" portable receiver. It covers the standard AM and FM Broadcast bands, plus nine additional short wave bands. The R-11's selectivity is greatly enhanced by the use of double conversion on short wave frequencies above 5.95-MHz. High sensitivity coupled with a dual antenna system (telescopic and ferrite core) allow it to reach out and bring in those distant stations from all over the world.

Simplicity of operation is enhanced by a band-spread type tuning control. Electronic band switching, with LED band indicator, along with a tuning meter to indicate received signal strength, combine to provide you with superior listening capability. Safety Hold-Release switch prevents accidental station loss. Large front mounted speaker provides excellent sound quality. Tone switch adjusts for high, low and voice transmission. Optional HS-7 micro-head phones allow for private listening pleasure.

All this along with a record output jack, external antenna terminal and a rugged and attractive carrying case make the R-11 portable receiver the perfect travel companion!

More information on the Kenwood receivers is available from authorized dealers of Trio-Kenwood Communications 1111 West Walnut Street, Compton, CA 90220.

CIRCLE 77 ON READER SERVICE CARD

R-2000 Top-of-the-line general coverage receiver • 150 kHz to 30 MHz • Ten memories • Dual 24-hr clock with timer • Scanning • 100-240 VAC (Opt. 13.8 VDC) • Opt. VHF (118-174 MHz converter).

R-1000 High performance receiver • 200 kHz–30 MHz • digital display/clock/timer • 3 IF filters • PLL UP conversion • noise blanker • RF step attenuator • 120-240 VAC (Optional 13.8 VDC).

R-600 General coverage receiver • 150 kHz–30 MHz • digital display • 2 IF filters • PLL UP conversion • noise blanker • RF attenuator • front speaker • 100-240 VAC (Optional 13.8 VDC).

SHORTWAVE HEADQUARTERS

EEB THE NATIONS LEADING SWL SUPPLIER

You can count on the Electronic Equipment Bank for:

- **The very latest in SWL products**
- **Friendly knowledgeable sales help**
- **Fast delivery from our huge inventory**
- **Full service on ESKA-ICOM-Kenwood- Yaesu**
- **Big savings on our discount prices**
- **Easy ordering with our toll free phones**

SERIOUS DXING FULL FEATURED

EEB IS ICOM'S #1 RECEIVER DEALER AND THERE'S GOOD REASON

ICOM R71A
$700 Range

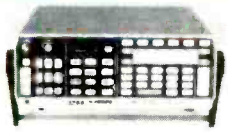
(See Our R71A Ad on page 74)

- **EEB** offers 100% QC, including 24 hour bench test and complete alignment.
- **EEB** offers more options and modifications to tailor your receiver to your needs.
- **EEB** is an authorized ICOM Service center. We take better care of you.

EEB EXCLUSIVES

- **EEB**'s skilled technicians know the R71A inside and out; and offer many optional improvements.
- **EEB** doubles your warranty: 90 days ICOM/90 days **EEB**, so you are covered a full 6 months!

Add $6.75 UPS



NEW

- World's most advanced receiver.
- 99 memory channels
- Phase lock AM detection
- 40 kHz to 30 MHz in Hz steps
- Passband tuning/clarifier
- 40 character LCD display show, frequency, time & date, meter band, bandwidth, more.
- Direct keyboard entry

ESKA RX99PL
$2000 Range
ETA Feb. 85

YAESU FRG-8800 ALL NEW PLL SYNTHESIZED CAT RECEIVER

NEW

$600 Range
ETA Feb. 85

The Yaesu FRG-7700 was a great receiver. Now the new generation FRG-8800 takes you a step further.

- CAT-computer interface control
- 12 memories—Scan—RIT
- Keyboard frequency entry
- 12 & 24 hour clock/timer-recorder control
- Green back lite LCD readout 100 Hz resolution
- 150 kHz to 30 MHz
- All mode AM-FM-SSB-LW (800 Hz filter Std)
- Optional VHF converter

MANY DETAILS NOT AVAILABLE AT PRESS TIME

SHORTWAVE LISTENING AT ITS BEST

KENWOOD

R2000

- 10 memories
- 100 kHz- 30 MHz
- All mode
- Optional VHF
- $500 range

R1000 **Sale $499.95**

- 100 kHz. 30 MHz • AM SSB CW • Wide narrow BW
- Digital readout • $400 range **Sale $399.95**

R600

- Most cost effective • 100 kHz-30 MHz • Wide narrow BW • Digital readout • $330 range **Sale $329.95**

YAESU FRG-7700 **Sale $399**

SPECIAL PACKAGE DEAL 7700-MU7700 FRA-7700 499.95

- 150 KHz-30MHz
- All mode AM-CW-SSB-FM
- Digital frequency and clock

Options:

- FRA-7700 active antenna ..... $39.95 (FRA-7700 free with FRG-7700)
- MU-7700 12 channel memory $135
- FRT-7700 antenna tuner $59
- FF-5 VLF low pass filter $20
- DC-7700 12 VDC kit $8
- FRV-7700 VHF converter $135
- Add $6.50 UPS

PANASONIC RF-B600 **Sale $429** List $595

- 1.6 to 30 MHz, LW/MW/SW & FM
- Micro Computer Multi-Tuning System
- 9 Memory stations, scan
- Slow/Fast rotary tuning
- 10 key direct access tuning
- Universal voltage • Add $6.00 UPS

RF-B300 **Sale $209** List $249.95

- 1.6 to 30 MHz & FM
- Slow/Fast 2 speed tuning
- RF gain control for AM/SW
- Dual voltage
- Add $5.00 UPS

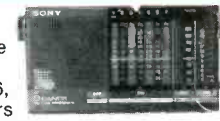
★G.E. WORLD MONITOR List $229.95 ($4.00 UPS)
Sale $169

Digital readout, wide and narrow selectivity BFO for SSB & CW.

- 3.5 - 31 MHz SW/MW/FM • 120V/220V or battery

TAKE IT WITH YOU PORTABLE SWL

SONY ICF 4910



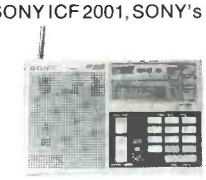
- Ultra small pocket size
- AM, FM, 7 SW most popular bands—13, 16, 19, 25, 31, 41, 49 meters
- Safety lock • Optional AC power
- Batteries (2) AA • Sale $99.95

SONY ICF 7600A

- Over one million sold—proof of its place in the world of SWL
- AM, FM, 7 SWL bands • Safety lock
- Same size as ICF-2002 • Sale $139.95

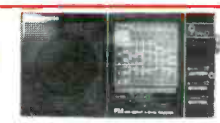
SONY ICF 2002

- Ultimate compact HiTech at an affordable price
- 25% size of famous SONY ICF 2001, SONY's best seller
- 150 kHz - 30 MHz
- AM, FM
- Memories
- Keyboard entry
- Scan
- 24 hour clock
- Sale $219.95



SONY ICF 6500 W & ICF 6800 sold out & discontinued—sorry

PANASONIC RF-9



- Same size as SONY ICF 4910
- Lacks safety lock
- AM, FM, 7 SW bands—13, 16, 19, 25, 31, 49, 75 meters (75 meter band not usable in USA)
- Only $89.95

TOSHIBA RP-F11

- Small battery portable
- AM, FM, SW bands—13, 16, 19, 22, 25, 31, 41, 49 meters
- 8 bands plus tunes 60, 75, 90, 120 meter tropical bands
- S meters • Only $99.95

SHARP FV-610
Sale $139.95

- Digital read-out
- Clock
- AM, FM—13, 16, 19, 25, 31, 41, 49 meter bands and longwave 150-285 kHz

FV310 Same basic radio without digital readout **$99.95**

SONY • PANASONIC • TOSHIBA • BEARCAT • JIL • SHARP • UNIDEN • MIZUHO • ICOM • KENWOOD • YAESU • ESKA • PALOMAR • MFJ • Book department— all accessories

FREE CATALOG—Get all the details. Write or call today for our 1985 catalog
800-368-3270

- We ship world-wide
- SASE for FREE Catalog
- Foreign 3IRC's Air Mail
- Shipping charges not included
- Prices & specifications subject to change without notice

VISA MasterCard

10 miles west of Washington, D.C.
Sorry—No COD's
10-5 Tues., Wed., Fri.
10-9 Thursday
10-4 Saturday
Closed Sunday and Monday

Electronic Equipment Bank
516 Mill Street, N.E.
Vienna, Virginia 22180

Order Toll Free 800-368-3270
Virginia 703-938-3350

CIRCLE 164 ON READER SERVICE CARD

NEW!

Regency®

Scanners

Communications Electronics,™ the world's largest distributor of radio scanners, introduces new models with special savings on all radio scanners. Chances are the police, fire and weather emergencies you'll read about in tomorrow's paper are coming through on a scanner today.

We give you excellent service because CE distributes more scanners worldwide than *anyone* else. Our warehouse facilities are equipped to process thousands of scanner orders every week. We also export scanners to over 300 countries and military installations. Almost all items are **in stock** for **quick shipment**, so if you're a person who prefers fact to fantasy and who needs to know what's *really* happening around you, order your radio today from CE.

NEW! Regency® MX5000-E

List price $599.95/**CE price $359.00**

Multi-Band, 20 Channel • No-crystal scanner Search • Lockout • Priority • AC/DC Selectable AM-FM modes • LCD display World's first continuous coverage scanner

Frequency range: 25-550 MHz continuous coverage.

Never before have so many features come in such a small package. The *Regency* MX5000 mobile or home scanner has continuous coverage from 25 to 550 MHz. That means you can hear CB, Television audio, FM broadcast stations, all aircraft bands including military and the normal scanner bands, all on your choice of 20 programmable channels.

Regency® MX3000-E

List price $319.95/**CE price $179.00**

6-Band, 30 Channel • No-crystal scanner Search • Lockout • Priority • AC/DC

Bands: 30-50, 144-174, 440-512 MHz.

The *Regency* Touch MX3000 provides the ease of computer controlled, touch-entry programming in a compact-sized scanner for use at home or on the road. Enter your favorite public service frequencies by simply touching the numbered pressure pads. You'll even hear a "beep" tone that lets you know you've made contact.

In addition to scanning the programmed channels, the MX3000 has the ability to search through as much as an entire band for an active frequency. The MX3000 includes channel 1 priority, dual scan speeds, scan or search delay and a brightness switch for day or night operation.

Regency® Z30-E

List price $279.95/**CE price $169.00**

6-Band, 30 Channel • No-crystal scanner

Bands: 30-50, 144-174, 440-512 MHz.

Cover your choice of over 15,000 frequencies on 30 channels at the touch of your finger.

Regency® C403-E

List price $99.95/**CE price $59.00**

5-Band, 4 Channel • Crystal scanner Channel indicator LED • AC only • Low cost

Bands: 30-50, 148-174, 450-470 MHz.

Regency's basic scanner, the C403 gives you the excitement of police, fire and emergency calls at a budget price. It can tune in to any of five public service bands and brings the signal in loud and clear...on any of four possible channels. It comes with detachable telescope antenna and AC power cord. Order one crystal certificate for each channel you want to receive.

Regency® HX1000-E

List price $329.95/**CE price $209.00**

6-Band, 30 Channel • No Crystal scanner Search • Lockout • Priority • Scan delay Sidelit liquid crystal display • Digital Clock

Frequency range: 30-50, 144-174, 440-512 MHz.

The new handheld *Regency* HX1000 scanner is fully keyboard programmable for the ultimate in versatility. You can scan up to 30 channels at the same time. When you activate the priority control, you automatically override all other calls to listen to your favorite frequency. The LCD display is even sidelit for night use. A die-cast aluminum chasis makes this the most rugged and durable hand-held scanner available. There is even a backup lithium battery to maintain memory for two years. Includes wall charger, carrying case, belt clip, flexible antenna and nicad battery. Order your *Regency* HX1000 now.

Regency® R106-E

List price $159.95/**CE price $92.00**

5-Band, 10 Channel • Crystal scanner • AC/DC

Frequency range: 30-50, 146-174, 450-512 MHz.

A versatile scanner, The *Regency* R-106 is built to provide maximum reception at home or on the road. Rugged cabinet protects the advanced design circuitry allowing you years of dependable listening.

NEW! Regency® R1050-E

List price $179.95/**CE price $109.00**

6-Band, 10 Channel • Crystalless • AC only

Frequency range: 30-50, 144-174, 440-512 MHz.

Now you can enjoy computerized scanner versatility at a price that's less than some crystal units. The *Regency* R1050 lets you in on all the action of police, fire, weather, and emergency calls. You'll even hear mobile telephones.

Programming the R1050 is easy. Merely touch the keyboard and enter any of over 15,000 frequencies on your choice of 10 channels.

Regency® HX650-E

List price $129.95/**CE price $79.00**

5-Band, 6 Channel • Handheld crystal scanner

Bands: 30-50, 146-174, 450-512 MHz.

Now you can tune in any emergency around town, from wherever you are, the second it happens. Advanced circuitry gives you the world's smallest scanner. Our low CE price includes battery charger/A.C. adapter.

NEW! Regency® HX-650P-E

List Price $189.95/**CE price $104.00**

Now, Communications Electronics offers a special packaged price on the *Regency* HX-650 scanner and the following items for only $104.00. You get the *Regency* HX-650 scanner, a set of 4 AAA ni-cad batteries, the MA-506 carrying case, six crystal certificates, AC adapter/charger and flexible rubber antenna for only $104.00 per package plus $10.00 shipping/handling. To order this special package, use CE special order number HX-650P-E.

QUANTITY DISCOUNTS AVAILABLE

Order two scanners at the same time and deduct 1%, for three scanners deduct 2%, four scanners deduct 3%, five scanners deduct 4% and six or more scanners purchased at the same time earns you a 5% discount off our super low single unit price.

NEW! Regency® HX2000-E

The World's First 800 MHz. Handheld Scanner

List price $569.95/**CE price $359.00**

7-Band, 20 Channel • No-crystal scanner Priority control • Search/Scan • AC/DC Sidelit liquid crystal display • Memory backup

Bands: 118-136, 144-174, 440-512, 800-950 MHz.

The new *Regency* HX2000, handheld scanner covers thousands of frequencies including the new 800 MHz. band. Although this scanner does *not* have low band, you can scan up to 20 channels at the same time. Selectable AM/FM reception modes on all frequencies. With the included AC/DC transformer, the HX2000 can be operated on either 120V AC or 6 VDC. Scans 15 channels per second. Size 3" x 7" x 1½" Includes wall charger, carrying case, belt clip, flexible antenna and nicad batteries.

NEW! Regency® RH250B-E

List price $699.95/**CE price $329.00**

10 Channel VHF synthesized transceiver Built-in scanner with programmable priority Fully programmable CTCSS on every channel

If you're a fireman, policeman or a person on the go and it's essential that you stay in touch with headquarters, you need the *Regency* RH250 transceiver. You can program simplex or semi-duplex frequencies including CTCSS tones.

OTHER RADIOS & ACCESSORIES

Z10-E Scanner	$138.00
Z45-E Scanner	$199.00
RPH410-E 10 ch. handheld no-crystal transciever	$399.00
B-4-E 1.2 V AAA Ni-Cad batteries (set of four)	$9.00
A-135C-E Crystal certificate	$3.00
A60-E Magnet mount mobile antenna	$35.00
A70-E Base station antenna	$35.00

Add $3.00 shipping for all *accessories* ordered at the same time.
Add $3.00 shipping per scanner antenna.

BUY WITH CONFIDENCE

To ***get the fastest delivery from CE*** of any scanner, send or phone your order directly to our Scanner Distribution Center.™ Be sure to calculate your price using the CE prices in this ad. Michigan residents please add 4% sales tax or supply your tax I.D. number. Written purchase orders are accepted from approved government agencies and most well rated firms at a 10% surcharge for net 10 billing. All sales are subject to availability, acceptance and verification. All sales on accessories are final. Prices, terms and specifications are subject to change without notice. All prices are in U.S. dollars. Out of stock items will be placed on backorder automatically unless CE is instructed differently. A $5.00 additional handling fee will be charged for all orders with a merchandise total under $50.00. Shipments are F.O.B. Ann Arbor, Michigan. No COD's. Most products that we sell have a manufacturer's warranty. Free copies of warranties on these products are available prior to purchase by writing to CE. International orders are invited with a $20.00 surcharge for special handling *in addition* to shipping charges. Non-certified checks require bank clearance.

Mail orders to: Communications Electronics,™ Box 1045, Ann Arbor, Michigan 48106 U.S.A. Add $7.00 per scanner for U.P.S. *ground* shipping and handling in the continental U.S.A. For Canada, Puerto Rico, Hawaii, Alaska, or APO/FPO delivery, shipping charges are three times continental U.S. rates. If you have a Visa or Master Card, you may call and place a credit card order. Order toll-free in the U.S. Dial 800-USA-SCAN. In Canada, order toll-free by calling 800-221-3475. WUI Telex CE anytime, dial 671-0155. If you are outside the U.S. or in Michigan dial 313-973-8888. Order today.

AD #011085-E

For credit card orders call

1-800-USA-SCAN

COMMUNICATIONS ELECTRONICS™

Consumer Produces Division

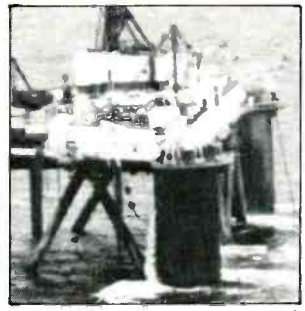
P.O. Box 1045 □ Ann Arbor, Michigan 48106-1045 U.S.A.
Call 800-USA-SCAN or outside U.S.A. 313-973-8888

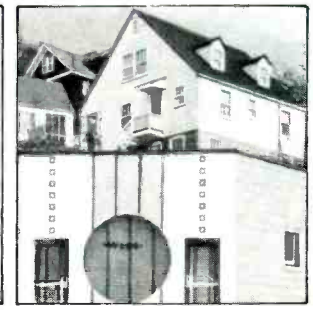
CIRCLE 23 ON READER SERVICE CARD

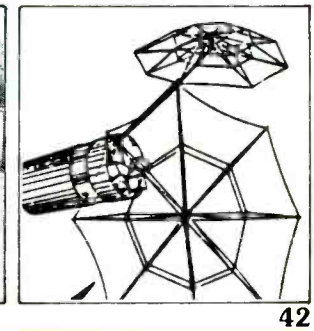
Offices: 76 North Broadway, Hicksville, NY 11801. Telephone 516 681-2922. Popular Communications (ISSN 0733-3315) is published monthly by Popular Communications, Inc. Corporate officers: Richard A. Ross, Pres.; Thomas S. Kneitel, Vice Pres.; Alan M. Dorhoffer, Secretary. Second class postage paid at Hicksville, NY and additional offices. Subscription prices: Domestic—one year $14.00, two years $25.00, three years $36.00. Canada/Mexico—one year $16.00, two years $29.00, three years $42.00. Foreign—one year $18.00, two years $33.00, three years $48.00. Foreign Air Mail—one year $71.00, two years $139.00, three years $207.00.
Postmaster: Please send change of address to Popular Communications, 76 North Broadway, Hicksville, NY 11801.

POPULAR COMMUNICATIONS

FEBRUARY 1985 **VOL. 3, NO.6**


14




42

FEATURES

This month's cover: *Counterr Group instructors J. Keith Idema, Raymond Carney, and William Aylward during a drug interdiction operation course in Poughkeepsie, New York. Photo by Larry Mulvehill, WB2ZPI.*

DEPARTMENTS

BEAMING IN

AN EDITORIAL

BY TOM KNEITEL, K2AES

Scramblers & Such

In our November '84 edition, we ran a story on the topic of listening to police communications. This story, you may recall, traced some of the history of the public's interest in police monitoring and also mentioned that some public safety agencies liked to utilize voice scramblers to thwart attempts to let anybody overhear what they're talking about. Quite a bit of mail came in after the November issue went on sale, much of it expressing a multitude of pro and con thoughts about the relative merits of voice scrambling. It's a hot topic, to say the very least!

Interestingly, prior to the invention of the scanner 17 years ago, there really wasn't very much controversy surrounding the public listening to police or other law enforcement communications; this, even though the hardware to do this had been easily available for decades in the form of tunable and non-scanning crystal controlled receivers. Somehow, scanners caused a bell to ring somewhere and things changed. Not only did some agencies suddenly decide to become leery of the public's interest in their communications, there were those who sought to satisfy those new-found fears with a number of voice scrambling devices to be used by enforcement agencies.

All of this has generated no small manner of controversy around what the populace should and should not be permitted to hear over the public's airwaves. There are those who would restrict and limit your right to freely monitor the communications taking place on certain frequencies, citing all manner of reasons to support their position. Sometimes the agencies take an attitude that says, "you never really know who's listening to those scanners and hearing what we're saying." Well, now that they mention it—what *are* they saying, anyway?

I should point out that not all enforcement agencies take that stance. One police chief encouraged the use of scanners, saying, "We'd like to see one in every home." Enlightened officials recognize that their job is made easier when large segments of the public can be counted upon to understand their problems and their functions. As a Detroit police spokesman acknowledged a few years ago, "If citizens listen, they know what we're paid for."

The Indianapolis Chief of Police once commented: "I believe strongly an informed citizen is our best ally. By listening, citizens appreciate many of the problems and complexities with which the police must work daily." Or, as one police communications officer once advised me, "We have nothing to hide from the public—and we can't lose sight that we are, after all, public employees. That means that the public is our boss and we are supposed to be pleased to have the boss know how well we are doing our job. And, as it turns out, we are using radio frequencies, a great natural resource owned by the public."

Yes, it's true that there have been relatively few isolated instances when scanners have been misused in conjunction with an anti-social act. But weigh those instances against the number of scanners in the hands of the public, or the number of crimes that have gone on the books without any reference to scanner involvement, and you really have to wonder what all of the fuss is about. The fact is that there is every reason to believe that the vast majority of scanners are in use by hobbyists, police buffs, fire buffs, members of volunteer ambulance teams or fire departments, off-duty police officers, and citizens interested in knowing what's going on within the community that they support with their taxes. The few rotten apples who own scanners are scattered so sparsely through this basket that it hardly justifies all of the paranoia. More rotten apples own cars than own scanners—and are enjoying the right to do so by virtue of licenses issued to them by public agencies! Frankly, a criminal can get convicted of any number of serious felonies and still retain a drivers' license and vehicle registration!

Let's take a closer look at the potentials of a scanner being used for ulterior motives, such as an aid to the commission of a criminal act. Most likely such uses would revolve around its possible benefits relating to crimes where a large profit was at stake—robberies, burglaries, drug deals—immediately come to mind. What might its uses be under such circumstances? For one thing, alerting the participants to surveillance or an imminent "bust." It might also be used to advise the location of road blocks or police vehicles during a getaway. In view of the fact that scanners are not in especially heavy use by professional criminals, one must assume that these apparent or possible benefits aren't quite as good as they appear on paper.

In any event, one can assume that criminal knowledge of a surveillance or the fact that police vehicles are on the way to the scene during the commission of a crime might easily cancel the act or at least abort it prematurely. You might see this as serving a good purpose by eliminating or reducing crime. On the other hand, you might see this

(Continued on page 71)

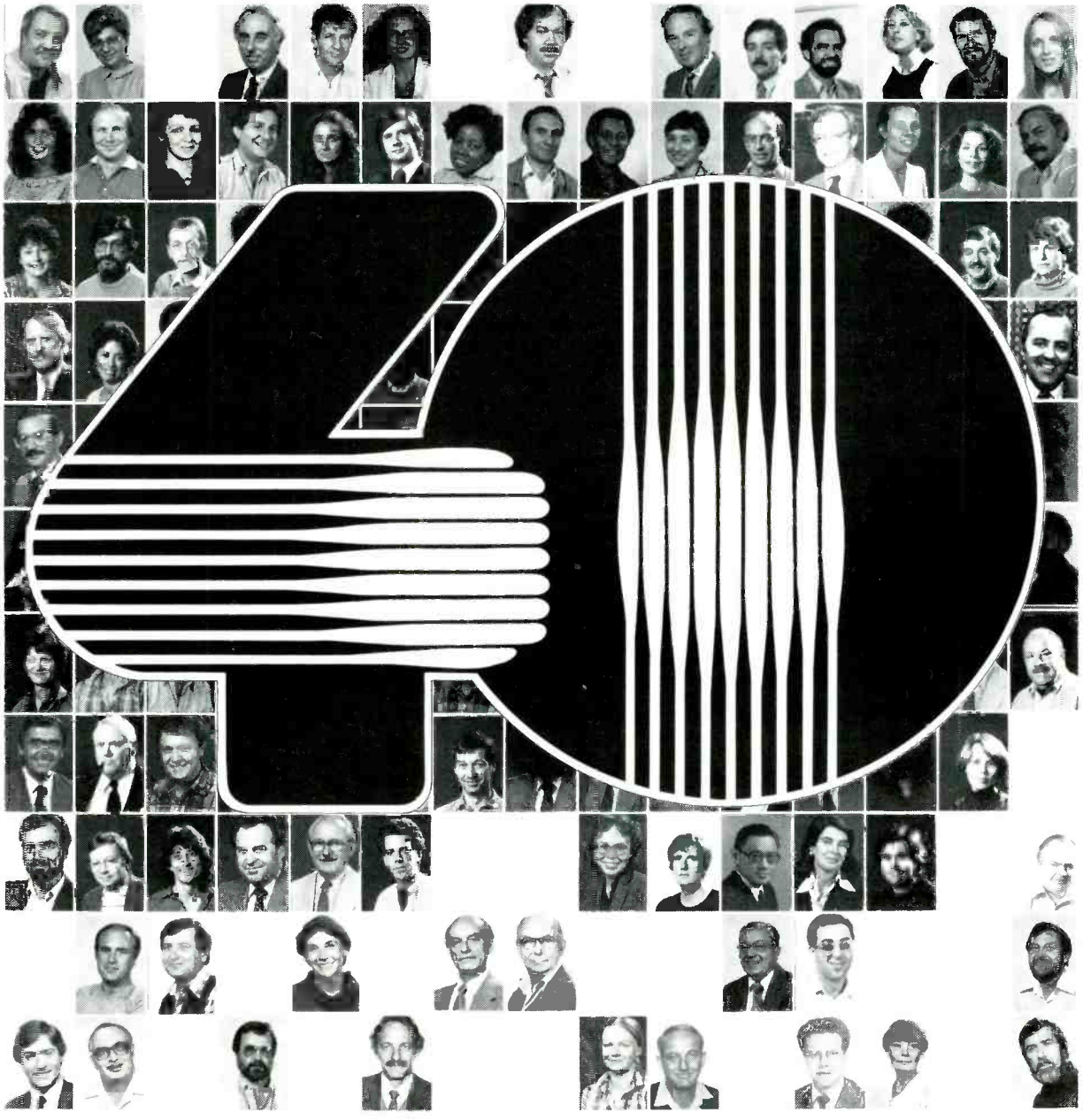
Radio Canada International

In the dynamic field of international broadcasting it is with pride that Radio Canada International begins its fifth decade.

These are the people whose voices you hear every day on RCI's shortwave broadcasts, bringing you a Canadian perspective on events and trends, both national and international.

Partenaire dynamique de la diffusion internationale, Radio-Canada International est fier de s'engager dans sa cinquième décennie.

Voici les visages qui se cachent derrière les voix que les ondes courtes de RCI vous font entendre chaque jour pour vous exposer le point de vue du Canada sur les événements et l'évolution de l'actualité nationale et internationale.



40 YEARS/ANS RADIO CANADA INTERNATIONAL 1945-1985

To obtain our free program schedule, write to:
Écrivez-nous pour recevoir l'horaire de nos émissions:
Radio Canada International
P.O. Box / C.P. 6000
Montréal, Canada
H3C 3A8

CIRCLE 117 ON READER SERVICE CARD

MAILBAG LETTERS TO THE EDITOR

The most interesting questions we receive will be answered here in each issue. Address your questions to: Tom Kneitel, Editor, Popular Communications magazine, 76 North Broadway, Hicksville, NY 11801.

Maple Leaf Lag?

Please let me know the frequencies to tune to monitor weather and other transmissions from the Royal Canadian Air Force (RCAF). I haven't been able to locate these by random tuning. Would like to see more information on Canadian communications in your columns, although—in general—*POP'COMM* is a fine publication.

Harry Volkoff
Saskatchewan, Alberta

One of the more active RCAF weather frequencies is 6753 kHz, which has broadcasts from Alberta, Newfoundland, Ontario, and British Columbia between 20 and 45 minutes past each hour. Also listen for RCAF communications on 6705, 11209, and 11265 kHz. Canadian communications data is always welcomed in our columns; we run everything that is sent to our columnists. The more we receive from our readers, the more we can present. We can't run what readers don't share with us. Tell your friends to contribute information and you'll see it all in our columns. We'd like to see more Canadian listings too!—Editor

Current Information, Please!

I plan to take my shortwave receiver to England when I go there for a 6-month period. My travel agent tells me that my receiver will probably not operate there because of voltage differences. Unfortunately, he had no additional information to offer and that leaves me confused.

Harold Mortenson
Elkins, WV

Voltage differences are only part of the things to consider. In England they require all receivers to be licensed by the government and you should check with the British Consulate on this side of the Atlantic to see if they will issue you this license. And, by the way, in England they don't allow the monitoring of non-broadcast stations. Insofar as the voltage matter is concerned, your receiver (if it doesn't operate from batteries in addition to 120 volt 60 Hz AC) would need a converter-adaptor having a 3-prong plug and operating from 220 volt 50 Hz AC. This is the most commonly encountered power in England, although in some rural areas there are other voltages and frequencies in use. You might wish to write ahead and ask your hosts about their local electrical system. Brochures on the subject of foreign electricity are available from Franzus, 352 Park Avenue South, New York, NY 10010. Should you try plugging your 120 volt 60 Hz receiver into a 220 volt 50 Hz outlet without the necessary converter-adaptor, be sure to tune for maximum smoke. And, by the way, it's probably best to use a converter to run your electric razor, contact lens or denture cleaner, Water-Pik, etc. while in England.—Editor

No Oscars For These Epics

In a 1982 issue of *POP'COMM* you mentioned that you once wrote training films for the U.S. Army. When I was in the Army, the training films I saw were mainly concerned with avoiding social diseases while on a weekend pass. I also saw one on how to pick up litter and another on the proper method of making a bed. Just wondering if any of these were your handiwork.

Bill Caprioletti
San Francisco, CA

Fortunately (for me, at least) most of the films I wrote were about topics that were quite fascinating, including several on armored and artillery matters. The most interesting ones I did for the Signal Corps were prepared for the Army Security Agency at Ft. Devens, Massachusetts. These were classified as "secret" and related to tactical communications. I think the dullest one I did was called "Operations of the Quartermaster Corps in CONUS," a 30-minute epic guaranteed to cure even advanced cases of insomnia. If you had to sit through that disaster, please accept my sincere apologies.—Editor

Numbers Game

Someone told me that, in addition to "800" toll-free telephone numbers, there are several additional toll-free exchanges that are in use, but are not made public. Is this true?

Rudy Meyers
Jackson Hole, WY

I don't know if or how they might be similar to the "800" toll-free numbers, but other exchanges are in use, although you can't access them by direct dialing. In your own area, you can dial the Operator and ask for "Zenith 2615." That will get you a toll-free call to the FAA Flight Service Station in Scottsbluff, Nebraska. Asking the Operator to get you "Enterprise 9711" will give you a toll-free call to the FAA Flight Service Station in Rapid City, South Dakota. There may be other toll-free exchanges than Zenith and Enterprise, but these are two examples of what you're asking about. I don't know why they are used instead of "800" numbers. If any reader knows, pass along the information and we'll try to explain further.—Editor

One More Group

In your October issue you had an editorial about radio clubs. It's the first time anybody has ever had the unmitigated gall to be bluntly honest and direct about this subject. There was one organization conspicuously absent from your listing which I agree with you for leaving out of your "recommended" listing. Even though your listing covered only "national" groups in the United States, I would like you to consider the merits of a fine regional scanner organization called the All Ohio Scanner Club (AOSC), which has members in Ohio, Pennsylvania, Michigan, Kentucky, and other states.

(name withheld by request)
Cleveland, OH

Right on! The AOSC is an excellent scanner club and puts out a nifty publication for its members! Those interested in finding out more about the AOSC should send a self-addressed stamped #10 envelope to Dave Jones, General Manager, AOSC, 1043 Princewood Ave., Dayton, OH 45429. Tell them POP'COMM *sent you.—Editor*

Tapped Out

I'm trying to locate a "phone phreak" newsletter called "TAP," but nobody knows where it can be obtained. Have you ever heard of it?

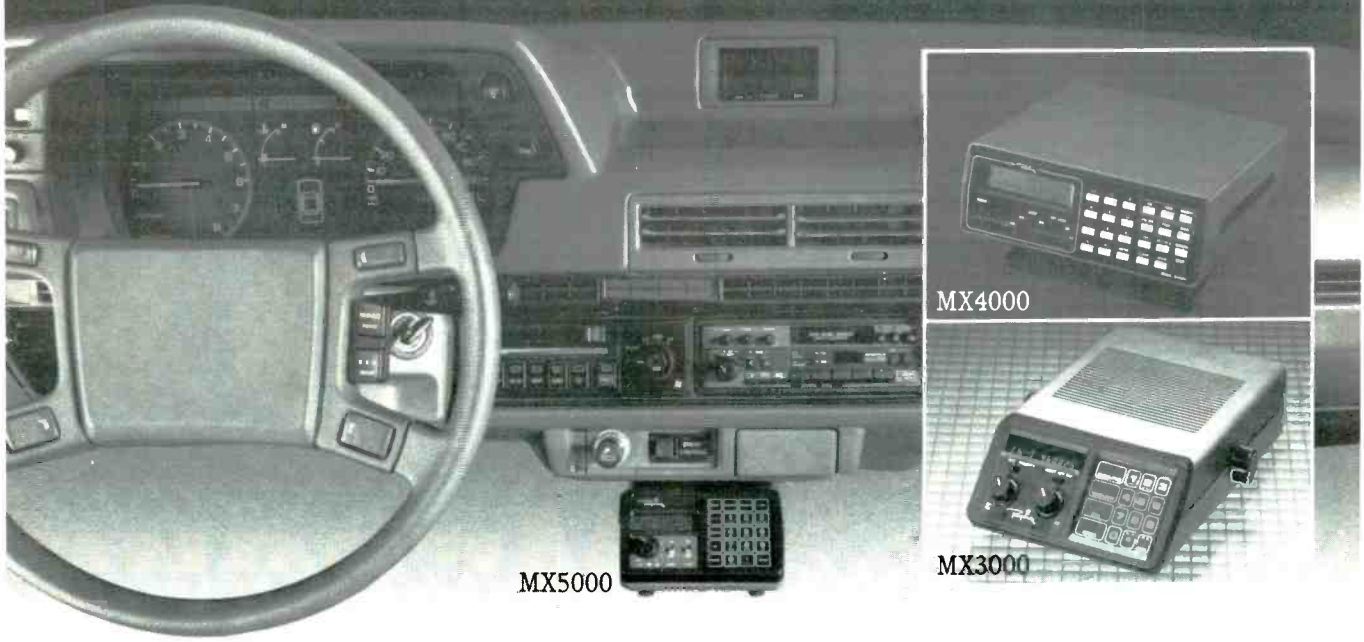
E. Santos-Verde
Hialeah, FL

TAP started up about 15 years ago as an outrageous "make free phone calls" underground newsletter and eventually branched out to cover ripping off cable TV, Telex, computer hacking, wiretaps, and related areas. I haven't seen a copy in three years. To a point, most of what they had was well done. The last few copies I saw, unfortunately, displayed a major shift in emphasis away from telecommunications in favor of a lot of very silly material relating to the preparation and use of street drugs. I don't know the present emphasis of the publication, or even if it is still in existence. The last address I had for TAP was Room 603, 147 West 42nd Street, New York, NY 10036. You'll have to take it from there yourself.—Editor

New 800 MHz models

Regency Scanners

Bring you the Excitement of Police, Fire, Emergency Radio, and more.



Our radios deliver the local news. From bank hold-ups to three alarm fires. It's on-the-scene action. While it's happening from where it's happening . . . in your neighborhood.

You can also listen to weather, business and marine radio calls. Plus radio telephone conversations that offer more real life intrigue than most soap operas. And with our new models, there's even more.

Unique Capabilities

Introducing two all new Regency scanners. First, there's the MX7000, a 20 channel, no-crystal unit that receives continuously from 25 to 550 MHz and 800 MHz to 1.2 GHz. That's right! Continuous coverage that includes VHF and UHF television audio, FM Broadcast, civil and military aircraft bands and 800 MHz communications. Next in line is the new MX4000. It's eight band coverage includes standard VHF and UHF ranges with the important addition of 800 MHz and aircraft bands. Both units feature keyboard entry, a multifunction liquid crystal display and selectable search frequency increments.

Practical Performance

If you don't need the 800 MHz range coverage, Regency offers two exciting new units. The MX5000 is a 20 channel, no-crystal scanner that receives continuously from 25 to 550 MHz with all the same features as the MX7000. Then there's the 30 channel MX3000. It's digitally synthesized so no crystals are necessary, and the pressure sensitive keyboard makes programming simple. What's more, it has a full function digital readout, priority, search and scan delay, dual scan speed, and a brightness switch for day or night operation.

At Home Or On The Road

With compact design, easy access front panel and mounting bracket these Regency scanners are ideal for mobile* use. But we also supply each radio with a plug-in transformer and a telescoping antenna so you can stay in touch at home. The MX4000 even has a rechargeable battery pack so it's fully portable.

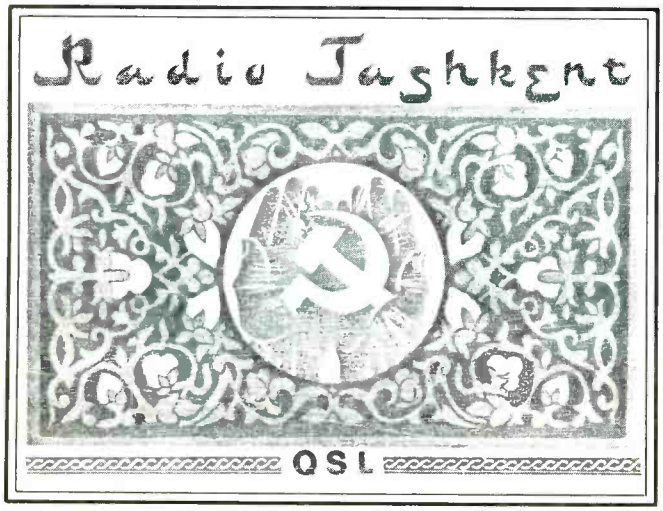
See your Regency Scanner Authorized Dealer for a free demonstration on these and other new Regency Scanners. Or, write Regency Electronics, 7707 Records Street, Indianapolis, IN 46226.

Regency®
ELECTRONICS, INC.
7707 Records Street
Indianapolis, IN 46226-9989

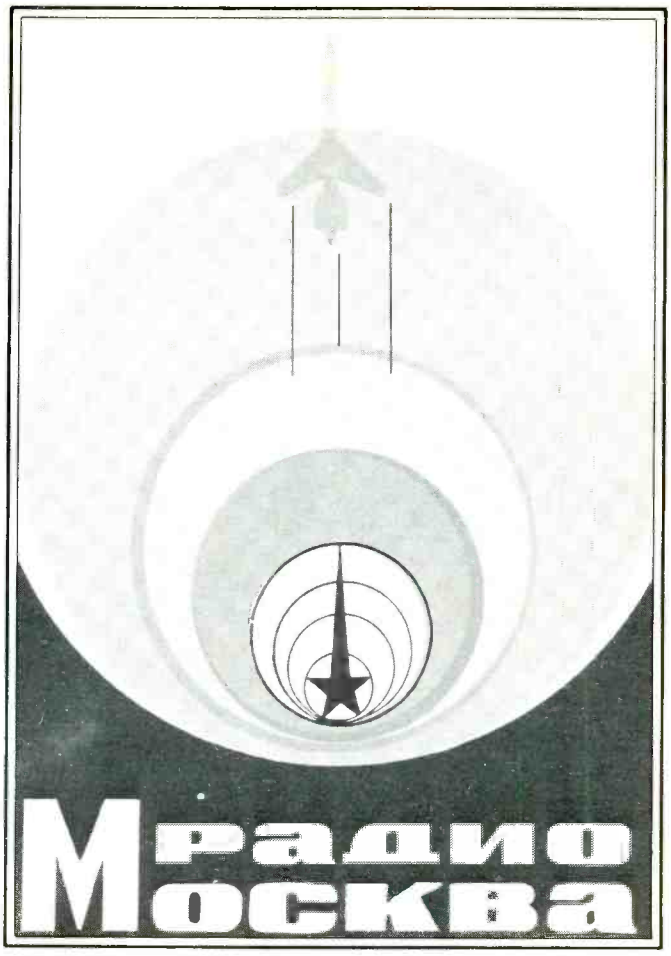
*Mobile use subject to restriction in certain localities.

CIRCLE 62 ON READER SERVICE CARD

A Radio Moscow QSL card showing the transmitter site.



A QSL from Radio Tashkent. (Courtesy Thomas J. McKeon)



Radio Moscow QSL cards come in a dizzying array of styles.

Soviet Broadcasting— An Inside Look!

Russia Revisited

BY GERRY L. DEXTER

In the November 1982 *POP'COMM*, we explored Soviet Radio in "DXing The Soviets." We've been asked to update the subject, and we can state with no reservations that, in the interim, the situation hasn't gotten any simpler! In all of the broadcasting world there is probably no subject more involved, confusing, challenging, irritating, rewarding, frustrating, or interesting.

There are several home services, several foreign services, dozens of revolving transmitter sites, regional radio centers, programs named radio such and such—a nonstop parade of continually changing frequencies. It's enough to melt the microchips in a fair-sized computer! Even the experts have trouble sorting it all out and keeping up with the constant changes. The poor individual hobbyist who wants to root out the Russians may feel like throwing up his hands in despair at the enormity of the task.

Don't give up before you start. Yes, it is complex. Yes, it is full of problems and pitfalls. And, yes, it can be conquered. The DXer who approaches the problem piece by piece, who does his homework, who divides it all up into manageable amounts can pretty much tame the Russian radio bear.

This article and its predecessor can serve as a good start toward that goal. But serious Soviet searchers will want to obtain some adtitional help and information as well.

You might want to write to SPEEDX at 7738 East Hampton St., Tucson, AZ 85715 and inquire about the availability of their *Guide to Soviet Broadcasting*. Enclose a self-addressed, stamped envelope for their reply to you.

In any given hour, broadcasting from the Soviet Union on shortwave contains Radio Moscow's programming in various languages to a number of areas around the world, plus Radio Moscow facilities in use by other Soviet "stations," plus relays of Russian domestic services, along with almost hourly frequency changes.

As an example, from 0100 to 0200 GMT, Radio Moscow is broadcasting on ten frequencies to China in Chinese; some 20 frequencies in English to North America; a dozen spots on the dial in Spanish to Cuba,

about the same number in English for the "World Service"; nearly 20 frequencies are in use for Radiostansiya Rodina; another ten for "Mayak" service; and a dozen or so are carrying "Radio Peace and Progress" in Spanish to Latin America.!

Just listening to Radio Moscow in English to North America starts the questions off. Any one of several transmitter locations could be broadcasting the signal you are hearing. Chances are strongly against your being tuned to a transmitter actually in or near the Soviet capital. And transmitter sites are never announced on the air!

Moscow adjusts its frequencies in use every hour and realigns things six to eight times a year in contrast to most international broadcasters who make adjustments just four times per year.

The SWL or DXer who has paid little or no attention to Russian radio would be advised to start out by just listening. It's not all that important at first to worry very much about what service or transmitter you've tuned. The more you listen, the better "feel" you will have for the general sound of a broadcast from the Soviet Union. And they do have definite characteristics which stand out no matter what language or service is being used. It's something not easily put into words. One male announcer sounds the same as all of the other male announcers and the same holds true for the ladies. There's a certain quality about the transmissions which make them easy to recognize once you have the knack.

Soviet Broadcast Services

Let's start out by reviewing the various "programs," networks, and other services from the Soviet Union that you can hear on the shortwave bands.

Radio Moscow World Service: This service is the most recent major addition to the Moscow line-up, although it is already several years in existence. It's in English and operates 24 hours a day, beamed to all corners of the world on all bands at one time or another. Frequencies are too numerous and too changeable to list here. Rest assured that a little searching around will turn it up.

North American Service: A multi-hour English broadcast designed for and beamed to the North American continent. As Russia's prime competitor for the world's attention and loyalties, we deserve and get special treatment. It's on the air to the east coast from 2300 to 0400 and to the west coast from 0400 to 0800 daily in the 13, 16, 19, 25, 31, 41, and 49 meter bands. Again, the frequencies are too many and too changeable to list, and changes are made every hour. Some frequencies are relays from Russia's friends at Radio Havana Cuba. The North American service is not hard to find if you go looking.

Other Radio Moscow Services: These are beamed in the native languages of the target areas in East and West Europe, the Middle East, Near East, Africa, Southeast Asia, the Far East, and South and Central America in a lingual and babel that runs from Amharic to Zulu. Not all areas get the same amount of time devoted. Some services run for a period of several hours, others for as little as half an hour per day. Incidentally, the French service is tagged as "Radio Moscow International."

The Hotel Tbilisi in the Georgian SSR.

06.00-07.00	41,25,19,16 13	7.30*; 12.05; 15.11*; 15.44*; 17.76*; 17.88*; 21.45*; 21.56*; 21.74*
07.00-08.00	41,25,19,16 13	7.30*; 12.05; 15.11*; 15.44*; 15.46*; 17.76*; 17.88*; 21.45; 21.56*; 21.71; 21.74*
08.00-09.00	41,25,19,16 13	7.30*; 12.05; 15.44*; 15.46*; 17.76*; 17.88*; 21.45; 21.49*; 21.56*; 21.71; 21.74*
09.00-10.00	41,25,19,16, 13	7.30*; 12.05; 15.44*; 15.46*; 17.70*; 17.76*; 17.88*; 21.45; 21.49*; 21.71; 21.74*
10.00-11.00	41,25,19,16, 13	7.30*; 12.05; 15.44*; 15.46*; 15.47**; 15.53*+; 17.70*;17.88*; 21.45; 21.49*; 21.61*; 21.71; 21.74*
11.00-12.00	41,25,19,16 13	7.30*;11.74; 12.05; 15.44*; 15.46*;15.47**; 15.53*+; 17.70*; 17.88*; 21.45; 21.61*; 21.71;21.74*
12.00-13.00	41,25,19,16 13	7.30*; 11.74; 12.05; 15.44*; 15.46*;15.47**;15.53*+;17.70*; 17.88*;21.45; 21.49; 21.61*; 21.71; 21.74*
13.00-14.00	41,25,19,16 13	7.30*;11.74; 12.05; 15.44*; 15.46*;17.88*;21.45; 21.49; 21.61*; 21.71; 21.74*
14.00-15.00	25,19,16,13	11.74;11.85; 12.05;15.46*; 17.70*+;17.88*;21.61*;21.71; 21.74*
15.00-16.00	25,19,16,13	11.85;12.01**;15.33*+;17.77; 21.61*

A part of Radio Moscow's World Service schedule.

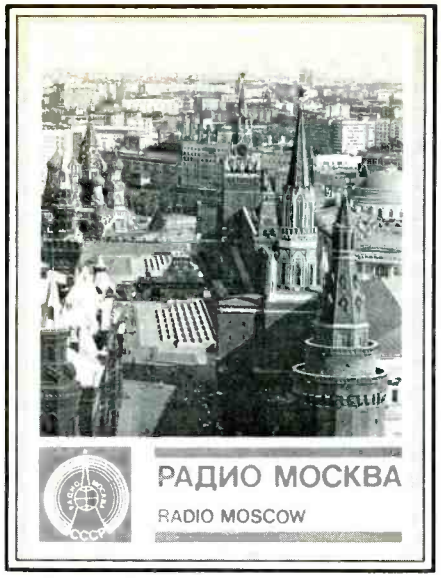
Radio Peace and Progress: This supposedly is the "voice of Soviet public opinion" and is said to be sponsored by various official groups in the country, i.e., youth, women, cultural, peace, journalistic, artistic and others. Peace and Progress is on the air to Europe, the Middle East, Africa, the Far East, and Southeast Asia, as well as to South and Central America. The list of languages used falls considerably short of Radio Moscow's linguistic overkill, but it's still healthy enough. English is aired at 1300 and 1630, although the Spanish version is probably more easily heard in the United States during the evenings. Listen for the Spanish identification "Radio Paz y Progresso."

Radio Magallenes: There are special political overtones connected with this service which is directed solely to Chile. It is supposedly produced by the Chilean Communist Party, which is no longer welcome in that country after the overthrow of Salvador Allende some years ago. This service runs two half-hour broadcasts at 0200 and 0330 in Spanish. Try frequencies in the 25, 31, and 41 meter bands.

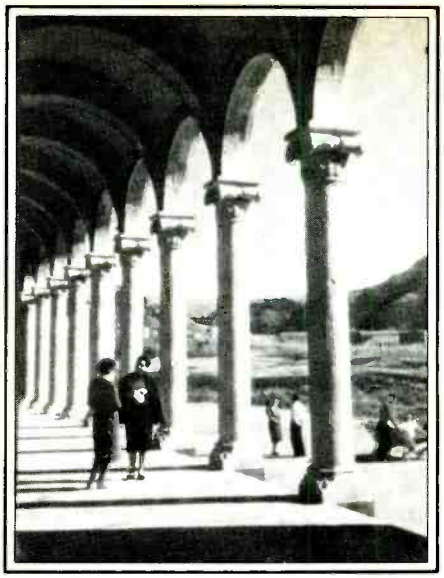
Radio Mayak: This "lighthouse" service is part of the extensive Soviet home service and is relayed on shortwaves to distant points throughout the country as well as to Russian citizens serving outside the borders. It's easily identified by its interval signal, the first ten notes of "Moscow Nights," a tune we know better as "Midnight in Moscow." Mayak runs 24 hours a day, entirely in Russian. An easy way to hear this one is 4.765, although it is apparent that this particular transmitter site is in Cuba rather than Russia. If you wish to hear it directly from Russia, there are plenty of frequencies on the higher bands that carry this service.

Radiostansiya Atlantika: This too is a part of the home service, relayed on shortwaves mostly as a service to Soviet sailors and seamen serving in the Altantic. Most recently it was scheduled at 1300 and 1630, all in Russian, mainly on frequencies in the 11, 15, 17, and 21 MHz bands.

Radiostansiya Rodina: The Voice of the Soviet Homeland is said to be an effort of something called the "Soviet Committee for Cultural Relations for Compatriots Abroad (try saying that three times after a couple of vodkas!). One hour programs in Russian are aired at 0200, 1400, 2000, and 2330 to Europe and the Americas.



Radio Moscow's current brochure.



A health spa in the Armenian SSR.

At the opposite end of the spectrum from Atlantika is **Radio Tikhy Okean** (Radio Pacific Ocean), operating from transmitter sites in the Soviet Far East, from studios at Vladivostok. Broadcasts are aired at 0815, 1315, and 1930 to the Pacific, North America, Asia, and the Middle East. Reportedly, there is a very brief English newscast from this service on Saturdays at approximately 0845. A wide number of frequencies are used in the 13, 16, 19, 25, 31, 41, 49, and 60 meter bands.

Regional Radio Centers

Most of the various Soviet republics have shortwave facilities of one form or another, many of which carry some sort of foreign service. Here again there are problems in knowing what you're listening to since some of these foreign services, while being produced in the capital of the republic involved, may not be coming from transmitters within that republic but from Radio Moscow facilities instead. Or, it may be a combination of both! We've tried to seperate the two where possible and give you an idea of where to hear the service as well as point out where you're likely to hear broadcast directly from the actual republic involved.

Armenia: Radio Yerevan's foreign service includes a brief English segment beamed to the Americas at 0355 to 0400. It also broadcasts in Armenian, French, Arabic, Turkish, and other languages to Europe, the Middle East and Latin America from 0330 to 2300. Most, if not all, of these are over Radio Moscow facilities on the higher frequencies and, again, always changing. To be fairly certain you have a transmitter designated Yerevan, try 4.040. It's on from 0300 to 2100 in Armenian. Like any of the lower frequency Soviets, it is not the easiest logging you will ever make.

Azerbaijan: Radio Baku's foreign service is aired in Arabic, Farsi, and other languages to the Near and Middle East from around 1100 to 1700 with some breaks, on 6.110 and 6.135. Local transmissions from Baku can be logged in the early mornings, less frequently in the evenings, on 4.785 and 4.958.

Byelorussia Radiostansiya Soviet Byelorussia, with studios in Minsk, broadcasts in Byelorussian to Europe. Half hour segments are aired at 1800 and 2130 on 5.980, 6.010, 6.185, 7.280, and 7.420. 12.015 is also used, from 0300 to 2200, and this frequency is, at least on occasion, actually a Minsk outlet.

Estonia Radio Tallin airs broadcasts in Finnish, Swedish, and Estonian to Europe from 0800 to 1100 and 2100 to 2200 on 5.925. A transmitter at Tallin operates on 6.085 and is occasionally heard in Estonian up until its sign off shortly after 2200.

Georgia Radio Tbilisi from Uncle Joe's home territory occasionally is on 5.930 at 1800 to 1930, although this foreign service is not active on a daily basis and, in any event, would be very difficult to log here on that frequency at that time.

Better prospects for hearing Tbilisi are on 4.930 and 5.040, the latter operating on a 24 hour a day basis in Georgian, Russian, Armenian, and other languages.

Karelian SSR Petrosavodsk Radio can occasionally be caught in Russian and local languages in evenings or early mornings on 4.780 and 5.065.

Kazakh Radio Alma Ata broadcasts in Kazakh to Central Asia on 5.915 and 6.135 at 0000, 0100, 1330, 1400, 1500, and 1600. A better opportunity exists on 5.035 which is active 24 hours a day.

Kirghiz Radio Frunze is one of the tougher ones. No foreign service as such exists but there are high power transmitters at Frunze used for various Radio Moscow services at various times. Locally, your best opportunity (and it's not a very good one), is on 4.010 during the early morning hours.

Latvia Radio Riga uses 5.935 for a foreign service to Europe in Swedish, Latvian, and Russian along with relays of various other Radio Moscow services.

Lithuania Radio Vilnius has an English service to North America at 2300 on 9.685, 9.750, and 17.870, although these frequencies, like most of the others, are subject to change at any time. Other broadcasts are in Lithuanian. So far as can be determined, there are no shortwave transmitters within Lithuania itself. Programming on shortwave is aired by transmitters in other parts of the Soviet Union.

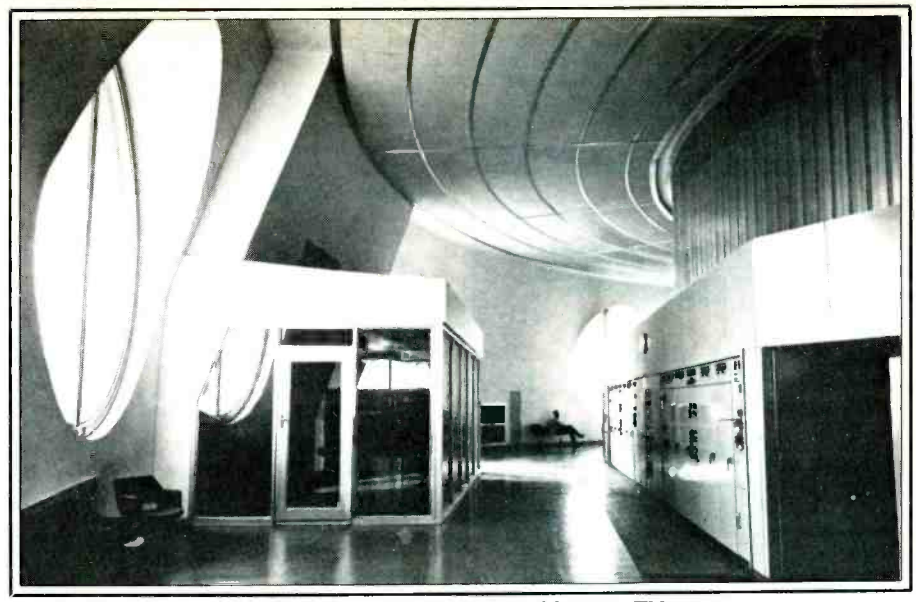
Moldavia No luck here either, although there was a high power transmitter used for local programs and Radio Moscow relays at Kishinev a number of years ago.

Tadzhik Radio Dushanbe's foreign service is in Farsi and Dari to Afghanistan and the Middle East at 0200 to 0300 and 1230, 1400, 1530, and 1730 to 1900 on 4.975 and 7.275. You'll have better luck trying the local service from Dushanbe on 4.635 during early evening periods, especially during winter months.

Turkmen Radio Ashkhabad uses 4.825, 4.895, and 4.930 for broadcasts in Turkmen and Russian. 4.825 is also occupied by Vladivostok and Yakutsk and 4.930 is also listed for Tbilisi. Try local early mornings or, more rarely, evenings.

Ukraine Radio Kiev's foreign service includes English to North America at 0030 and 0300 on frequencies in the 16, 19, 31, and 41 meter bands, via Radio Moscow facilities. Other broadcasts go out to Europe and the Americas in Ukranian.

A local outlet from Kiev operates on 4.940 during all hours except 0200 to 0300.



An inside view of part of the famous Moscow TV tower.

Yakutsk is also here but an early evening reception is likely to be Kiev on this spot.

Uzbek Radio Tashkent's foreign service features English at 1200 and 1400 on 31 and 49 meter band frequencies using Radio Moscow's facilities. Early mornings may produce Tashkent on 4.850 but beware of Mongolia and China also operating here.

European Russian Soviet Federated Socialist Republic This is a DXers creation, splitting off the immense Russian land mass into two countries—European and Asiatic—and using the Ural Mountains Range as a border. There are a couple of dozen or more site possibilities from this region. The best way to hear it is via one of Radio Moscow's North American Service channels. Try a few reception reports with site requests until you get a winner.

Asiatic Russian Soviet Federated Socialist Republic Here again, there are many possibilities, most of them always on the move, so it's like trying to catch flies without a swatter. The surest one is probably

Petropavlovsk Kamchatsky on 4.485 or Vladivostok on 5.015, both of which will show up fairly regularly on the hours before sunrise.

Other Targets

There are some other interesting, semi-broadcasting DX targets within the Soviet Union.

The TASS News Agency transmits slow-speed news in Russian for local newspapers within the Soviet Union on weekdays from 0700 to 0900. Frequencies include 5.780, 6.770, 7.340, 7.420, 9.730, and 9.850. These broadcasts are seldom reported in the United States and we know of no verifications having been received.

There are several time stations in the Soviet Union. *RWM*, at Moscow, operates 24 hours a day on 4.996, 9.996, and 14.995. *RID* at Irkutsk is also on around the clock at 5.004, 10.004, and 15.004. *RTA* at Novosibirsk operates on 10.000 from 0200 to 0500, 1400 to 1730, and 1800 to 0130 and on 15.000 from 0630 to 0930 and 1000 to 1330. *RCH* from Tashkent uses 2.500 from 0530 to 0400; 5.000 from 0200 to 0400, 1400 to 1730, and 1800 to 1030; and 10.000 from 0530 to 0930 and 1000 to 1330. Could we get WWV to go off the air for a few weeks?

Russian time stations have been known to QSL reports on occasion.

Verifying Soviet Broadcasters

Radio Moscow will send you all the QSL cards you want. The problem is getting Radio Moscow to fill in the cards the way you'd like, i.e. indicating sites and services.

The general rule is that you must send your report in care of the service you heard and in the language of the broadcast, i.e. English for the World or North American services, in French if the broadcast was in French and so on. Normally, under those conditions, Radio Moscow will place a site on your card. If not, returning the cards with a second request will often do the trick.

The trouble is, Radio Moscow sometimes indicates sites which other evidence indicates are incorrect. Indeed, some who study Soviet broadcasting believe that some sites Radio Moscow lists don't even exist! Transmitters for these phantom locations may actually be nearby but in a different city.

How you cope with that little problem we leave up to you.

Radio Peace and Progress will confirm reports (don't send these to Radio Moscow) but replies are not as assured as Radio Moscow's and Peace and Progress does not confirm sites.

Radiostansiya Rodina, Atlantica, and the others can be sent to Radio Moscow, although verifications specifically listing such services are erratic.

Verifications can also be had from the individual republic stations when you've heard their broadcasts. Purely local broadcasts are less apt to receive a reply than those that carry some sort of foreign service.

But, with repeated effort and determination, you should be able get most of them to reply, although it can well take a few years to complete a "republic" collection.

Return postage is unnecessary when writing to Soviet stations.

We hope that, with this somewhat abbreviated view of the Soviet scene, we have whetted your appetite for taking a plunge into this phase of the monitoring and DXing hobby. Keep at it and good luck! PC

Local Soviet Frequencies

3.995	Yuzhno Sakhalinsk, AR
3.995	Nikolaevsk-na-Amur, AR
3.995	Kyzyl, AR
4.010	Frunze, Kirghiz
4.030	Anadyr, AR
4.040	Yerevan, Armenia
4.040	Vladivostok, AR
4.050	Frunze, Kirghiz
4.050	Yuzhno Sakhalinsk, AR
4.055	Kalinin, ER
4.395	Yakutsk, AR
4.485	Petropavlovsk, AR
4.485	Ufa, ER
4.520	Khanty Maniysk, AR
4.520	Palana, AR
4.525	Alma Ata, Kazakh
4.610	Khabarovsk, AR
4.635	Dushanbe, Tadzhik
4.780	Petrozavodsk, Karelin SSR
4.785	Baku, Azerbaijan
4.795	Ulan Ude, AR
4.800	Yakutsk, AR
4.810	Yerevan, Armenia
4.820	Khanty Mansiysk, AR
4.820	Starobelsk, Ukraine
4.825	Ashkhabad, Turkmen
4.825	Vladivostok, AR
4.825	Yakutsk, AR
4.850	Tashkent, Uzbek
4.860	Kalinin, ER
4.860	Chita, AR
4.895	Tyumen, AR
4.895	Ashkhabad, Turkmen
4.920	Yakutsk, AR
4.930	Tbilisi, Georgia
4.930	Ashkhabad, Turkmen
4.940	Kiev, Ukraine
4.940	Yakutsk, AR
4.958	Baku, Azerbaijan
4.975	Dushanbe, Tadzhik
4.990	Yerevan, Armenia
5.015	Arkhangelsk, ER
5.015	Vladivostok, AR
5.035	Alma Ata, Kazakh
5.040	Tbilisi, Georgia
5.040	Yuzhno Sakhalinsk, AR
5.065	Petrozavodsk, Karelian SSR
5.260	Alma Ata, Kazakh
5.290	Krasnoyarsk, AR
5.925	Tashkent, Uzbek
5.935	Riga, Latvia

AR = Asiatic Russia
ER = European Russia

Note: The Soviet Union operates transmitters on virtually 5 kiloHertz increments throughout the major international broadcasting bands as well as many others on "out of band" frequencies. Transmitters operating in these frequency ranges rarely stay the same for very long insofar as site locations are concerned.

Soviet Transmitter Sites Verified By U.S. DXers

European RSFSR
Archangelsk
Armavir
Gorki
Kalach
Kalinin
Kazan
Kingisepp
Konevo
Kursk
Leningrad
Mitchurinsk
Moscow
Murmansk
Orenburg
Riazan
Serpukhov
Ufa
Vologda
Voronezh
Tula
Zhigulevsk

Byelorussia SSR
Minsk
Moghilev
Orsha

Uzbek SSR
Tashkent

Latvian SSR
Riga

Azerbaijan SSR
Baku

Karelian SR
Petrozavodsk

Kirghiz SSR
Frunze

Armenian SSR
Yerevan

Asiatic RSFSR
Anadyr
Blagoveschensk
Chita
Irkutsk
Kenga
Khabarovsk
Khanty Mansiysk
Komsomolsk-on-Amur
Krasnoyarsk
Magadan
Nikolayevsk-on-Amur
Okhotsk
Omsk
Petropavlovsk-Kamchatka
Sverdlovsk
Tyumen
Ulan Ude
Vladivostok
Yakutsk
Yuzhno-Sakhalinsk

Tadzhik SSR
Dushanbe

Georgia SSR
Tbilisi

Turkmen SSR
Ashkhabad

Kazakh SSR
Alma Ata
Dzhambul

Lithuania SSR
Kaunas

Estonia SSR
Tallinn

Ukraine SSR
Ivano-Frankovsk
Kharkov
Kiev
Lvov
Simferopol
Starobelsk
Nikolayev
Uzhgorod
Vinnitsa

List courtesy of Alvin V. Sizer

Soviet Station Addresses

Radio Moscow
Moscow, USSR
(first line of address should specify service, i.e. North American Service)

Radio Mayak
Radiostansiya Atlantika
Radio Magallenes
Radiostansiya Rodina
c/o Radio Moscow

Radio Tikhy Okean
Ul. Uborevista 20-A
Vladivostok Central 690000

Radio Yerevan
5 Mravian Str.
Yerevan
Armenian SSR
USSR

Radio Baku
Ul. M. Guzeina 1
370011 Baku
Azerbaijan SSR
USSR

Byelorussian Radio
Ul. Krasnaya-4
220807 Minsk
Byelorussian SSR
USSR

Eesti Radio
Lomonossovi 21
200100 Tallinn
Estonian SSR
USSR

Radio Tbilisi
68 Lenin Str.
380015 Tbilisi
Georgian SSR
USSR

Radio Alma Ata
Ul. Mira 175-A
480013 Alma Ata
Kazakhstan SSR
USSR

Radio Frunze
Pr. Molodoy Gavardii 63
720885 Frunze
Kirghiz SSR
USSR

Latvian Radio
17. junija Laukoma 8
226935 Riga
(or P.O. Box 266)
Latvian SSR
USSR

Radio Vilnius
Konarsiko 49
Vilnius
Lithuanian SSR
USSR

Radio Dushanbe
Ul. Chapaeva 25
734025 Dushanbe
Tadzhikistan SSR
USSR

Ashkhabad Radio
Ashkabad
Turkmen SSR
USSR

Radio Kiev
26 Kreshchatik Ave.
Kiev,
Ukraine SSR
USSR

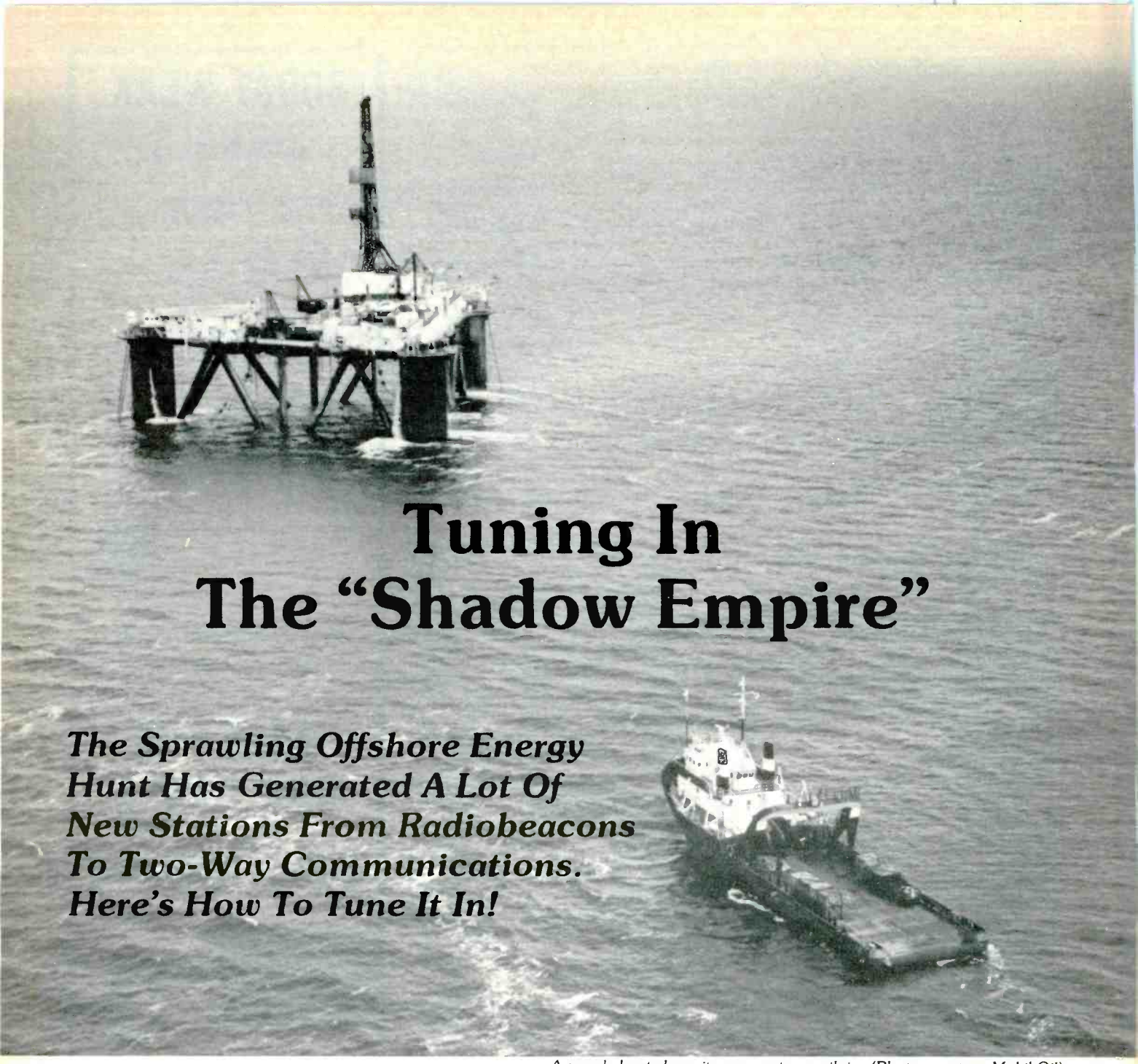
Radio Tashkent
Khorezmiskaya 49
700047 GSP
Tashkent
Uzbekistan SSR
USSR

Radio Peace and Progress
Moscow,
USSR

Time stations:

State Committee of Standards of the Council of Ministers of the USSR
9 Leninskii Prospekt
117049 Moscow

TASS News Agency
Tverskoi Bulvar 10-12
Moscow



Tuning In The "Shadow Empire"

The Sprawling Offshore Energy Hunt Has Generated A Lot Of New Stations From Radiobeacons To Two-Way Communications. Here's How To Tune It In!

A supply boat chugs its way up to an oil rig. (Photo courtesy Mobil Oil)

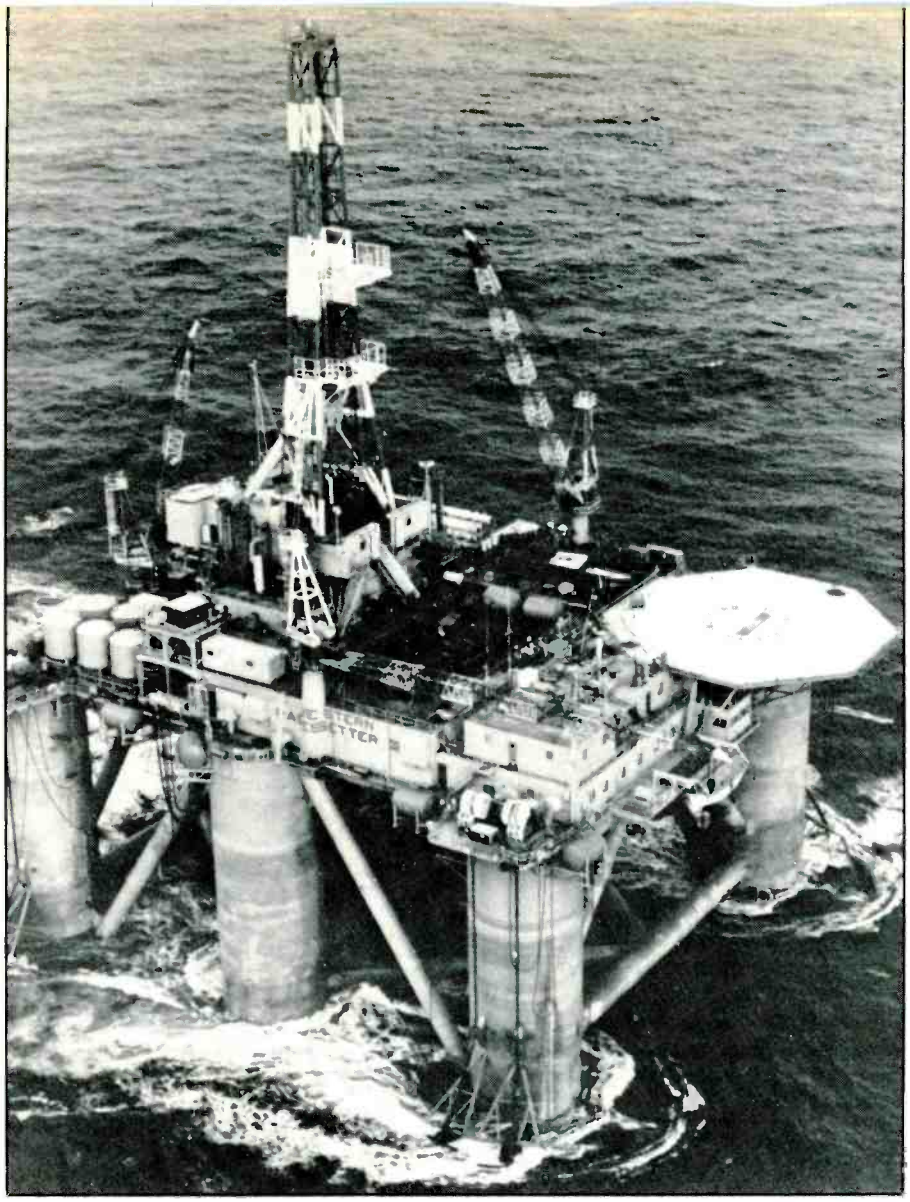
BY JIM C. TUGWELL, KTX5SM

Most folks take for granted that North America consists of a single large land mass with its edges sprinkled with various-sized islands. But it's more than that when you take into account the many man-made extensions to North America in the form of hundreds of oil and natural gas drilling platforms that have been built along our shores. These are mini-communities with living quarters, stores, helicopter landing pads, telephones, entertainment and recreational facilities, and lots of citizens. These are rather permanent islands, sunk into the sea floor on concrete or steel pilings. Indeed, they are more formidable, productive, and populated than many natural islands.

Add to these permanent man-made islands, those other similar facilities of a semi-permanent nature, plus oil drilling and exploration ships and you've really got what amounts to another country, or at least another state. Since there are no landline communications to and from these scattered oceanic outposts, there is an amazing amount of radio communication traffic required to accommodate their presence off our coastlines. They can be heard on frequencies below 500 kHz, on HF channels, and on the VHF low and high bands. Much of this can be copied throughout North America—even the low band VHF traffic when propagation conditions are suitable.

I have found these communications to be so fascinating and extensive that I've concentrated my monitoring efforts on hearing these man-made outposts, most of which are offshore in the Gulf of Mexico, off the coast of southern California, and in the Georges Banks area of the middle Atlantic states.

You'll find that the people who populate this "Shadow Empire" (as I call it) are truly citizens of their own private world, complete with a unique vocabulary. Whether it's an oil worker calling home to find out family news, an engineer calling in a technical problem to the home office, a supply vessel or chopper working out docking/landing arrange-



The gigantic oil rig known as the Western Pacesetter is more or less a small village.

ments, or the workers on one drilling platform giving some gentle ribbing to the guys on another rig, there's always something interesting and unusual to hear. Here are some of the ways to do it and places to listen.

Radiobeacons

You may not be aware that many offshore platforms are also radiobeacons, yes, radiobeacons very similar to those used at an airport. Supply ships and helicopters use these non-directional beacons to home in on, because locating a specific oil or gas drilling platform in the vast expanse of the Gulf of Mexico (and distinguishing one platform from a dozen other nearby platforms which look almost identical) is not especially simple.

These beacons have identifying letters, similar to all other aeronautical beacons, and they operate in the same band (200 to 400 kHz in most cases) used by aeronautical beacons. While these stations do actually have callsigns, they are seldom heard on the air. For instance, beacon "PDO" on 344 kHz is actually licensed by the FCC as WRLB2362, while "RAT" on 201 kHz (actually 201.51 kHz) is licensed under the callsign WRLB2260. The "WRLB" callsign prefix is assigned to "radiolocation beacons." Forget the actual callsigns and pay attention to the identifying letters, which are sent over and over in very slow CW.

While these beacons have been snagged by listeners over considerable distances from time to time, they are true DX challenges. For instance, beacon "BVP" (363 kHz) is located on a Kerr-McGee platform and is running only 25 watts. Moreover, unlike a regular airport radiobeacon which operates continuously, "BVP" is put on the air only when men or equipment are being transferred to the platform. This rig is within 100 miles of Galveston at 28-06 N, 94-31 W. Nevertheless, a number of beacon fans have logged this station.

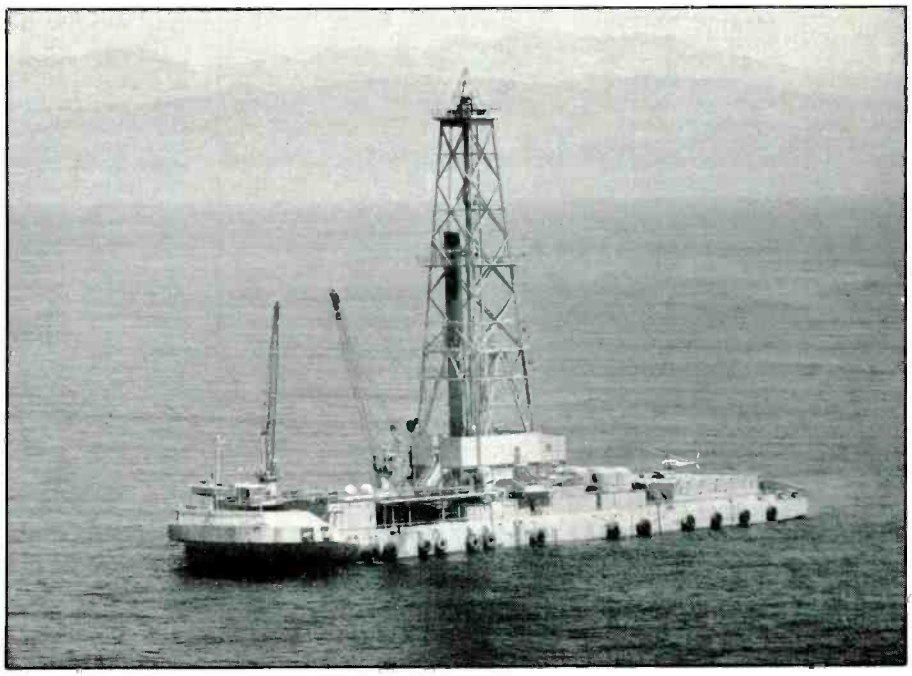
A single (virtually) complete roster of all North American offshore radiobeacons from oil/gas platforms and ships has never before been compiled, that is until now. Accompanying this story in *POP'COMM* is the most comprehensive listing of these stations yet offered. Out of the 250 or so radiobeacons listed, you should be able to hear at least several with moderate effort over several good nights of tuning. With some diligence, you'll probably expand your loggings.

Aeronautical Communications

Virtually all offshore drilling platforms and ships contain landing facilities for helicopters which come and go on a regular basis. These helicopters transport crew members and small amounts of supplies from shore or other platforms. These activities are the cause for a considerable amount of communications activity which occupies HF and VHF spectrum.

Oil rig aero activities that can be monitored on a communications receiver take place on 2778, 3019, 3434, 4672, 5463,

West coast rig #6 located off the coast of California is a small floating city complete with heliport. (Photo courtesy Mobil Oil)



Some Oil Company Frequencies Offshore Oil Rig Radiobeacons

ID	kHz	Location	Owner/Operator
AAK	224	GULF OF MEXICO	EXXON
ACI	229	GULF OF MEXICO	ARCO
ADN	375	GULF OF MEXICO	UNION OIL
AFH	392	ATLANTIC COAST	EXXON
AGV	211	GULF OF MEXICO	TRANSCONTINENTAL OIL
ANO	229	GULF OF MEXICO	ANR PRODUCTION CO
AQW	335	GULF OF MEXICO	SUN OIL
AUQ	283	GULF OF ALASKA	
AWF	392	GULF OF MEXICO	TRANSCONTINENTAL OIL
AZY	272	GULF OF MEXICO	ZAPATA OIL
BBU	400	GULF OF MEXICO	DIAMOND M CO
BKP	230	ATLANTIC COAST	CHEVRON OIL
BKP	237	(SHIP) BEN OCEAN LANCER (NWT CANADA)	
BSZ	419	(BARGE) ST MATHEWS ISL (ALASKA)	ARCO OIL
BVP	363	GULF OF MEXICO	KERR-MC GEE CORP
CAJ	341	GULF OF MEXICO	PENNZOIL
CGS	281	GULF OF MEXICO	SHELL OIL
CJQ	411	ATLANTIC COAST	MOBIL OIL
CNN	229	GULF OF MEXICO	GULF OIL
CQF	359	GULF OF MEXICO	SHELL OIL
CQK	329	GULF OF MEXICO	ROWAN
CSW	245	GULF OF MEXICO	CITIES SERVICE OIL
CUY	403	GULF OF MEXICO	MARATHON OIL
CZS	260	GULF OF MEXICO	KERR-MC GEE CORP
DDZ	251	ATLANTIC COAST	TEXACO
DPW	403	GULF OF MEXICO	MARATHON OIL
DQK	355	CALIF COASTAL	CHEVRON OIL
DQK	525	CALIF COASTAL	CHEVRON OIL
DYW	402	GULF OF MEXICO	DIAMOND M CO
DZF	368	GULF OF MEXICO	SOUTHERN AVIONICS
DYW	400	GULF OF MEXICO	DIAMOND M CO
DYW1	400	GULF OF MEXICO	DIAMOND M CO
EAB	403	GULF OF MEXICO	MARATHON OIL
ECX	223	ATLANTIC COAST	EXXON
EEM	253	GULF OF MEXICO	C&G PRODUCTION CO
EJT	224	GULF OF MEXICO	EXXON
EKU	281	GULF OF MEXICO	SHELL OIL
EQN	382	GULF OF MEXICO	PENNZOIL
EXB	401	CALIF COAST	EXXON
EXG	224	GULF OF MEXICO	EXXON
EXU	343	GULF OF MEXICO	EXXON
EXU1	392	GULF OF MEXICO	EXXON
EXU2	392	GULF OF MEXICO	EXXON
EXU3	392	GULF OF MEXICO	EXXON
EYS	224	GULF OF MEXICO	EXXON
EZR	283	BERING SEA, ALASKA	
FAV	275	GULF OF MEXICO	
FCW	229	GULF OF MEXICO	ARCO OIL
FKU	281	GULF OF MEXICO	SHELL OIL
FLI	215	GULF OF MEXICO	ARCO OIL
FQN	382	GULF OF MEXICO	PENNZOIL
FUD	242	GULF OF MEXICO	SABINE CORP
FWN	224	GULF OF MEXICO	EXXON
FXR	401	CALIF COAST	EXXON
FZQ	403	GULF OF MEXICO	MARATHON OIL
F2	335	(SHIP) EXPLORER I (CANADA)	
GCX	359	GULF OF MEXICO	SHELL OIL
GEV	275	GULF OF MEXICO	CHEVRON
GFC	224	GULF OF MEXICO	EXXON
GIU	261	CALIF COAST	CHEVRON
GKZ	215	GULF OF MEXICO	ARCO
GMC	275	GULF OF MEXICO	CHEVRON
GMC	343	ATLANTIC COAST	
GOP	376	NORTH PACIFIC COAST	
GSC	281	GULF OF MEXICO	SHELL OIL
GSC	359	GULF OF MEXICO	SHELL OIL
GVJ	275	GULF OF MEXICO	CHEVRON
GXX	359	GULF OF MEXICO	SHELL OIL
G9	413	(SHIP) CLAYTON M JOHNSON (LABRADOR)	
HGH	215	GULF OF MEXICO	MOBIL
HKQ	281	GULF OF MEXICO	SHELL OIL
HNF	215	GULF OF MEXICO	MOBIL
HOQ	212	CALIF COAST	EXXON
HPM	215	GULF OF MEXICO (HARENA PLATFORM)	
HQK	218	GULF OF MEXICO	SHELL OIL
HXA	224	GULF OF MEXICO	EXXON
HXA1	224	GULF OF MEXICO	EXXON
HXA2	224	GULF OF MEXICO	EXXON
HXA3	224	GULF OF MEXICO	EXXON
HXA4	224	GULF OF MEXICO	EXXON
HXC	219	CALIF COAST	EXXON
HXS	227	CALIF COAST	GLOBAL MARINE
HXS	234	CALIF COAST	GLOBAL MARINE
HXS	239	CALIF COAST	GLOBAL MARINE
IHW	368	GULF OF MEXICO	SOUTHERN AVIONICS
IHX	368	GULF OF MEXICO	SOUTHERN AVIONICS
IHY	368	GULF OF MEXICO	SOUTHERN AVIONICS
IHZ	368	GULF OF MEXICO	SOUTHERN AVIONICS
IKD	272	GULF OF MEXICO	ZAPATA OIL
ILC	224	GULF OF MEXICO	EXXON
IOG	379	GULF OF MEXICO	TEXAS EASTERN
IPQ	266	GULF OF MEXICO	PENNZOIL
IQY	224	GULF OF MEXICO	EXXON
JEU	368	GULF OF MEXICO	SOUTHERN AVIONICS
JGU	371	GULF OF MEXICO	PETROLEUM HELICOPTERS
JGU	400	GULF OF MEXICO	PETROLEUM HELICOPTERS
JGU	403	GULF OF MEXICO	PETROLEUM HELICOPTERS
JHU	404	GULF OF MEXICO	PETROLEUM HELICOPTERS
JJQ	215	GULF OF MEXICO	ARCO
JKH	272	GULF OF MEXICO	
JMZ	215	GULF OF MEXICO	MOBIL OIL
JVW	266	GULF OF MEXICO	PENNZOIL
JZN	224	GULF OF MEXICO	EXXON
KZZ3	371	GULF OF MEXICO	OCCIDENTAL OIL
LGN	275	GULF OF MEXICO	CHEVRON
LQB	224	GULF OF MEXICO	EXXON
LWU	215	GULF OF MEXICO	ARCO
L9	399	(SHIP) WEST VENTURE (NEWFOUNDLAND)	
MBZ1	215	GULF OF MEXICO	MOBIL OIL
MBZ1	257	GULF OF MEXICO	MOBIL OIL
MBZ2	215	GULF OF MEXICO	MOBIL OIL
MBZ3	215	GULF OF MEXICO	MOBIL OIL
MBZ4	215	GULF OF MEXICO	MOBIL OIL
MBZ5	215	GULF OF MEXICO	MOBIL OIL
MBZ6	215	GULF OF MEXICO	MOBIL OIL
MBZ7	215	GULF OF MEXICO	MOBIL OIL
MBZ8	215	GULF OF MEXICO	MOBIL OIL
MBZ9	215	GULF OF MEXICO	MOBIL OIL
MDJ	414	GULF OF MEXICO	MARINE DRILLING
ME	229	GULF OF MEXICO	ARCO
ME	230	GULF OF MEXICO	MISSION DRILLING
MEK	332	GULF OF MEXICO	MISSION DRILLING
MGT	253	GULF OF MEXICO	FIELD SWIRE
MLN	249	CALIF COAST	MOBIL
MPC	332	GULF OF MEXICO	MC MORRAN PRODUCTION CO
MQL	221	GULF OF MEXICO	EXXON
MQL	224	GULF OF MEXICO	EXXON
MSU	332	GULF OF MEXICO	GULF OIL
MWP	332	GULF OF MEXICO	MICH-WISC PIPELINE
MWV	403	GULF OF MEXICO	TRANSCONTINENTAL OIL
MXN	364	GULF OF MEXICO	HOUSTON OFFSHORE INT'L
ODV	249	GULF OF MEXICO	MARATHON OIL
OFI	215	GULF OF MEXICO	MOBIL OIL
OFI	257	GULF OF MEXICO	MOBIL OIL
OGV	397	GULF OF ALASKA	
OHX	215	GULF OF MEXICO	MOBIL
OHX	257	GULF OF MEXICO	MOBIL
OHX1	257	GULF OF MEXICO	MOBIL
OIY	215	GULF OF MEXICO	MOBIL
OIY1	215	GULF OF MEXICO	MOBIL
OIY2	215	GULF OF MEXICO	MOBIL
OMX	275	GULF OF MEXICO	GLOBAL MARINE
ONJ	392	GULF OF MEXICO	TRANSCONTINENTAL OIL
OPS	224	GULF OF MEXICO	EXXON
OWZ	215	GULF OF MEXICO	ARCO
OYK	266	GULF OF MEXICO	PENNZOIL
OYR	359	ATLANTIC COAST	SHELL OIL
PCC	355	CALIF COAST	
PCR	242	GULF OF MEXICO	SAVAGE DRILLING
PDO	344	GULF OF MEXICO	PLACID OIL
PFY	224	GULF OF MEXICO	EXXON
PHI	371	GULF OF MEXICO	PETROLEUM HELICOPTERS
PHI	403	GULF OF MEXICO	PETROLEUM HELICOPTERS
PPP	215	GULF OF MEXICO	ARCO
PWW	355	CALIF COAST	CHEVRON
PWW	525	CALIF COAST	CHEVRON
PWX	229	GULF OF MEXICO	GULF OIL
PXF	224	GULF OF MEXICO	EXXON
PZO	329	GULF OF MEXICO	ROWAN DRILLING
P9	354	(SHIP) SEDCO (NEWFOUNDLAND)	
Q9	330	(SHIP) ZAPATA UGLAND (NEWFOUNDLAND)	
RAT	201	GULF OF MEXICO	READING & BATES DRILLING
RDC	329	GULF OF MEXICO	ROWAN DRILLING
RFQ	379	GULF OF MEXICO	TEXAS EASTERN
RFW	329	GULF OF MEXICO	ROWAN DRILLING
RKP	230	ATLANTIC COAST	CHEVRON
RKU	254	GULF OF MEXICO	GULF OIL
RQJ	329	GULF OF MEXICO	ROWAN DRILLING
RQK	329	GULF OF MEXICO	ROWAN DRILLING
RUU	254	GULF OF MEXICO	GULF OIL
RWW	329	GULF OF MEXICO	ROWAN DRILLING
R9	373	(SHIP) PELLERIN (LABRADOR)	
SCU	238	CALIF COAST	MARATHON
SKP	224	GULF OF MEXICO	EXXON
SOH	403	GULF OF MEXICO	MARATHON
SQZ	257	GULF OF MEXICO	MOBIL
SSE	429	(SHIP) SEDCO 708 (ALASKA)	
SSJ	335	GULF OF MEXICO	SUN OIL
SZB	224	GULF OF MEXICO	EXXON
SZW	272	GULF OF MEXICO	SUPERIOR/ZAPATA

ID	kHz	Location	Owner/Operator
TEX	224	GULF OF MEXICO	HOUSTON HELICOPTERS
TDI	400	GULF OF MEXICO	TELEDYNE
TGQ	354	GULF OF MEXICO	TRANSCONTINENTAL
TIG	229	GULF OF MEXICO	GULF OIL
TOJ	354	GULF OF MEXICO	TRANSCONTINENTAL OIL
TOJ5	354	GULF OF MEXICO	TRANSCONTINENTAL OIL
TQC	400	GULF OF MEXICO	TELEDYNE
TUY	400	GULF OF MEXICO	TELEDYNE
TVG	253	GULF OF MEXICO	TEXAS PIPELINE CO
TWP	257	GULF OF MEXICO	WESTERN OCEANIC
TWW	400	GULF OF MEXICO	TELEDYNE
TXM	354	GULF OF MEXICO	TRANSCONTINENTAL OIL
TYA	219	GULF OF MEXICO	WESTERN OCEANIC
TZC	201	GULF OF MEXICO	ZAPATA
TZC	272	GULF OF MEXICO	ZAPATA
T9	263	(SHIP) NEDDRILL (LABRADOR)	
UAE	229	GULF OF MEXICO	ANR PRODUCTION CO
UFS	359	GULF OF MEXICO	SHELL OIL
UGD	403	GULF OF MEXICO	MARATHON OIL
UKJ	359	GULF OF MEXICO	SHELL OIL
UMP	400	GULF OF MEXICO	PETROLEUM HELICOPTERS
UMP	403	GULF OF MEXICO	PETROLEUM HELICOPTERS
UPE	253	GULF OF MEXICO	DIXILIN-FIELD DRILLING
UQZ	329	GULF OF MEXICO	ROWAN DRILLING
USL	359	GULF OF MEXICO	SHELL OIL
UTC	332	GULF OF MEXICO	CHARLES DRILLING
UWI	224	GULF OF MEXICO	EXXON
UZP	272	GULF OF MEXICO	ZAPATA
UZP	275	GULF OF MEXICO	ZAPATA
U9	302	(SHIP) PANCORSE 1 (LABRADOR)	
VGE	223	ATLANTIC COAST	EXXON
VIM	224	GULF OF MEXICO	EXXON
VKY	272	GULF OF MEXICO	ZAPATA
VMN	335	GULF OF MEXICO	SUN OIL
VUW	215	GULF OF MEXICO	MOBIL
VYZ	261	CALIF COAST	CHEVRON
VXQ	368	GULF OF MEXICO	SOUTHERN AVIONICS
VZD	257	GULF OF MEXICO	ZAPATA
VZD	272	GULF OF MEXICO	ZAPATA
V9	413	(SHIP) SEDCO 709 (CANADA)	
WYU	400	GULF OF MEXICO	DIAMIND DRILLING
W9	287	(SHIP) GLOMAR ATLANTIC (LABRADOR)	

ID	kHz	Location	Owner/Operator
XAX	264	LWR COOK INLET ALASKA	ARCO
XCC	389	CALIF COAST	SHELL OIL
XDD	400	GULF OF MEXICO	DIAMOND M
XHC	219	CALIF COAST	EXXON
XIE	354	GULF OF MEXICO	HOUSTON HELICOPTERS
XJM	400	GULF OF MEXICO	PETROLEUM HELICOPTERS
XKK	272	GULF OF MEXICO	CHEVRON
XKZ	229	GULF OF MEXICO	GULF OIL
XOU	389	CALIF COAST	SHELL OIL
XPJ	400	GULF OF MEXICO	PETROLEUM HELICOPTERS
XPJ	403	GULF OF MEXICO	PETROLEUM HELICOPTERS
XPL	394	BERING SEA ALASKA	ARCO
XSM	388	GULF OF MEXICO	UNION OIL
XSM1	388	GULF OF MEXICO	UNION OIL
XSM2	388	GULF OF MEXICO	UNION OIL
XSM3	388	GULF OF MEXICO	UNION OIL
XSS	350	GULF OF MEXICO	TENNECO
XSS1	350	GULF OF MEXICO	TENNECO
XSS2	350	GULF OF MEXICO	TENNECO
XSS3	350	GULF OF MEXICO	TENNECO
XSS9	350	GULF OF MEXICO	TENNECO
XTQ	361	GULF OF MEXICO	TEXAS OIL
XUS	355	GULF OF MEXICO	UNION OIL
XUS	388	GULF OF MEXICO	UNION OIL
XUS1	388	GULF OF MEXICO	UNION OIL
XWL	332	GULF OF MEXICO	MICH-WISC PIPELINE
XZX	515	(SHIP) SEDCO 708 (ALASKA)	
X9	265	(SHIP) JOHN SHAW (NEWFOUNDLAND)	
YKK	272	GULF OF MEXICO	ZAPATA
ZAP	275	GULF OF MEXICO	ZAPATA
ZAP	301	GULF OF MEXICO	ZAPATA
Z9	367	(SHIP) BOWDRILL 1 (CANADA)	
Z25	215	GULF OF MEXICO	ZAPATA
Z26	301	GULF OF MEXICO	ZAPATA
2V	413	(SHIP) BANKSLAND SURVEYOR (CANADA)	
3G	200	SEISMIC VESSEL ATLANTIC COAST	
3G	267	SEISMIC VESSEL ATLANTIC COAST	
3J	377	(SHIP) POLAR EXPLORER (CANADA)	
3W	218	ZAPATA DRILL RIG 31 NOVA SCOTIA	ZAPATA
4S	300	(SHIP) EXPLORER IV (NWT)	
7G	247	(SHIP) EXPLORER II) (NWT)	

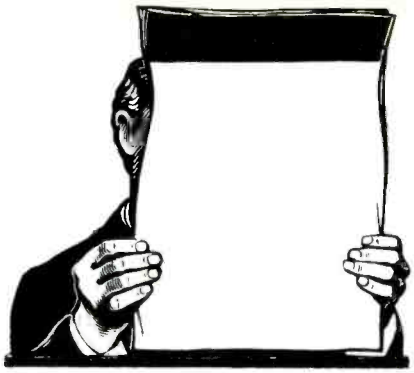
and 5508 kHz, upper sideband. At night, communications on these frequencies can be copied over great distances, although there is far less activity on them at night than during the day.

For those who live within 100 miles of a coastline where there is offshore oil/gas drilling or exploration, there is plenty of scanner frequency activity on the aero frequencies. For instance, 122.725, 122.75, 122.85, 122.9, 123.025, 123.05, and 123.075 MHz are sure bets. As noted in the new 4th Edition of the *AIR-SCAN* directory, listeners in the Gulf of Mexico area can also expect activity on these frequencies:

128.95 MHz	130.75 MHz
129.05	130.85
129.1	131.05
129.15	131.2
129.35	131.35
129.375	131.4
129.575	131.475
130.1	131.5
130.4	131.575
130.45	131.6
130.5	131.9
	132.0

Maritime Frequencies

Communications are usually necessary between platforms and supply ships bringing in heavy equipment, certain supplies, and also some crew members. The most popular frequencies for this are those within the VHF FM maritime band which are allocated for commercial purposes, such as



The Clandestine Confidential Newsletter

A new publication devoted to clandestine stations and programs, *The Clandestine Confidential Newsletter* is designed to keep you up to date on this intriguing aspect of shortwave listening and DXing.

C-C-N will be published six times a year, beginning with the February, 1984 issue. It will contain the latest frequency and schedule information, monitoring data, background information, addresses, and features on new and old stations.

C-C-N will serve as a continuing updater to the new book *Clandestine Confidential,* being published by Universal Electronics.

Subscriptions to *C-C-N* are $10.00 per year in North America, $13.00 overseas, payable in cash, check or money order.

Also available: *List of Clandestines By Time* and *List of Clandestines By Frequency* for $3.95 each.

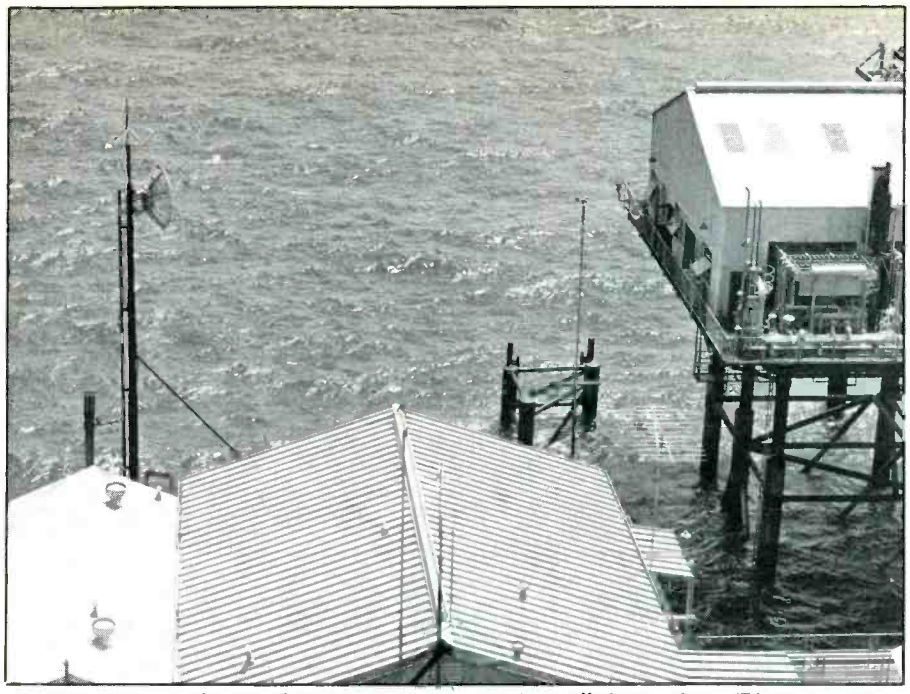
To subscribe, send your remittance to:

C-C-N,
Gerry L. Dexter,
RR4 Box 110,
Lake Geneva, WI 53147, U.S.A.

Petroleum Radio Service (Selected Frequencies)

25.02 MHZ	31.48 MHZ	48.64 MHZ	49.08 MHZ
25.06	31.52	48.66	49.10
25.10	31.60	48.68	49.12
25.12	31.64	48.70	49.14
25.14	31.72	48.72	49.16
25.16	31.76	48.74	49.18
25.18	33.18	48.76	49.20
25.20	33.20	48.78	49.22
25.22	33.22	48.80	49.24
25.24	33.24	48.82	49.26
25.26	33.26	48.84	49.28
25.28	33.28	48.86	49.30
25.30	33.30	48.88	49.32
25.32	33.32	48.90	49.34
30.66	33.34	48.92	49.36
30.70	33.36	48.94	49.38
30.74	33.38	48.96	49.40
30.78	35.48	48.98	49.42
30.82	48.56	49.00	49.44
31.32	48.58	49.02	49.46
31.40	48.60	49.04	49.48
31.44	48.62	49.06	49.50

Company Name	Offshore Frequencies (MHz)
AMINOIL USA	49.50
AMOCO	153.23 153.335
ARCO	48.60 156.90 156.975
CHEVRON	33.18 49.36 153.11 156.50
CITIES SERVICE	33.28 49.16
CONOCO	33.20 33.28 33.38
DIAMOND M	33.32 156.50
DIXILYN-FIELD DRILLING	33.30 49.34 49.48
EXXON	33.36 48.86 156.45 158.37
FORREST OIL	153.56
GENERAL AMERICAN	153.065
GETTY OIL	49.98
GLOBAL MARINE	49.18 156.975
GULF OIL	49.02
HOUSTON OFFSHORE INT'L	156.55
KERR-MCGEE	30.66 33.28
KEYDRIL CO	156.45
MARATHON OIL	49.30 49.42
MARINE DRILLING CO	49.24
MC MORRAN EXPLORATION	33.24 48.96
MICH-WISC PIPELINE	49.22 156.45 156.60 156.90
MOBIL OIL	49.18
NATOMAS NORTH AMERICAN	48.84 152.30
OCCIDENTAL PETROLEUM	153.185 154.175 154.515
PENNZOIL PRODUCING	49.04
PLACID OIL	49.14 49.28
READING & BATES DRILL	43.04
ROWAN CO	152.975
SABINE CORP	156.90 157.025
SHELL OIL	48.56 48.64 48.70
SONAT EXPLORATION	153.365 156.45 156.50
SOUTHERN NATURAL GAS	49.06
SUN OIL	33.34 48.62 48.64 49.34
SUPERIOR OIL	153.095 153.575 153.605
TELEDYNE MOVABLE OFFSHORE	33.24
TENNECO	33.26 158.22 158.325
TEXACO	153.68 156.45 156.90
TEXAS EASTERN	48.82
TEXAS GAS TRANSMISSION	48.82
TEXOMA PRODUCTION CO	49.08 156.95
TRANSCONTINENTAL GAS	48.74 49.48 156.90
TRUNKLINE GAS	48.80 49.02
UNION OIL	33.34 33.36 48.66
ZAPATA OFF-SHORE	156.50



This is a close-up of some of the antennas on a modern off-shore oil rig. (Photo courtesy Mobil Oil)

156.05, 156.175, 156.35, 156.45, 156.50, 156.55, 156.90, 156.95, 156.975, and 157.025 MHz.

On the HF bands, maritime simplex frequencies are often used between the platforms and company offices for communications relating to business and operational matters, and sometimes the rigs are noted on these frequencies communicating with one another. Transmissions are in upper sideband on the following frequencies:

2096.5 kHz	8294.2 kHz
2738	12429.2
2830	12432.3
4125	12435.4
4143.6	16587.1
4419.4	16590.2
6218.6	16593.3
6221.6	22124
6521.9	22127.1
8291.1	22133.3
	22136.4

The Petroleum Radio Service

Notwithstanding any of the frequencies mentioned thusfar, the FCC has set aside a great number of frequencies for oil/gas exploration and drilling companies. These frequencies are in heavy use by offshore facilities and when DX conditions are right, those below 50 MHz can "skip" across the continent. The frequencies below 30 MHz use SSB, those above 30 MHz are FM. The frequencies to tune are shown in the Petroleum Radio Service (selected frequencies) chart.

Telephone Calls

Those who work on these offshore mini-cities invariably have considerable reason to communicate with the shore for personal reasons, or to place long-distance business calls that cannot be handled on the other frequencies thusfar shown. This brings about more frequencies of interest. Phone calls have been monitored to and from the platforms on VHF channels used for both mobile and marine operator calls. On HF bands, calls have been noted on channels most often used by ships placing high-seas telephone calls. Since the great majority of American offshore oil/gas rigs are in the Gulf of Mexico, many of these HF calls are placed through Mobile Marine Radio Inc. station WLO in Mobile, Alabama, a station that can be monitored throughout the nation most evenings. Here are the WLO transmitting/receiving channels:

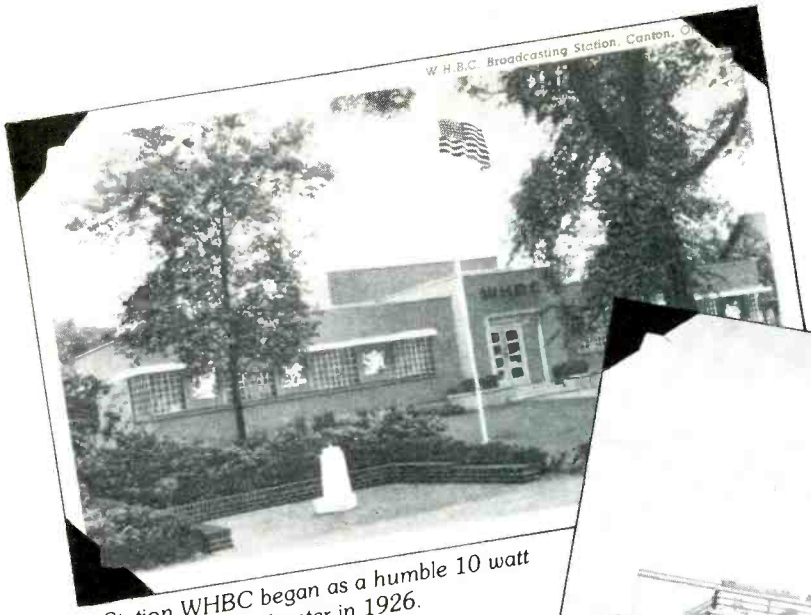
Oil Rigs	Shore Station
8266.3 kHz	8790.2 kHz
8281.8	8805.7
8284.9	8808.8
12364.1	13134.1
12404.4	13175.2
12407.5	13178.3
16478.6	17251.5
16556.1	17329
16584	17356.9
22080.6	22676.6
22093	11689
22111.6	22707.6

Transmissions exchanged with WLO are upper sideband mode.

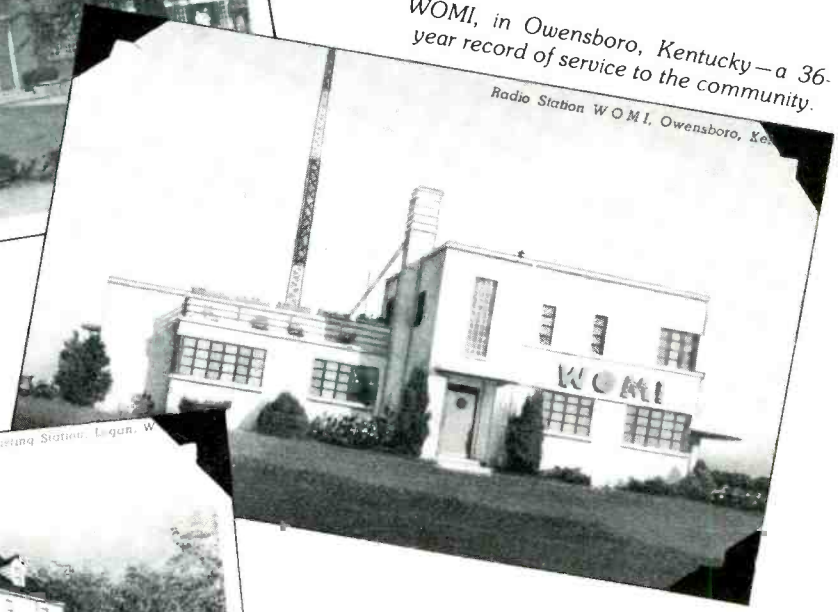
Odds And Ends

Oil rigs in Canadian waters have been heard on 5281.5 and 5744 kHz communicating with shore stations. In addition to the other frequencies shown in this report, American oil rigs have been reported at various times on the following frequencies: 4550, 4565, 4572, 4613.5, 4634.5, 4637.5, 4826, and 5435 kHz.

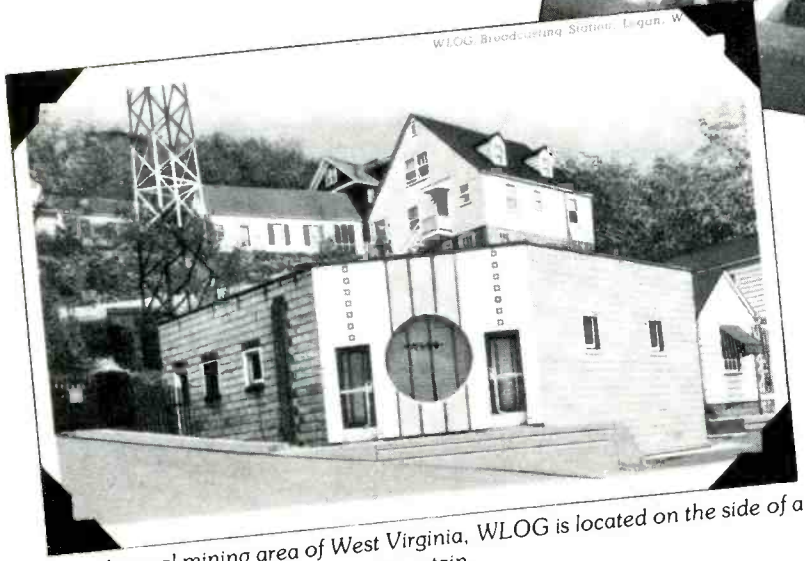
As you can see, the communications links to and from these frontier mini-cities located offshore are many, indeed. As I mentioned, they exist as a "shadow empire," a network of offshore cities which (today) constitute virtually a nation unto itself, with thousands of its own citizens—although, from a legal standpoint, they are really extensions of the nations under whose auspices they exist. Nevertheless, they offer a unique class of stations that are neither ship stations nor shore stations, and which are worthy of consideration as "something different."



Station WHBC began as a humble 10 watt broadcaster in 1926.



WOMI, in Owensboro, Kentucky—a 36-year record of service to the community.



From the coal mining area of West Virginia, WLOG is located on the side of a mountain.

I Can See It Now

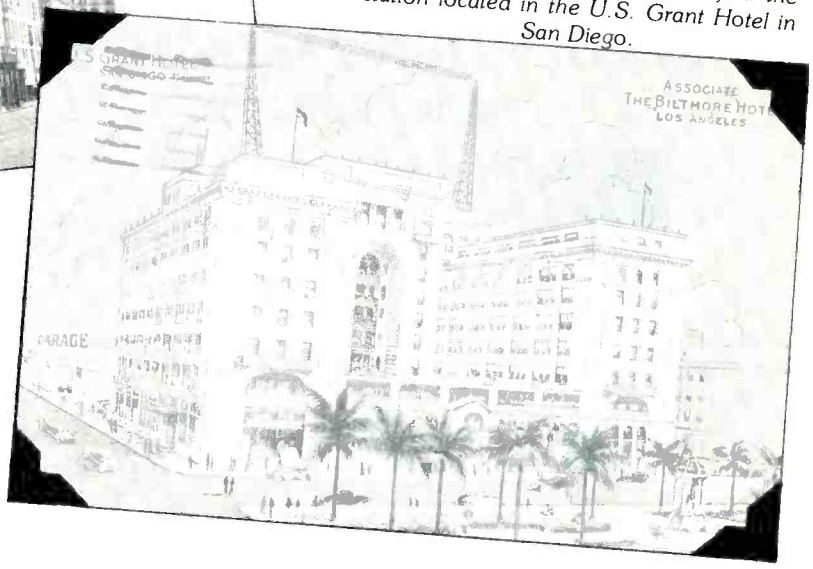
Looking Back Into Radio's Golden Era

BY ALICE BRANNIGAN

Many have noted that the backbone of American radio is the good old meat and taters local broadcaster dedicated to serving one specific community. Their own communities come to rely upon such stations for local news and weather, information on area events, perhaps farm prices, and a generous helping of music which is fine tuned to the tastes of residents of the area. Because such stations play an important part in the lives of those who reside in a community, they become local institutions and therefore continue in operation for many decades. They even become so much a part of the community that they show up on picture postcards, on a par with other local landmarks. That's lucky for us, because we have been able to gather some of these cards and can therefore take a look at a couple of these stations from our nation's heartland.

An example of this is station WHBC in Canton, Ohio. WHBC went on the air in 1925 and that makes it one of the oldest broadcasters in the United States. It has been in Canton serving the community for a solid 60 years. The station first took to the air with only 10 watts on 1200 kHz and was operated by St. John's Catholic Church. Records from the late 1940's show that it was then owned by the Ohio Broadcasting Company at 550 Market Avenue South, with the transmitter located on the Broad Avenue Extension N.W. It had moved to 1480 kHz and was runing 1 kilowatt. Current records show WHBC still on 1480 kHz, but with 5 kilowatts and an FM outlet on 94.1 MHz. It is owned by the Beaverkettle Co. The postcard view we have of WHBC is undated, but shows a modern orange-brick

Obviously an early wireless station, the exact identification of this station atop the Hotel Cadillac in Detroit remains a mystery.



A mystery solved. Readers identified the station located in the U.S. Grant Hotel in San Diego.

structure on an attractive wooded lot.

Station WOMI in Owensboro, Kentucky, took to the airwaves in 1938 on 1500 kHz with 250 watts. It was owned by the Owensboro Broadcasting Company. After the big frequency switch which affected most broadcasters just prior to WWII, WOMI ended up on 1490 kHz, just a hop and a jump away from where it began. Today, this station still operates on 1490 kHz, but the power is 1 kilowatt (250 watts at night). Our (undated) postcard shows WOMI in a building which has a definite art deco style and which sports a single vertical radiator in the back yard. The owner of the station is still the Owensboro Broadcasting Company; after 36 years of serving Canton, it's still going strong.

At an intersection on the side of a rather steep looking grade in Logan, West Virginia, sits station WLOG on a postcard dated 1953. WLOG came on the air in 1940. The area around Logan is thick with coal mines and about the only time you can get away from the smog is when you go over another of West Virginia's picturesque mountains. It's real "Hatfield and McCoy" country and there's a nearby monument to Anse McCoy who started it all. Well, Anse did not start WLOG, anyway. When WLOG first put its carrier on the air (1200 kHz, 100 watts), it was owned by Clarence H. Frey and Robert O. Greever. Its location was Kanada and Chestnut streets. When broadcasters shifted frequencies, like WHBC in Canton who was also on 1200 kHz, WLOG had to move. The station changed to 1230 kHz, and by the end of WWII had increased its power to 250 watts. Presently WLOG is owned by the Guyan Valley Broadcasting Company and is running 1 kilowatt, still on 1230 kHz.

The 1953 postcard of WLOG shows an attractive art deco facade on a small structure with external walls constructed from cement blocks, and a single vertical radiator at the rear. The station's callsign is written on the large circular window at the center of the facade.

The last station we'll look at this time doesn't quite fit into the same category as the previous three. In fact, it's another one of those mystery stations. Here is a colorful postcard dated 1906 and displaying the Cadillac Hotel in Detroit, Michigan. Shown on the roof of this hotel, along with plenty of flags, is what appears to be a rather large wireless tower. It is supported by six guy wires. Assuming that the guy wires go to the mid-point of the tower, and that the hotel itself is 100 feet in height, the tower was probably about 125 feet in height. When you're talking about 1906, you're getting back into the very early days of wireless, long before broadcasting. Someone went to a considerable amount of trouble and expense to stick this large tower atop what was undoubtedly a very classy hotel in its day. But for what station? And for what purpose? If anybody knows, please step forward.

And speaking of people stepping forward with solutions to mysteries, in the October issue we saw a view of an unidentified station located in the U.S. Grant Hotel of San Diego. Several readers were kind enough to help identify the San Diego station.

One of the more comprehensive explanations came from Russ Hamnett, Manager of station KNAU (88.7 MHz) in Flagstaff, Arizona. Russ explains that the antenna belonged to KSFD, which was owned for many years by the Airfan Radio Corporation, and later (under the callsign KOGO) by Time-Life, Inc. KSFD's offices were located on one of the upper floors of the hotel, while the transmitter itself was in a small structure on the roof. It was a 1 kilowatt Western Electric rig. Russ relates a story told to him by Ralph Evans, then a studio engineer with KSFD, about the transmitter power supply. Many stations of that era obtained their high-voltage from a motor-driven generator, rather than rectifier tubes, and KSFD was just such a station. Occasionally, the engineers would notice that the power was starting to ebb. At that point, one of the engineers would go up to the transmitter shack on the roof and, by means of an emery cloth fastened to the end of a wooden pole, clean the spinning commutator of the generator—amid a dramatic shower of flying sparks. Following this operation, the station's power would return to normal.

Russ also mentioned that the KFSD-KOGO towers each leaned slightly outward from the roof (as can be seen in the photo). That was because the width of the hotel was not quite sufficient to provide the proper length for their 600 kHz antenna. In the late 1940's, KSFD moved its transmitter to a site that was known as Emerald Hills in south-

east San Diego and increased its power to 5 kW. Then, in 1959, the AM, FM, and TV stations were finally placed under one roof at a state-of-the-art plant at 47th Street and Highway 94. Russ worked at this later facility between 1961 and 1964.

Russ points out that just down the street from KSFD's hotel-mounted antenna was the Pickwick Hotel, which was the location of station KGB (1360 kHz, 1 kW). Russ mention's that KGB's transmitter was also on the roof and the air intake for the transmitter was near the air vent from the hotel's kitchen. When the transmitter was moved in the 1950's to a site on 52nd Street, they actually had to scrape the grease off the transmitter.

A few blocks further removed from the U.S. Grant Hotel, right on Broadway, were the beautiful studios of KYOR in the basement of the Hotel San Diego. On the roof was its 250 watt transmitter and single omnidirectional tower. The station operated on 1130 kHz, a frequency taken over by (then) KUSN in a move to 1510 kHz, coupled with a power increase to 5 kW. The callsign KYOR has been reissued several times since then, most recently to a station in Nevada.

Many thanks, Russ, and all who were kind enough to write to me about the station in the U.S. Grant Hotel, San Diego. And, of course, the many cards and letters that have come expressing approval of *POP'COMM* displaying these historic postcards have been wonderful. Glad you like them. **PC**

"Hello World, It's KWKH!"

Today, Station KWKH Is A Pillar Of The Community—But Before 1932 It Was One Of The Most Controversial Broadcasters Going!

BY TOM KNEITEL, K2AES

You'd never know it to hear Shreveport (Louisiana) station KWKH today, but at one time it was the focal point of some of the biggest fireworks in broadcasting. Those were the days when KWKH was best known for its premiere air attraction (and owner), William K. Henderson, a man whose nightly broadcasts were cause for 1,000 to 2,000 telegrams to be received at the station each day—many expressing outrage, and an equal amount offering congratulations. But let's not get ahead of our tale.

In The Beginning

Our story begins in the radio shack of W. E. (Bill) Antony back in the early 1920's. Bill had constructed the first radio transmitter in Shreveport and had become an engineer with the Southern Bell Telephone Company, testing transmitters and amplifiers as they were developed. Broadcasting was, however, his personal joy and he had a "Special Radio Station License" (callsign 5ZS) for his experimental broadcasting station located at 1513 Laurel Street. Antony's station became so popular in Shreveport that it was soon sold to the Elliot Electric Company and, in 1922, was sold again to W. G. Patterson, who took out a regular broadcasting license under the callsign WGAQ (1190 kHz, then later 1140 kHz) for its 150-watt transmitter.

After a year of operation, Patterson ran into money problems and sought financial backing from various leading businessmen. As fate would have it, one of those Patterson sought out as a potential investor was W. K. Henderson, Jr.

Henderson, The Man

By the time Patterson showed up in Henderson's life, Henderson was about 42 years old and was the owner of the W. K. Henderson Iron Works and Supply Company. He was also the Vice President of the Shreveport Chamber of Commerce and one of Shreveport's leading citizens.

To be sure, Henderson was a high-profile, high-power personality in Shreveport. He began his career working at his father's iron factory, but by 1909 he had gone into the fledgling automotive business. He was active in this business for some eight years, at which time he had built his garage into an activity which grossed $1-million per year. It was, in fact, the "largest garage in the world," according to a car magazine of the day (*Horseless Age*).

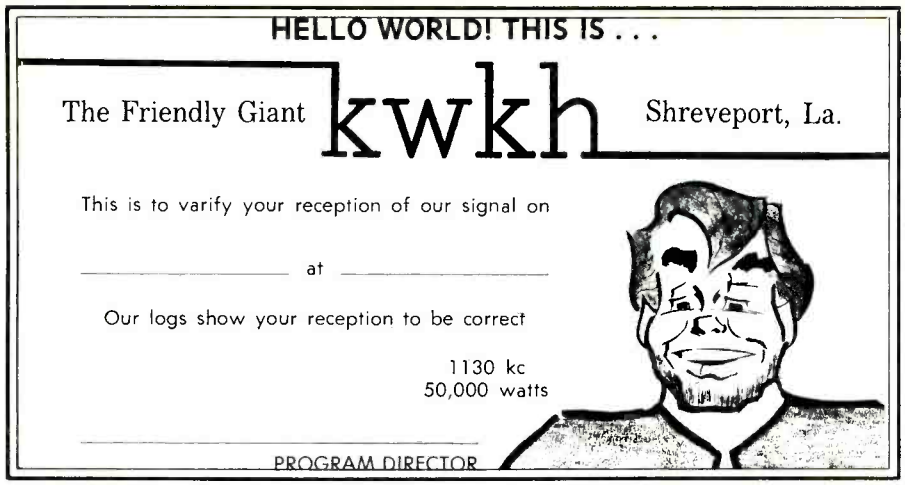
W. K. Henderson at the height of his career.

When his father passed away in 1918, Henderson returned to the iron business as owner of the company, where he applied his magic touch and built it into an enterprise far more imposing than ever before. When Patterson approached Henderson in 1923 he was immediately interested in his proposal and thereupon summoned several other Shreveport businessmen to discuss a joint venture in broadcasting. Those called together were Sam Weiner and Jack Tullas, owners of the Youree Hotel, and John D. Ewing, editor of *The Shreveport Times*. A consortium was formed for the purchase price of $2,500, with Patterson keeping 25% ownership.

Bill Antony was signed up as the Chief Engineer, and the station was moved from his home on Laurel Street to the Youree Hotel. Ward Delaney was hired as the Station Manager, with Paul Goodwin and Owen Crump as the Staff Announcers.

As soon as WGAQ went on the air from its new location, there were complaints from the local citizenry, citing interference which denied their listening access to distant stations. Henderson then decided to move the station to a new location on the premises of his 3,700 acre country estate at Kennonwood, 18 miles north of Shreveport. Broadcast records of 1925 show that the callsign was then changed to KWKH (Henderson's initials) and the station was authorized for a transmitter on a frequency of 911 kHz. At that point, Henderson bought out Patterson's share in the station.

KWKH's schedule was 8 to 9 p.m. on Mondays; 9 to 12 p.m. on Tuesdays; silent



The present KWKH QSL card.

on Wednesdays; 8 to 9 p.m. on Thursdays; Fridays and Saturdays 9 to 12 p.m.; and 9:30 to 10:30 a.m. as well as 5 to 6 p.m. Sundays. Most of the broadcasting was handled by Henderson himself, who found that it suited his tastes and also pleased the KWKH audiences.

Henderson, On The Air

KWKH eventually moved to 850 kHz, where Henderson quickly became as well-known on the air as he was in the business world. Although he was actually less than 50 years old, he sounded considerably older to his audiences. Most people assumed he was about 70 and he became popularly known as "Old Man Henderson" to his audiences. "Hello World" was his favorite on-the-air catchphrase, closely followed by his second best phrase, "Doggonit," which was also one of his milder expletives.

Henderson realized that he could air some of his stronger opinions over KWKH and the audiences were quickly tantalized. The more he spoke, the more both he and his audiences enjoyed it all. What was most surprising was that, in person, he was a friendly and mild-mannered man. It was only when he got behind a microphone in his studio (which he called "the asbestos den") that he roared like a lion and told the world at large what was on his mind.

During the 1928 presidential campaign he was filling the air with harsh accusations against Herbert Hoover, but that proved to be only a warm-up for what was, in late 1929, to become his main and most well-known on-the-air "campaign." By that time he was really burning up the airwaves with salty language.

He freely admitted that his language was "hot," but even objections to some of his language and his "tactics" did not cause him to tone down his rhetoric. On many occasions he was summoned before the Federal Radio Commission. In 1930, Senator Clarence C. Dill (Dem., Washington), author of a considerable amount of federal radio legislation, asked the Dept. of Justice to check Henderson. For his troubles, Dill found that he was on the receiving end of Henderson's verbal barbs.

"People don't wish gentle talk," Henderson claimed, "they prefer it strong. When you get into a fight, give 'em Hail Columbia."

With KWKH's transmitter power increased, he could be heard across the nation conducting various campaigns against those people and things he didn't like. By 1930 his major campaign was directed against chain stores—yes, chain stores! This was more than a passing complaint of Henderson's, it was an all-consuming obsession and eventually it took up virtually all of his on-the-air time, with occasional side tangents into a couple of other favorite topics. Actually, he could talk extemporaneously on any subject that interested him, and he always felt he was right. He used to say, "If you can show me where I am wrong I will admit it." When he spoke of things like the national debt and chain stores, he perceived himself as an Everyman, a voice representing all of the people challenging powerful and sinister unseen forces.

Undoubtedly the Wall Street "crash" of October 1929 was one of the factors that caused the Henderson Iron Works to rapidly go into receivership by late 1929, although this sad state of affairs may have been made even worse by Henderson's having spent most of his efforts in running KWKH. The Henderson Iron Works continued to operate, but Henderson really seemed to have been totally absorbed in KWKH and the new campaign against chain stores. It may well be that his own strapped financial situation went into motivating his chain store campaign and the events which followed its becoming an integral part of his oratory.

Chain Stores, You Say?

At first, one might not see chain stores as something which could obviously bring anybody's blood boiling at the ferocious rate it had affected Henderson. He did have his reasoning, however. In his chain store campaign, he pictured himself doing battle with the wicked forces of monopoly and absentee ownership. He felt that chain stores were not properly taxed, and that the money they made was not being circulated into local economies. He saw these funds being deposited in local banks and then transferred out of state to a distant corporate headquarters. He stated that they, therefore, were of no benefit to the local economy and were harmful to local businesses that paid local property taxes and recirculated their income within the local economy. He urged his listeners to boycott chain stores and to give their business only to hometown enterprises. In particular, he targeted Clarence Saunders of Memphis (owner of the Piggly Wiggly Stores) for special hostilities.

Henderson, via KWKH, then organized a group called the "Merchant's Minute Men" around the nation. The members of the MMM were told to go into chain stores and purchase items such a sugar or coffee, and then take them home to weigh them. If a member of the MMM would discover that a 5-pound bag of sugar or flour didn't actually weigh 5 pounds, the matter would be reported to Henderson where he would announce it over the air along with the name and address of the chain store that was cheating the public.

Invitations were eventually sent to the MMM's 35,000 members, along with 20,000 labor union members, to gather at a convention of the MMM which Henderson was to hold. KWKH was selected by those assembled as the official propagator of "independent thought," and Henderson was acclaimed as the President of the MMM. Membership in the MMM was set at $12 per year, with $9 of that fee turned over to state organizations. It might be noted that the $12 membership fee was at least one or two weeks wages in those days.

Henderson then conceived the idea of marketing, over KWKH, his own brand of "Hello World" coffee, which was available at $1 per pound at a time when coffee could be obtained at less than 10 cents per pound. This was produced especially for Henderson by the Diamonds Coffee Mill division of Hicks Grocery Company in Shreveport. This proved to be a highly popular item, despite the price. Henderson had a very strong following, thousands of listeners hung on his every word, and when he offered the tins of expensive coffee, orders came pouring in.

Among the things that endeared him to his nationwide audiences were his anecdotes, many of which were hilariously funny, off color parables with a lesson to be learned at the punch line, usually at the expense of his enemies. One of his most famous was related to me by *POP'COMM* reader Harry Lookabill of Kansas City, Missouri, who remembers hearing it told by Henderson. Henderson used to tell of the time when he was a young boy and lived on a farm. They would bring the stallion around once in a while to take care of the mares. His daddy always told him to be a good boy and go into the house, and he always did—except for the one time his curiosity got the better of him and he hid in the barn. He said that he crawled up on the partition of the next stall and took a peek. Then he told his audience, "You know folks, that old mare was

getting just what you get when you trade with the chain stores!"

This was exactly the type of commentary that would bring in between 1,000 and 2,000 telegrams, many of which were read aloud over the air.

All was not roses. Even though he had a nationwide audience and a very loyal staff, he had made many enemies. He had numerous costly court battles with the Federal Radio Commission, and the FRC eventually became inquisitive about the $400,000 taken in with the Merchants Minute Men.

By 1932 he had more troubles than he needed and even though he was no longer able to pay his employees, they all remained at their jobs. But the FRC was balking at renewing the license for KWKH and it did seem that his popular expressions of "Hello World," "Doggonit," and "Shreveport on the air, Shreveport everywhere" were in real jeopardy.

Since listeners all over the United States and Canada could hear KWKH long before Henderson had been authorized to use more than 500 watts, the FRC had also surmised that Henderson had installed a transmitter that was running more power than they had authorized. Truthful to a fault, Henderson (afterward) admitted that he used many times the power for which KWKH was authorized.

The December, 1932, issue of *Radex Magazine*, a popular radio hobby magazine of the 1920's to 1940's, described Henderson as follows: "A typical demagog, he would rant and rave over his station for hours at a time, tilting at whatever windmill attracted his attention at the moment. *Doggonit* was one of his favorite expletives. His others were ruled off the air by the Commission but for a long time Henderson paid no attention to the ruling of the Federal Board."

So, the FRC was down on Henderson for a number of reasons, and this was also at a time when the FRC was able to refuse to renew the license of any radio station which allowed certain criticisms of persons holding public office. Actually, the cards were stacked against Henderson on many different levels.

Henderson's attorneys suggested that he sell KWKH in 1932, and the station was transferred to the International Broadcasting Corp., a company headed by Sam Hunter, a Shreveport oil magnate. The price was $50,000. IBC moved KWKH to Albany Road in Shreveport.

When Henderson's removal from the scene took place, and *Radex* reported it in their December 1932 issue, it did not escape Henderson's eyes. No longer able to respond by radio to chastise the magazine for saying things about him that he didn't like, or making reference to him as "Old Man Henderson, the Peck's Bad Boy of Radio," he took pen in hand and wrote a letter to *Radex* in typical Hendersonesque style. This time he was on the defensive and was attempting to explain himself and his actions, tossing in a few jibes at enemies along the way.

Henderson responded to *Radex* as follows:

"During the time intervening between the breakdown of the Department of Commerce and the borning of the Federal Radio Commission (which I claim was illegitimately borned), I went to Chicago and purchased the largest generator (transmitter) I could buy or that was maufactured at that time. Although my license, issued to me by the Department of Commerce who had been exercising authority they did not rightfully possess, called for 1000 watts, I put my power up to 3500 watts as at that particular time I had the right to do so.

"I put the best coffee money could buy in a can, and the label, carton, postage on the package delivered anywhere in the United States for $1.00. I explained that the coffee was not worth a dollar but the profit I could make on it was being used by my campaign to bring the people truths they couldn't get in the papers and leading magazines like yours.

"I did organize the Merchants' Minute Men (at a dollar a month dues) and furnished them with a card to hang in their windows, those who were not too cowardly to do so, but I furnished them with something you could or would not do—the truth. I have not consulted my books but I am sure the amount was not the $400,000 you claimed. And, what if it was? I submitted to the Federal Radio Commission the amount of receipts and expenses of operation of the station and employing over a hundred people and I had nothing whatever to hide from them.

"Your next statement—Henderson is now retiring from the air because of financial troubles—is only partly true. I have had my full quota of financial troubles, having been worth at least two million dollars in substantial properties which I was unable to hold, and by paying the debts of the different lines of endeavors I was in, and actually took bankruptcy, giving up every single thing I possessed."

Henderson went on to deny that the FRC refused to renew his license for KWKH and that, as a matter of fact, it was renewed as the *Hello World Broadcasting Corporation*, with a blank of approval of transfer to the International Broadcasting Corp.

In any event, International did not long own the station. It was soon sold to John D. Ewing of the *Shreveport Times* newspaper, putting Ewing in the strange position of owning two local radio stations, KWKH and KTBS. Broadcasting records of 1946, however, show the station owned by International Broadcasting and operating on 1130 kHz. Presently the station is owned by the Great Empire Broadcasting Co., Inc., of 6341 Westport Drive, Shreveport. This Wichita-based country music chain owns KFDI AM/FM in Wichita, KTTS AM/FM in Springfield (MO), WOW AM/FM in Omaha, KROK-FM in Shreveport, and KRBQ AM/FM in Denver.

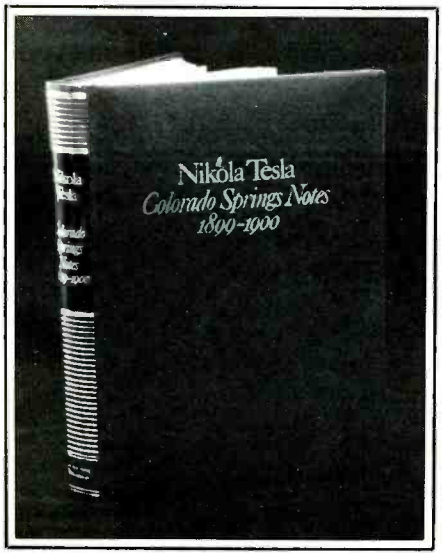
Henderson—The Later Years

W. K. Henderson had a stroke in 1939 and died in 1940. His employees remained with him until the end of his association with KWKH, and then went with the new owners of the station. Chief Engineer, W. E. Antony died in 1964 after 47 years with KWKH (and his widow, Claudine, supplied *POP'COMM* with many of the facts in this story; she is now 82 years old).

Henderson's station has hardly gone unnoticed in the pages of radio history. It is the orginator of the famous Louisiana Hayride program, and it has gone on to become a powerful 50,000 watt beacon heard in 38 states and 4 nations. At least 23 members of the Country Music Hall of Fame got their start on KWKH, including Johnny Cash, Elvis Presley, Hank Williams, and Ernest Tubb. It's now a million-dollar state-of-the-art facility which is a far cry from the days when W. K. Henderson clutched the microphone in his fist and spoke, entirely off-the-cuff, saying whatever came into his mind, as if the total audience was one lone person sitting across the desk from him.

And yet, KWKH has obviously not forgotten its colorful roots. To this very day, the KWKH QSL card is headlined with the words "Hello World! This is KWKH." PC

BOOKS YOU'LL LIKE!



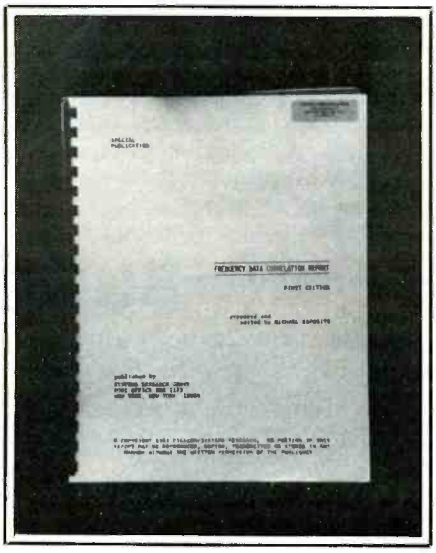
In 1899 and 1900, Nikola Tesla went to Colorado to perform experiments. He thought that the earth was electrically charged. (It is.) At Colorado Springs, he set up a plant that would add to the earth's charge so that you could plug in anywhere and get electricity. He pumped power in, claimed to draw it back—creating lightning. These were the years when Tesla's creativity in the field of high frequencies was at its peak.

Contrary to popular belief, Tesla took many notes and made numerous sketches about his work relating to radio and wireless electrical power transmission, however most of his writings "disappeared" shortly after his death in 1943. His Colorado notes were rediscovered recently at the Tesla Museum in Yugoslavia and have been published (in English) along with equations, drawings, photos, and schematics.

The book containing this material is called *Nikola Tesla, Colorado Springs Notes 1899-1900*. The manuscript was prepared for publication by the Nikola Tesla Museum, Belgrade, Yugoslavia, with the help of the Yugoslav Federal Administration for International Scientific, Educational, Cultural, and Technical Cooperation. Added to Tesla's own notes are many interesting scientific commentaries by Aleksandar Marincic, Associate Professor of Electrical Engineering at Belgrade University.

The experiments described and shown (in great detail) in this book are fascinating to anyone interested in early HF and ELF wireless theory and techniques. To the many students of Tesla's works, the book is an absolute goldmine of scientific data, to say nothing of a wealth of insight into this brillant inventor. In addition to the experimental data, Tesla has also provided many fascinating personal observations about the period he spent in Colorado. All in all, it's a wonderful reference volume and a rare chance to examine the ideas and experiments of a genuine genius.

The book itself is quite handsome, being hardcover and bound in leatherette with gold stamping. It has 437 pages, printed on high quality paper in an 8½" × 11" format. The book is published by Nolit, Belgrade, Terazije 27, Yugoslavia. We have been informed that a limited number of copies (available on a first come, first served basis) have been offered at $29.95 each (postpaid) by Liberty Library, 300 Independence Ave., S.E., Washington, DC 20003. Those wishing to order this book from Liberty Library may wish to double check in advance to see if copies remain available. Their toll free telephone number is (800) 528-6000; in Arizona call (800) 352-0458. Copies can be ordered on Visa or MasterCard as those numbers.



Firecom Communications, P.O. Box 61, New York, NY 10011, sent us a review copy of the publication *The Frequency Data Correlation Report*. This is intended for users of Bearcat 210, 210XL, 211, 220, 20/20, 250, 250A, 300, and 350 scanners, and also all other programmable scanners (including Regency and Realistic) with frequency coverage starting in the 420 to 430 MHz range and with IF frequencies of either 10.7, 10.8, or 10.85 MHz.

The report explains the "image monitoring technique" in detail so that frequencies in the 406 to 420 MHz band can be received. Conversion tables are included to give the monitor a chance to select the proper image frequency to program into the scanner, thus eliminating the need for complicated user computations. The report provides simple programming techniques and no modifications are required in order to instantly access 406 to 420 MHz. The information provided in this report is not included in owners' manuals.

The price of this publication is $9.00 per copy, plus 95 cents postage and handling.

Gilfer Associates, P.O. Box 239, Park Ridge, NJ 07656, advises that they now carry the well-know *Tropical Bands Survey* produced by Danish Shortwave Clubs International. This is a detailed listing of all shortwave broadcasting stations operating between 2000 kHz and 5900 kHz, including schedule and power information. Gilfer is also the North American distributor of Gerd Klawitter's book entitled *Time Signal Stations*. Check with Gilfer directly about the prices of these two useful publications.

There's a new (4th) edition of *Air-Scan* just out. This is a massive compilation of aeronautical communications frequency and station information containing more than 40,000 listings. It's the largest single source of aeronautical station/frequency data ever assembled between two covers. In this case, there are 120 pages of data between the covers, and those pages are 8½" × 11" in size (same as this page in *POP'COMM*)!

This new edition of Tom Kneitel's book brings into focus virtually every aspect of aero communications monitoring, leading off with tips and techniques information on monitoring aircraft and ground station communications. Then it gets into the listings and there are an abundance. Yes, there is a state-by-state listing of airports (civil, military, and even so-called "unlisted" ones not open to the public) operating in the 118-136 MHz VHF aero band—control towers, ground frequencies, approach/departure, Unicom, etc.—but there's more in this edition! This new edition, for the first time anywhere, offers information on aero communications outside of the VHF aero band, including 30 to 50 MHz, 138 to 174 MHz, and above 400 MHz! This includes airport security, airline operations, air ambulances, military, federal agencies, crop dusters, flight schools, aircraft manufacturers, airport ground services, aircraft maintenance, and more. It becomes quite obvious that there's much more to monitoring aero communications than the standard 118-136 MHz VHF

The Nation's SWL/HAM Headquarters!

ege, inc.

13646 Jefferson Davis Highway
Woodbridge, Virginia 22191
Just 25 minutes south of Washington, D.C.

Wash., D.C. area 643-1063
In Virginia 800-572-4201

Store Hours: MWF 12 noon—8 p.m.; TThS 10 a.m.—4 p.m.

R-2000

R-1000

R-600

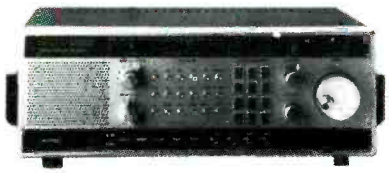
The R-2000 is an innovative all-mode SSB, CW, AM, FM receiver that covers 150 kHz - 30 MHz, with an optional VC-10 VHF converter unit to provide coverage of the 118-174 MHz frequency range.

PANASONIC
Now in Stock
RF 2200, RF 3100, RF 799, RF 9
—Call for Introductory Prices—

SONY
SWL Receivers in Stock
Models 2002, 4800, 6500, 7600A
—Call for a Good Deal—

Interested in RTTY/CW Reception with Your Computer for Under $100?
Call Us About
the New MFJ RTTY/CW Reader

ICOM R71
A Commercial-Grade Receiver at a Not-So-Commercial Price
—Call for Your Best Price—



BEARCAT DX1000
LISTEN TO AM/USB/LSB/CW/FM
BEARCAT SCANNERS IN STOCK

UNIDEN
Full CB line from $37.95
Bandit Radar Detectors
from $112.50

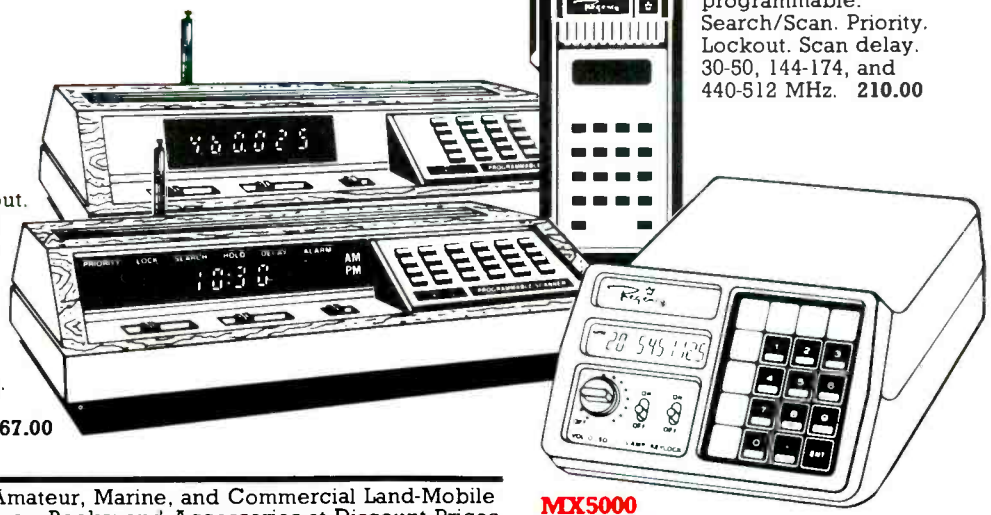
BOOKS, ANTENNAS & ACCESSORIES
—In Stock—

Send 60c in Stamps for Catalog
Dealer Inquiries Invited

For Orders and Quotes—Call **800-336-4799**

Regency®

SCANNER SALE



Z10
10 Channels, 6 Bands
Search/Scan. Priority. Lockout. Scan delay. AC/DC. Covers 30-50, 140-174, 440-512 MHz. **137.00**

Z30
30 Channels, 6 Bands
Search/Scan. Quartz clock with alarm. Priority. Lockout. Scan delay. AC/DC. 30-50, 140-174, and 440-512 MHz. **167.00**

HX1000
Hand-Held Scanner
The ultimate in versatility. 30 channels, 6 bands. Keyboard programmable. Search/Scan. Priority. Lockout. Scan delay. 30-50, 144-174, and 440-512 MHz. **210.00**

MX5000
Continuous Coverage
from 25 to 550 MHz. Listen to the normal scanner bands plus CB, Television audio, FM broadcast, all aircraft bands, and more. 20 programmable channels. Search/Scan. Clock. **357.00**

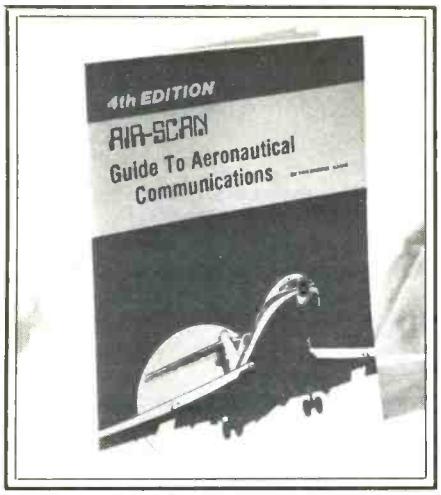
Telephones; Amateur, Marine, and Commercial Land-Mobile Radios; Antennas; Books; and Accessories at Discount Prices.

CALL TOLL FREE **800-336-4799** **800-572-4201** IN VIRGINIA

ege, inc.

For Information and Service Phone (703) 643-1063
13646 Jeff Davis Highway, Woodbridge, Virginia 22191
Hours— M-W-F: Noon-8 p.m.; T-Th-Sat: 10 a.m.-4 p.m.

CIRCLE 74 ON READER SERVICE CARD



aero band, and it can be picked up on a standard scanner.

The 4th edition of *Air-Scan* covers FAA Air Route Traffic Control Centers, Flight Service Stations and Flight Watch, also airline "enroute" frequencies, a large listing of company frequencies, and a huge "frequency file" (listed according to frequency) covering worldwide voice frequencies from 2-30 MHz, plus military and civilian frequency usage from 30-50, 118-174, and 400-515 MHz. A glossary of aero communications terminology is also included.

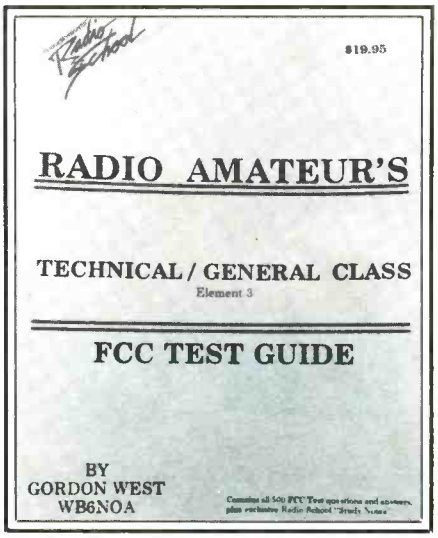
In addition to the USA (including Puerto Rico and the Virgin Islands), airports in Canada and Mexico are also listed in the 4th edition of *Air-Scan*. This book covers all of the bases, even listing traffic helicopter frequencies, all of the new air/ground ("Airfone") telephone stations/frequencies, the 454 MHz air/ground telephone stations and frequencies, and the 460 MHz airline ground-service frequencies.

This latest edition of *Air-Scan* is $10.95 (plus $1 postage to addresses in the USA/Canada/APO/FPO). If your favorite communications dealer doesn't have the new edition in stock yet, it can be ordered directly from the book's publisher, CRB Research, P.O. Box 56, Commack, NY 11725.

Gordon West's Radio School announces the first-of-its-kind, 500 test questions and answers guide for the new volunteer-administered Element 3 examination. All 500 test questions plus multiple choice answers are listed in this 8½" × 11" test guide. The exact questions plus the exact distractors (wrong answers), and the exact correct answer, are listed word for word as they will be found on the ARRL and W5YI Report volunteer examinations. While independent examinations will use the exact same question and the exact answers, the three incorrect answers may vary.

"This test guide is similar to an FAA pilot's manual. This will take the surprise out of any examination upgrade—every question and every right and wrong answer are in the book exactly as it will appear on an ARRL or W5YI Report examination," comments Gordon West, well-known writer and instructor.

In addition to each question and answer



are "study notes" that list references on where the questions are derived and the answers found in more detail. Since most questions and answers were developed by the American Radio Relay League, most references apply to ARRL publications and to their exact page number. There are also study notes that indicate formulas and how to solve them after each question is given.

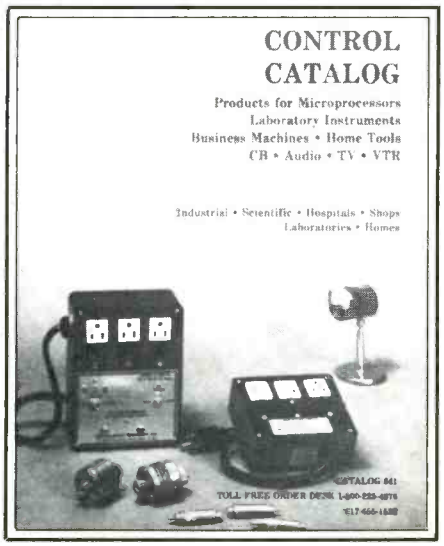
This test guide also has several pages of instructions to the applicant on where to locate a volunteer exam coordinator, and how to sign up for a local volunteer examination test. Also included are the necessary test forms plus examples of the answer sheet. Pertinent FCC rules and regulations are also included in this handy reference manual.

"We are happy to be the first with this type of reference guide," comments West. "We have provided enough room on our pages that students can take notes on those questions that they may need some extra study time on. This format allows students to go over and over the material until every question and every right and wrong answer is down pat," adds West.

Radio School also produces code test tapes to prepare students to pass both the General as well as the Extra Class code portions of their examinations.

The Radio School Technician/General Class FCC Test Guide is available for $19.95 plus $3.00 postage. California residents add 6% sales tax. Code test tapes are also available for $9.95, all from Radio School, Inc., 2414 College Drive, Costa Mesa, CA 92626.

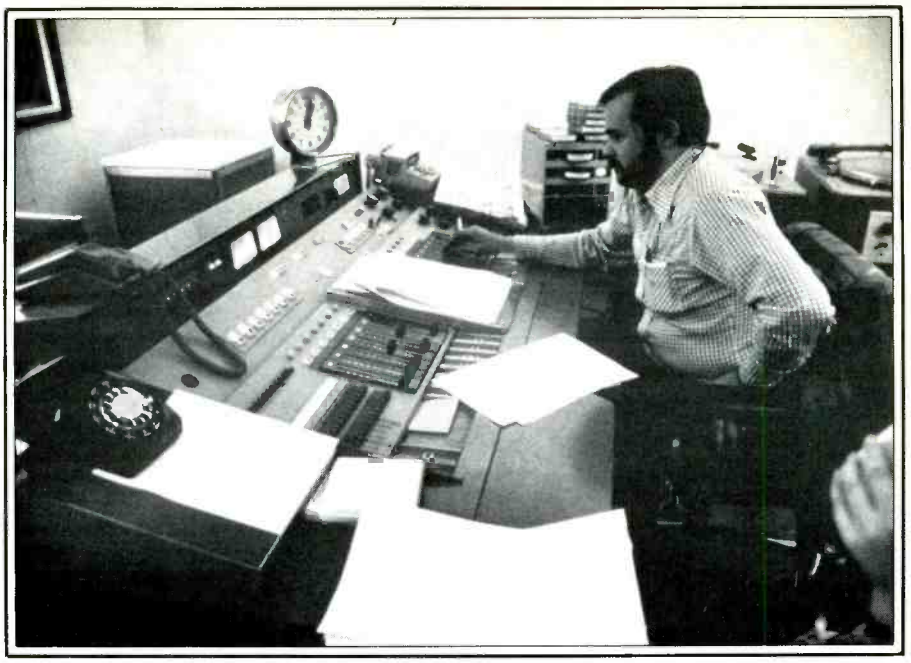
Volunteer examiners wishing to give the written examination or code test can also obtain Radio School 10-set Technician/General Class examinations. Volunteer examiners should write for more details including their accreditation number for verification.



Protection and Interference Control products are presented in a new 40 page catalog from Electronic Specialists. Costly damage from lightning or power line spikes can be prevented and disruptions or interference from power line carried EM1 and RF1 can be controlled. Protective devices for Communication Gear include a variety of features: AC Line Voltage Regulators and Conditioners, Modem and phone line surge suppressors as well as Equipment Isolators and Filter/Suppressors.

Typical protection and interference problems are described, together with suggested solutions for various communication installations. Catalog 841 also describes numerous applications for Hi-Tech Equipment Protection and Interference Control.

The catalog is available from Electronic Specialists, Inc., 171 South Main Street, P.O. Box 389, Natick, MA 01760. PC



Old vs new. RCI's early studios and one of the modern studios in use today.

Happy Anniversary, RCI!

Forty Years Old And Louder/Clearer Than Ever

BY GERRY L. DEXTER

Things were not going at all well for Great Britian in World War II during the early 1940's. The beleaguered nation had fought virtually alone against the Axis powers since 1939. The tide was far from turned and Prime Minister Winston Churchill thought it best to prepare "worst case" alternatives. An invasion by Hitler was still a very real possibility. As Churchill and his War Cabinet saw the picture, it might even become necessary to move the British government out of Great Britain entirely! The logical place to set up a government-in-exile was Canada. It was secure and relatively close to Britain compared to other Commonwealth nations.

Any such move would have encountered gigantic problems. And one of the difficulties involved in a relocation to Canada was shortwave. Canada had no high frequency broadcasting facilities and a shortwave service was seen as absolutely vital if the transplanted British government were to be able to stay in touch with citizens in Britain.

The word was passed to Canadian authorities in Ottawa. "Please prepare for us, just in case . . ." The Ottawa parliament gave a go-ahead to get a shortwave system ready and in September, 1942 the job fell on the shoulders of Leonard Brockington, first Chairman of the Board of Governors of the publicly-owned domestic service, the Canadian Broadcasting Corporation.

The year 1943 was still fresh on the calendar when work began on installation of two 50 kilowatt transmitters at Sackville, New Brunswick, which were to be used for the new international service.

Montreal, rather than the Canadian capital, was chosen as headquarters for the broadcast center because it was further from potential governmental meddlers. More importantly, Montreal was a more convenient production center with a larger talent pool upon which to draw. The first studios were in an older house on Crescent Street. The station had been in operation for some weeks before staffers discovered that the lower floor housed one of the city's higher class brothels!

You couldn't put a shortwave on the air overnight (especially in those days) in the middle of a war. So it was late in 1944, December 16 to be exact, before the first test transmission went out from CKNC on 17.820 (megacycles then, MegaHertz now). A week later, on Christmas Day, Canadian troops serving in Europe got a very special Yuletide gift . . . the first official programs broadcast by what was then called the "CBC International Service."

The CBC wasted no time in expanding the hours and languages of its "Voice of Canada" transmissions. Air time was up to 45 hours per week just two months after opening day.

As things turned out, Britain never had a need for the CBC shortwave outlet, but Canada found a real use for the facility. Initially it provided entertainment, news, and information for Canadian troops serving overseas as well as programs for the people of Great Britain and those in still-occupied or recently liberated countries. Programs were being broadcast in Czech and Dutch in addition to the basic English, French, and German.

The end of the war saw no slowdown in Canada's growing official voice. A few months after the conclusion of the war in Europe, broadcasts were expanded to include the Caribbean and Latin America with programs in Spanish and Portuguese. Calypso music was used to draw Caribbean listener's to Canada's spot on the dial. Montreal had one of the top calypso bands around and that group was engaged to create songs dealing with Canada and Canadian viewpoints. They even did a song encouraging people to tune in Canada.

During the period 1946-47, a regular broadcast to Scandanavia was added, with broadcasts in Danish, Swedish, and Norwegian, as well as services beamed to Austria and Italy. Australia and the South Pacific were next in line for attention, followed by Finland.

The Dutch service was aimed at potential immigrants from Holland, stressing the need to learn English ahead of time and pro-

viding potential newcomers with a clear, straightforward picture of the problems and adjustments they would face in their adopted country.

The transition between the end of the hot war and the start of the cold war in 1948 and beyond saw Czech broadcasts switch from encouraging resistance against the Nazi's to providing Canadian and Western viewpoints to those newly enslaved by communism. Jamming of the broadcasts from Canada began almost immediately and the large number of letters the station had been receiving from listeners in Czechoslovakia slowed to a trickle. People were still listening, despite the jamming—they were just afraid to write.

By the early 1960's Africa had been added to the growing list of target areas served by the CBC International Service.

Up until this time there had been no change in the technical facilities. Even then there was a realization that the transmitters in use were obsolete. Engineers sought a third transmitter which might have been used simply as a source for hard-to-find spare parts. Such a unit was found in Venezuela, looked at, purchased, shipped to Sackville, and found to be useable as a complete unit. Suddenly the station had three 50 kilowatt transmitters on the air instead of two.

As nicely as that affair worked out, it was only a temporary measure. In the late 1960's, plans went on the drawing board for five new 250 kilowatt transmitters and the first of these became operational in 1971. The rest were on the air by the end of 1974. Two of the old 50 kilowatters, thought to be ready for the junk heap as early as the 1950's, are still going strong and are in daily use.

More importantly, the new transmitters brought with them a new name—Radio Canada International.

It wasn't all smooth sailing, and it wasn't all ever-expanding growth. Some people, at one time or another, wanted to cut the service back or do away with it entirely. Governmental budget cuts have taken their toll through the years with cutbacks in programming and languages occurring on more than once occasion. Like most broadcasters, from Radio New Zealand to the BBC, Radio Canada International has often had to stand up and fight to maintain its service against those of nearsighted pursuasion. Canada's official shortwave efforts have suffered from what Alan Brown, a former director of RCI called "benign neglect." Budget cuts, for instance, caused the Italian, Dutch, Swedish, Danish, and Norwegian programs to be dropped. Others have been cut to once-a-week services. Today, RCI broadcasts in eleven languages beamed to East and West Europe, North and South America, the Caribbean, Africa, and the Middle East. Past and possibly future services to Australia/New Zealand and Asia suffer from the lack of a west coast transmitting site.

From its less-than-plush beginnings, Radio Canada International now broadcasts from an ultra-modern complex, the "Maison du Radio Canada" which includes a 25 story tower. The $65 million dollar installation houses not only the international service but television, the CBC Northern Service and serves as network headquarters for CBC English and French network flagship stations as well. Some 3,400 people work at the 25 acre site on Dorchester Boulevard in east central Montreal. RCI's 195 employees work in three major areas - shortwave programming, recorded programming, and distribution and engineering.

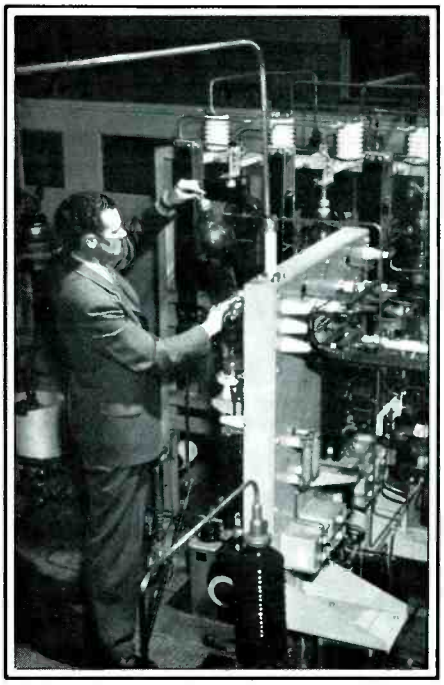
Radio Canada International's programming has always taken a no-propaganda approach, preferring the BBC-like concepts of news, public affairs, and entertainment. Canada's programming is among the most popular to be found on the shortwave dial.

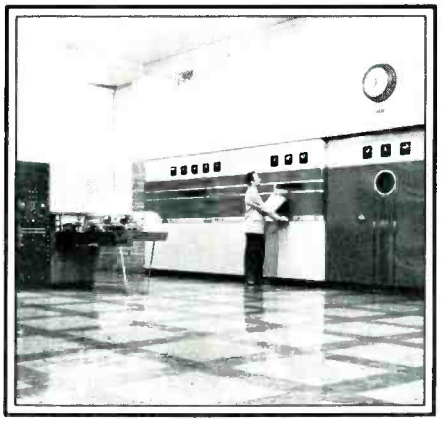
Early programming efforts included a heavy emphasis on relays of domestic service programs for Canadian troops away from home. The multi-lingual international service followed close on and for many years entertainment and music was a heavy part of the schedule. That, in turn, has changed into today's magazine-style news and information service.

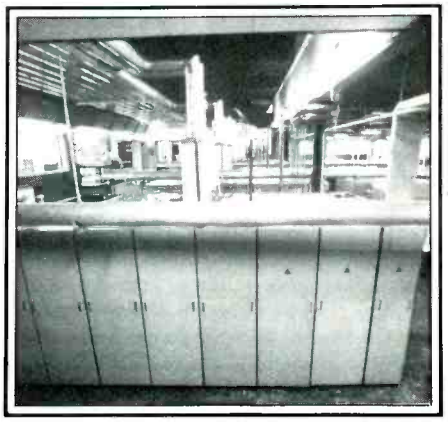
Interviews, talks, and discussions were conducted with German prisoners of war in Canadian POW camps for three or four years during and after the war, partly as a means of educating both prisoners and German citizens at home about the changes taking place. Other early efforts included coverage of the first Canadian International Trade Fair, co-operation with United Nations Radio, coverage of the coronation of Queen Elizabeth and royal visits, and many other Canada-wide and worldwide events.

In 1949 programming contained lots of commentaries and talks on a wide range of subjects and events—in programs entitled "Speaker," "Midweek Commentary," and

One of the old 50 kw RCA transmitters and one of the newer 250 kw Collins units.







"Weekend Commentary." Interviews and so-called actualities were aired on "Canadian Chronicle," "Canadian Scene," and "Cross Sections." Magazine style formats were already in vogue with programs like "The Lively Arts," "Discovering Canada," and talks and stories could be heard on "The Canadian Story," "Tuesday Talk," "Women In The New World," and music was featured on "Evening Recital," "Folk Songs," and "Prarie Schooner." There was drama on "A Tale of Toronto."

"Canadian Chronicle" was still on the air by the mid-1950's, but other shows had disappeared, replaced by such programs as "Overheard in Canada" (programs originally on the domestic service), "Canadiana" (anecdotes, stories, and adventures about life in Canada), "How We Live," and "Canada At Work." By the early 1970's the English language programs, at least, had taken on the news magazine format and included news, interviews, book reviews, technical and industrial developments, relationships with other countries, cultural and life-style themes and so on.

Currently Canada's shortwave voice has a considerable line-up of interesting programs and features including "Canada A La Carte," Canadian pop music on "Off The Record" and "Hot Off The Streets," as well as "Quirks and Quarks" (science), "Sunday Weekend Magazine" and the "Saturday Night Music Show" which are all favorites of many listeners.

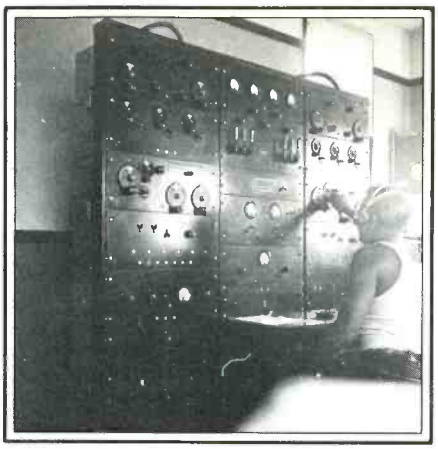
Perhaps the most popular program on RCI, at least among serious SWL's, is "SWL Digest" hosted by Ian McFarland. That program got its start in 1962 as the "Radio Canada Shortwave Club" hosted by Basil "Pip" Duke, then head of the engineering department. "SWL Digest" covers the world of communications, including shortwave DX news on its weekly broadcast. In late 1984, McFarland was freed-up to spend most of his time working on the show and the promising results of that change will have already born fruit for the listener.

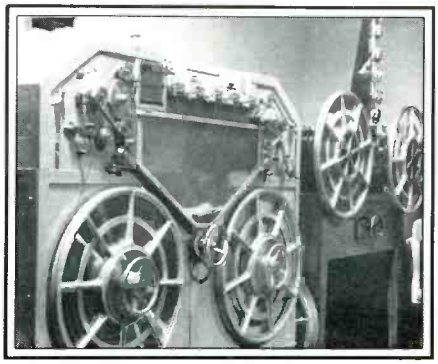
Recorded programming, and the distribution of such programs to foreign stations for rebroadcast locally is a large part of RCI's activity as well, and some CBC shows are aired on the National Public Radio Network in the United States.

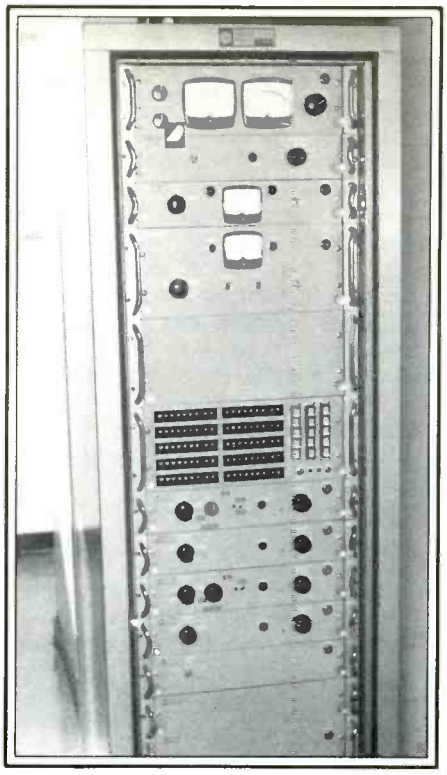
Polls indicate that RCI has an audience of about ten million people per week worldwide, one million in the United States alone. RCI receives about 50,000 letters a year from its listeners.

Programs are sent from Montreal via special microwave circuits to the transmitting site at Sackville some 600 miles distant. A building separate from the main transmitter complex houses special switching gear that can be used to pair up any number of transmitter-antenna combinations. The antennas are curtain arrays beamed to Africa and Europe, South America, North America, the Caribbean, and Northern Canada.

The transmitting site is in a marshland area which provides the right kind of soil for the best "reflective base" for efficient short-wave signal reflection. A computer controls the transmitters so that scheduling information can be programmed as much as 24 hours ahead of time. Some 100 different functions can be programmed into the computer. Transmitters can be tuned to any frequency between 3.950 and 26.500 MHz automatically.







The diversity receiving system, with giant tape recorders, and the system in use today.

In addition to the Sackville site, RCI is also relayed by the BBC's Daventry transmitter site and by the Radio Trans Europe facility at Sines, Portugal.

A third RCI installation is the receiving station at Stittsville, Ontario. Staffers here monitor the North American services of other broadcasters (who, in turn, do similar favors for RCI). Stittsville also serves as a backup that can be used when the regular transatlantic satellite circuit between RCI and the BBC isn't available, allowing BBC relays to be taken directly off the air so RCI's half of the BBC-RCI agreement can be carried out. The receiving station also feeds other international broadcasters to the RCI news department, including the newsroom of the English and French domestic services and CBC TV for use when desired.

Radio Canada issues two program schedules each year. But, there's no mailing list maintained for this purpose. Interested listeners have to write to the station each time in order to receive a schedule. The address is Radio Canada International, P.O. Box 6000, Montreal, Quebec, Canada H3C 3A8.

QSL card collectors should take special note of this program schedule business because there's quite a routine that must be followed in order to get a verification from RCI. Step one is to write for a copy of the summer/autumn schedule. A blank QSL card

Frequencies of Radio Canada International

P = Portugal
E = England

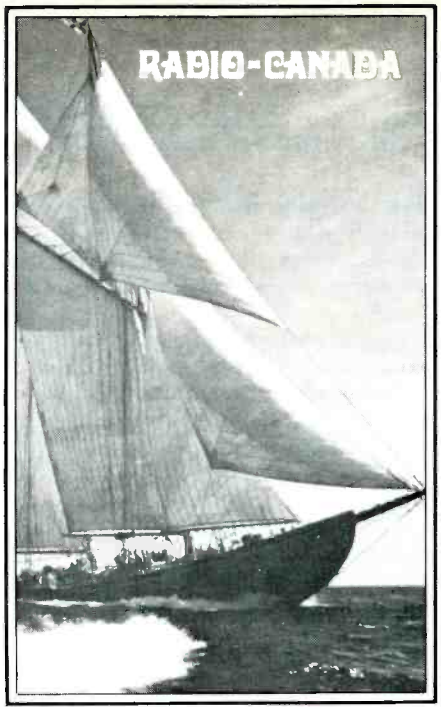
5.960	11.905
5.965 - E	11.915 - P
5.995 - E	11.925
6.015 - P	11.935 - E
6.045	11.940
6.065	11.955
6.140	11.960
6.195	15.140
9.615 - P	15.150
9.625	15.190
9.650 - E	15.235 - E
9.685	15.240
9.755	15.260
9.760	15.285
11.720	15.315 - E
11.775 - E	15.325
11.825	15.440
11.845	17.820
11.850	17.860 - E
11.855	17.875
11.895	21.695

Radio Canada International English To North America

(Times GMT)

0000-0030
0100-0230
0300-0330
1200-1225
1300-1600
2200-2230
2300-2330

Note: Some time segments apply only Monday-Friday. others may apply on weekends.

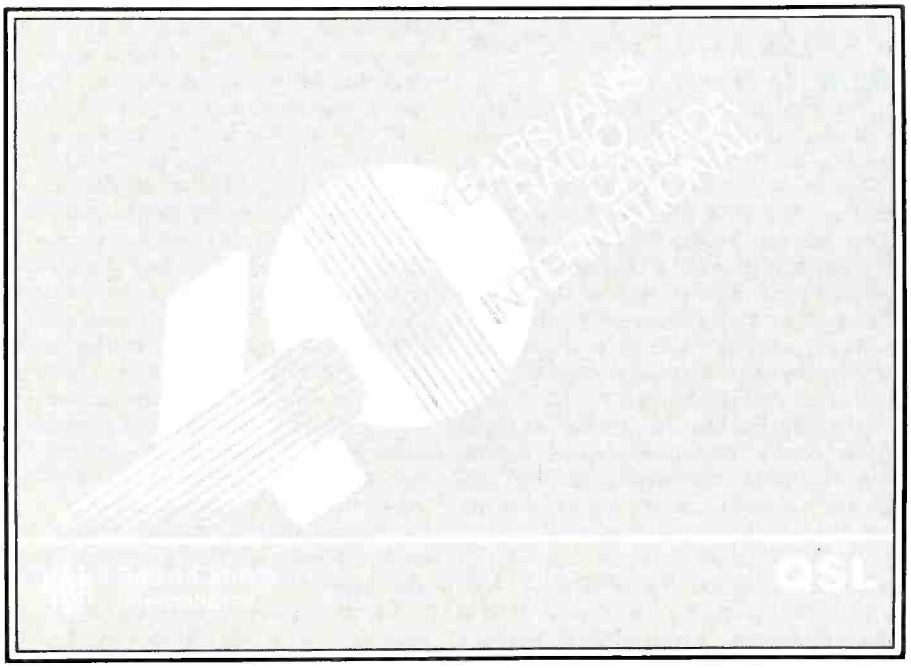


There have been a variety of Radio Canada QSL cards through the years.

will be included with the schedule. Step two is to fill in the card yourself with the details of your reception. Step three, mail the card back to RCI where it will be certified and then returned to you.

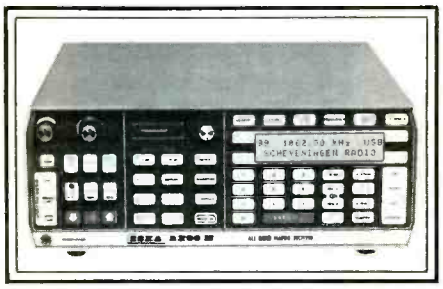
It's said that life begins at 40. This month marks the 40th anniversary of Radio Canada International. Forty years of serving, informing, entertaining. Four decades of gains and setbacks. In that time RCI has grown to be a world leader in providing creative, innovative programming. Shortwave listeners the world over look forward to forty more years. Raise your glass in a toast! Hold your headphones up in a salute! Happy 40th, RCI! PC

The QSL card commemorating the 40th Anniversary celebration of Radio Canada International.



PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS



Communications Receiver With 64K Microcomputer

A state of the art marine communications AM/SSB/CW/RTTY receiver, designed by Eska Elektronik a/s, Denmark, and sold by their U.S. marketing Organization: DANTRONICS/MEMAC of Boca Raton, Florida, provides pushbutton selection of radio station frequencies to within 10 Hz, and can display the identity of the radio station to which it is tuned.

Designated Model RX99M, it has a 58-key keyboard plus a two-line liquid-crystal display (LCD), and can be programmed to memorize the tuning settings of up to 99 different stations so that any one of them can be quickly selected by a two-digit code.

The small (10"x 3½"x 11½") RX99M is suitable for temporary or permanent use on any site vessel or monitoring office. The RX99M can receive CW, AM, FM, or radio telex transmissions in the 40 kHz-30 MHz, 60-110 MHz, and 140-170 MHz bands, as well as all marine VHF channels. An optional VHF/UHF converter covering the entire range from 30 MHz-500 MHz can be fitted, thereby enabling the unit to monitor aeronautical transmissions and a variety of other radio traffic.

The unit weighs only 6¼ lbs. and is powered by battery and 110 VAC. It incorporates a 64K microcomputer that controls the signal-processing as well as frequency-selection circuits to provide fade-free and distortion-free reception with a minimum of radio interference.

The microcomputer also provides a number of useful push-button selected functions, such as the programmable memory channels hitherto not found on commercial receivers of its size.

Each channel can be programmed for operating-mode, bandwidth, antenna gain, sideband selection, and AGC time-constant. The LCD display shows the memory channel plus the operating mode with bandwidth in use. The name of the station selected is displayed with the aid of a plug-in programmable option. Warning signals and operating instructions can also be displayed.

A choice of automatic frequency-scanning facilities can be selected, including memory channels between any two numbered channels, and any frequency band between pushbutton-selected limits. Sophisticated start/stop scanning sequences in pre-set marine and broadcast bands are also possible.

Programmable switching functions provided include a "sleep" facility which automatically switches the receiver off up to 60 minutes later, the delay time being selectable in increments of ten minutes; and the "standby" function that switches the receiver on the pre-selected times.

An intelligent timer allows the receiver to be switched on and off automatically up to a maximum of 24 times to allow automatic monitoring of weather forecasts and the emergency frequencies. The on/off time slots can be hourly, daily, or according to the date, and can be set with one-minute accuracy on the receiver's display. They can also be individually set to select any of the 99 memory channels and can be set to switch on an external tape recorder.

Other options available include a notch bandpass/lowpass filter for improved reception of weak and noisy signals, and an additional 99-channel unit for VHF/UHF operation.

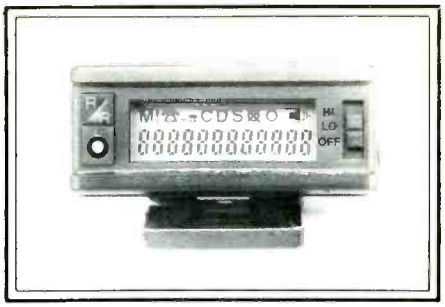
Further information is available from: DANTRONICS/MEMAC Ltd., P.O. Box 204, Boca Raton, Florida 33429, or circle number 105 on the reader service card.

MFJ-106 24/12 Hour Clock With ID Timer

The MFJ-106 clock meets the demands of serious communications or DX operator. It has a 24/12 hour display, is synchronizable with WWV and has a 9 volt battery backup. The MFJ-106 also features an ID timer that alerts every 9 minutes, after setting, up to 1 hour and 59 minutes. You can also use this feature as a snooze alarm to get those extra minutes of sleep that you always want but rarely get. With the observed timer feature you can set the clock to zero and time any event up to 24 hours.

The MFJ-106 has a large .6 inch and LED readout and a sloped face for easy across the room reading. It operates on 110 VAC, 60 Hz and is housed in an attractive silver cabinet that matches any radio shack decor.

The MFJ-106 24/12 hour clock with ID timer can be ordered from MFJ for $19.95 plus $4.00 shipping for each unit. Send a check or money order to: MFJ Enterprises Inc., 921 Louisville Rd., Starkville, MS 39759, or use the Toll Free number, 800-647-1800 and charge to your Visa or MasterCard.



All Band Pager

Standard Communications Corp. has introduced the world's first pager with built-in tone alert, voice paging, and digital message display. The "PG-50" pager, for use with in-house and RCC paging systems, is a compact, highly sensitive paging receiver, available for all popular paging frequencies: Lo Band, VHF, UHF, and 900 MHz.

In addition to its combined paging functions, the PG-50 will store and recall up to six digital messages totaling 72 digits. Its liquid crystal readout features a twelve-digit display and ten additional "mode" indicators, which provide special information on the numeric display, memory contents, and reception quality.

Up to 1,000,000 PG-50's can be paged individually by one paging system, making the pager suitable for any in-house or metropolitan system. When necessary, groups or sub-groups of pagers can be contacted simultaneously.

The PG-50 can operate in a special "Silent Mode," automatically storing digital messages in memory. The digital display indicates when the memory contains new, unread information, so a person can quickly tell if messages were received with pager in Silent Mode. The display also indicates "in range" and "out of range" receiving conditions, and the pager sounds a special tone when it is moved out of receiving range.

PG-50 receives eight types of messages: tone only, tone and voice, voice with data, data only, phone number, phone number with extension and source, data with code, and phone number with source. A microprocessor coordinates the numeric readout with the appropriate mode indicators: for example, a "D" indicator appears for a data readout, "C" for code, and "S" for source. When the readout displays a phone number, it also displays a picture of a telephone; for an extension number, a smaller picture is also displayed.

The paging receiver operates for up to ten weeks on one AA alkaline battery, and

when the battery needs replacement, the readout indicates "LO CELL."

The PG-50's compact case, 3" × 2¼" × 1", fits easily in hand, weighs only 5 oz. (including battery), and comes in 5 colors. For tactile feedback, an optional motor vibrator is available.

For in-house paging, the PG-50 is designed for use with Standard Communications' AL900 Paging Encoder. For community wide paging, the RCC system must provide HSC format encoding.

Standard Communications Corp. can be contacted at P.O. Box 92151, Los Angeles, CA 90009, or for more information, circle number 103 on the reader service card.

Portable VHF Receiver

Ace Communications, Inc. (A Division of AOR, LTD. Tokyo) has introduced a new VHF FM monitor receiver, model AR-33.

The AR-33 is a microprocessor controlled VHF FM feather weight portable receiver. It covers 140 to 170 MHz band in 5 kHz steps. Frequencies are selected by thumbwheel switch and slide switch for 5 kHz increments.

The receiver employs CMOS microprocessor to offer a multitude of features at an economical price, as well as being small and lightweight. Features included are wide range (30 MHz minimum), 2 field programmable memory channels, high sensitivity, OSM coaxial antenna connector, and 2 penlight cells operation. The actual size is 130 mm (H) × 63 mm (W) × 26 mm (D) and weight just below 200 grams.

For further information, contact Ace Communications, Inc., 22511 Aspan St., Lake Forest, CA 92630, or circle number 106 on the reader service card.

IN-LINE Power Cord Transient Voltage Suppressor & EMI/RFI Filter

Kalglo Electronics Co., Inc. has announced a new IN-LINE Power Cord transient voltage suppressor and EMI/RFI noise filter. The unit is designed to replace detachable power cords and provide voltage surge protection and EMI/RFI noise filtering. The unit features a 3-staged surge suppression network and a 3-staged noise filtering network which works synergistically with each other to provide 6-stages of total protection.

The unit's 7-foot cord allows for easy access to wall outlets and its status light informs the user it is functioning properly. The unit's design is ideal for portable radios, computers, word processors, typewriters, calculators, cash registers, test equipment, or any electronic or electrical equipment furnished with a detachable CEE-22 power cord.

For more information, contact Kalglo Electronics Co., Inc., 6584 Ruch Road, E. Allen Twp., Bethlehem, PA 18017, or circle number 108 on the reader service card.

The Cluster Beacons Revisited

An Inside Look At Nine Puzzling "Channels"

BY WILLIAM ORR, W6SAI

My previous article discussed the mysterious "cluster beacons" that can be found in various portions of the HF spectrum. These are CW beacons, keyed on and off with various letters and symbols. They have been on the air, in one form or another, for over a decade. The beacons cluster together in narrow frequency spans about 4 kHz wide, spaced across the radio dial (Figure 1).

Extended listening and direction finding tests have proven that the beacons are Soviet in origin. Listening posts in Hawaii, California, Massachusetts, and Europe have been able to determine that the cluster beacons are spread across the USSR, generally in an east-west pattern. Some beacons transmit digital data along with the identifying symbol; others do not. The identifier changes from time to time on a single beacon frequency, indicating that either the beacon code has changed, or the beacon has left the air and another one has taken its place.

The Beacon Cluster

Although the beacon cluster seems to be merely a jumble of signals, this is not the case. The cluster follows a definite pattern that is repeated from cluster to cluster and this pattern is being refined daily as more beacon reports are received from various parts of the world.

Figure 2 shows the complete cluster plan, as of summer, 1984. The clusters listed in Figure 1 are shown vertically, with the individual cluster frequency read on each line of the chart. Frequency is read from left to right, with 100 Hz intervals marked. To simplify matters, the clusters are broken down arbitrarily into eight channels, with 500 Hz separation between channels. Channels read vertically on the graph. Some interesting conclusions can be reached by a close study of the chart, channel by channel.

Channel 0: This channel is the lowest frequency channel in the clusters, comprising the frequencies 3564, 5305, 6801, 8645, 10643, 13635, 17015, 20991 kiloHertz. The only beacon signal heard on this channel is a V-beacon heard in the mid-Pacific area. It has not been confirmed by reports in the continental USA. Listeners should search for this beacon during the early morning hours of winter and spring to verify it. Other frequencies on this channel should be monitored to see if the V-beacon exists on other cluster bands.

Figure 1

Band	Range
3 MHz	3564 - 3568 kHz
5 MHz	5305 - 5309 kHz
6 MHz	6801 - 6805 kHz
8 MHz	8645 - 8649 kHz
10 MHz	10643 - 10647 kHz
13 MHz	13635 - 13639 kHz
17 MHz	17015 - 17019 kHz
20 MHz	20991 - 20995 kHz

Unconfirmed reports suggest another beacon band exists in the 13.015 MHz region. Reports confirming or denying this will be appreciated.

Channel 1: This channel is occupied by signals having the identifiers S and F. It is not known if this is one or two beacons. The S-beacon sends long strings of complex digital information. So far, no digital information has been heard on the F-beacon. Note that the S-beacon on 5305.5, 6801.5, 8645.5, and 10643.5 kiloHertz has been logged on the U.S. east coast but not the west coast. It is assumed, therefore, that the beacon is in the western area of the USSR. The F-beacon, on the other hand, has been heard on the west coast on almost all bands. Possibly it is located in the eastern area of the USSR (Siberia).

Slightly below Channel 1 in the 17 MHz band is a G-beacon that has been heard only in the Pacific area. West coast monitors should look for this beacon during the winter months in the early morning.

Channel 2: Channel 2 seems to be the habitat of a C-beacon. It can be heard on the higher frequencies on the west coast and also on the east coast on the lower frequencies. This seems to place its location in the western area of the USSR. Note that in the 8645 kHz band it is on the same frequency as commercial station LPD4 (Argentina), making if difficult to receive this beacon in the western U.S.

The C-beacon in the 20 MHz band is extremely loud in northern Europe, suggesting the beacon is in the Black Sea (Odessa?). It cannot be heard in the western U.S. on the lower bands, but is audible in the eastern U.S. as low in frequency as the 5 MHz band.

Beacons with the identifiers S and A have been noticed on this channel in the western U.S. Perhaps they are located in Siberia.

About 200 Hz above Channel 2 is an interesting beacon that sends the letter K on an 8-second interval. It has been heard in the western U.S. on all bands except the 10 and 13 MHz ones. It is very loud during the winter months in the late evening hours on the 3 MHz band. Its probable location is Kharbarovsk, on the Kamchatka peninsula.

To tantalize the listener, an A-beacon has been noted on this channel at various times in the Pacific area. And the question remains: why hasn't the K-beacon been heard in the 13 MHz band?

Channel 3: Channel 3 seems to be taken over by a P-beacon, logged on all bands except the 3 MHz one. It can be heard on the lower bands on the east coast, but only on the 13 MHz band on the west coast. Reception of the P-beacon in the 17 MHz band is difficult because marine station KPH (near San Francisco) is on this frequency. East coast listeners should search for this beacon in the 3 MHz band during the winter months. Since this beacon is well-received on the east coast, if is probably located in European USSR.

Channel 4: The D-beacon on Channel 4 is thought to be in the Crimea area because of the great strength of this beacon in Europe on the 20 MHz band. Spurious emissions from this beacon jam the low frequency of the 21 MHz amateur band in some portions of Europe. It can be heard in the western U.S. only on the higher frequencies.

Two hundred Hz above Channel 4 is a K-beacon that is very loud in the western U.S. It has not been logged yet in the eastern portion of the U.S. The keying rate is 8 seconds, and some observers think this signal is a spurious emission of the K-beacon that is exactly 1 kHz lower in frequency. I think not, as the two beacons have never been heard on the air at the same time. The K-beacon is in Asiatic USSR and perhaps in the same physical location as its lower frequency counterpart.

Channel 5: This channel is the home of the G-beacon. It has been heard mainly on the east coast, indicating a western-USSR location. The 3 MHz band should be watched this winter for the appearance of this beacon. The channel is partially blocked by the west coast of the USA by marine station JDC (Japan).

Channel 6: Listeners agree that the O-beacon is located on this channel and it appears to come from European USSR. It has been heard on the west coast of the U.S. on the 10 and 13 MHz bands. Two hundred

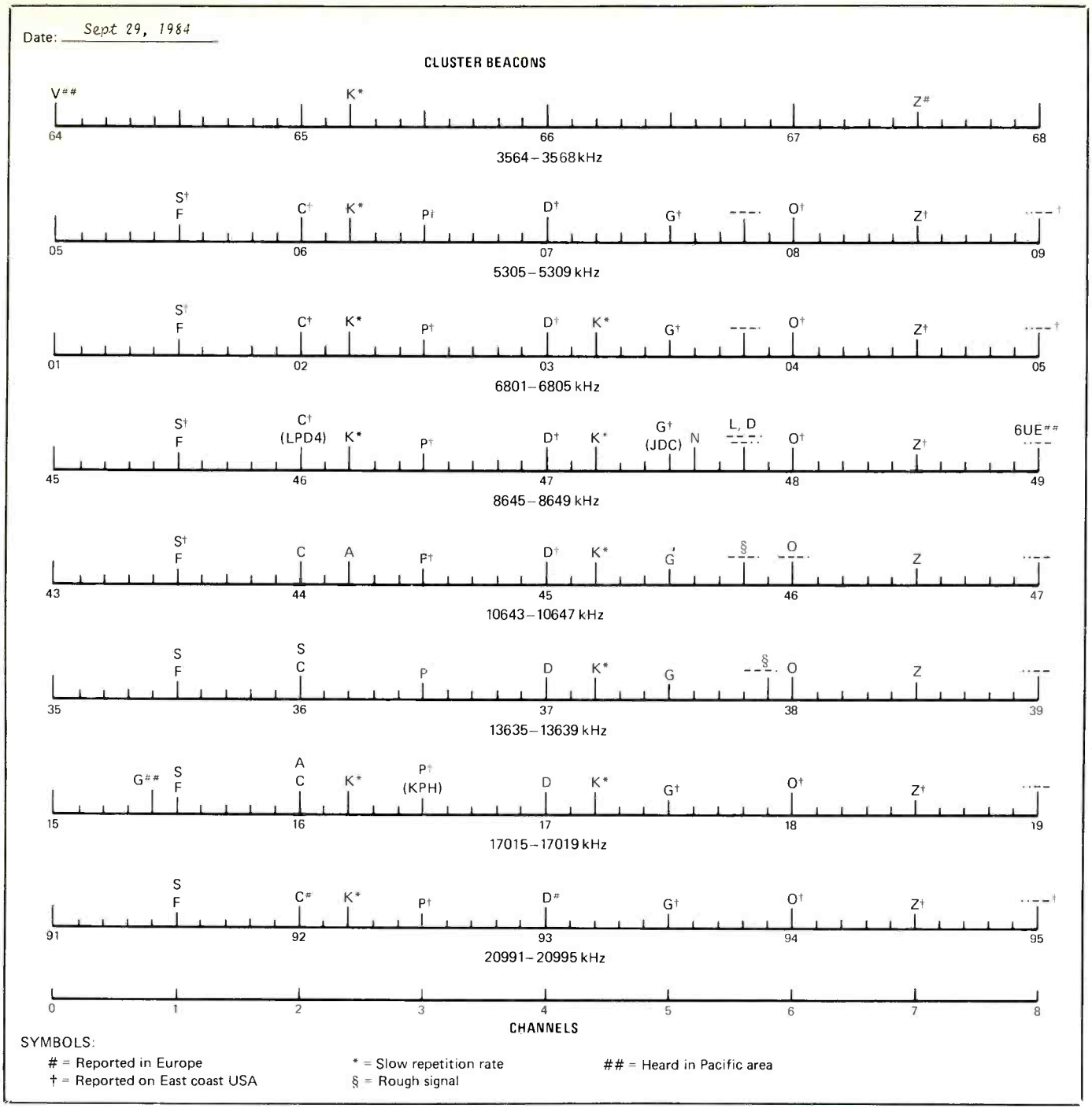


Figure 2

Hz below Channel 6 is an interesting beacon. It transmits the Cyrillic identifier – – – •. Sometimes this identifier takes the form of the letters L or D and occasionally Z. Is this a fault in the transmitting equipment, or is it a meaningful change in the identifier? It has been noted that the transmissions in the 10 and 13 MHz bands are "rough." That is, the signal is not a pure one. Is it caused by equipment malfunction? Or is the beacon powered from a motor-generator source that adds a distinct tone to the signal? In any event, this is one of the most interesting beacon signals.

Channel 7: The Z-beacon has been heard on all bands on this channel. The beacon in the 3 MHz band has been heard only in Europe, and the beacon in the 20 MHz band causes much interference to European radio amateurs because of its spurious emissions. It is very loud in England. Location? Possibly the Crimea area of the USSR.

Channel 8: The beacon on this channel transmits the Cyrillic character • • – –. It has been heard in Europe on the lower bands and this indicates a European USSR location. It has been heard on the west coast of the USA only in the 8, 10, 13, and 17 MHz bands.

Other Beacon Signals

Scattered oddball beacon reports have been received and logged from time to time. An N-beacon has been logged in the Pacific area in the 8 MHz band just above Channel 5. The G-beacon in the 17 MHz band and V-beacon in the 3 MHz band have been heard in the Pacific but not in the continental United States.

On Channel 8, the • • – – beacon in the 8 MHz band has on occasion sent 6UE. Possibly, possibly not, this is a different, interfering signal and has nothing to do with the beacon. And the curious action of the – – – • beacon in the 8 MHz band is open for further observation. Finally, why does the – – – • beacon sound so "rough" in the 10 and 13 MHz bands?

Where Do We Go From Here?

It stands to reason there are more cluster beacons that have not been logged and identified. The 3 MHz band is virtually empty of verified signals. Logic says they are truly there, they have not been noted—yet. Monitor the 3564-3568 kHz region during the winter night hours for additional beacon signals!

Is the V-beacon in the 3 MHz band duplicated on other bands? What about the N-beacon in the 8 MHz band? Does it exist on other bands?

Close observers will note that beacon signals go on and off at various times and some are not on the air on the weekends (operators running a 40 hour week?).

Some observers have reported digital transmissions just outside the upper-frequency edge of the 13 MHz and 10 MHz bands. Are these connected with the beacon signals? And once a solitary beacon signal was noted 1 kHz outside the lower edge of the 10 MHz band. Was it a transmission in error, or do other beacon signals exist outside the arbitrary limits of the bands?

Monitor these bands and the adjacent frequencies during the cooler months. Report your beacon reception to me, in care of *Popular Communications*. Let's log *all* the cluster beacons before summer static and the DX capabilities are reduced! Let's fill in this chart completely! **PC**

RECEIVE WEATHER CHARTS IN YOUR HOME!

SPECIAL!
While Supply Lasts
UNIDEN CR-2021
HF General Coverage
Receiver only $95
plus $5 s/h When
purchased with Weather
Chart Recorder Kit

You can DX and receive weather charts from around the world.

Tune in on free, worldwide government weather services. Some transmitting sites even send weather satellite cloud cover pictures!

You've heard those curious facsimile sounds while tuning through the bands—now capture these signals on paper!

Assemble ALDEN's new radiofacsimile Weather Chart Recorder Kit, hook it up to a stable HF general-coverage receiver, and you're on your way to enjoying a new hobby activity with many practical applications. Amateurs, pilots, and educators can now receive the same graphic printouts of high-quality, detailed weather charts and oceanographic data used by commercial and government personnel.

Easy to assemble—Backed by the ALDEN name.

For over 40 years, ALDEN has led the way in the design and manufacture of the finest weather facsimile recording systems delivered to customers worldwide. This recorder kit includes pre-assembled and tested circuit boards and mechanical assemblies. All fit together in a durable, attractive case that adds the finishing professional touch.

Buy in kit form and save $1,000!

You do the final assembly. You save $1,000. Complete, easy-to-follow illustrated instructions for assembly, checkout, and operation. And ALDEN backs these kits with a one-year limited warranty on all parts.

CIRCLE 112 ON READER SERVICE CARD

Easy to order.

Only $995 for the complete ALDEN Weather Chart Recorder Kit.

To order, fill out and mail the coupon below. For cash orders enclose a check or money order for $995. Add $5 for shipping and handling in the U.S. and Canada, plus applicable sales tax for CA, CO, CT, IA, MA, NY, WI. (Export price is $1250 F.O.B. Westborough, MA. Specify 50 or 60 Hz.) To use your MasterCard or Visa by phone, call (617) 366-8851.

ALDENELECTRONICS
Washington Street, Westborough, MA 01581

NAME:_____

CALLSIGN:_____

ADDRESS:_____

CITY:_____ STATE:_____ ZIP:_____

☐ I've enclosed a check or money order for $995.00 and $5.00 for shipping and handling, plus applicable sales tax.

☐ Charge to: ☐ MasterCard ☐ Visa

ACCOUNT # (ALL DIGITS)

EXPIRATION DATE

SIGNATURE REQUIRED
IF USING CREDIT CARD _____

POPCOMM

SATELLITE VIEW

INSIDE THE WORLD OF TVRO EARTH STATIONS

BY FRANK BAYLIN

Satellite Telephone Systems

The unique advantage of satellite technology is its ability to reach even the most remote corners of vast geographical areas. As a result, satellite television has brought big-city entertainment to rural areas. In the near future, satellite telephone systems for both fixed and mobile users will bring about a second revolution by tying every community and remote outpost together to the global communications network.

At present, two companies are designing comprehensive satellite telephone systems. The unique aspect of both the Mobilsat and the Skylink systems lies in the end-users' ability to use low-cost equipment for relaying digital messages directly to an orbiting satellite. Until recently, a two-way satellite communication circuit required the use of an extremely expensive uplink. For example, a broadcast quality uplink could cost up to $600,000. By contrast, Skylink's "Personal Satellite Phones" are expected to range in price from $1500 to $3000, so consumer leasing costs could be an affordable $30 to $60 per month.

Michael Exner, president of Skylink Corporation, sums up his company's strategy. "We are aiming Skylink at a very specific market niche: people and equipment that operate beyond the reach of existing conventional terrestrial communication services. If you want to reach out and touch someone, you may find them unavailable within the present telephone and radio networks. Our service will provide contact to those areas traditionally inaccessible. Skylink will provide telephones where there are none today."

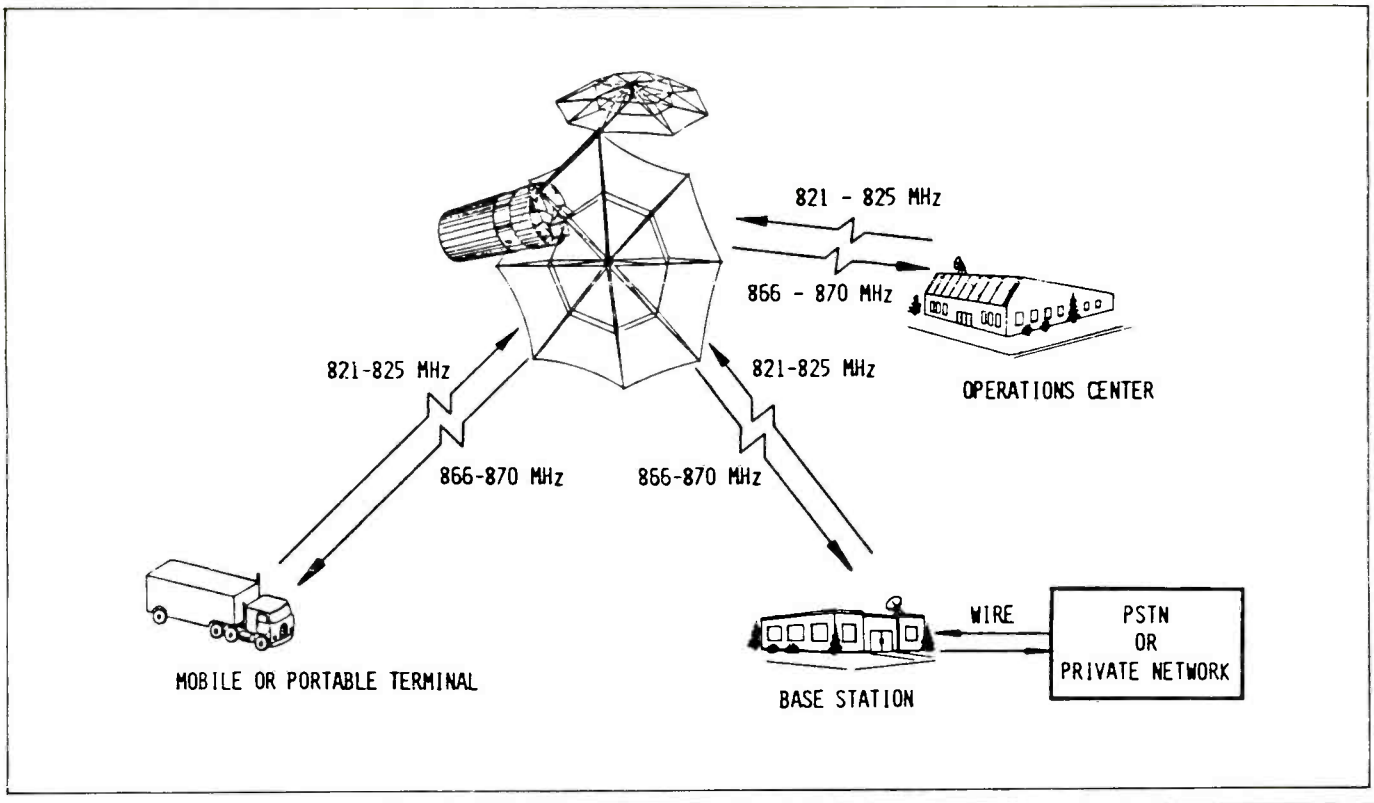
The proposed Skylink network consists of four main elements: the Personal Satellite Telephone; the Base Station Terminal; the space segment with its associated Operations Center; and the Network Operations Center (NOC). Two types of satellite telephones will be used; the mobile remote terminal and the portable remote terminal. The mobile unit communicates directly to satellite via a small, low-gain omnidirectional antenna and a 5-watt power supply. The portable remote unit uses only one-fourth of the power because it uses a higher gain, directional antenna which can be fixed on a remote cabin in the mountains or any other inaccessible location. A small, axial mode helix will be used as an antenna.

The Base Station Terminals (BST) serve as the hub of any company or group which decides to function as a wholesaler of this satellite telephone system. BSTs used in smaller networks will require use of only a single frequency-agile channel modem and will use only a small portion of the network's capacity. Larger rural common carriers will use more sophisticated setups.

Skylink has applied to the FCC for permission to launch three geosynchronous satellites at 75, 105, and 135 degrees west to serve its network. They propose to use the 821 to 825 MegaHertz band for the uplink and the 866 to 870 band for the downlink. Initially, the system will be operated from a single ground control station located in Boulder, Colorado. This range of frequencies will provide for 800 voice-capable channels or alternately sixty-four hundred 300 bit per second data channels per satellite. A mix of fewer of both channel types will be used in the operational system.

This type of network is termed thin-route because it provides rather low data rates per user rather than bulk transmissions (as is the case with trunk lines). In future generations of Skylink satellites the scarce frequency will be reused by employing either four or seven spot beams to target different regions of the country with the same frequencies. This is the same strategy which has made the rapidly growing urban cellular telephone system possible. The frequency reuse technology will eventually increase the capacity of this

Figure 1: *The Skylink Network*



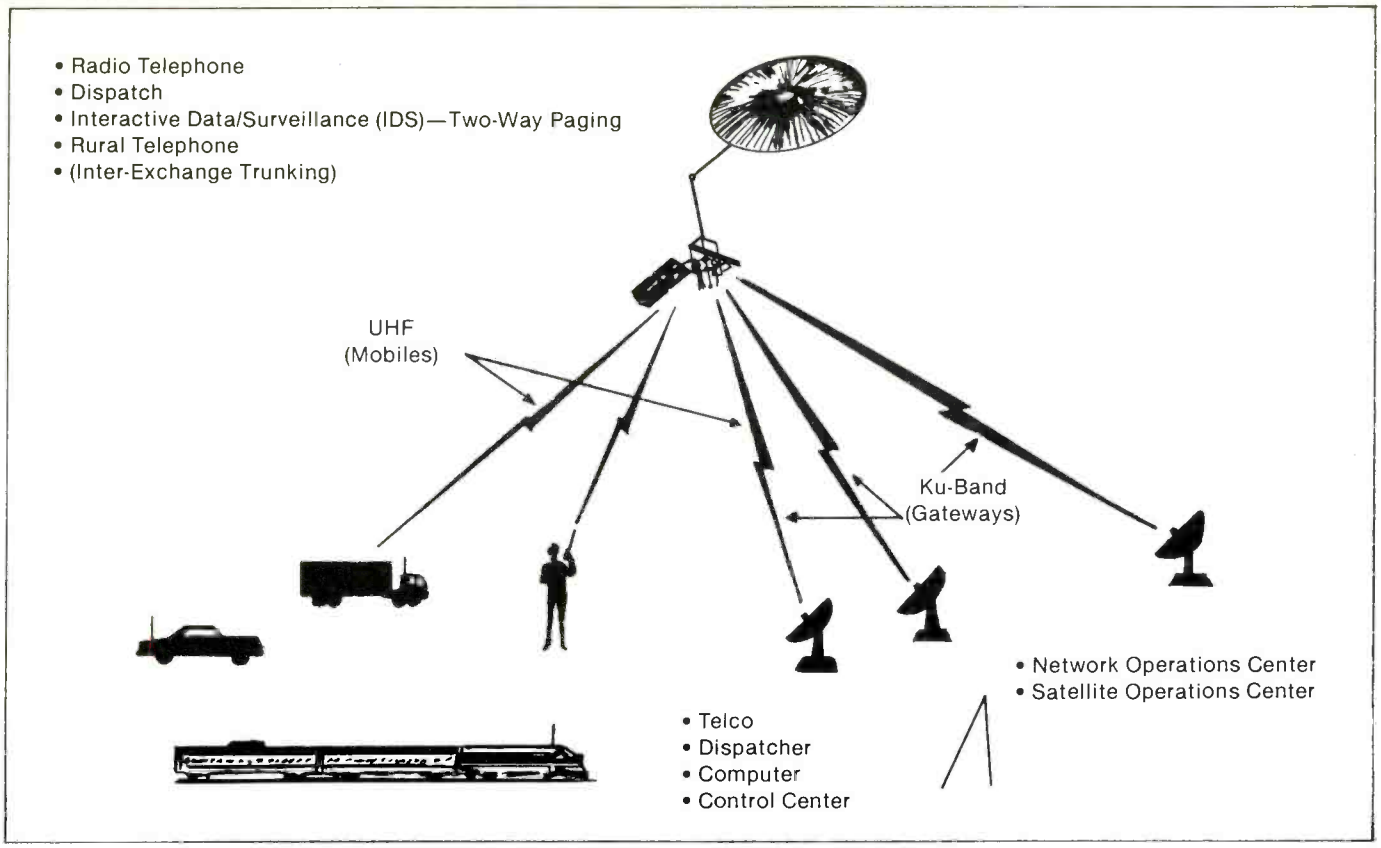


Figure 2: *Land Mobile Satellite System Operating Concept.*

satellite telephone system by a factor of 12 to 15, thus allowing up to 30,000 voice-capable channels per orbit location.

The Network Operation Center will be the heart of this network. It communicates via 5-meter antennas to all the BSTs and includes all control, performance monitoring, and billing subsystems.

Skylink is currently actively perfecting two major technical advances which will underlie the operation of its system. One will reduce the cost of providing very high efficiency digital signaling; the other will improve overall satellite power conversion efficiency by 300%. In addition, this company is actively working with the Canadian authorities to ensure that a bi-national compatible system is placed into service.

The proposed Mobilsat satellite system is quite similar in design to the Skylink network. This company plans to own at least two in-orbit satellites. The Satellite Operations Control Center will coordinate the activities of all the network gateways (termed BSTs in the Skylink system). Mobilsat expects that there will be a large number of gateways at telephone exchanges, dispatch offices, public service organizations, and computing centers.

The system operation is also similar. A user initiates a digital transmission to satellite in the UHF band (in the range of 800 MegaHertz) by calling any fixed or mobile telephone in the worldwide telephone system. This signaling and the message are relayed via satellite in the Ku band (near 12 to 14 GigaHertz) to the Satellite Operations Control Center which alerts the nearest gateway and assigns a pair of talking channels between the gateway and the mobile phone.

The Mobilsat group envisages serving a rather wide range of users in addition to telephone exchanges. This includes voice and digital dispatch, interactive data communication and surveillance, supplementary air traffic control, and inter-exchange trunking. In effect, once these thin-route systems are in place, their possible uses will certainly multiply.

Both Skylink and Mobilsat are actively seeking FCC approval while simultaneously designing their hardware and network architectures. The underlying concepts are valid and such systems will certainly exist within 3 to 5 years. The end result will be a much improved communications system available to those in even the most remote locations. PC

RTTY

BY JOSEPH JESSON

THE EXCITING WORLD OF RADIOTELETYPE MONITORING

Recently, I've gotten quite a bit of mail regarding the selection of a suitable receiver for RTTY reception. John Davis writes to inquire about the myriad of options available for the ICOM R71A and specifically what options are recommended for RTTY and CW listening. As most of *POP'COMM's* readers, John enjoys general SW broadcasts, ham, and SSB monitoring and is curious as to what options are usable for specific modulation choices.

```
RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRRYRYRYRYRYRY
QRA Y7A53 Y7A59 RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
QRA Y7A53 Y7A59 RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
QRA Y7A53 Y7A59 RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
```

Figure 1: *MFA Berlin, German Democratic Republic.*

The ICOM R71A represents a particularly good buy for the RTTY hobbyist for several reasons; excellent stability (synthesized), keyboard entry, 32 memories, passband and notch tuning, and a wide dynamic range just to name a few niceties.

Several options include: the CR-64 high stability option increases the stability by reducing the temperature drift characteristic of the primary oscillator. Instead of a frequency drift of several hundred Hertz per hour, the high stability option reduces this to less than 100 Hz per hour. I've noticed different R71A's have various drift characteristics, some receivers are better than others. This option is highly recommended for RTTY buffs. A good (sharp internal audio mark/space filters) demodulator will show dramatically an increase of RTTY character "hits" or errors if the HF receiver is slightly mistuned due to drift. Drift may be caused by temperature changes or long term aging of the crystal used in the oscillator. Either way, an improvement in the oscillator will help reduce RTTY errors. Keep in mind that the primary oscillator is used to derive *all* frequencies selected by using phase locked loop techniques.

This option is a waste of money if your only interest is in AM voice reception. Option EX310 is a voice synthesizer and may be a useful aid if the bright vacuum display is difficult to read due either to a visual handicap or an inconvenient location of the receiver. I certainly would include option FL-44, a 2.4 kHz filter for board shift RTTY, SSB, ECSS, and narrow AM reception. A 2.4 kHz is marginal for narrow shift (170 Hz) RTTY and a 1.8 kHz filter is preferable over a broader filter. My favorite option for the R71A is the remote control option. A dyed-in-the-wool RTTY buff will eventually want his computer to program the actual RTTY frequency. The remote control option will allow exactly this set frequency by loading the frequency information into the remote control port. Previously, the remote control option has been difficult to obtain. The only other consumer receiver to offer remote control has been the excellent JRC NRD515 shortwave receiver.

Other custom options are also available from Electronic Equipment Bank (EEB), 516 Mill Street NE, Vienna, VA 22180.

Two of our readers wrote in to specifically answer the September 1984 question of our German friend's listing—the Washington to Moscow "HOT LINE"! Who said RTTY monitoring wasn't the most exciting of all monitoring hobbies! This message has been verified as the offical daily RTTY test message between point-to-point locations. As we said last month, this "hot line" is not a telephone line but an RTTY system. This RTTY "hot line" is due for a major change in the next 12 months.

Brian Crum writes in to ask the relationship of words-per-minute (WPM) and baud rate. Baud is measured as one over the minimum bit time and 60 WPM equals 45 baud (most hams), 66 WPM equals 50 baud (press, military and weather), and 100 WPM equals 74 baud (weather and military). Until one gets the audible sense of data rate, select various baud rates (while starting at 50 baud) until plain text is achieved. After listening to RTTY for several months and matching the shift and speed setting to obtain plain text, selection can be made by simply listening to the distinctive sound. Listening to an RTTY signal using 170 Hz shift is different than a shift of 850 Hz and a 50 baud rate is also different than 74 baud. Other modulation schemes will be designated as special or unusual mode designations: AFSK for audio frequency shift keying, ASCII for computer compatible coding, FEC for forward error correction, SITOR for teletype over radio, and FG for frequency division multiplexing. Note that all of the above modulation "sounds" different and experience is required to recognize all of the unique modulation schemes.

Figures 1 and 2 represent printouts from two German RTTY transmissions. MFA Berlin can be found on several frequencies: 23460.0 kHz, 22950.0 kHz, 20020.0 kHz, 19440.0 kHz, 17395.0 kHz, 17128.0 kHz, 16356.0 kHz, 16199.0 kHz, 15963.0 kHz, 14569.0 kHz, 14460.0 kHz, 14409.0 kHz, 13538.0 kHz, 11459.0 kHz, 11443.0 kHz, 10464.0 kHz, 9086.0 kHz and 8008.0 kHz.

Watch 14409.0 between 0430-0800 GMT for German news or direct messages. DPA, the Deutsche Presse-Agentur GmbH is located in Hamburg, Federal Republic of

Figure 2: *DPA (Deutsche Press-Agentur GmbH) in Hamburg, Federal Republic of Germany.*

```
131728 SEP 84 NNNN

ECWØ67 4 I 68   DPA Ø62

INDIA-PAKISTAN ;
   NEW DELHI, SEPT 13 DPA - INDIAN AND PAKISTANI TROOPS EXCHANGED
FIRE THURSDAY IN THE URI SECTOR OF ZHAIR COMMON BORDER IN KASHMIR,
THE UNITED NEWS OF INDIA REPORTED.THE NEWS AGENCY SAID PAKISTANI SOLDIERS
PROVOKED THE INCIDENT.
INDIAN TROOPS REPULSED THE FIRE, IT ADDED.
   SIX PAKISTANIS WERE KILLED IN A FIRE EXCHANGE IN THE SAME SECTOR
IR/WPC/KS
```

```
OEØOTO
BHV OVAHUCITDAKUP (KWACTAU ITAPRECS)
                                    8 94/10/84

88=78 Ø
      VQKWACHA UNITA PRESS) A AGENCIA DE NOTICIAS
DA UNITA, (UNIAO NACIONAL PARA INDEPENDENCIA TOTAL DE ANGOLA),
TRANSMITINDO PARA AFRICA AUSTRAL E PARTE DA AFRICA CENTRAL
EM LINGUA PORTUGUESA E INGLESA APARTIR DO TERRITORIO LIVRE DE
ANGOLA, DIARIAMENTE AS 06HOO GMT AOS 10,9 MHZ NO PERIODO DA
MANHA E 12,7 MHZ NO PERIODO DA TARDE, NO SISTEMA DE TRANSMISSAO
RADIO-TELEGRAFO.


ANNOUNCEMENT OF KUP (KWACHA UNITA PRESS) THE NEWS AGENCY OF UNITA
THE NATIONAL UNION FOR THE TOTAL INDEPENDENCE OF ANGOLA,
TRANSMITTING FOR SOUTHERN AFRICA ANDPART OFCENTRAL AFRICA
IN PORTUGUESE AND INGLISH FROM THE FREE LAND OF ANGOLA DAILY
AT 06HOO AND 12HOO GMT ON 10,9 MHZ IN THE MORNING AND 12,7 MHZ
IN THE AFTERNOON, IUSING TELEGRAPH RADIO TRANSMISSION.


KUP KUP KUP KUP KUP KUP

FIM FIM FIM

A PROXIMA EMISSAO AS 12HOO GMT AOS 12,7 MHZ OBRIGADO.



KUP KUP KUP KUP KUP KUP

ENDS ENDS ENDS

NEXT TRANSMISSION AT 12HOO GMT ON 12,7 MHZ THANK YOU.
```

Figure 3: *10899.2 kHz, 425/50 baud, SIO = 343 in South Africa, 0600 GMT.*

Germany. Local West German news coverage is conducted from regional bureaus in Hamburg, Hannover, Dueseldorf, Frankfurt, Stuttgard, and Munich. The DPA's charter states that they shall carry out its task impartially and independent of pressures exerted by parties or ideological, economic and finance groups. Contrast this to the MFA, a propaganda arm of the government.

Of course, the MFA often has nasty things to say regarding the U.S. leadership. DPA can be found on 18697.6 kHz, 18700.7 kHz, and 15996.1 kHz between 0900-1400 GMT.

Set your shift select to 425 Hz and baud rate to 50 for both MFA and DPA news agencies. Phase should be normal.

ADN, Allgemeiner Deutscher Nachrichtendienst, is located in Berlin, German Democratic Republic. ADN schedules are subject to changes but recent loggings have been located on 10785.0 kHz, 13735.0 kHz, 14799.9 kHz, and 19723.0 kHz. Use 50 baud, 425 Hz shift for decent copy. Also, the frequencies listed are English with a standard RY RTTY test message.

Figure 3 is a choice RTTY find at a setting of 10899.2 kHz, 0600 GMT, 425 Hz, and 50 baud. Logged in South Africa, Kwacha Unita Press may not be heard in the North but give it a try and let me know if you have any success. Both Portuguese and English are transmitted daily. Send in your RTTY loggings so we may share your favorite RTTY finds. PC

SURVIVAL

BY R.L. SLATTERY

ESTABLISHING SURVIVALIST COMMUNICATIONS SYSTEMS

We received word from NCG, 1275 North Grove St., Anaheim, CA 92806, that they have a new 49 MHz VHF FM transceiver available. This unit is called the Shuttlecock 3 and it offers full duplex communications over a 1/4 to 1/3-mile area. Features include hands-free operation, a standby switch to save the battery, a receive-only switch, wraparound or vertical antenna. These units operate from 9 volt batteries. These are sold in frequency-matched sets of 2 transceivers operating in the no-license band between 49.83 to 49.89 MHz. The suggested retail is $119.95 for the pair of transceivers.

Received an interesting letter from Rick at Kootenai Radio and Energy Systems, Box 215, Kootenai, ID 83840. Rick puts out a really well done newsletter directed towards survival type folks. The publication covers radio communications, alternative energy, and general survival topics and techniques. Rick says that he is also a supplier of all sorts of survival communications and emergency power gear as well as other related equipment, in addition to his newsletter (which is called *The Light Spectrum*). Rick, who is an active ham operator, knows his onions from the looks of the newsletter and at $18 per year for a subscription (six issues) to *The Light Spectrum*, it looks like a pretty good deal to us.

Solarex Corp., 1335 Piccard Drive, Rockville, MD 20850, has brought out three new photovoltaic modules carrying a minimum wattage guarantee. The new modules are the SX-38 (a 36 cell, 38 watt module), the SX-42 (36 cells, 42 watts), and the SX-146 (40 cells, 46 watts). Although the usual practice for companies producing photovoltaic products is to offer "nominal" specs based upon minimum power output, Solarex guarantees that the power output of a given module will have a specified power output. These modules have a 5-year warranty.

Here's a suggestion that came in from Gar Cobb of Arkansas and it seems like a useful one. Gar notes that in order to establish an operational survival or emergency command post at a remote location, one has to be able to erect antenna systems for scanners, transceivers, and communications receivers (similar to the ones described in last month's column).

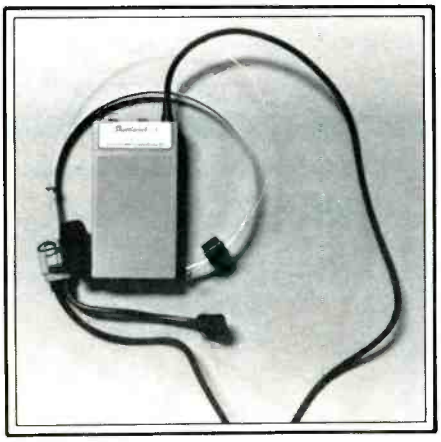
What Gar suggests is that for those who don't have a full-blown communications van, bus, or truck, there is no need to spend a lot of time erecting the antennas. Let's say that one is working with a regular passenger vehicle. Obviously it gets pretty cramped inside a car if a couple of communications people are attempting to use the vehicle as a command post. Gar says, forget it! Use the car only to transport the equipment along with a collapsible table sturdy enough to support the equipment. Also bring along a few folding chairs.

A montage of QSLs from lively and illegal outbander communications frequencies.

Upon the arrival of the operations site, the table and chairs are set up, and the equipment is placed on the table. Power is connected from your usual source—the vehicle's electrical system, a generator, or a battery which is recharged by solar or wind power. The antenna system? Easy! You simply use the antennas already installed on the vehicle. If they've been installed properly they should actually be most efficient.

Be certain not to locate the vehicle too close to your operating site, but bring along enough coaxial cable to hook your equipment to the vehicle's antenna system. If the antennas in the vehicle are normally used in conjunction with equipment installed in the vehicle itself, you'll have to bring along extra cable and attach it to the existing connectors. This can easily be accomplished by using a PL-258 "barrel" coupler (Radio Shack #278-1369 or equivalent).

Gar came up with this idea out of necessity. Seems he owns an ambulance service which uses radio dispatching. One day a couple of years ago there was a violent storm which took down the company's antenna mast and threatened to temporarily shut down dispatching operations. At that point one of the ambulances was just backing into the dispatch area and Gar realized that the vehicle's antenna system might be used in a pinch. Within minutes, a 50 ft. length of coaxial cable (with connectors) was obtained from a local store and run between the base station transceiver and the vehicle antenna—it went right out the building window and through the vehicle window! No, it wasn't as good an antenna as the original one atop the mast, but it was better than he thought it was going to be. He also has used this same idea in reverse. When the base station transceiver unexpectedly conked out last summer, he pulled one of the ambulances up to the dispatching office window and connected the mobile unit's transceiver to the base station antenna. Until the service technician came to repair his base station rig he had dispatching capabilities. Gar realized that both of these ideas had a number of potentials for our readers and thoughtfully passed them along. Many thanks, Gar!



The NCG Shuttlecock 3, a new 49 MHz transceiver.

Reader Phil W. of Tacoma, Washington advises that he was told to consider establishing a communications system for his

survival training group on "one of the outband frequencies." Communications shops in his area tell him they don't know what he's talking about and hopes we can help him out with some information. That we can, although the person who gave Phil the original advice should have filled him in on the relative dangers of such operation.

So-called outband frequencies (also known as freeband frequencies) are those used for unauthorized communications between 26.00 and 26.96 MHz, also 27.41 to 27.99 MHz. Much CB equipment can be modified for operation on these frequencies and puts the operator on the air on frequencies which are free of any interference from CB operators. Most folks who elect to operate on these frequencies are either unaware or unconcerned that they are actually dedicated to certain legitimate uses and that unauthorized (and often high-powered) communications could cause interference to authorized users. Many of these frequencies are, in fact, dedicated to governmental uses. For instance, between 27.54 and 28.00 MHz, frequencies are exclusively reserved for federal use and are moderately active for such purposes, especially 27.575 and 27.585 MHz. Below 27.54 MHz, there are also several frequencies assigned to the Business Radio Service and illegal use of those frequencies by outband operators could cause interference to those operations on 27.41, 27.43, 27.45, 27.47, 27.49, 27.51, and 27.53 MHz.

Aside from the altruistic motives of not wishing to cause interference to authorized communications activities on these frequencies, one very good reason for avoiding them is that the FCC has been monitoring them rather closely and closing in on those who operate there. This is nothing new and has been going on for a number of years now. In fact, at one time there were several large groups of operators organized on outband frequencies—notably the "HF International" and "Whiskey" groups—and the FCC gave them considerable hassle, eventually charging that they constituted as "organized scheme" to circumvent federal authority and regulations.

Today the authorized CB frequencies are far less crowded than they were back in the mid-1970's when many operators fled to the outband frequencies. There is really no valid reason to operate on outband frequencies unless you simply enjoy living dangerously and are interested in possibly causing interference to someone else's communications. And if 27 MHz doesn't suit your fancy, there are many other places in the spectrum where operations can be established without headaches from the FCC or raining on someone else's parade. There are, nevertheless, many stations still entrenched on outband frequencies (mostly pseudo-Ham type hobbyists) and efforts to remove them by federal enforcement and rational explanation have been only moderately successful. Some people just don't care, I guess. My advice is to avoid the outband frequencies for your proposed operation. PC

BROADCAST TOPIX

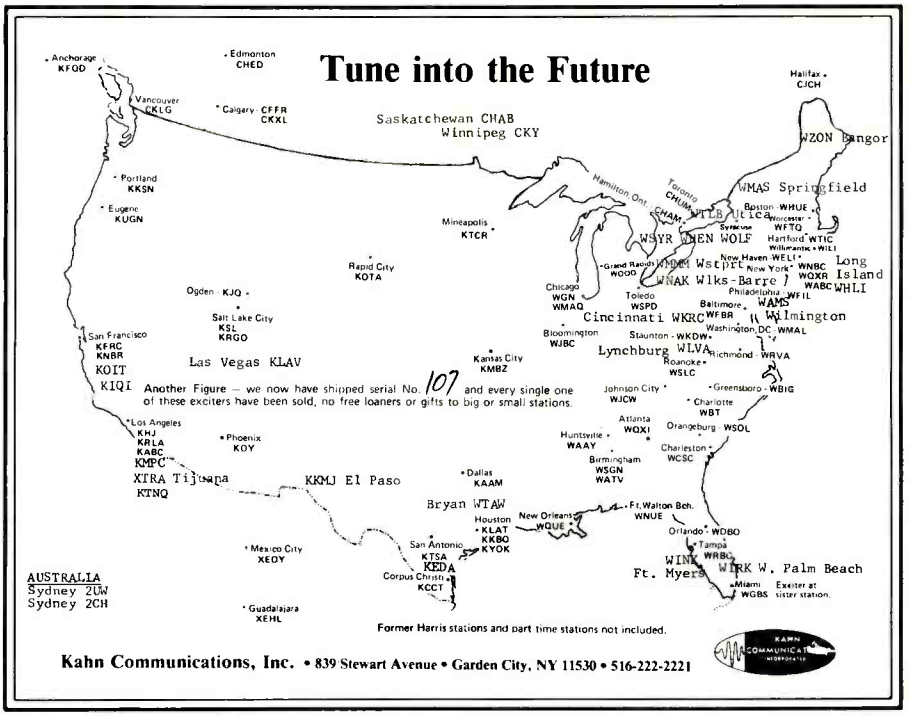
BY MARK J. MANUCY, W3GMG

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

Have you heard AM STEREO yet? You've never heard it (AM) so good!!! I have read about AM STEREO for years now but back in September a friend of mine let me borrow his Sony SRF-A100 portable radio. I spent the next two weeks with my ears glued to the headphones! Way back in the early sixties when FM STEREO first became available, I spent many a night listening and enjoying this "new" mode. At that time there were only a handful of stations on the air and one had to hunt to find a stereo station. Many were just broadcasting in stereo a few hours a day because there was not a whole lot of material available. Most stations were using two track tapes because there was more music available on them and they were better quality than records and four track tapes. Today most broadcasters still use two track for stereo reel to reel broadcasting because of the inherently better quality and lower noise level they provide. Two track tapes can also be spliced with ease.

Anyway, getting back to AM STEREO, I haven't had so much fun DXing in years! This is where AM has it all over FM! I can sit in my shack and tune in stereo stations all over the country. To add some fascination to AM STEREO DXing, there are four different systems currently being used by broadcasters. Each one requires a different stereo detector. However, three of the four can be decoded with a single detector. Motorola, Magnavox, and Harris uses a multiplexed AM/PM signal that can be heard with a single decoder. The Kahn/Hazeltine system uses an Independent Sideband system which only requires two regular radios to hear stereo. More about the others in a minute, but first let's look at this simple "two radio stereo." In the late 50's and early 60's, broadcasters were using two stations to broadcast stereo. These could have been one AM and one FM (using a common AM/FM station) or it might have been two AM's or two FM's. One would broadcast the right channel and the other the left channel. It didn't work very well, but it was fun and only required two table radios! Kahn's system works best with the proper decoder, but lacking that two AM radios may be used. One is tuned slightly to the high side of the station and the other slightly to the low side of the same station. The radio tuned high is the right channel and the one tuned low is the left channel. Really, this works, and it works day or night so check the map and see what you can hear. This only works with the Kahn system, but he has a lot of stations (over 100) using his system as of now.

The other three systems require a special decoder or adapter, which I hope will be available before too long. When they are available, I'll let you know and have some instructions on how to hook them up to a receiver. The other answer at the moment is the Sony SRF-A100 or the SRF-A1 portable receivers. These are the only ones I've been able to find. The SRF-A1 is a Walkman-type of headphone radio which sells for less than $75. The radio that excited me was the other SONY model, SRF-A100. This radio costs about $10 more, but shop around. It has a bandwidth switch, wide and narrow. In the wide position, AM STEREO sounds better than FM STEREO, at least to my ear! Mono AM also sounds the way the broadcasters want their station to sound, in most cases, excellent. Those stations that boost the high frequencies to compensate for poor radios sound terrible on a wideband radio. At night from Baltimore, half of the U.S. is alive with AM STEREO. As far as the DXer is concerned, the Motorola system is the only system that presents a serious problem when it comes to reception. When there is any fading (always!) or interference, the Motorola system exhibits what is called "platform motion," which is to say the "center stage" of the stereo sound is in constant motion. For example, the announcer or vocalist does not stay in the center of the stereo stage but moves back and forth from left to right. It is very distracting and readily noticeable during skywave reception. This is one way to determine which system is being used if you don't know.

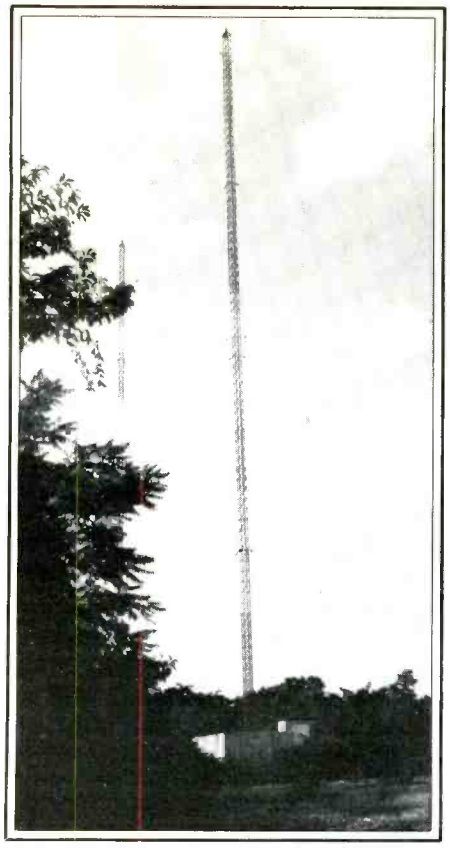


AM STEREO stations using the Kahn/Hazeltine system.

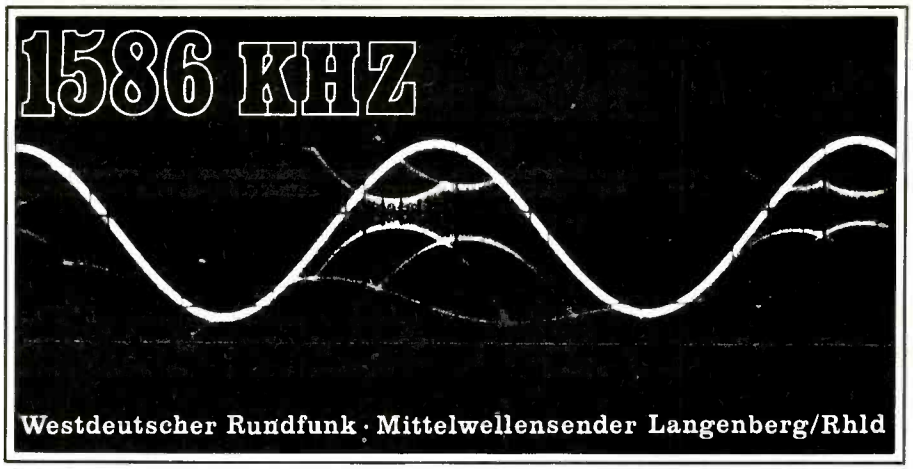
Marconi's Signal Hill in St. John's, Newfoundland in Canada.

The Sony receiver has a two position switch used to select between the KAHN system and the other three. It takes a little practice to get used to tuning this wide-band radio; it seems to tune more like an FM radio. The Sony does not have a stereo indicator light for AM or FM, so one must use his ears to determine when an AM STEREO signal is located. With the switch in the KAHN (B) position, all AM stations sound better and it also gives a slight stereo effect to all stations.

In the daytime, things are different for stereo. If you have a nearby station, the wide band-width does marvelous things for AM. As I tell you a little more about AM STEREO in the next few months, I will also describe a



Antenna array at station WRCN (1570 kHz) in Riverhead, New York. This station was formerly known as WAPC and WHRF. (Photo by Tony Earll)



Jack Roberts' of Gorham, Maine, favorite QSL. It is glossy green on a black background. He uses an old Hammarlund HQ-129X receiver.

loop antenna which you will need for AM STEREO DXing in the daytime. WNBC's stereo sounds great 200 miles out from New York in the daytime.

Mail Call

Lots of mail, again, but still no shack pictures or station pictures. Come on, mine are all the same!

Royal Walker in Suffolk, Virginia has been hearing Radio Paradise on 825 kHz. This station operates on St. Kitts with 50 kw, Royal. Good catch.

Jim Blackburn from Talent, Oregon has been away from the BC band for several years. Says his SX-99 is having more trouble than it used to pulling in east coast stations. It's not the radio, but so many more stations! He's still pulling in Japan on 828 kHz and China on 840 kHz. Nothing wrong with the old Hallicrafter if your hearing those, Jim!

Charles McDonald sent a nice long letter. He's using an R-600 and is asking about loops. Homemade loops are coming up in a couple of months, Charles—stay tuned.

Seems we have quite a group of BCL's in Alaska. This month I heard from Nicholas

Call Letter Changes

AM Stations

Old	New	Location
new	WXWY	Robertsdale, AL
new	KRDZ	Granby, CO
KRDZ	KKMX	Hayden, CO
KIIQ	KIKX	Manitou Springs, CO
WOOJ	WGTR	Lehigh Acres, FL
WMIB	WWWO	Marco, FL
new	WONQ	Pine Hills, FL
KZHI	KWAI	Honolulu, HI
WSAC	WBUL	Fort Knox, KY
WYAT	WLTS	New Orleans, LA
KUZN	KMBS	West Monroe, LA
WGAY	WNTR	Silver Spring, MD
WLLH	WSSH	Lowell, MA
WTGE	WKLT	Kalkaska, MI
new	KTGG	Spring Arbor, MI
new	WWTG	Stanwood, MI
KQAQ	KGHR	Austin, MN
new	WSWG	Greenwood, MS
KARR	KYOT	Great Falls, MT
KHDN	KYTY	Hardin, MT
new	KNPE	Bellevue, NE
WCCR	WVSG	Cornwall, NY
WBNX	WKDM	New York, NY
new	WGCR	Brevard, NC
WQRB	WBAG	Burlington, NC
WAYS	WROQ	Charlotte, NC
WTSB	WAGR	Lumberton, NC
new	KQLX	Lisbon, ND
WGIC	WBZI	Xenia, OH
KHEN	KDLB	Henryetta, OK
KTEW	KLUP	Poteau, OK
KMYZ	KGCR	Pryor, OK
KWOK	KTCR	Wagoner, OK
KYXI	KSGO	Oregon City, OR
WZRA	WMOC	Chattanooga, TN
KIKN	KDAE	Sinton, TX
new	KKQA	Nephi, UT
WQBX	WNRB	Christiansburg, VA
KOQT	KNTR	Ferndale, WA
new	WHRY	Hurley, WI

FM Stations

Old	New	Location
new	WQZX	Greenville, AL
new	KDEJ	Anchorage, AK
new	KYSY	Juneau, AK
KEZC	KJJJ-FM	Glendale, AZ
new	KQSS	Miami, AZ
new	KFLR-FM	Phoenix, AZ
new	KKSY	Bald Knob, AR
new	KMRO	Camarillo, CA
KLPC-FM	KXCC-FM	Lompoc, CA
KTMS-FM	KKOO-FM	Santa Barbara, CA
KRTM	KRRR	Temecula, CA
KIIQ-FM	KIKZ-FM	Manitou Springs, CO
WVFK	WAIL	Key West, FL
new	WEGS	Milton, FL
new	WLPE	Augusta, GA
WRNZ	WMJB	Wrens, GA
KUID	KFRA-FM	Moscow, ID
WOKO	WPXN	Paxton, IL

FM Stations

Old	New	Location
WMCZ	WQTZ	Decatur, IN
new	WZDM	Vincennes, IN
new	KUOO	Spirit Lake, IA
new	KZNA	Hill City, KS
new	KMDJ-FM	Allen, KY
new	WBPK	Flemingsburg, KY
new	KVDP	Dry Prong, LA
WLTS	WLTS-FM	Slidell, LA
WPIG	WHYR	Saco, ME
WCOZ	WZOU	Boston, MA
new	WITW	Cadillac, MI
WWRM	WKPK	Gaylord, MI
WKLT	WKLT-FM	Kalkaska, MI
KQDE-FM	KOWO-FM	Waseca, MN
new	WBBN	Taylorsville, MS
KRFG	KORX	Greenfield, MO
KSMO-FM	KMMC	Salem, MO
KHDN-FM	KATM	Hardin, MT
new	KZEN	Central City, NE
KEER	KYRK-FM	Las Vegas, NV
new	WMTK	Littleton, NH
KLCJ	KNFT-FM	Bayard, NM
KCPK	KZZO	Clovis, NM
KALG-FM	KPSA-FM	La Luz, NM
new	KXKK	Lordsburg, NM
WSLU	WJGT	Canton, NY
WJGT	WSLU	Canton, NY
WFMN	WGNY-FM	Newburgh, NY
new	WJPZ-FM	Syracuse, NY
new	WNYW	Watertown, NY
WUNF-FM	WCQS-FM	Asheville, NC
WBAG	WZZU	Burlington, NC
WROQ	WROQ-FM	Charlotte, NC
new	WMQI	Robbinsville, NC
WXYY	WRDU	Wilson, NC
new	KDSR	Williston, ND
new	WMEJ	Proctorville, OH
WBZI	WBZI-FM	Xenia, OH
KDLB	KDLB-FM	Henryetta, OK
KLUP	KZZE	Poteau, OK
KBKN-FM	KAST	Astoria, OR
new	WMQP	Clarion, PA
WPTG	WJTL	Lancaster, PA
new	WGSI	Russell, PA
WDFM	WPSU	State College, PA
new	WTQY	Johnston, SC
WATP-FM	WKXS	Marion, SC
KBCB	KRYS-FM	Corpus Cristi, TX
KOAX	KQZY	Dallas, TX
KALK	KLAK	Denison, TX
KGVL-FM	KIKT	Greenville, TX
new	KRRS	Hamlin, TX
new	KXTO	Odem, TX
KPRT	KZTX	Refugio, TX
new	KTLT	Wichita Falls, TX
new	WPUF	Mechanicsville, VA
new	WXXX	Burlington, VT
WHWB-FM	WJJR	Rutland, VT
KREM-FM	KZZU	Spokane, WA
KENE-FM	KZHR	Toppenish, WA
WIBZ	WMGP	Parkersburg, WV
new	KTKL	Casper, WY
KPCQ-FM	KLZY	Powell, WY

Station Updates

Call	Location	Freq	Pwr	Ant
AM				
new	Granby, CO	930	.5/0	0
new	Stanwood, MI	1070	.25/0	0
KASM	Albany, MN	1150	2.5/0	0
WTWZ	Clinton, MS	1120	2.5/0	0
WABS	Arlington, VA	780	5/0	0
new	Rural Retreat, VA	660	.25/0	0
new	Hurley, WI	1450	1/.25	0
FM				
KARZ	Burney, CA	106.1	N/C	1977′
WSEA	Georgetown, DE	93.5	2.6	N/C
WWFR	Okeechobee, FL	91.7	.16	1350′
WGLF	Tallahassee, FL	104.1	N/C	189′
WKLS-FM	Atlanta, GA	96.1	N/C	968′
KLCE	Blackfoot, ID	97.3	100	1513′
KMVC	Burley, ID	99.9	25	2437′
KRNQ	Des Moines, IA	102.5	N/C	1260′
new	Hill City, KS	90.7	100	658′
KCLC	St. Charles, MO	89.1	25.7	257′
KOPR	Butte, MT	94.1	100	N/C
KBBZ	Kalispell, MT	98.5	60	2313′
KMCM-FM	Miles City, MT	92.5	100	856′
new	Webster, NY	90.7	1.4	100′
KKRB	Klamath Falls, OR	106.9	43.2	1124′
WLAC-FM	Nashville, TN	105.9	N/C	1233′
KNFO-FM	Waco, TX	103.3	100	1061′
WEQX	Manchester, VT	102.7	.9	2490′
WRHN	Rhinelander, WI	100.3	N/C	N/C

D = Daytime
N = Nighttime
DA = Directional Antenna
DA1 = Same Pattern Day & Night

N/C = No Change
DA2 = Different Pattern/Power Day/Night
O = Omni Antenna Day And/Or Night
= Special Operation Or Critical Hours

Stichick. He wants to know if anyone has heard "BEER CAN" broadcasts? He thinks they originated with Scott AFB. Does the Air Force still air this type of propagation broadcast? When and where? Write me. By the way, Nick, Maryland could hide a bushel of crabs under the one that gal is holding!

David Snavely, I really enjoyed reading your reminiscing about WBAP. We all have a favorite station and I appreciate your sharing thoughts with me. And speaking of WBAP, Wayne Wicks tells me he hears them all the way into New York with his Sony 2001. Thanks for the kind words, Wayne; I'll look for you on 40 meters someday. David Simonis hadn't figured on WBAP being so strong in Wisconsin. Stronger than some of the Illinois stations! Steve Anderson of San Marino, California, reports WBAP as his first "W" station! He reports hearing KWNK testing for the first time on 670 kHz from Simi Valley, California. Says he heard the KEAR translator in Medford, Oregon. Why does a station need a translator 400 miles away? Did you hear me on the air over WBAP in October? WBAP got coast to coast reception reports during September! This month we should be able to do the same with WHO (1040 kHz) in Des Moines, Iowa.

Vic Janlone still enjoys the BC band after more than ten years. Vic had some questions that I will address in detail next month about skywave and catching some states without 50 kw stations!

The card from Edward Tricco showed Marconi's "Signal Hill," pictured elsewhere.

TIS

There is a new TIS station in the Baltimore metro area on 530 kHz. I live pretty much in the geographic center of metro Baltimore and this station (which is run by the highway folks) is audible at my house. It is used to give info about the construction work going on around the beltway (I-695).

Beginning this month, we will keep you informed as to new AM STEREO stations and which system they are using.

Don't forget to write and send photos. If you want a response, send a stamp, too. The address is P.O. Box 5624, Baltimore, MD 21210. PC

PIRATES DEN

BY DARREN LENO, WDØEWJ

FOCUS ON FREE RADIO BROADCASTING

An interesting logging this month comes from Ken Cobb of Maine. While randomly tuning his receiver across the shortwave bands, Ken happened upon a station calling itself "WSWL, Purple Pumpkin Radio" on 3475 kHz after 0530 GMT. He wonders if we at *POP'COMM* know anything about this pirate.

Well Ken, the Voice of the Purple Pumpkin has been heard intermittently for at least 15 years. Now and then a station calling itself the "Purple Pumpkin" will suddenly appear, air a few shows, and the disappear again, sometimes for years.

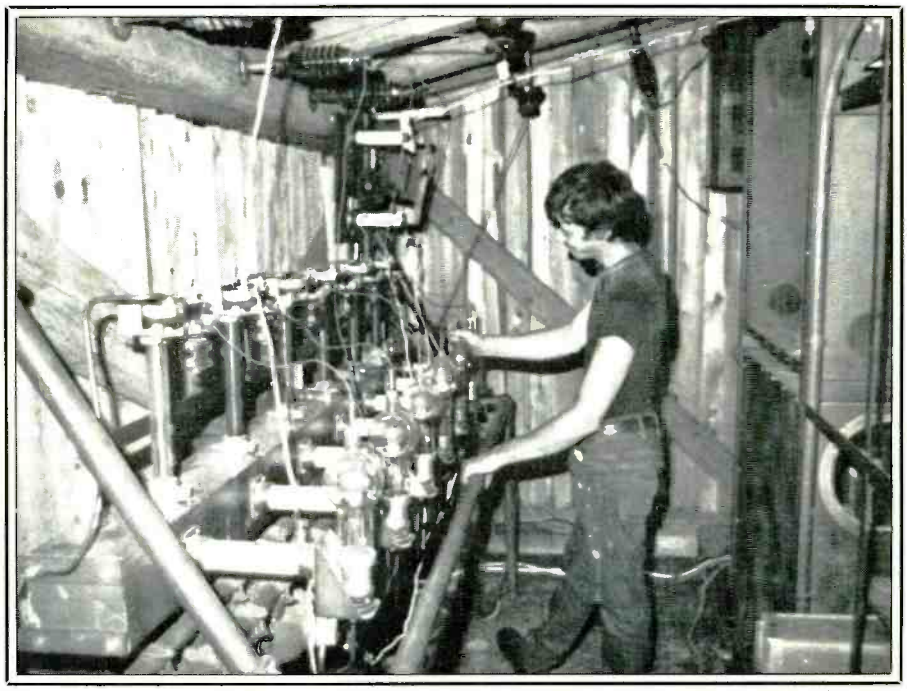
The original Voice of the Purple Pumpkin was first heard in the late 1960's through the early 70's. In an article written for *THE ACE*, DXer Terry Provance of Ohio described his first experience with this station on July 27, 1970. In its early days, the Pumpkin broadcast 60's music (particularly songs from the Beatles), offered anti-Vietnam War editorials, and recited counter-culture slogans. The station would also sign on with "Beethoven's 5th Symphony," and identify itself occasionally as WJMS and WCKL, according to Terry.

A few years later, Terry began wondering what had happened to the Pumpkin, which he realized one day he had not heard in quite some time. He wrote to the Federal Communications Commission and received a letter in return from Vernon P. Wilson, Acting Chief of the FCC's Enforcement Division. Mr. Wilson stated in his letter of July 31, 1974 that "the Voice of the Purple Pumpkin was an unauthorized station . . . which was situated in Maryland and located by long range and close-in direction finding techniques. Subsequently it was closed down March 26, 1972 by one of our field enforcement officers."

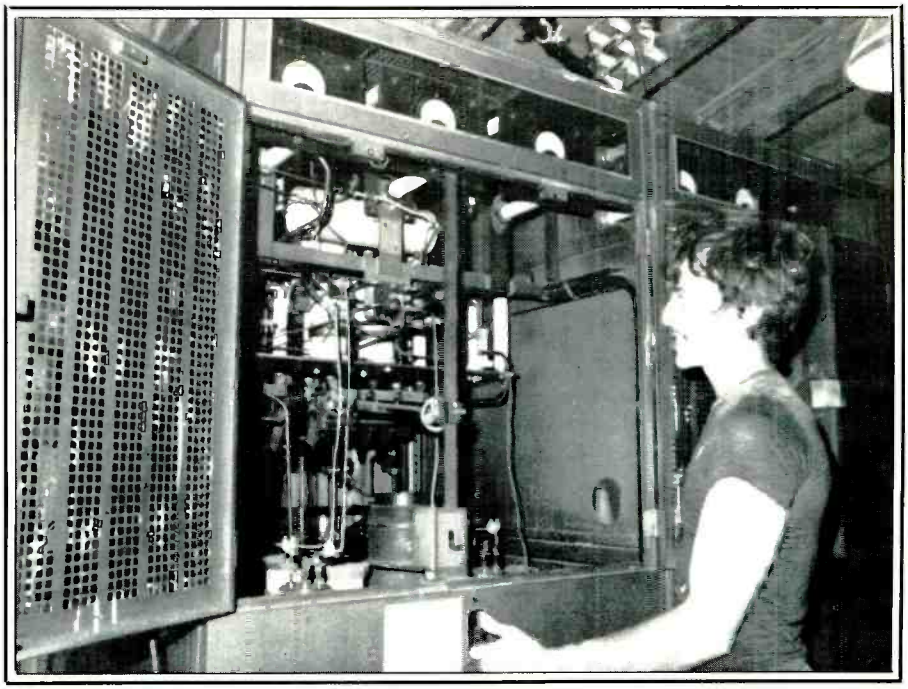
Thank you Mr. Wilson.

DXers have reported hearing the Purple Pumpkin since 1972. The most recent burst of activity occurred around Halloween, 1983 on 7408 kHz. Broadcasts would begin with barking dogs.

A friend of mine who knows the gentleman who ran the first Voice of the Purple Pumpkin assures me that all latecomers are totally independent copies of the original. It appears that certain people have concerned themselves with keeping the name of this well-known political pirate alive. How long the Pumpkin will continue to exist is anyone's guess. Mine would be that this phenomena will persist for years to come.



The main power supply for one of KPRC's AM transmitters is supposedly capable of putting out 10,000 volts!



Here is Pirate Tom with a KPRC power amplifier, or so the man claims.

Across The Dial

KQRP: This widely heard pirate has wisely decided to quit while it is ahead. Randy Kaeding of Michigan heard Dr. X announce on 7430 kHz after 0300 GMT that the station was going off the air. QSLs will still be issued for correct reports to PO Box 982, Battle Creek, MI 49016.

Harold Levison of Pennsylvania heard Dr. X say he hopes the station can return to the air in a year or two with more power, but may do so under a different name.

John Friberg, Jr of New Hampshire enjoyed KQRP's last broadcast, which included Orson Wells version of "War of the Worlds."

Dr. X's announcement of KQRP's leaving the air comes as a relief to many insiders, who feared the station's frequent transmissions would inevitably result in an FCC raid. I'm sure KQRP will be missed by many SWLs and DXers alike.

Radio Clandestine: "Fifteen years and

I've never heard a pirate—six months and you get one and I have come over here to heat it!" That's what Elton Manzione's jealous friend said after Elton logged his first pirate. Elton, a DXer from Georgia, heard Radio Clandestine with host R. F. Burns on 7355 kHz after 0300 GMT. This pirate claims to be broadcasting off the east coast of North America.

Clandestine was also heard by John Block, Jr. of Wisconsin from 2328 to 2340 GMT on 7425 kHz.

Radio North Coast Int'l: John Friberg Jr. of New Hampshire logged this one on 7425 kHz at 0116 GMT. The show consisted of music by The Tubes and satyrical ads, including one for "Diane's House of Leathery Things." RNCI claims to be broadcasting from a ship named "*Finger*."

Radio Sine Wave: Bruce Frederick of Massachusetts checks in this month with his first pirate logging. Bruce heard RSW on a local Saturday evening at 0200 GMT on 7428 kHz. The operators of the station were reading listeners letters, and were amused to find one addressed to "Radio Crime Wave." Reception reports can be addressed to PO Box 5074, Hilo, HI 96720.

Radio Sound Wave: This pirate (not to be confused with Radio Sine Wave) was noted on 7425 kHz after 0300 GMT by Randy Kaeding of Michigan and Jeff Zell of Ohio. They noticed the station was having modulation problems, which distracted from the programming. Reception reports? Try PO Box 393, E. Moline, IL 61244.

Voice of Laryngitis: DJ "Cowboy Stanley" was playing rock music on 7415 kHz when Andy Bohn of Ohio tuned in after 0130 GMT. Andy says the VOL's signal was extremely strong.

Voice of To-morrow: Michael Psara, a serviceman stationed in Ft. Bragg, North Carolina, and John Friberg Jr., a DXer from New Hampshire, tuned in to the Voice of To-morrow on 7410 kHz at 2300 GMT. The VOT said they would also be transmitting on 15040 kHz and 1616 kHz. Their address is PO Box 20039, Ferndale, MI 48220.

WMTV: This pirate was asking listeners to send reception reports and giving out a phone number with a Florida area code. Andy Bohn of Ohio and John Block Jr. of Wisconsin heard WMTV on 7423 kHz after 0300 GMT.

Gary Hickerson of Arkansas heard WMTV playing "Video music without the video" on 7435 kHz after 0400 GMT. Gary reports an address as WMTV, c/o John, PO Box 1945, Del Ray Beach, FL 33444.

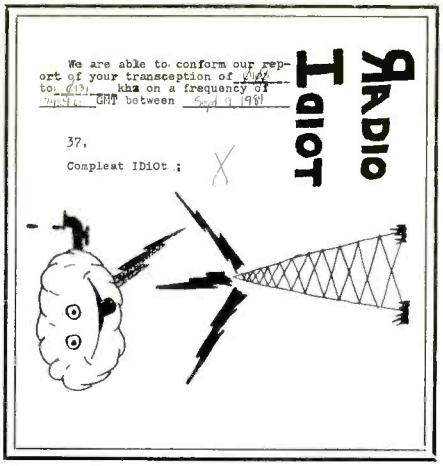
KPRC Checks In

KPRC, New York's notorious AM, FM, and SW pirate, checked in this month with a letter.

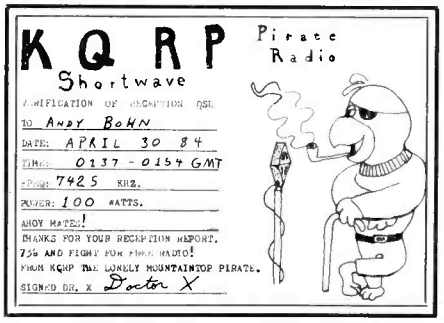
Dear Darren,

KPRC is rolling along its merry old way. We have been pleased with the great response to our programs of peace and understanding. Radio can do so much to help people and bring them together. Commercial and Public Radio have their place—and they do offer the listener a service. But there's nothing quite like Pirate Radio! Enclosed are some photos of one of KPRC's medium wave transmitter sights.

Peace Though Radio.
Pirate Pete



Radio Idiot is a new pirate station. Paul Walkendorf of Michigan recently received this interesting QSL from them.



This widely heard pirate has announced they are leaving the air.

Reader Feedback

I'm writing to pass on what I know about XEPRS, a legal Mexican broadcaster that Geoff Butler of California mistook in a past episode of The Pirates Den for a pirate station. I can see how Geoff made the mistake. I first heard the station in 1977. Their programming is loudly and strongly political and different from other legitimate broadcasters. To mistake this broadcaster for a pirate would be easy to do.

Scott Yost, WB8HSL
Michigan

Prior to reading The Pirates Den in *POP'COMM*, I thought pirates were limited to expensive European operations floating in the North Sea. These low-budget guys have certainly renewed my interest in SWLing.

Bruce Frederick, KA1FGY
Massachusetts

European Report

A*C*E's European correspondent, Podney Sixe on Cornwall, England sends the following information for us this month.

Radio Tonair Int'l has made several broadcasts recently on 6240 kHz. Programs thus far have been in both Dutch and English.

Radio Black City made a rare broadcast recently on 7320 kHz until 0930 GMT. Announcements were in German and English. Music was played by Jimi Hendrix, the Bee Gees, and Rory Gallagher.

Radio Big Brother, a West German pirate that has been testing frequently on 6225 kHz, announced that they would soon begin regular transmissions in the 48-meter band.

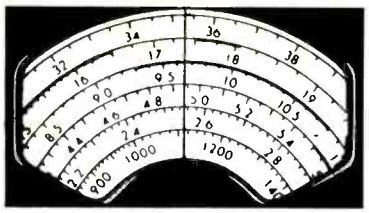
U.K. Radio with DJ Ms. Kelly Browne, has been heard on 6240 kHz. It is rumored that this station is the result of a project involving a number of Free Radio stations cooperating together.

Radio Freedom Int'l from Scotland is continuing to make regular test broadcasts on 6235 kHz Sunday mornings (GMT).

In Conclusion . . .

The 1985 Association of North America Radio Clubs (ANARC) convention is being hosted this year, July 19-22, by the National Radio Club. I am planning to be in attendance this year, and hope I'll have the chance to meet with you. For more information, write ANARCON '85, Dept. PC, PO Box 24, Cambridge, WI 53523.

Thanks to all those people listed in this month's column. *POP'COMM* readers are invited to participate in The Pirates Den by sending copies of pirate QSLs, pennants, info-sheets, tips, observations, loggings, etc., to the Pirates Den, c/o Popular Communications, 76 N. Broadway, Hicksville, NY 11801. PC



COMMUNICATIONS CONFIDENTIAL

BY RON RICKETTS, WA5VFA

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Dallas Williams, WA0MRG/0, of Sedgwick, Colorado furnished us with this photograph of his absolutely spectacular station.

George Osier of New York shares some recently received QSL cards with us this month. These are all very good catches, too. Station ZUO, National Physical Research Laboratory, Pretoria, Republic of South Africa, operates several time and frequency stations. These stations, located at Olifantsfontein and Johannesburg, operate on carrier frequencies of 2.5, 5, and 100 MHz, with a radiated power of 4 kw on HF and 80 watts on VHF. In the U.S., the HF stations could only be received during the silent periods on WWV. Unlike WWV, no continuous audio frequencies are broadcast. The time scale markers are an interrupted 1000 Hz tone. The Morse code station identification and time announcements are an interrupted 600 Hz tone. The time scale "second" markers consist of 5 cycles of 1000 Hz tone. The time scale "minute" markers consist of 500 cycles of 100 Hz tone. The Morse code station identification is transmitted three times every fifth minute, followed by four digits indicating the GMT hour and minute of the next minute marker.

George also sends us a copy of another QSL, this one coming from ZSC44, Capetown Radio, RSA. ZSC operates as a time standard also, but running more power, 10 kw, and operating on more frequencies than ZUO. ZSC operates from 0755-0800 and 1655-1700 on 4291, 8461, 12724, 17018, and 22245 kHz and on 418 kHz at 5 kw. These transmissions consist of time signals, one pulse per second. If you wish to obtain a QSL from this station, the mailing address is Capetown Radio, Private Bag, Milnerton 7435, Cape Town, RSA. Don't bother to send any IRC's since they aren't good there.

Robert Sheaffer of California is a respected and talented author in the field of science and has recently become interested in the mysterious numbers stations. His efforts have yielded, among other things, loggings of Chinese numbers stations. He has provided us with some of the results of his monitoring efforts; frequencies and times of the various stations heard on the west coast. This information will be useful to our readers who have never heard a numbers station.

4-Digit Spanish Transmissions

Frequency	Time
5091	various during weeknites, sometimes parallel to
6840	
6802	weekday evenings
6840	
7726	Sunday 0600
8418	sometimes parallel to 6802, 9075
9075	sometimes parallel to 11532
9224	sometimes parallel to 11532
11532	

5-Digit Spanish Transmissions

5134	Sunday, 0600
6833	0500, 0700
7528	Monday, 0300
7847	Wed, 0600 and Tue, 0700
7888	Wed, 0500
8058	0500, 0600 Sat and Sun
8113	Fri. 0500
8117	Mon, 0600
9238	Thu, 0400
9456	Mon, 0500
11518	Tue, 0300

German Numbers

9267	Wed, 0300
14096	Wed, 0500 in USB

English Numbers

9267	Thu, 0300

Modulated CW Numbers

9442	0400, 0500 various days
6840	0430 on weekdays

Chinese Numbers

8400	1400, 1500 daily

Miscellaneous

8422	singsong, language unknown but perhaps Israeli (Mossad?), heard 1430 Mon and Tue, sometimes Wed and Thu.

This should help our readers to log a numbers station with a considerable saving of effort. Bear in mind that, like gold, numbers are where you hear them. There are a vast number of frequencies that are not used on a routine basis. Thanks to Robert Sheaffer for sharing this valuable information with the readers of *POP'COMM*.

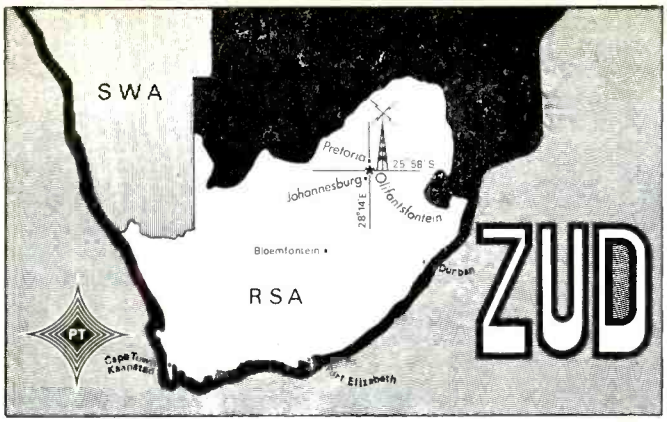
Another California reader, Michael Mideke, writes to pass along some catches that certainly prove that low frequency DXing is definitely not a wintertime-only hobby. These particular stations were logged in late summer.

Freq.	Time (GMT)	Call and Location
40 kHz	1315	JG2AS, time signal, Tokyo, Japan
155	1230	Khabarovsk, USSR, domestic broadcast
182	1235	Petropavlovsk, USSR, domestic broadcast
224	1330	GUA, beacon, Girua, Papua, New Guinea
238	1310	KT, beacon, Kataia, New Zealand
260	1250	NF, beacon, Norfolk Is., Australia
276	1303	TL, beacon, Townsville, Australia
284	1305	MH, beacon, Manihi, Fr., Polynesia
307	1349	NA, beacon, Nausori, Fiji Islands
311	1235	CH, beacon, Coffs Harbor, Australia
311	1345	NTW, beacon, Normanton, Australia
374	1320	TW, beacon, Tarawa, Gilbert Islands
379	1325	NQM, beacon, Midway Island
412	1335	SO, beacon, Santo Island, New Hebrides (now called Luganville, VANU)

Now before all of you start hollering about this, Michael is not using a common receiving setup. His receiver is a homebrew rig specially designed for low frequency DX work. His antenna is a long wire 3800' (yes, 5/8 of a mile) in length, running east/west. This gives him extreme directivity to the west. That and listening at sunrise, using the "gray line" effect, help him capture this fantastic DX. This serves to prove what can be accomplished when someone puts his mind and wire to getting the job done. Thanks for sharing with us, Michael.

570 kHz "RR" Mystery Solved

A reader living in Dixie who prefers the distinctive and colorful name of Nek Nomis advises me that I should be ashamed of myself for not figuring out this mysterious "RR" and clock-like ticking. As a matter of fact, the source of this signal is none other than Radio Reloj, a Cuban network outlet serving as both a continuous time station and news station. This particular station operates on 570 kHz and is audible at night over a sizeable portion of the southern states. This station is usually masked by other stations, though,



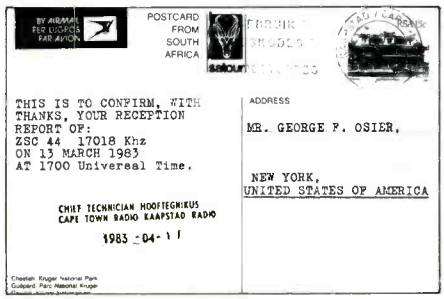
INTERNATIONAL TRANSMITTING STATION — INTERNASIONALE SENDSTASIE
OLIFANTSFONTEIN (ZUD)
Republic of South Africa / Republiek van Suid-Afrika

Confirmation of Transmission / Bevestiging van Uitsending

Date/Datum 1983 12 6 Time/Tyd 0100 0105 0110
Frequency/Frekwensie 5000 KHz
Modulation/Modulasie A3E
Power/Krag 4KW
Antenna/Antenne MONOPOLE
Remarks/Opmerkings

1984 -07- 19 PRETORIA RADIO-ENDSTASIE

Both sides of standard frequency station ZUD QSL in South Africa. Thanks to George Osier in New York.


POSTCARD FROM SOUTH AFRICA

THIS IS TO CONFIRM, WITH THANKS, YOUR RECEPTION REPORT OF:
ZSC 44 17018 Khz
ON 13 MARCH 1983
AT 1700 Universeal Time.

CHIEF TECHNICIAN HOOFTEGNIKUS
CAPE TOWN RADIO KAAPSTAD RADIO
1983 -04- 11

ADDRESS
MR. GEORGE F. OSIER,
NEW YORK,
UNITED STATES OF AMERICA

George Osier's QSL from ZSC 44.

which is one reason I have never logged it here. The format of Radio Reloj (pronounced ray-loh, meaning clock or watch) consists of an announcement of the time once per minute and "RR" in modulated CW. The balance of the minute is consumed by news briefs and pronouncements by Uncle Fidel. And a tip of the fedora to Nek for his information.

An "Eyeball QSL" You Wouldn't Want

There is mixed opinion on the advisability of attempting to get a QSL from utility stations. In many cases, a station providing a public service, such as nav beacons, time, and frequency standards are certainly fair game. In fact, most stations of this type welcome reception reports because they aid the station engineer in determining effective range, antenna directivity and such. However, it is certainly not wise to QSL other services, such as SAC bases, DEA offices, and the local office of the FBI. In the middle falls stations like the High Seas services such as WLO, WNU, WCC, etc. These communications between private individuals are intended for private consumption, though I know of persons who have received acknowledgements from these stations.

A Canadian monitor advises me that he decided he wanted a QSL from KKN50, a U.S. State Department communications facility. Having obtained a mailing address, he repeatedly sent reception reports over a period of years, hoping that persistence would pay off. Well, it did, but in an unexpected way.

After numerous attempts to get a QSL, the DXer was contacted by the Canadian Department of Commerce and was advised that he was being investigated and was in serious trouble. The D.O.C. had copies of every single reception report he had sent to KKN50. Once it was realized that he was merely after a QSL and not selling secrets, he was lectured severely and told never to do this again. Kind of makes you wonder about the clout the State Department has north of the border, doesn't it? By the way, he never did get a QSL.

From The Mailbag

We have received an interesting letter from a reader in Athens, Greece with some frequencies of various services in his country. He tells us that it is forbidden to possess radio equipment or to listen to utility stations of any type. The only persons who may have radio equipment are licensed radio amateurs belonging to the Radio Amateur Association of Greece. For this reason, he does not give us his name.

Greek Navy Operations Net: Main frequencies are 5320 and 5633 kHz. Official callsigns are not used; only tactical identifiers.
Civil Aviation Traffic and Weather: Primarily on 5638 and 5912 kHz, civil airports exchange weather information. Also in this net is the tactical station "Daedalus," belonging to the Greek Air Force and located near Mt. Pournis near Athens. The police use 3815, 5285, 5340, 5473, and 5395 in both SSB and RTTY.
On 5485 can be heard the topographic survey operations of the Greek Army. There are four geodetic nets and a central station in Athens. These transmisions are in USB.
On 5488 kHz (USB) is the Greek Army emergency net, which can be heard during forest fires and other emergencies in the Athens Area.
This net uses tactical identifiers such as "23," "25," and "26."
On 2640 kHz in LSB are the stations located in all the electrical power plants in Greece.
There are a number of coastal stations operating in USB.
SVN - Athens Radio, 2590 kHz.
SVK - Korfu Radio, 2830 kHz.
SVL - Lemnos Radio, 2730 kHz.
SVX - Chios Radio, 3743 and 1820 kHz.
SVH - Heraklion Radio, 2799 and 1742 kHz.
SVR - Rodes Radio, 2624 kHz.
Also ship-to-ship on 2520 and 2364 kHz.
On 120 kHz the Greek Navy has 3 stations on CW; SVA (K13A, Sparta Attikis Naval Radio), SXA24, and SXA33.
On 418 is Athens Radio, SVA in CW.
And last of all, considerable pirate activity from experimenters using LSB (and also RTTY with personal computers) may be heard on 9992 kHz.

Our thanks to "Athens Monitor" for his intriguing letter.

Thomas A. McElvy of Virginia sends a QSL he received from the Kennedy Space Center. He monitored NASA on 20186 on 20186 during the *Discovery* launch. Thomas also sent a list of active frequencies during Space Shuttle flights.

2678 kHz	Cape Kennedy Range Control
5810	Primary Call In
6693	Support Aircraft
7765	Booster Recovery Ships
8972	USN Atlantic Support
8981	Support Aircraft
9043	Support Aircraft
9132	Support Aircraft
10780	Primary Call In
11205	Support Aircraft
13170	Support Aircraft
20192	Ascension Island Relay
20197	Ascension Island Relay (LSB)
3850	Johnson Space Center
14280	
21370	
28600	
3860	Goddard Space Flight Center
7185	
14295	
21390	
28650	

Rodney Grussling of Idaho sent a copy of a QSL received from the State of Idaho for the station KNHD-261. This station is a T.I.S. mini-broadcaster operating on 1610 kHz that sends construction information simulcast from four transmitters each running four watts output. Enclosed with the QSL was a business card from the Washington Department of Transportation. As you may have noted from a recent *POP'COMM* article, these mini-broadcasters are thriving, especially in the larger cities.

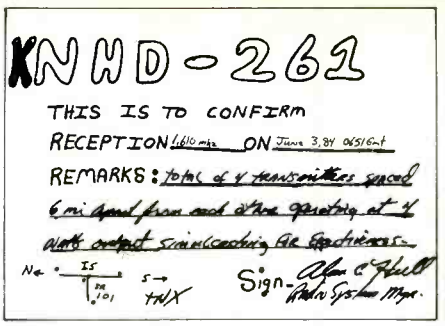
The Columnist's Soapbox

Over the last few months I have received several letters from individuals who have asked why their loggings are either never printed or appear in print several months

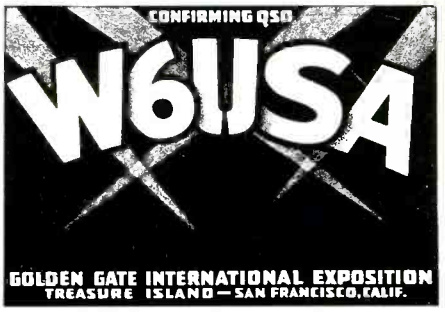
USAF MARS Regional Networks (USB)

```
REGION 1 (CT DC DE IN MA MD
 ME MI NH NJ OH NY PA RI VT)
NET CONTROL STATION: AIR (DC)
PRI NIGHT FREQ 3315 KHZ ROMEO ALPHA
SEC DAY/NITE   4593.5KHZ ROMEO BRAVO
PRI DAY        7324 KHZ ROMEO CHARLIE

REGION 2 (AL FL GA KY NC SC
 TN VA WV)
NET CONTROL STATION: AGA2LA (VA)
PRI NIGHT FREQ 3299 KHZ ROMEO DELTA
SEC DAY/NITE   4580 KHZ ROMEO ECHO
PRI DAY        7313.5 KHZ ROMEO FOXTROT

REGION 3 (IA IL KS MN MO ND
 NE SD WI)
NET CONTROL STATION: AGA3HQ (IL)
PRI NIGHT FREQ 3308 KHZ ROMEO GOLF
SEC DAY/NITE   4517 KHZ ROMEO HOTEL
PRI DAY        7305 KHZ ROMEO INDIA

REGION 4 (AR LA MS OK TX)
NET CONTROL STATION: AGA4KE (TX)
PRI NIGHT FREQ 3370.5 KHZ ROMEO JULIET
SEC DAY/NITE   4557 KHZ ROMEO KILO
PRI DAY        7302 KHZ ROMEO LIMA

REGION 5 (CO ID MT OR UT WA WY)
NET CONTROL STATION: AGA5MC (WA)
PRI NIGHT FREQ 3292 KHZ ROMEO MIKE
SEC DAY/NIGHT  4450 KHZ ROMEO NOVEMBER
PRI DAY        7329 KHZ ROMEO OSCAR

REGION 6 (AZ CA NM NV)
NET CONTROL STATION: AGA6TR (CA)
PRI NIGHT FREQ 3296 KHZ ROMEO PAPA
SEC DAY/NITE   4487 KHZ ROMEO QUEBEC
PRI DAY        7457 KHZ ROMEO ROMEO

HAWAII 4448.5 KHZ
ALASKA 4517 KHZ
MISC OTHER USAF MARS FREQS NOTED:
 4832 4872 6996 7632 14390.5 KHZ
RTTY (170/75N) 7633.5 7832.4 14392.5 KHZ
```

For those of you who have asked about the USAF MARS Regional Networks, here is the breakdown.



This is a QSL card from TIS station KNHD-261 on 1610 kHz.



A rare 1930's QSL from the Golden Gate International Exposition held in California. This was submitted by "Lu" Wirts of PA.

after being sent. I feel that I should give an explanation and that it would be of general interest to everyone. First, there are some realities in the world of magazine publishing that cannot be ignored. A magazine, unlike a newspaper, is generally oriented toward a special interest group. The material presented in a magazine is usually written to order in advance so that a particular issue is well organized. It takes a lot of time to edit, proofread, typeset and make up the pages, and then get them printed, collated, and bound. Then the magazine must be distributed by mail, stores, and newsstand distributors. This takes time. A typical magazine must be put be put to bed (editorially completed) three months or so before the month of publication. This means that even the freshest of loggings will have aged a bit before seeing the public. Now consider that the loggings themselves do not appear in an even flow. Some winter months the loggings are a veritable flood while in summertime they tend to taper off. I try to use about the same number of loggings each month so this requires the saving of them during heavy months and the withdrawal during lean times. Fortunately, the loggings themselves, with few exceptions, have no real "time value"; they remain valid indefinitely. The really hot ones go in as soon as possible, though. This is why sometimes eternity *seems* to pass before you see your name in print. The only loggings that do not ultimately see publication are those that are either grossly incomplete, obviously false, are repetitive, or indecipherable.

As a columnist, I receive mail from the pinnacle of praise to the abyss of abuse. This goes with the territory. However, a letter I received from Rick Hadley (WA0FYG) of Indiana concerning our apparent "mystification of the ordinary" spurred me to make a response. His criticism deals with NDB's—non directional beacons—that are used for aircraft navigation and are located below the broadcast band. Hadley charges that we are attempting to take a common phenomenon and make it seem to be something unusual. A portion of his letter follows:

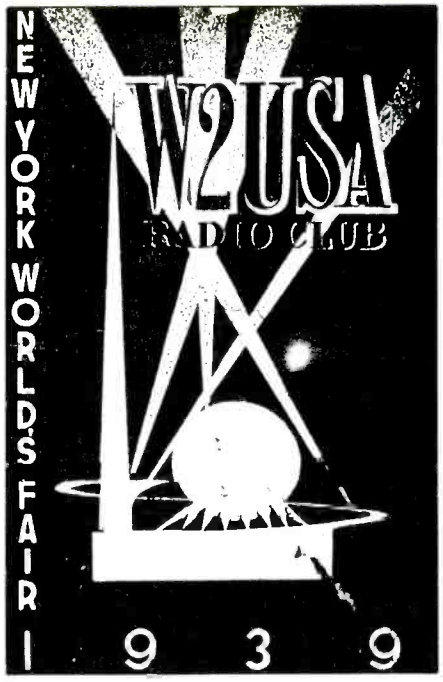
"I find it very hard to believe that anything so common could generate *considerable speculation*. . . *Popular Communications* in general, and Communications Confidential in particular, have had a regrettable tendency to attempt to "mysticize" the ordinary. I, for one, find this distressing, because it smacks of the *National Enquirer* school of journalism. . ."

I suppose that it somehow has escaped this reader's attention that we have dedicated a good portion of the last two columns to loggings of these "mysterious" beacons, and that we have then explained their purpose, callsigns, and location. And it also appears that he has not noticed that, when something unusual is logged, we openly ask our readers for their input and assistance. Not only that, but when reports of odd sig-

nals above the broadcast band were reported, this column solicited expert advice and published the source of these signals, their purpose, and even the name of the company generating them. Mystification? Hardly.

In the process of writing this column I learn something new daily. When I began my career in radio 20 years ago, I didn't know what a beacon was. But by reading, studying, and twisting the dials, I learned. When I began monitoring, the first beacons I heard were indeed mysterious, TO ME. However, reading and enquiry solved that in short order. The point is that *Popular Communications* is not a technical journal, and our readers are not required to be engineers. We do our very best to entertain, inform, and help everyone (even the beginner) in this fascinating hobby. Yes, Rick, you and I know what a beacon is and what it sounds like. But to a beginner, it is mysterious, and perhaps some of this wonderment of a new discovery is reflected in the tone of my column. But in the end, the reader gets a straight answer, just like you did.

Send your loggings and question to Ron Ricketts, Communications Confidential, Popular Communications, 76 N. Broadway, Hicksville, NY 11801. If you would like a personal reply, send an SASE. I will try to answer you, time allowing. Now let's get on to this month's reception reports.



In the November '84 issue we ran a QSL from the 1984 World's Fair in New Orleans. Reader "Lu" Wirts of Allentown, Pennsylvania sends along another World's Fair QSL, but this time from the 1939 Fair which was held in New York City.

Listening Reports

174: WGU20, time station with male announcer, every ten seconds in EST, logged at 2100. (Mike Gardner, OH)
224: "BH" beacon, Birmingham, AL, with weather transmissions. (John R. Tow, AL) "SUL" aerobeacon, MCW ID, no voice, at 2300. (Robert C. Homuth, AZ)
230: "BCZ" beacon in LSB and MCW. (John R. Tow, AL)
281: "RSZ" aerobeacon, MCW ID, no voice, at 2315. (Robert C. Homuth, AZ)
326: "POQ," Phoenix Sky Harbor Airport, MCW ID with weather reports in AM, at 2320. (Robert C. Homuth, AZ)
338: "RYN", Ryan Airport in Tuscon, AZ, with MCW ID and weather reports in AM heard at 2333. (Robert C. Homuth, AZ)
530: Tuscon, AZ International Airport Travelers information station. Parking information in English with a male announcer and then the message is repeated in Spanish with a female announcer, at 0400. (Robert C. Homuth, AZ)
1670: A continuous grinding noise in SSB, possibly some sort of navigation system, at 0022. (Robert C. Homuth, AZ) Right you are. This is SPOT, a high-precision navigation system used extensively in the Gulf of Mexico and elsewhere. (Editor)
2670: CG Boston, NMF, with weather advisory to mariners at 0450. (Ken Newell, FL)
2808: Rampart (anti-drug smuggling base) working a Shark unit in USB at 0553. (Daryl Symington, OH)
3130: "Foxtrot One Bravo" and "5 4 Tango" setting up net in AM at 0046. (George Osier, NY)
3443: 5-digit Spanish numbers station with female announcer at 0100 with very distorted audio. (George Primavera, NJ)
3810: Time pips with male quoting the time every minute in Spanish at 0600. Same male announcer and format as HD210A on 7600 kHz. (George Primavera, NJ) Yes indeed, George. This is also HD210A. They also transmit on 5000 kHz but are usually inaudible due to the strength of WWV. (Editor)
4525: Y3S, Nauen, GDR with time signals at 0020. (Charles E. Brault, NH)
4578: AFA20D in communication with AFF2T in USB at 0138. Appeared to be some kind of military net. (Brian Watkins, AL)
4639: KFC699, Houston Unit 14 making fuel check with ships and barges. Male announcer in USB at 1106. (George Osier, NY)
4670: 4-digit Spanish numbers station with female announcer at 0630. This was not the same female as is normally heard on this frequency. (George Primavera, NJ)
4747: USAF "Skyking" broadcast at 0100. Aero traffic to McDill AFB followed. (George Primavera, NJ)
4786: 5-digit Spanish numbers station with female announcer in AM at 0137. (Brian Watkins, AL)
4861: "R4A" in contact with "48N" in USB at 0148. Seemed to be USN traffic net. (Brian Watkins, AL)
5016: German 5-digit numbers station beginning with "Papa November" and tones at beginning. Female announcer in USB at 0032. (George Osier, NY)
5090: Female announcer repeating "Cinco Cuatro Cinco" in Spanish followed by count of 1-0 in Spanish in AM at 0610. (Lee Amoroso, CO) 4-digit Spanish numbers station with female announcer from 1910-1925. (Lawrence Greenberg, NY)
5225: English 4-digit numbers station with female announcer, "count 109," in AM heard at 0004. (George Osier, NY)
5320: Coast Guard Group Galveston, TX to Coast Guard Corpus Christi, TX radio check in USB at 0215. (Brian Watkins, AL)
5616: Gander Radio, Newfoundland with military and civilian traffic in USB at 0338. (Lee Amoroso, CO)
5640: "Sierra Yankee November 2" repeated by female announcer at 0145. (George Primavera, NJ) This is probably the Mossad, an Israeli intelligence organization. (Editor)
5692: San Diego Air communicating with CG helicopter concerning checking out a sailboat in the area, in USB at 0500. (Jay MacNeill, BC) German 3/2 numbers station with male announcer in USB at 0610. This is not unusual; having a numbers station right on top of a common USCG frequency. (Daryl Symington, OH)
5696: CG Group Cape May working Cutter Point Franklin with request of ETA on scene and sea conditions. (Ken Newell, FL)
5814: 3-digit Spanish numbers station in AM with female announcer at 0603. (Rodney Grussling, ID)
6100: YVTO, Caracas, Venezuela, with time and ID on the minute. (George Osier, NY)
6233: 3/2 type German numbers station with rapid speaking female announcer at 0415. (George Primavera, NJ)

6430: CFH, Halifax, Nova Scotia, with VVV marker in CW at 0315. (Rodney Grussling, ID)
6475: DAM, Elmshorn, FRG. German Hydrographic Institute time signals heard at 0000 to 0006. (George Osier, NY)
6506: US Naval Communications station, Portsmouth, VA with weather info on Gulf of Mexico in USB at 0400. (Mark Abramowitz, TX) CG Commsta Guam working cutter Basswood with shift to 12 MHz RTTY frequency at 0942. (Ken Newell, FL)
6680: Auckland, New Zealand VOLMET. This is a new frequency for them. (Robert C. Homuth, AZ)
6683: Air Force One working Andrews AFB/Crown enroute to Daytona, FL. (Ken Newell, FL) Air Force One to Andrews AFB; phone patch with Crown ID's such as "Succulent," "Arrowhead," "114" and "747." About every nine minutes they had a signal check. This occurred on the Fourth of July with the President enroute from Daytona, FL to the Decatur, AL Spirit of America festival. (Brian Watkins, AL) SAM 24197 working Andrews AFB with phone patch to the SAM command post in LSB at 2246. (Daryl Symington, OH)
6669: Victor 2 Quebec working Alpha 1 Papa, 3 Bravo November HMCS 3, and Delta 1 Papa passing medical and evacuation information on injured sailor. (Ken Newell, FL)
6754: VXA, Edmonton, Alberta VOLMET in USB at 1122 with aviation weather spoken by male announcer. (George Osier, NY)
6760: At 0300 a "Skyking" message in USB followed at 0301 by "Oxford out." In this from Croughton Airbase in England? (Brian Watkins, AL) Can any of our readers answer Brian's question? (Editor)
6800: 4-digit Spanish numbers station with female announcer at 0100 and 0200. (George Primavera, NJ)
7375: Slow CW from unknown source sending "B U D" nine times a minute from 0200 to 0210. (Keith Hill, NY)
7410: 5-digit CW number groups at 20 groups per minute from unknown station at 0300. Signal strength was extreme—80 db over S9. (George Primavera, NJ)
7600: HD210A, Guyaquil, Ecuador time and frequency standard, with announcement of hour, minute, and second. From 0100 to 0200. (Paul Scalzo, Quebec)
8010: "B4B" in slow CW at 0305, then two long "dahs" at 0309 from unknown source. (Brian Watkins, AL)
8419: 4-digit Spanish numbers station with female announcer in AM at 0511. (Brian Watkins, AL)
8452: VAI, Vancouver Coast Guard Radio sending a series of "VVV" in CW at 0333. (Robert C. Homuth, AZ)
8568: XFM, Manzanillo, Colimas, Mexico with erratic CW ID at 0750. (Lee Amoroso, CO)
8638: DAM, Hamburg, FRG time signals at 1719. (Charles E. Brault, NH)
8646: FUJ, New Caledonia, with CW ID at 0741. (Lee Amoroso, CO)
8650: NMO, Honolulu, HI with CW ID followed by traffic in SITOR at 0739. (Lee Amoroso, CO) SITOR is a special encoding technique used for transmitting radioteletype signals with a minimum of errors. It is not possible for most inexpensive RTTY converters to display SITOR signals. (Editor)
8688: WNU44, Slidell Radio, LA, calling CQ in CW at 0359. (Robert C. Homuth, AZ) ZSC, Capetown, RSA, with CW marker at 0555. (Rodney Grussling, ID)
8711: VIS65, Sydney Radio, Australia, with CW ID at 0733. (Lee Amoroso, CO)
8743: KMI, San Francisco, CA with traffic list in USB at various times. (Rodney Grussling, ID)
8765: NMO, Honolulu, HI VOLMET in USB at 0552. (Rodney Grussling, ID)
8772: "Raspberry Pensacola" (USN) calling "Spartan" followed by touchtone sounds in USB at 0337. (Brian Watkins, AL)
8778: "Sierra 3 Victor" calling "Mike 3 Zulu" in USB at 2242. These are USN stations. (Jay MacNeill, BC) "Delta Zero Zulu" working "Victor Seven Juliet" in USB at 0613. (Rodney Grussling, ID)
8972: "Q6H" and "2FW," USN stations with assorted traffic in USB at 2044. These stations possibly Anti-Submarine Warfare commo centers. (Gary P. Vendetti, NJ)
8989: Elmendorf AFB calling Victor Lima 904 and advising them that Adak NAS was on the phone awaiting a patch to them, in USB at 2137. (Jay MacNeill, BC) "11th Marines" working McClellan AFB at 2216. (Daryl Symington, OH)
8991: MAC 70001 working Scott AFB with a phone patch to Elgin AFB. 70001 was on the air attache corps mission with VIP's aboard. They were complaining about full toilets. (Daryl Symington, OH) Not uncommon if they were political candidates. (Editor)
9007: Executive 1 Foxtrot giving Andrews AFB preflight frequency list at 2154 in USB. (Jay MacNeill, BC)
9027: Station "Adonis" doing Skyking transmission in USB at 0201. (Gary P. Vendetti, NJ)
9028: Beeping sound every three seconds at 0143 in USB, off at 0153. (Gary P. Vendetti, NJ)
9240: 5-digit Spanish numbers station with female announcer from 0300 to 0335. (Paul Scalzo, Quebec)
10178: German 5-digit numbers station with "Bravo Echo" followed by tones and groups at 2235. (George Osier, NY)
11176: Albrook AFB doing phone patches in USB at 0123. Also Maguire AFB in NJ talking to "MAC 676" at 0138. (Gary P. Vendetti, NJ)
11182: "Peru" working Scott AFB using authentification codes and mentioning they had radome problems. Possibly AWACS or some command-post aircraft; in USB at 1823. (Daryl Symington, OH)
11243: SAC station "Bagpipe" broadcasting foxtrot message in USB at 2329. (Jay MacNeill, BC)
11247: Yokota AB Japan working Andersen AFB Guam and Hickham AFB. Traffic concerning RTTY problems; in USB at 0110. (Daryl Symington, OH)
12700: "HHH B NIU" in CW repeated over and over at 0456. (Brian Watkins, AL)
12717: ZLO, Irirangi Radio, New Zealand CW marker at 0414. (Lee Amoroso, CO)
12763: DAM, Hamburg, FRG with time signals at 1718. (Charles E. Brault, NH)
13027: DAL, Norddeich Radio, FRG with CW traffic at 0353. (Lee Amoroso, CO)
13107: WOO, New York Radio, AT&T Radiotelephone station, Manahawkin, NJ. Male announcer giving marine weather broadcasts in SSB at 2230. (David Patton, TN)
13133: "This is Victoria 3 FEB 2" in USB at 1700. No other transmission heard. (Brian Watkins, AL)
13193: "This is St. Lys Radio Telephonie" spoken by announcer with French accent followed by a French phone patch in USB at 2044. (Brian Watkins, AL)
13453: 4-digit Spanish numbers station with female announcer in USB at 1821. (Brian Watkins, AL)
13950: HR1MM USMAAG Honduras working AHF4 Panama, with phone patches in LSB at 2125. (Daryl Symington, OH)
14563: Bizarre sound effects in SSB, sounding like electronically modulated speech, but no recognizable words. This signal covered a bandwidth of over 5 kHz. (Robert C. Homuth, AZ) This is another of the DVP, digital voice processing, methods of voice encryption. See last month's column for a further explanation. Unfortunately, not only the good guys have these. This frequency is very popular with drug smugglers imitating military transmissions. (Editor)
14686: Atlas working Shark 620 p/p with Marlin 395, running checks on suspected drug smuggling boats at 0600. Frequency code name mentioned is Papa. (Ken Newell, FL)
14996: RWM, Moscow, USSR time and frequency standard, at 1600. (Charles E. Brault, NH)
15015: HIFI 89 working Albrook AFB with phone patch to the Dover AFB command post in USB at 1742. (Daryl Symington, OH)
16451: KHJB, the ship "Western Venture" calling WHD057 in SSB at 0234. The "Western Venture" received no reply. (Dallas Williams, CO)
16980: DAM, Hamburg, FRG with time signals at 1710. (Charles E. Brault, NH)

POPULAR COMMUNICATIONS BOOK SHOP

How To Make Your Own Solar Electricity
John W. Stewart
All the step-by-step information and practical guidance needed to begin converting energy from sunlight into usable electric power for home use! 168 pages, paperback, $5.95. Order #T212.

Broadcasting Law & Regulation
R. Terry Ellmore
A guide to the rules and regulations that govern commercial and non-commercial radio and TV broadcasting, including cable. 504 pages, hardcover, $24.95. Order #T213.

Protecting Electronic Equipment from Electrostatic Discharge
Edward A. Lacy
Provides an in-depth look at both the causes of ESD and the procedures and equipment used to combat it. 176 pages, paperback, $11.45. Order #T214.

Beginner's Guide To Reading Schematics
Robert J. Traister
A hands-on guide to understanding and using schematic diagrams that should be required reading for every electronics student and hobbyist. Here's the key to mastering the fundamental concepts needed to design, build, troubleshoot, and repair electronic circuits of all types. Filled with step-by-step explanations and plenty of clear, to-the-point illustrations. 140 pages, paperback, $8.95. Order #T215.

The Illustrated Dictionary of Electronics, 2nd Edition
Rufus P. Turner
An indispensable reference for professional or hobbyist. It covers more than 25,000 terms and applications from "A" to "zymurgy"! Every possible electronics term is included with every meaning and application given for each one. Thoroughly cross-indexed and with hundreds of detailed illustrations, tables, and charts to further clarify and amplify definitions. 896 pages, paperback, $18.95. Order #T216.

How To Repair Old-Time Radios
Clayton Hallmark
All the how-to's for putting old and antique radios into like-new condition. 252 pages, paperback, $7.95. Order #T217.

World Press Services Frequencies
by Thomas Harrington
A comprehensive manual covering the field of radioteletype news monitoring—antennas, receivers, terminal units, monitors, and more. Contains 3 master lists of times of transmission, frequencies, plus ITU list of over 50 news services worldwide. 84 pages, paperback, $8.95. Order #U173.

The Shortwave Propagation Handbook, 2nd ed.
by George Jacobs, W3ASK,
and Theodore J. Cohen, N4XX
A new, revised edition of the popular guide to all your propagation needs. Contains up-to-the-minute information and charts, and guides you through producing your own propagation data. 154 pages, paperback, $8.95. Order #C137.

World-Wide Radioteletype Call Sign List.
Some 3000 callsigns of RTTY and CW stations located in all parts of the world. Starts out at AAA3USA and goes to ZYK and beyond—through the numerical prefixes from 3AC to 9YM. Handy directory for identifying unknown RTTY and CW transmitters on international frequencies. $6.00. Order #U201.

The Complete Security Handbook – for home, office, car, boat, RV, anything
by C.A. Roper
If you've ever worried about your home or vehicle being burglarized . . . this book has the answers you need. An all-inclusive source on how to determine your security needs, buy the right systems and devices, and install them. Includes alarm systems to protect your home, vehicles, and other property against fire, smoke, lightning, vandalism, theft, gas, water leaks, and more. 540 pages, 681 illustrations, paperback, $13.95. Order #T194.

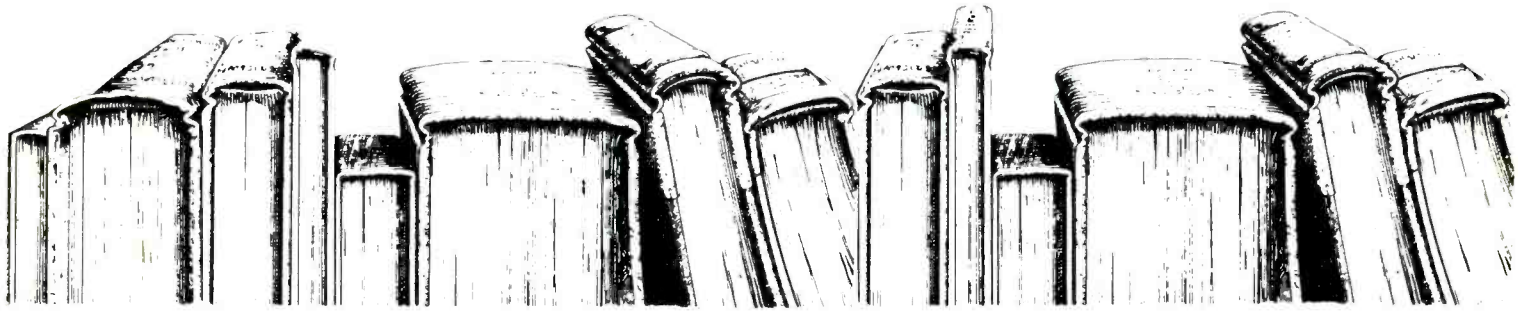
The Master Handbook of Telephones
by Robert J. Traister
An info-packed manual of modern telephone communications, covering literally every aspect from terminology and equipment to accessories and repair . . . with projects! Covers standard telephones, decorator models, answering devices, electronic telephones, a multitude of accessories, scramblers, and security devices . . . makes it easy for anyone to install, use, and repair almost any kind of phone equipment imaginable! 360 pages, 250 illustrations, with 8 pages color section, paperback, $10.95. Order #T195.

Guide To RTTY Frequencies 2nd ed.
Details on 5500 RTTY stations/frequencies in two lists. "Real" press schedules, inside information on new RTTY techniques, etc. 192 pages, paperback, $9.95. Order #G205.

Radio Handbook, 22nd ed.
by Bill Orr, W6SAI
A state-of-the-art, single-source reference on radio communications and theory for hams, professional ops, techs, and engineers. New coverage includes solid-state devices, Yagis and quads, and H.F. amplifier designs. A hands-on instruction manual, as well. 1168 pages, hardcover, $39.95. Order #S197.

The Radio Publications Group—The "Bill Orr Series"
These easy reading classics belong in the library of any active ham. Loaded with practical how-to information, with tables, charts, and formulas arranged for handy reference.
Beam Antenna Handbook, 200 pages, paperback, $7.95. Order #R143.
Wire Antennas, 192 pages, paperback, $7.95. Order #R144.
Antenna Handbook, 192 pages, paperback, $7.95. Order #R145.
Cubical Quad Antennas, 112 pages, paperback, $6.95. Order #R146.
VHF Handbook, 336 pages, paperback, $11.95. Order #R147.
Interference Handbook, by W.R. Nelson, 247 pages, paperback, $9.95. Order #R172.

The Final Exam
by Dick Bash, KL7IHP
Amateur radio license exam manuals proven highly successful in helping hams pass the FCC tests. Material for the books was obtained by interviewing actual applicants for the exams and collecting and researching the questions they had on the exams.
General Class, 123 pages, paperback, $9.95. Order #B153.
Advanced Class, 108 pages, paperback, $9.95. Order #B154.
Extra Class, 108 pages, paperback, $9.95. Order #B155.
Novice Class, 104 pages, paperback, $4.95. Order #B163.



POPULAR COMMUNICATIONS
76 N. Broadway, Hicksville, NY 11801
Order Date: _____

Name _____
Address _____
City _____
State _____ Zip _____
☐ Check ☐ MasterCard ☐ VISA
Card No. _____ Expires _____
X _____
Signature required on all charge orders:

QTY.	ORDER #	TITLE	PRICE	TOTAL

Shipping charges $2.00 per order. Shipping charges waived on orders of $50.00 or more. Books shipped best way. All orders are processed the day they are received, but please allow 30 days for delivery within North America.

Book Total	
Shipping Charge	
Grand Total	

SCANNER SCENE

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

How often have you sat down to an evening of monitoring with your radio gear only to wish you could share your latest find—a really hot frequency—with other scanner hobbyists?

Sure, you could get on the horn and pass the tip along to all of your buddies, but then your phone bill might add up after a while. Is there another way? Of course. Think about it: If cops and taxicabs and farmers all can use two-way radio, why can't you? Often for the price of a scanner you could equip yourself to communicate on two-way radio frequencies with other scanner buffs in your neighborhood or region. Let's take a look at all of the available options.

First you must consider the area of coverage you will need to communicate over. Are all of your scanner buddies located within a few blocks of each other, are they located all within the same town, or are they scattered all across a given metropolitan area?

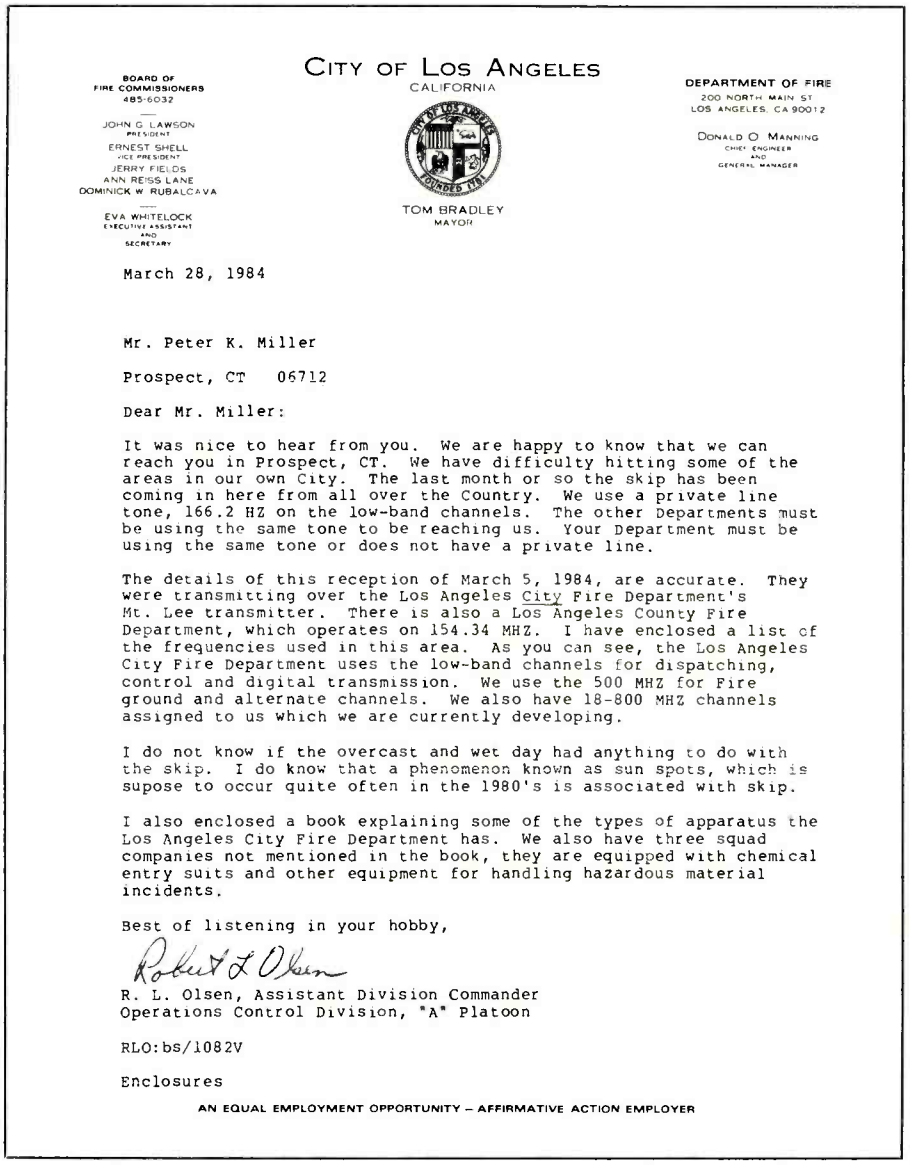
If those you want to communicate with all live relatively close together in the same neighborhood, there are several ways you could use to communicate back and forth. Don't forget about the 49 MHz low-power channels. In fact, those cheap kiddie walkie-talkies on the 49 MHz band would serve fine over a distance of a couple of blocks. Get one with a squelch control and rig up an external power source with an adapter so you don't run down batteries all the time, and you could leave the radio on all the time so you don't miss calls. Make sure you pick a clear channel, too. Other kiddie-talkies and your neighbors' cordless phones may be running on the same frequency you pick.

If you want something more professional, a VHF or UHF portable in a battery charger would be excellent. The range of the unit would depend on the power output of the portable. If you buy your radio through a two-way radio dealer, he or she should be able to help set you up and license you on a business band frequency such as 151.625, 154.570, or 154.600 MHz. In fact one manufacturer, Ritron Inc., sells HTs off the shelf already set up on one of the above three channels for less than $200 each. If you don't want to hear anyone else on the frequency, you can add an option of CTCSS (continuous tone-coded squelch system)—also known as Private Line or Channel Guard—to the radio.

In addition to VHF, there are hundreds of available UHF low-power channels (which we discussed in a recent column here) for HTs. We don't particularly recommend it, but there's also CB that could be used. But by the time you buy a mobile CB radio, a power supply and a base antenna, you could have bought a new or used piece of professional two-way radio communications equipment.

If you just need to cover your town or city to reach all of your scanner friends, maybe CB is the best bet. But you have to listen to all the other junk as well. The 27 MHz business band still is available, and underused if used at all in most cities, and with the right equipment, could be a viable alternative. Don't forget, though, that each base station has to be licensed (the Federal Communications Commission needs to know the station's exact coordinates to within one second, so this could be a hassle to some folks). Since frequency coordination isn't required to obtain licenses on VHF high band for business users, the 151 and 154 MHz bands also could be used for a network of base stations, if necessary. VHF low band also could be used, but you'd probably get better results on high band. With the help of a radio dealer, you could license each base station individually or under a system license with a name of an organization.

On VHF high band, you can buy a mobile unit—fully synthesized even—for less than $500. With a power supply and an outdoor antenna (a simple ground plane will suffice), you'll have a professional set up to let everyone else know when you pick up on some-



BOARD OF FIRE COMMISSIONERS
485-6032

JOHN G. LAWSON
PRESIDENT
ERNEST SHELL
VICE PRESIDENT
JERRY FIELDS
ANN REISS LANE
DOMINICK W. RUBALCAVA

EVA WHITELOCK
EXECUTIVE ASSISTANT AND SECRETARY

CITY OF LOS ANGELES
CALIFORNIA

TOM BRADLEY
MAYOR

DEPARTMENT OF FIRE
200 NORTH MAIN ST
LOS ANGELES, CA 90012

DONALD O. MANNING
CHIEF ENGINEER AND GENERAL MANAGER

March 28, 1984

Mr. Peter K. Miller

Prospect, CT 06712

Dear Mr. Miller:

It was nice to hear from you. We are happy to know that we can reach you in Prospect, CT. We have difficulty hitting some of the areas in our own City. The last month or so the skip has been coming in here from all over the Country. We use a private line tone, 166.2 HZ on the low-band channels. The other Departments must be using the same tone to be reaching us. Your Department must be using the same tone or does not have a private line.

The details of this reception of March 5, 1984, are accurate. They were transmitting over the Los Angeles City Fire Department's Mt. Lee transmitter. There is also a Los Angeles County Fire Department, which operates on 154.34 MHZ. I have enclosed a list of the frequencies used in this area. As you can see, the Los Angeles City Fire Department uses the low-band channels for dispatching, control and digital transmission. We use the 500 MHZ for Fire ground and alternate channels. We also have 18-800 MHZ channels assigned to us which we are currently developing.

I do not know if the overcast and wet day had anything to do with the skip. I do know that a phenomenon known as sun spots, which is supose to occur quite often in the 1980's is associated with skip.

I also enclosed a book explaining some of the types of apparatus the Los Angeles City Fire Department has. We also have three squad companies not mentioned in the book, they are equipped with chemical entry suits and other equipment for handling hazardous material incidents.

Best of listening in your hobby,

Robert L Olsen

R. L. Olsen, Assistant Division Commander
Operations Control Division, "A" Platoon

RLO:bs/1082V

Enclosures

AN EQUAL EMPLOYMENT OPPORTUNITY – AFFIRMATIVE ACTION EMPLOYER

Peter K. Miller of Prospect, Connecticut, received this letter-type QSL from the Los Angeles City Fire Department after he received it on 33.70 MHz. Peter uses a Regency DX-3000 connected to a CB ground plane antenna.

thing hot on your scanner. In addition, you'll also be in the know when the others in the system hear something interesting.

Let's say you need to cover an entire metropolitan area. The above-mentioned systems aren't going to reach from one far area to the other. In this case, you're going to have to move to repeater systems on UHF. The repeater, usually located at a mountaintop or on top of a tall building or radio tower, receives transmissions on one frequency and retransmits them on another frequency, thus extending the coverage area of mobile units and hand-helds.

In the metropolitan New York area, the Emergency Notification Association of Metropolitan New York (P.O. Box 741, Ridgewood, NJ 07451-0741) operates several UHF repeater systems for its members to keep in contact with each other using hand-helds and mobile radios. ENANY operates on 461.800 MHz in New York City, 462.700 in Bergen County, NJ and 462.650 in West Orange, NJ. The latter two frequencies are General Mobile Radio Service (GMRS) channels and anyone is eligible to be licensed in this service (the old Class A CB).

The repeaters used by ENANY are maintained by radio shops that charge ENANY members a nominal monthly fee to use the repeaters. If anything important is heard, members pick up their microphone to tip off other members and even discuss what is going on. Some of the group's members are involved in the emergency services, some in the news media, and others just want to know what is going on. To get on the system, one needs to plunk down as little as $150 for a used UHF hand-held. That's even less than the price of a scanner!

While the GMRS frequencies (462.550-462.725 MHz) are the best available channels for scanner hobbyists to keep in contact with each other, you can always go one step further and obtain your ham license and operate on one of the VHF or UHF bands with your friends. I keep in touch with several scanner buffs on the 220 MHz band in my area. One nice thing about 220 MHz is that hardly any scanners cover the band and we can discuss things that we'd be afraid to say over other channels that might be monitored. The 2-meter and 440 MHz bands also can be used to keep in touch with others, not only on repeaters, but on hundreds of discreet simplex (or if you really want to confuse listeners, go duplex) frequencies.

The name of the game is to share your listening activity with others. While you may communicate by mail or even occasionally by phone with others who also like to listen to the same things you do, we're trying to offer to you another way to keep in touch with your radio friends. And like we said earlier, there's no reason you also can't use radio to keep tabs on those also using two-way. If you set up a system with your friends, let us know. We'd be interested in hearing how your system fits your needs.

Mailbag

Dennis McEwan of the Bronx, NY writes in to say he listens to "Crown," the White House Communications Agency, communicate with *Air Force One* and *Air Force Two* on 407.850 MHz whenever the planes are in the New York City area. However, he says he cannot hear the plane calling back to make phone patches for executives and seeking flight information. Well, *AF 1* and *2* both transmit on 415.700 MHz and you'll need to go back and forth between the channels, depending on who is talking.

This radio circuit sometimes is referred to as the "Echo-Foxtrot" system, because 407.850 is called Echo frequency and 415.700 is called Foxtrot. The system works with a nationwide system of Foxtrot receivers and Echo transmitters throughout the nation for the plane to keep in constant contact with "Crown." Typically the Echo-Foxtrot links are located at airports or at microwave relay stations operated by the telephone co. If you hear activity on 407.850, then you probably live near a major airport or a major long distance relay tower. The transmissions then are fed back to the White House from the remote sites via landlines. If you listen to the 415.700 MHz side of the calls, you'll hear phone patches made by government and even news media types. Because the aircraft is several thousand feet in the air, you'll hear the Foxtrot side of the conversations for 50 to 100 miles sometimes.

What questions do you have? What interesting things have you heard on your scanner lately? We're interested in hearing from you here at *POP'COMM*. We'd also like to receive lists of frequencies you have compiled or would like to hear about any listening tips you might have for other listeners. You can write to me at: Chuck Gysi, N2DUP, Scanner Scene, Popular Communications, 76 North Broadway, Hicksville, NY 11801. PC

LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

All the news this month is on the plus side. Many of the hard-to-hear regional stations in Papua New Guinea have moved from 120 meters to 90 meters, or are scheduled to do so. That should make them somewhat easier to hear. Radio West New Britain at Kimbe goes from 2.340 to 3.235, Radio Manus at Lorengau moves from 2.428 to 3.315, Radio Western Highlands from 2.450 to 3.375, Radio Northern at Popondetta from 3.322.5 to 3.325. Another Papua New Guinea item states that Radio Chimbu on 2.376 at Kundiawa is correctly named Radio Simbu.

The improvement plans at Radio Japan seem to be official now. New relays sites will go up in Thailand using 500 kilowatts to provide service to much of Asia, a new relay in Panama will beam broadcasts to the Americas and Gabon will provide service to Africa. It's unclear whether the Gabon relay will simply make use of Africa Number One (we expect that's the case) or whether an entirely new installation is planned. When they're not being used for Radio Japan programming, the relays will carry their own. All of this should make Thailand a lot easier to log and, of course, Panama has been silent on shortwave for many years so lots of DXers will welcome that one. It'll be a few years before all of this happens however.

Good news from New Zealand. The new labour government there plans a full investigation into the upgrading of long-suffering Radio New Zealand. This may mean higher power transmitters and an eventual overseas service.

Radio Sweden International's popular "Saturday Show," which has been off the air two or three years, is now available as a "best of" collection on cassette. Tapes are priced at $2.50 each from Radio Sweden International, S 105 10 Stockholm, Sweden. If you're into computers and using them with your shortwave hobby, Radio Sweden also has a free information leaflet entitled "The DXers Guide to Computing" available from the same address.

HCJB's DX Party Line program has now expanded to three half-hour programs per week. The program is still at 0230 GMT Tuesdays, Thursdays, and Sundays (Monday, Wednesday, and Saturday nights U.S. time). The program has also expanded in content to include the full field of communications. HCJB should also have their new 49 meter band antenna for Europe up by now, as well as another 100 kilowatt transmitter. The 100 watt transmitter on 26.020 is temporarily off the air for repairs. And 1985 HCJB tours to Ecuador are scheduled for March 9-23, July 13-27, and September 7-21. If you are interested, contact the World Radio Missionary Fellowship (operators of HCJB) at P.O. Box 553000, Opa Locka, Florida 33055-0401.

Here's DXer Don L. Waba, "all alone" in Gillette, Wyoming.

This nice layout belongs to David Salmi in Massachusetts. That's the Drake R-7 in the center of the photo.

Before our appeal for area club information even got into print we received a copy of the first issue of "IDEX," the bulletin of the Idaho DX and Communications Club. The group is headed up by Frank Aden, Jr., P.O. Box 2082, Boise, Idaho 83701. The newsletter comes out every other month and area listeners can get a year's worth of issues for six 20-cent stamps. The group published the *Idaho Broadcasting Guide* earlier this year and that's available for $3.40.

If you know of local, regional, or area clubs, we'd like to get details and a sample bulletin. We know there are people out there looking for an area group to join, so here's your chance to perhaps add some new members and strengthen your group. If nothing else, we'll at least have the data on file and can refer any queries we may get from time to time.

From The Mailbag

There's a lot of mail this month, so let's take a look at it.

Pat McDonough of Pittsburgh, Pennsylvania starts us off with a request for a definition of "QSL." It's a radio amateur "Q" code meaning "can you acknowledge receipt?" Like so many of the ham Q codes, it was borrowed for use in the monitoring side of things. You can also call them verifications, confirmations, or veries.

Jeffry L. Popa, WB8QYT of Akron, Ohio wonders about a station he hears on 15.450 around 2230 in English with an anti-American approach. It's the African Service of Radio Jamahiriya from Khadafy's Libya, Jeff. The shack in Akron sports an ICOM IC-751 transceiver with external keyboard pad and is set up for copying radioteletype, too. Jeff notes that the Voice of Free China takes the honors when it comes to responding with lots of stuff.

John H. Mack of South Pasadena, California asks for the addresses of a number of shortwave stations—too many to list here. We suggest you purchase a copy of the *World Radio TV Handbook* and/or the *QSL Address Book* so you'll have the addresses you need, when you need them. Sorry we didn't have the space to help you out here.

An article about Radio Earth. That's what Robert Pastrick of Baden, Pennsylvania would like to see in these pages. To tell you the truth Bob, it's been on our list of things to do for some time now. Trouble is, things change so frequently with Radio Earth that we're afraid much of any article on that topic would be out of date by the time it sees print. Perhaps later when things have settled down.

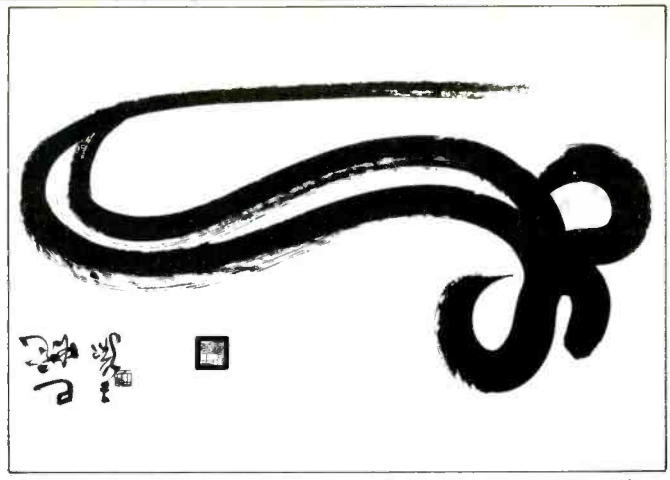
John Mayson of Tampa, Florida sends along a photo of his shack. He's using a DX-100 and thinking about a Panasonic RF-3100. Thanks John. We always appreciate those shack photos!

West Berlin is the listening location of James Smallwood, who's serving in the U.S. Air Force. Jim sends a long letter noting that he's been listening since he was 14 and is a member of NASWA and SPEEDX. Currently he uses a Panasonic 4900-B. Higher ups, he says, have told him he can't write to stations in communist countries. Jim notes that all of the European stations, with the exception of Radio Denmark, are heard well. As to your question, Jim, the Voice of Peace and Radio Dublin should respond in two or three months, so perhaps you've received your replies by now.

Another DX-100 sits in the shack of Dennis Richards in New Haven, Connecticut. No room for an outside antenna, so Dennis uses a piece of #8 aluminum ground wire from the receiver to a radiator with "good results." Dennis hopes to move up to a Kenwood R-2000 or Yaesu FRG-7700 soon.

Rick Cunningham of Texas City, Texas holds ham call N5DTI and uses a Drake

Radio Dublin, the Irish pirate station, sends this QSL.



One of the QSLs sent by The Voice of Free China. This one belongs to Kim Bryant of North Carolina.

SPR-4 for shortwave listening. He has a mystery on 7.418 where he heard medium waver XEG in Monterrey, Mexico one night only at 0215. You are right in guessing XEG has no shortwave outlet Rick, so it may have been a pirate pick-up as you suggest—we really can't say for certain. As for the log of WMLK, the Assemblies of Yahweh station on 15.107, we don't think so. The international service of Equatorial Guinea operates here about the time of your logging and, if memory serves well enough, that outlet carries some English language religion. Although WMLK has tested, it had a dummy load on the antenna so the signal didn't go out very far. Last word was that WMLK would be on in late 1984 or early 1985.

A Drake R-7 receiver has arrived in the shack of David Salmi in Maynard, Massachusetts since he last checked in with us. Dave's using an 11-49 meter trap dipole antenna and a homemade "slinky" dipole for tropical band and partial medium wave use.

Mike Masino of Hattiesburg, Mississippi comments on previous remarks of Albania's QSL policies, saying that while he got no answer the first time, he did on the second time around. He also received a QSL from Radio Jamahiriya after six months and notes that he sent no IRCs.

POP'COMM can take the credit for getting Phil Scribani of Elmhurst, New York into the listening game. Phil was active about ten years ago but he stopped because there was no publication like *POP'COMM* around! Now that he has found us, he's back in action using a Kenwood R-600 and an old Lafayette "Explor-air."

Regular Sheryl Paszkiewicz of Manitowoc, Wisconsin checks in to say that last month brought her two new countries and several QSLs. She's also signed up as a monitor for Radio RSA.

Larry Fravel of Clarksburg, West Virginia is trying to interest his 13-year-old son in the hobby. Larry says that, so far, his son is only half convinced! Larry QSL'd Transkei and Lesotho within the past month, bringing his countries verified total up to 103 and has hopes of reaching 125 by the end of the DX season.

John Palumbo in Wandber, Pennsylvania bought a Uniden 2021 portable and says he can pick up the stations a lot more easily than with his previous receivers. But, says John, some of the stations aren't there when he tries to punch them up. That's no fault of the receiver, John. The stations may not be using the frequencies at the times you are trying or those frequencies may not be propagating well. Listening isn't automatic!

Wain Buckley of Thomasville, Georgia is having trouble receiving Radio Denmark and thinks part of the problem may be that his information could be out of date. The latest schedule on hand here has Radio Denmark to North America on at 1400 to 1452 on 15.165, 1900-1952 on 11.960, 1100-1130 and 1730-1830 on 11.960, 2100-2115 on 9.730. It is also on at 1600-1652 and from 0000-0052 on 11.875. As you probably know, there is no English from Radio Denmark, other than station identifications.

It sounds like a lot of receivers are being bought out there! Ted Moran of Chicago now has a Kenwood R-1000 and is using a 25-meter random longwire. Ted says he's received a lot of new QSL cards thanks to this column, and promises a photo if he can get the "messy" shack cleaned up. An eternal problem, Ted!

Kim Bryant of Raleigh, North Carolina echos the earlier statement about the flood of goodies from the Voice of Free China and sends along the card he received, which we've pictured this month. Thanks Kim.

Isolation plagues a lot of listeners, including Don L. Waba of Gillette, Wyoming. You might want to check out the Idaho group mentioned earlier Don, as well as the new *DXers Directory* from Universal Shortwave since there may be listeners fairly near your location you are unaware of. Don notes that one good thing about his location is the lack of interference. Don's interested in military intelligence gathering, RTTY, utilities, Interpol monitoring as well as shortwave broadcast. He'd like to correspond with others with similar interests. You can reach Don at 612 Arrowhead Drive, Gillette, WY 81716.

Billy Hunt of Durham, North Carolina finds himself very well equipped in the receiver department with a Japan Radio Company NRD-515 and an ICOM R-70, with two preamp antennas.

Will we hear from you next month? Hope so! Your comments, questions, interests, shack photos, QSL copies, program schedules, clippings, and loggings are always welcome. After all, it's you who make up this column!

Listening Reports

Here's what's on. All times are GMT.

Albania Radio Tirana on 9.750 at 0254 with news, anti-American comments. Heard later at 0330 on 6.200 which I think was repeat of earlier broadcast. (McDonough, PA) 0000 on 7.065 but often QRM'd. (Landkamer, MN) 0000 in English to North America, CW interference. (Pastrick, PA)

Algeria Radio Algiers, 17.745 in English at 2000. French (also on 15.215) at 2045. (Nacht, NY) 2015 on 17.745 poor, with western pops. (Gray, MI)

Antigua BBC Caribbean Relay on 6.175 with "Waveguide" at 0030-0038. (Bennett, MA)

Argentina RAE has three 1 hour programs in English, at 0200, 0300, and 1100 on 11.710, 11.755, and 15.345. First two frequencies are often inaudible here; 15.345 starts strong at 0200 but fades rapidly. (Behrendt, NE) At 0210 in English with Argentina music. (Nacht, NY) 0230 with headline news, local events, sambas. (Hunt, NC)

Ascension Island BBC Atlantic Relay 6.005 at 0455-0500 in English with news on the hour. (Fravel, WV) 17.880 heard at 1615 in English, info on SWAPO. (Gray, MI)

Australia Radio Australia, 17.795 in English at 0211 with historical conflicts of Japan and Korea. (Gray, MI) English with long sports report at 0800-0830 on 9.680. (Behrendt, NE) 9.580 at 1330-1400 folk music, old Bing Crosby records. (Fravel, WV) 0800 with international news, commentary, schedule, frequencies. (Walker, VA) 9.580 and 6.060 very good at 1330. (Landkamer, MN) 9.580 at 1000 with news. (Bennett, MA) 5.995 at 0800 to South Pacific, news, and "Australian Country Style." (Salmi, MA) 0941 in Pidgin English. (Moran, IL) 1117-1131 economics, lottery reports, sports. (Fravel, WV)

ABC, Perth on 9.610 at 1058-1108, music, news, sports in English. (Fravel, WV)

ABC Brisbane, 4.920 at 1204 sports and Queensland news. (Gray, MI)

Austria Austrian Radio, 5.945 at 0130, news, weather, and "Report from Austria." (Gray, MI) 0130-0150 news, music, sports items. (Hunt, NC) At 0510-0515 with Austrian music. (Fravel, WV) 9.770 but inaudible on announced 5.945 with English to North America at 0130-0155 followed by traditional Austrian music. (Behrendt, NE) 5.945 at 0133 with "main points in the news." (Pastrick, PA)

Belgium BRT Brussels on 9.925, strong at 0030-0110 in English broadcast to North America. (Behrendt, NE)

Belize Radio Belize, 3.285 English at 0220-0330, pop/rock. BBC news, Belize news. Shortwave power cut from 10 to 1 kilowatt, medium wave from 20 to 10 kilowatts. (Behrendt, NE)

Botswana Radio Botswana, 7.255 at 0404 with easy listening music, ID. Bad QRM. (Gray, MI)

Bolivia Radio Illimani, La Paz, 6.025 in Spanish at 0925 with tones, ballads. Worse on 4.945. Tentative, as no ID heard. (Paszkiewicz, WI) 4.945 in Spanish 0500-0600 with upbeat Andean music and pop standards. (Behrendt, NE)

Radio Progresso, La Paz, 6.005 at 0945. Music and time checks. (Moran, IL)

Brazil Radiobras, 15.290 at 0200-0215 in English with local news, program on Indian music and instruments. (Hunt, NC) Nightly at 0200-0300. Coffee production reports and nice music. (Landkamer, MN)

Radio Nacional Amazonas, 11.780 at 0000 in Portuguese with call-in program. Form letter advises station does not QSL and directs listener's letters to Radiobras if QSL is desired. (Behrendt, NE) 6.120 at 0950 in Spanish. (Moran, IL)

Radio Corumba, 4.835 at 0935 with talk and music. (Moran, IL) ID? Think Radio Nacional, Boa Vista is a lot more likely. (Editor)

Radio Cultura do Para, Belem, on 5.045 at 0715 with ID jingle. (Shute, FL)

Radiodifusora do Maranhao, Sao Luiz, 4.755 at 0727. (Shute, FL)

Radio Clube do Para, 4.885 at 0810. (Shute, FL)

Voice of America, via Radiobras, 15.170 at 2338 in Spanish. (Richards, CT)

Bulgaria Radio Sofia, 9.700 in English at 2230 to North America. News about Soviet block countries. (Pastrick, PA)

Cameroon Radio Douala, 4.795 at 0430 with an ID in English. (Shute, FL)

Canada Radio Canada International, 15.325 to Europe with "Sunday Weekend Magazine." English to Europe scheduled at 1900 on 5.995, 7.285, 15.325, 17.875, and 21.695. Monday-Friday only at 2000 on 5.995, 11.960, 15.325, 17.820, and 17.875. (McDonough, PA) "SWL Digest" on 9.755 at 2300-2330 Sundays. (Bennett, MA) 5.960 in English to North America at 0139. (Pastrick, PA) 6.140 at 0600-0700 in English and French. (Buckley, GA)

CHU time station on 3.330 at 2313 with time signals in English and French each minute. (Fravel, WV)

CFRX, Toronto, 6.070 relaying CFRB medium wave, in English at 0105. (Moran, IL)

CKZN St. John's Newfoundland at 1054 on 6.160 with talk. (Paszkiewicz, WI)

Cape Verde Islands Voz do Sao Vicente at 2305 on 3.390 in Portuguese with ballads, ID, 4 chimes, news, IS, anthem and off at 0002. Bad ham QRM. (Paszkiewicz, WI) 3.931 at 2302-0002 sign off with FM-type music, IDs at 15 after and 15 before the hour, possible news, more music to sign off. (Fravel, WV)

China Fujian Front (a/k/a People's Liberation Army Radio) on 5.170 in Chinese at 1007. Also on 5.265 and 5.770. (Moran, IL)

Radio Beijing, 15.520 at 0020 in English to North America. (Pastrick, PA) 0030-0045 in English, including Chinese lesson. (Hunt, NC) 9.860 at 1130 in English. (Gray, MI)

Colombia Radio Cultural Surcolombiana, Neiva, surprisingly strong on 5.010 in Spanish at 0415 with Latin American music. (Behrendt, NC)

Radio Caracol, Neiva, 4.945 at 1057-1103 with music, IDs, ads, news, all in Spanish. (Fravel, WV)

Emisora Nuevo Mundo, Caracol network in Bogota on 4.755 at 0434-0448 with easy listening music, U.S. and Latin. (Fravel, WV)

Radio Super, Cali, 6.120 at 0530 with music program in Spanish. (Fravel, WV)

Ondas del Meta, Villavicencio, 4.885 at 0445 with music program in Spanish. (Fravel, WV)

Emisora Gran Colombia, Bogota, 6.160 at 0908 with possible news and discussion. (Fravel, WV)

Radio Sutatenza, Bogota, 5.095 at 0935 with news and music in Spanish. (Moran, IL)

Radio Macarena, 5.975, Villavicencio, Spanish music and announcements at 0955. (Moran, IL)

Congo Radiotelevision Congolaise, Brazzaville, 4.765 at 0927 in French. Poor audio. (Moran, IL)

Costa Rica TIFC, Faro del Caribe, 9.645 at 0320-0325 with music program in Spanish. (Fravel, WV)

QSLs galore adorn the shack of John Mayson in Tampa, Florida.

5.055 at 0305 with English religious programming. (Nacht, NY) 0341-0356 religous program in English, ID, national anthem and off at 0356. (Fravel, WV)

Radio Reloj, San Jose, 4.832 at 0245 music and news in Spanish. (Hunt, NC)

Radio Columbia, San Jose, 4.849 at 0300 with LA music, ID. (Hunt, NC)

Cuba Radio Havana Cuba, 6.090 at 0140 weather, "Cuba and the World," ID 0145. 11.840 at 1120 with "Issue of the Day." (Gray, MI) 15.230 at 1527 in Spanish to North America. (Pastrick, PA)

Czechoslovakia Radio Prague, 7.345 at 0345 with "Magazine of the Air" in English. (Walker, VA) Here at 0100. Also scheduled on 5.930, 9.540, 9.630, 9.740, and 11.990. (Landkamer, MN) 9.740 at 0300 with anti-Reagan commentary. (McDonough, PA) 5.930 at 0124 with English to North America, disarmament talks. (Pastrick, PA)

Denmark Radio Denmark, 11.960 at 1900 in Danish, ID in English. Reports welcomed to: Shortwave Department, Radiohouse, DK-1999, Copenhagen. (Richards, CT)

Ecuador Radio Luz y Vida, Loja, 4.850 broadcast at 1045-1100 musical variety show heard in Spanish. (Fravel, WV)

HCJB on 6.130 at 0930-1000 with DX Party Line. (Fravel, WV) On 9.745 at 0044 with news, religion. (Pastrick, PA)

Radio Baha'i, Otavalo, 4.990 at 0600 with musical interlude, then "Desde los Andes Ecuatorianos, esta es Radio Baha'i, en Ecuador." Announced address as Apartado 14, Otavalo. Same format repeated to 0611 tune out. (Shute, FL) This was part of a series of test broadcasts. (Editor)

CRE, Guayaquil on 4.656 at 0925 in Spanish with music. (Moran, IL) Station heard at 0031-0037 in Spanish, announcements that were probably commercials. (Fravel, WV)

Egypt Radio Cairo, 12.050 at 2105 in Arabic, typical "sand" music. (Gray, MI) 9.805 from 2145-2210 in English, music and mailbag in European broadcast. (Pastrick, PA)

Equatorial Guinea Radio Nacional, ID heard at 0506 on 4.925 in Spanish with Latin-style music. Sign on with national anthem. (Shute, FL) Nominal 4.926. (Editor)

Finland Radio Finland International, 15.400 at 1100 with current affairs talk. (Gray, MI) At 1302-1309 with news and "Northern Report" in English. (Fravel, WV)

France Radio France International with "Paris Calling Africa" at 1605-1653 on 17.620. (Bennett, MA) 9.790 in French at 0553 announcing frequencies and other info. (Shute, FL) 7.135 at 0425-0430 end of English news, contest announcement, into French. (Fravel, WV)

French Guiana RFI Relay on 11.670 at 0110-0130 in Spanish to Latin America. Announcer mentioned "Radio Clube Latin America" and "our first DX program." (Brumm, IL)

Gabon Africa No. One on 9.805 in French at 2030 commentary, ID, African vocal pops. (Gray, MI) 4.810 at 0537 in French with pop songs. (Shute, FL)

Guatemala TGNA on 3.300 at 0036-0100 in Spanish with IDs at 0043 and 0100. (Fravel, WV)

Haiti 4VEH on 4.930 at 0055-0115 with music, station ID, news in French, more music. (Fravel, WV)

Honduras HRVC, La Voz Evangelica, 4.820 from Tegucigalpa at 0408 with religious program in English. (Salmi, MA) 0956-1000 in Spanish. (Moran, IL)

Iceland Icelandic State Broadcasting Service, 13.797 at 2045 with commentary and off with ID at 2115. (Gray, MI) At 1857 and 1924 in Icelandic with talks. (Nacht, NY) Scheduled 1855-1945 weekdays, 1215-1245 weekends to Scandanavia, 1945-2030 weekdays and 1245-1315 weekends to Britain and Continental Europe, 2230-2315 weekdays and 2030-2115 weekends to Canada and the U.S., all Icelandic. (Weinel, NC)

India All India Radio, 11.620 in English at 2046, weak. (Nacht, NY) 2213 with commentary, ID. (Gray, MI)

Iraq Radio Baghdad on 9.610 at 2115 in English, 1935 in German. (Nacht, NY)

Israel Kol Israel, 9.440 at 0013 interviewing an author in North American service. (Pastrick, PA) At 0200 with MidEast news. (Hunt, NC) 11.655 at 2000-2030 in English. (Landkamer, MN) "Calling All Listeners" and "DX Corner" at 0010-0022. (Bennett, MA) To 2300 with "A Look at Judism." (McDonough, PA) 7.412 at 0225. Parallels on 9.440 and 9.815 announced. (Buckley, GA) At 0215 with "Calling All Listeners." (Shute, FL) Now scheduled to North America at 2230-2300 on 11.655, 9.440, and 9.815; 0000-0030 on same frequencies; 0100-0130 on 11.655 and 9.815; and 0200-0230 on 9.815, 9.440, and 7.412. (Landkamer, MN) 2225 on 9.815 in English. (Gray, MI)

Italy RAI weak at 0100-0120 on 9.575, 15 minutes of news, one song and English ended, into French. (Behrendt, NE) 0100-0115 with world news, music. Excellent. (Hull, NC) 11.800 at 1947-2002 with news in English, one song, bird call IS, ID, into Italian. (Fravel, WV)

Ivory Coast Radiodifusion Television Ivoirienne, 7.215 at 0602-0620 with music program in French. (Fravel, WV) At 2330 and 0700 with African music. Off at 0000 with ID and anthem. (Behrendt, NE) 2325 in French, heavy QRM from hams. (Gray, MI)

Japan Radio Japan, 15.300 in English at 0025, to North America. (Pastrick, PA) Probably via Africa No. One. (Editor)

Kuwait Radio Kuwait, 11.675 at 1830 with English news and regional weather. (Rutowski, NY) 1910-1925 in English with music, news, magazine show. (Moran, IL)

Liberia ELBC, 6.090 at 0748-0800, weak, in English with news. (Moran, IL)

VOA Relay, 6.045 in English at 2107. (Nacht, NY) Heard on 15.600 in English at 1740 was "Music Time In Africa." (Gray, MI)

Libya Radio Jamahiriya, 15.450 in English 1830-1845 with African Service, pop music, some American and African tunes, ID. (Hunt, NC) 17.930 in Arabic at 1810. (Hunt, NC) 1455 in Arabic. (Gray, MI)

Lithuanian SSR Radio Vilnius, 15.405 at 2300-2330 in English to North America. (Landkamer, MN) Via Radio Moscow facilities. (Editor)

Luxembourg Radio Luxembourg 6.090 with pops at 2317. (Nacht, NY) At 2300 with news, weather, music. (Salmi, MA)

Mali Radiodiffusion National du Mali, Bamako, 4.783 at 0611. All French, African drums. (Shute, FL) At 0600 with Arabic chanting. (Behrendt, NE)

Malta Radio Mediterran at 2232 on 6.110 in English. News, interspersed with music. (Paszkiewicz, WI) 2240 poor with English. Talks and pop songs. (Pastrick, PA)

Mariana Islands KYOI, Saipan 11.900 at 1130 in English, pop music, ID. (Gray, MI)

Monaco Trans World Radio, Monte Carlo, heard on 7.160 at 0625 sign on in English. Terrible modulation. (Buckley, GA)

Mozambique Radio Mozambique, 9.618 at 1436 in Portuguese, mentions of Maputo and Mozambique and what sounded like football. Het and utility QRM. (Paszkiewicz, WI)

Namibia (Southwest Africa) Southwest Africa Broadcasting Corporation, 3.295 in English at 0405, religious music, static. (Gray, MI) 2348-0010 easy listening music, local time, ID at 0000. (Fravel, WV)

Netherlands Radio Netherlands, Pacific Service, 9.650 at 1035-1040 with news, current affairs. (Fravel, WV) With "Media Network" and "Shortwave Feedback" at 1030-1125 on 6.020. (Bennett, MA) 17.605 at 2045, parallel 15.560, English. 17.795 at 0230 in English, talks and "Media Network." (Gray, MI)

Netherlands Antilles Radio Netherlands Bonaire relay 9.590 with world news and "Newsline." Excellent. (McDonough, PA) 6.165 with "Newsline" at 0530. (Walker, VA)

Trans World Radio, Bonaire, 9.535 at 0358 sign on, music to 0405, then world news. (Rutowski, NY)

Nicaragua La Voz de Nicaragua, 6.015 at 0500, end of English and sign off at 0502. (Fravel, WV) 0103 in English with anti-American comments. Either jammed or severe QRM from 6.020. (Pastrick, PA) English from 0100. Last 15 minutes (at 0145) usually the most readable. (Landkamer, MN)

North Korea Radio Pyongyang, 9.977 at 1140 in English. Also on 9.745. (Salmi, MA) 9.745 at 1230 in English, music, ID, commentary. (Gray, MI) 1100-1132 news and propaganda in English on 9.977. (Fravel, WV) 1101 in English. (Nacht, NY) 15.240 at 2300 in English. Fades. (Landkamer, MN)

Norway Radio Norway International, 7.210 at 0557 with interval signal, ID done in both Norwegian and English. (Salmi, MA)

New Zealand Radio New Zealand, 15.485 at 0315 with mystery drama, fading after 0345. (Gray, MI) 0350 with music, talks. Also on 17.705 at 0400, very weak. (Nacht, NY)

Nigeria Voice of Nigeria, in English at 1249 on 15.120. Poor. (Shute, FL) At 2145 with East African Service. (Rutowski, NY) 1135-1200. News in English, ID. (Fravel, NY) 7.255 with West African Service in English to 0600, then into French. (Fravel, WV) Strong from 0500 on in English. (Behrendt, NE)

FRCN Kaduna, 4.770 at 0527 in English "This is the English service of Radio Nigeria." (Shute, FL) At 2225 with African pops in English. (Richards, CT)

Pakistan Radio Pakistan, Islamabad, 11.670 in English. Poor with news at 1605. (Fravel, WV)

Papua New Guinea NBC Boroko on 9.520 at 0700 with Pacific island music, feature program called "Frontier" at 0730. (Behrendt, MA)

Paraguay Radio Nacional, 9.735 at 0200 in Spanish, Latin music. (Hunt, NC)

Philippines VOA Relay, tentative, 15.425 at 1340 in English. (Nacht, NY)

Portugal Radiodifusao Portuguesa in English on 9.575 at 0545. (Shute, FL) 6.060 at 0300 with news, music DX show. (Hunt, NC) 6.025 at 0600 ending English. Deutsche Welle begins in German before RDP goes off. (Buckley, GA)

Qatar Qatar Broadcasting Service, 17.910 at 1550 in Arabic, news, music, ID. (Gray, MI)

Romania Radio Bucharest, 15.335 at 1459 with sign on, news, talk on the contradora group. Also uses 17.850, 15.250, 11.940, and 11.775. (Rutowski, NY) 9.570 at 0411 with world news. (McDonough, PA) 6.155 going off at 0030. Also on 9.510 and 9.570. (Buckley, GA)

Senegal Radiodiffusion Television Senegal, Dakar, 4.890 with interval signal 0557, national anthem, into French. QRM from SSB operator. (Shute, FL)

Singapore BBC Relay on 11.750 at 1650, English, music, commentary. (Gray, MI)

Solomon Islands Solomon Islands Broadcasting Corp.—Radio Happy Isles, 9.545 in English with news, music to 0745. SW frequencies 9.545 and 5.020 listed as 10 kw. (Behrendt, NE)

South Africa Radio RSA on 5.980 at 0519-0530 sign off in Lozi with jazz. (Fravel, WV) This and 6.010 and 9.615 at 0200-0256. 31 mb covered by KGEI at 0215. 6.010 is good here. (Buckley, GA) Difficulty on all channels in Minnesota. (Landkamer, MN) 6.065 at 2300 in Spanish service. (Pastrick, PA) 9.615 in English with news and "Africa Today" at 0200. (Nacht, NY) 3.230 at 0325 with DX program. (Behrendt, NE) 9.585 at 2103 in English, talks. (Gray, MI)

Spain Radio Exterior de Espana, 11.880 at 0000 in English with news from Spain and around the world. Better on 11.945 at 0020. (Linville, Alberta) Special message for hams and DXers at 0048-0055. (Bennett, MA) 9.630 at 0009 with news in English to North and Central America. (Pastrick, PA) 15.380 at 1930 in English. Good coverage of Central American subjects. (Landkamer, MN)

Surinam Radio Suriname International, tentative on 17.755 signing on at 1428, ID possibly in Dutch. Fair to poor. (Shute, FL) You're right. 1430 sign on on Sundays, 1700 Wednesdays and Fridays. Address is P.O. Box 2979, Paramaribo. Transmissions are via Radiobras in Brazil. (Editor)

Swaziland Trans World Radio, heard on 9.640 in English at 0340 ID and program "Life on the Other Side." (Gray, MI)

Sweden Radio Sweden International, at 1421 in English with mailbag program on 17.860. (Shute, FL) News and "Sweden Calling DXers" heard at 1400-1427. (Bennett, MA)

Switzerland Swiss Radio International, with "Dateline" at 1830-1842 on 9.535. (Bennett, MA) 3.985 with Swiss country music at 0612. Into French at 0615. (Salmi, MA) Difficult on 9.720, also 6.135 at 0145. (Landkamer, MN)

Tahiti Radio Tahiti on 15.170 at the odd hour of 1702 again! Short flute and Tahitian drums, man talking in Tahitian. Can anyone explain why I'm getting Tahiti at this hour? (Shute, FL) 0300-0315 with island music to fade out. (Hunt, NC) 11.825 from 0500 in French with island music. (Behrendt, NE)

Turkey Voice of Turkey on 9.540 at 0135-0145 in English. (Moran, IL)

United Arab Emirates UAE Radio, Dubai with news at 1630-1638 on 15.300. (Bennett, MA) 1631-1643 news in English and end of English program. (Fravel, NY) 1610 in English. (Gray, MI)

United States KGEI San Francisco, 15.355 at 2306 in Spanish. (Moran, IL) 15.280 at 2350 in Spanish to the Americas. (Pastrick, PA)

Organization of American States radio via VOA on 11.830 in Spanish to the Americas logged at 2345. (Pastrick, PA)

WINB, Red Lion, PA at 2305 on 15.185 "Through The Bible" program. (Pastrick, PA)

WYFR with Voice of Free China relay on 5.985 at 0545-0552 with "World of Science." (Fravel, WV) 0115 VOFC in English. (Gray, MI)

WRNO on 9.705 at 0039 with pop, toll-free song request number: 1-800-222-0221. 11.920 at 2247, more rock. (Pastrick, PA)

WWV on 2.500 at 0534-0540 and 5.000 at 0542 with time signals. (Salmi, MA)

VOA Greenville, 2045 on 15.205 music, program in slow English. (Gray, MI)

USSR Radio Moscow, 7.320 at 0315 discussion on Soviet cinema. (Walker, VA) 15.100 at 1500 with World Service in English, "massive poverty in America." (Pastrick, PA)

Venezuela Radio Tachira, San Cristobal in Spanish on 4.830 at 0245. Latin American music, ID. (Hunt, NC) 0830-0900. (Behrendt, NE)

YVTO Observatorio Naval Cagical, time station on 6.100 at 0724 with time announcements in Spanish. (Salmi, MA)

Radio Continente, Caracas, 5.030 at 0655-0707 with music, ID. (Fravel, WV)

Radio Barquisimeto, 4.990 at 0010. Nice music. (Moran, IL)

Radio Ecos del Torbes, San Cristobal, 4.980, popular music at 0105. (Moran, IL) News in Spanish at 0130. (Hunt, NC)

Radio Juventud, Barquisimeto, 4.900 at 0315 with American pops. (Hunt, NC)

Radio Rumbos, Caracas, 4.970 local vocals and many IDs. (Hunt, NC) 0330-0400 with news items interspersed with chimes. "Media noches" music program at 0400. Also on 9.660 at 0000 with Latin pop/rock. (Behrendt, NE) 9.660 at 0330, lively LA pops. Better than 4.970. (Paszkiewicz, WI)

West Germany Deutsche Welle, 9.650 at 0930-0950. (Bennett, MA) 9.545 at 0215 in German with news. (Hunt, NC) 9.690 in English to North America at 0546. (Shute, FL) 6.040 to North America at 0116 with talk on auto pollution, press review. (Pastrick, PA) Most of these would be via DW Caribbean relays. (Editor)

Bayerischer Rundfunk, Munich, after 0600 on 6.085 in German. Fun station for German-speaking listeners. (Buckley, GA)

Many thanks to the following: Sheryl Paszkiewicz, Manitowoc, WI; Pat McDonough, Pittsburgh, PA; Edward C. Bennett, Ware, MA; Robert E. Pastrick, Baden, PA; Michelle Shute, Pensacola, FL; Alan J. Nacht, New York, NY; Michael Landkamer, Fairbault, MN; Stephen C. Behrendt, Lincoln, NE; Dennis Richards, New Haven, CT; Jim Weinel, Greensboro, NC; David E. Salmi, Maynard, MA; Allen Linville, Edmonton, Alberta; Royal Walker, Suffolk, VA; Larry R. Fravel, Clarksburg, WV; Wain Buckley, Thomasville, GA; Ted Moran, Chicago, IL; Jerry Brumm, Chicago, IL; Dennis Rutowski, FPO, NY; J. Speed Gray III, Grand Rapids, MI; and Billy Hunt, Durham, NC.

Hope to see you next month. 'Til then, good listening! **PC**

WASHINGTON PULSE

FCC ACTIONS AFFECTING COMMUNICATIONS

Revocation Of SMRS Authorizations Affirmed

A federal appellate court has affirmed the Commission's revocation of the authorizations of AAT Electronics Corporation and P&R Temmer to operate 15 of the 20 channels in their separate trunked specialized mobile radio systems (SMRS).

Both companies filed their appeals with the U.S. Court of Appeals for the District of Columbia Circuit.

The Commission staff revoked the authorizations for 15 of the 20 channels originally authorized because both companies failed to meet the loading requirements imposed at the time the authorizations were granted.

The Commission denied both companies requests for reconsideration of the staff's decisions and for hearings.

The court concluded that the Commission actions were in compliance with both its licensing procedures and the Communications Act.

FCC Authorizes Flight Test Station In The 2310-2390 MHz Band; Clarifies Technical Criteria

At the request of the Aerospace & Flight Test Radio Coordinating Council (AFTRCC), the Commission has authorized flight test telemetry operations in the 2310-2390 MHz band and modified and clarified technical criteria governing such operations.

Flight test telemetry stations are used to transmit diagnostic data during flight testing of manned and unmanned aircraft, missiles, booster rockets, and other expendable vehicles or their major components. In the United States, government and non-government licensees are authorized to use flight test telemetry frequencies on a shared, coordinated basis.

Specifically, the Commission amended Parts 2 and 87 of the rules to:

- Make the 2310-2390 MHz band available at all times for assignment to flight test telemetry stations
- Eliminate restrictions on the flight test telemetry service specifying the use of certain frequencies for manned and others for unmanned operations
- Authorize the use of ground-to-air telecommand operations in the flight test telemetry bands
- Authorize the use of 1, 3, and 5 MHz bandwidth channels on a routine basis and conform with the international Radio Regulations by requiring flight test telemetry transmitters manufactured after January 1, 1985, and all such transmitters in operation after January 1, 1990, to have a frequency tolerance of 0.002 percent
- Add emission limitations for digitally modulated (F9Y) flight test telemetry stations identical to those applied to F9 stations,
- Require the frequency advisory committee to coordinate frequency assignment requests with the responsible Government Area Frequency Coordinator.

Frequencies In The 450-470 MHz Band For Central Alarm Use

The FCC allocated exclusively to central stations electrical protection companies four frequency pairs which lie between (12.5 kHz offset from) channels in the 450-470 MHz Business Radio Service band, and has relaxed the antenna height rule to allow central station operators to use antenna heights 20 feet above man-made structures.

The FCC acted in response to a request by the Central Station Electrical Protection Association (CSEPA) asking the FCC to set aside three pairs of 12.5 kHz offset frequencies in the 450-470 MHz band for nationwide use and three pairs for use within urban areas having a population of 200,000 or more. It also asked for authority to operate on these frequencies at antenna heights exceeding 20 feet above ground, but not more than 20 feet above man-made structures.

CSEPA also requested that seven paired and four single frequencies be reserved exclusively for electrical alarm signaling use at 952-960 MHz, in addition to a relaxation of frequency stability requirements to keep remote units economically viable.

The Commission declined to allocate 900 MHz frequencies for exclusive use of the industry. It pointed out that CSEPA members, however, remain eligible for operations in the 928-929/952-960 MHz band with other Part 94 eligibles.

This action will minimize disruption to alarm service providers by allowing the industry to operate on the offset frequencies between the industry's primary frequencies and by allowing the industry's representative, CSEPA, to coordinate the use of the frequencies. It would also provide needed spectrum relief to the industry.

Petition For Waiver For Vehicle Collision Warning System

Vehicle Radar Safety Systems, Inc. (VRSS), has filed a petition for waiver of the regulations for field disturbance sensors in Part 15, Subpart F, to begin marketing a vehicle collision avoidance systen, known as the Rashid Radar Safety Brake.

The system is intended to alert the driver of a truck or automobile when the vehicle is too close to another vehicle or object in its path, indicating the possibility of a collision. The safety brake consists of three major components: a miniaturized microwave radar antenna (transmitter/receiver), an electronic signal processor, and a dashboard monitor.

The low power radar transmitter is classified as a field disturbance sensor subject to requirements in Part 15, Subpart F. These requirements are designed to control the interference potential of such devices. The VRSS device transmits at a frequency of 24,125 MHz plus or minus 50 MHz. VRSS states that it cannot satisfy the applicable emission limitation of 250,000 μV/m at this frequency and still have a viable system.

VRSS submitted a separate petition for rulemaking for vehicle collision avoidance systems, RM-4840, which was put on public notice on August 10, 1984. Comments were due September 10, 1984, and replies are due September 25, 1984. In lieu of the present technical requirements, VRSS proposes the following:

> "For microwave collision warning systems operating at 24,125 MHz the maximum output power shall not exceed 0.1 watts. The product of output power and beamwidth shall not exceed 63.25."

Subsequently, VRSS filed a petition for waiver of the present technical requirements to allow it to begin marketing the safety brake as soon as possible. The petitioner claims that the device can save lives and reduce property damage and therefore the petition warrants prompt introduction to the marketplace.

Use Of TV Channel 19 Frequencies By Los Angeles County Sheriff Proposed

The Commission proposed allowing the Los Angeles (California) County Sheriff's Department to use Channel 19 or some frequencies thereof for public safety land mobile use.

In adopting a Notice of Proposed Rulemaking, the Commission found that the Sheriff's need for portable radios, coupled with unique aggravating factors present in the Los Angeles basin of expansive geography and diverse topography, constitute sufficient basis for initiating the proceeding.

The Sheriff's Department currently has spectrum at 39 MHz and 470 MHz. Although the detectives operating at 470 MHz do use hand-held radios, there is insufficient spectrum there to accommodate patrol officers as well. The Commission noted that narrowband and trunked system portables are not currently manufactured or available in this country for public safety systems in the 470

MHz band. These technologies, therefore, cannot meet the Sheriff's immediate needs.

The Commission agreed with the Sheriff's Department that use of 39 MHz spectrum presents problems for designing a portable system. The Commission noted that police departments in most major cities use communications systems with small portable radios carried by officers, rather than relying solely on vehicularly mounted radios. The Commission further noted that portable units are vital to an officer's ability to radio for back-up assistance or emergency help when away from his or her car and, therefore, further the safety of both the officers and the public they protect.

The Commission has proposed allowing use of Channel 19 for a number of reasons.

Allowing the use of Channel 19 by the Sheriff's Department will not cause loss of full power television. Because KSCI-TV operates on an adjacent channel (Channel 18) in San Bernardino and covers part of Los Angeles County, the FCC said Channel 19 cannot be used for television in Los Angeles. Although the interservice sharing criteria adopted in Docket 18261 would have to be modified to permit the Sheriff to use Channel 19, the Sheriff's Department argues that it can engineer a system that will not cause interference to Channel 18. Indeed, the Sheriff's Department is planning to test demonstrate the feasibility of this sharing.

In addition, the Commission recognized that use of Channel 19 has the advantage of permitting mutual aid compatibility with the Los Angeles Police Department (L.A.P.D.). Because L.A.P.D. operates on Channel 20 frequencies, radios could tune across both frequencies. Given the interlocking jurisdictions of the Sheriff's Department and the L.A.P.D., the Commission stated that the ability for the two departments to communicate by radio (at present they can only communicate by telephone) would thus promote their ability to foster public safety.

Finally, the Commission noted that spectrum allocated for land mobile use has already been assigned in the Los Angeles area.

The Commission expects the Sheriff's test results to be submitted by the Sheriff's Department with comments. The Commission said it will carefully study these results in determining whether Channel 19 should be reallocated by rulemaking, or whether a waiver should be granted to permit the Sheriff to construct a system tailored to avoid interference, whether Channel 18's license should be modified, or whether reallocation or use of Channel 19 by the Sheriff should be denied. If feasible, however, the Commission will make use of Channel 19 frequencies available.

Maritime Communications Systems In 216-220 MHz Expanded To Offshore Waters Of Gulf Of Mexico

The Commission expanded the service area of automated maritime communications systems operating in the 216-220 MHz band to include the offshore waters of the Gulf of Mexico.

It noted that since maritime use of the band is authorized along the Gulf Intracoastal Waterway, expansion into the offshore waters of the Gulf will not present potential interference problems with television reception. The availability of the 216-220 MHz band in the Gulf will broaden the diversity of services, generally improve maritime communications and enhance the economic viability of equipment procured for maritime use in this band.

In amending Parts 2, 81, and 83 of the rules, the Commission said the Gulf of Mexico would be divided into eastern and western sectors for application of the minimum coverage requirement and service would be permitted to fixed platforms, in addition to vessels.

Additional Frequencies For Races

The Commission expanded the Radio Amateur Civil Emergency Service (RACES) 6-meter operations to include the repeater subband 52-54 MHz, when the President's war emergency powers have been invoked.

Under the current RACES rules, 6-meter repeater stations may be used for daily communications, but not as RACES stations during wartime without major changes in operations.

Gary David Gray, the San Diego County Sheriff's Department, the County of Orange, the County of San Diego, and the Southern California Repeater and Remote Base Association requested that the RACES wartime subbands be expanded to include the 52-54 MHz repeater subband so that day-to-day 6-meter amateur repeaters could be used immediately for RACES operation during declared national emergencies.

Request For Waiver Of Requirements For Security Devices

Transcience Industries, a manufacturer of low power security devices, has submitted a petition for waiver of the requirements for such devices set forth in Subpart E of Part 15 of the FCC Rules.

Transcience states that its devices are unfairly penalized by the manner in which the Commission performs measurements of the transmitted signal strength. As a result, Transcience states that its security transmitter can only achieve a reliable operating range of 30 feet as compared to other manufacturer's advertised operating ranges of 100 to 500 feet. According to Transcience, the short operating range of its systems places it in a position of competitive disadvantage; and, consequently, the company has suffered severe financial hardship.

To correct the situation, Transcience requests a waiver of paragraph 4.4.2 of FCC Measurement Procedure MP-1 to allow average field strength to be measured in a way that it claims would yield equivalent interference potential to other manufacturers' systems. The petition states the following:

> "Specifically, we request peak signal levels of 48,004 microvolts per meter at 3 meters at 300 MHz for a total time duration of 752 milliseconds, or an average signal of 34,288 microvolts per meter (with a 1.4 duty cycle ratio) for the same time interval."

Along with the petition, Transcience submitted a letter, dated October 9, 1984, to Dr. Robert S. Powers, FCC Chief Scientist, elaborating on a number of points relevant to the petition. Accordingly, the petition and letter will be considered together.

New Experimental Stations

The Commission, by its Office of Science and Technology, Frequency Liaison Branch, took the following actions:

KE2XOL, ITT Telecom Products Corp., Miami, Florida. Experimental developmental station to operate on 1635.5-1645.0 MHz band to test, repair, train, and demonstrate INMARSAT Products.

KO2XGT, Harris Corporation, Fixed and Mobile within Continental U.S. Experimental developmental station to operate on 10550-10615 and 10615-10680 MHz bands to demonstrate equipment using customer provided facilities.

KO2XGU, Litton Systems, Inc., Colorado Springs, Colorado. Experimental research station to operate on 1030 MHz as required by U.S. Government contract.

KO2XGV, Motorola, Inc., Boynton Beach, Florida and 75 mile radius. Experimental developmental station to operate on 150.950 MHz to perform on-the-air testing of paging products during their design and development.

KO2XGW, Radionics, Inc., Salinas, California and 50 mile radius. Experimental station to operate on 462.000; 468.500; 928.5125; 952.5125 MHz for testing of equipment under development for use in fire and security alarm systems.

The following stations were granted for the purpose of setting up a cellular test site to develop and refine system software algorithms and operational characteristics—in the name of NEC AMERICA, Inc.—on 890-893 and 845-848 MHz bands:

KO2XGX, Grapevine, Texas and 50 mile radius; KO2XGY, Richardson, Texas and 50 mile radius; KO2XGZ, Irving, Texas and 50 mile radius.

KO2XHB, Yaesu Electronics Corp., Paramount, California and Los Angeles Basin. Experimental station to operate on 450-512 MHz band. Only frequencies as designated in Part 90 of Rules have been authorized to develop 16F3 and compandored sideband transceivers that run very low power at a lower price and to demonstrate to potential customers.

KO2XHD, IBM Research and Development, Inc., Within Continental U.S. Experimental station to operate on 823.9625 and 868.9625 MHz to demonstrate certain characteristics and concepts of a portable Data Radio Transmission System.

KO2XHF, Northern Technical Services,

Inc., Buoyborne in St. George Basin—Bering Sea, Alaska. Experimental station to operate on 27.615 MHz to develop and implement a data collection system to transmit environmental data.

KO2XHG, Northern Technical Services, Inc., Buoyborne in St. George Basin—Bering Sea, Alaska. Experimental station to operate on 27.745 MHz to develop and implement a data collection system to transmit environmental data.

KO2XHH, Northern Technical Services, Inc., Buoyborne in St. George Basin—Bering Sea, Alaska. Experimental station to operate on 27.565 MHz to develop and implement a data collection system to transmit environmental data.

KO2XHI, International Signal and Control Defense Systems, Inc., Mobile operation within counties of Lancaster, Dauphin, Lebanon, Pennsylvania. Experimental station to operate on 138.1 through 138.9 at .1 spacing and on 139.0 and 150.2 MHz for communications that are essential to a research project.

Revised Application For Amateur Radio Station And/Or Operator License

The FCC Form 610 has been revised and the new version is dated June, 1984.

The revisions reflect the recent changes in the Amateur Rules to allow volunteers to administer Amateur Operator Examinations and the new Novice exam procedure. Additional information, concerning these changes, is in the instructions in Section II of the form.

The question pertaining to the antenna height has been removed from the form. If the height of your antenna will exceed 60.96 meters (200 feet) or 1/100 of the minimum distance between the antenna site and any aircraft landing area (refer to Section 97.45), you must complete FCC Form 854 (Request for Approval of Proposed Amateur Radio Antenna and Notification of Action). FCC Form 854 may be obtained from your nearest field office.

The new FCC Form 610 should be used immediately. Previous editions dated August 1980 or later will be accepted, except those requesting examinations for new licenses or examinations to upgrade an operator class. Another Public Notice will be released later specifying the date that all previous editions of the FCC Form 610 (prior to June 1984) will become obsolete and may not be used to obtain Amateur licenses.

For further information contact the Consumer Assistance Branch, Private Radio Bureau, Gettysburg, PA 17325. Telephone number 717-337-1212.

Procedures For Frequency Coordination In The PLMRS

The Commission is seeking comments on its proposal to establish rules to govern frequency coordination and the role of non-Federal Government coordinators in the Private Land Mobile Radio Services licensing process.

The FCC proposed designating a coordinator for each separate radio service regulated under part 90, the four 800 MHz frequency categories (Section 90.617), and the 900 MHz paging channels (Section 90.494). Applicants proposing new stations or modifying existing licenses would send their applications (Form 574) to the recognized coordinator in the service in which they are applying. The coordinator would then review the application and determine the most suitable frequency, which may be the applicant's or the coordinator's choice.

If an applicant does not agree with the coordinator's choice, then the applicant may submit a field study or technical analysis to support the request. If the coordinating committee and the applicant cannot agree, the case may be submitted to the Commission for evaluation and decision.

The Commission requested that organizations desiring to be the certified coordinator for a particular service or group file their request as comments. Each request should include the following: (1) an overall description of the organization structure, (2) an outline of the proposed coordination process, including an estimate of the fees and processing times, (3) the entities' qualifications including how they are representative of the users in the groups, (4) how they intend to comply with the proposals in this proceeding, and (5) how they would encourage the implementation of spectrally efficient technology consistent with the technical flexibility permitted under the FCC's rules, policies, and proposals. If more than one request per service or group is received, selection would be made upon assessment of the applicant's submitted qualifications. Consideration would be given to the existing committee structure which is in place and which has worked very well over the years.

Each coordinating committee would be subject to periodic performance analysis by the FCC, which will include a review of speed and quality of service. The Commission may withdraw recognition of a coordinating committee if its performance is below standard and not in the public interest. The FCC proposed that fees charged by a frequency advisory committee or organization not exceed the costs of providing the coordination services, plus a reasonable profit.

The Commission said it believed the rules and policies concerning private land mobile radio frequency selection and assignments should be updated, particularly since it received Congressional authorization in the 1982 amendments to the Communications Act to use the assistance of frequency coordinating committees.

The FCC said its objective in making these proposals was to refine its approach to the frequency selection process, improve the quality of recommendations, minimize processing delays, encourage interservice frequency sharing where appropriate, and facilitate the introduction of new technologies into the Private Land Mobile Radio Services.

Beaming In *(from page 4)*

as only permitting the criminal(s) to get a reprieve in order to act at some time in the future—assuming that there was a 100% assurance that they will be caught in the end. One can possibly see that the creative use of disinformation (misleading police transmissions) could actually be used to the benefit of police in such situations.

What we are considering here is the value of a deterrent to a crime versus the crime taking place followed by the hope of eventual apprehension and conviction of the perpetrator(s). What with the nation's court systems and penal institutions so overloaded, one cannot dismiss the benefits of crime deterrents—and a scanner blasting out an endless stream of police activity messages certainly seems to offer a deterrent potential, but only if it isn't scrambled into sounding like Donald Duck.

No matter how hard one can try to justify the use of voice sramblers for police use, there is still the lingering and shadowy image of the police (or government) operating "in secret." Say what you will, but the concept of a "secret police" is a bit scary, not so much in isolated situations as it would be as an everyday fact of life. You really have to ask yourself where such an agency could lead itself within your community, and if you are satisfied that it should conduct its affairs in secrecy without the citizens expressing their approval.

I haven't even brought up the cost to the public for the purchase, installation, and maintenance of the equipment required to institute voice scrambling. Even scrambling systems that can be unscrambled by simple gadgets available to the general public are enormously expensive to those agencies using them. More sophisticated scrambling systems (such as those that use digital techniques and can't be unscrambled by the public—yet) are so outrageously costly that they are mind-boggling. They still offer no assurance that they will not be descrambled at some point in the future by diligent persons. The point is that the monumental expense might be worth it if there was sufficient justification to purchase all of this hardware, but I don't really see that the expense and effort is justified, notwithstanding the federal "matching funds" which help to purchase all of these doodads to scramble police communications. Let's face it, most major cities don't feel that they require scramblers, so it's hard to see why or how *any* city can feel it's necessary.

Manufacturers of the scramblers, of course, have long been interested in perpetuating the myth of maintaining police communications secrecy. And why not? The more successful they are in generating the false image of a nation of criminals sitting around listening to police communications, the more of these high-tech, high-end scramblers they can sell and service. In 1980, Motorola (manufacturers of the DVP scramblers) laid it right on the line with an ad for their scrambler which showed a bunch of sleazy looking dudes all sitting around a table listening to a scanner (a photo of this ad appeared in our November '84 issue). Despite the fact that there were few who were initially willing to react with open annoyance at this negative image of scanner owners, I took it upon myself to criticize such a characterization and stereotype of scanner users. It eventually inspired many others to contact Motorola in order to get them to back away from this approach. This ad was subsequently withdrawn.

The concept of scanner owners as low-life types offends me. Not only is it false, but it is the same type of foaming-at-the-mouth hysteria that, if permitted to take up a life of its own, could easily develop into a paranoia that would lead to many agencies using scramblers, coupled with laws that might severely regulate your right to buy or own a scanner. As a scanner owner, I don't like being characterized in this manner and I suspect that you don't either. And I certainly don't want or need one more wall of supposed secrecy erected between me and those people who are paying their mortgages and putting food on their tables courtesy of the taxes that all of us pay.

At the present time, you aren't restricted by any federal regulation whatsoever from listening, for your own personal information, to a scanner. That's the way things are in a free society. Certain local laws already exist which restrict or regulate the use of scanners in mobile units. Couple these local laws with the use of scramblers and you can see—hiding there in the shadows—a vague but certain suspicion about persons who own scanners.

Yes, there are those who question the constitutionality of laws restricting or regulating scanner usage since they exceed the authority of the local governments that have established those laws. Nevertheless, the laws are on the books and in order to fight or remove them it would take plenty of time and money. It would have been better for us all had they never been placed in effect. It would be easier for such restrictive laws to be expanded to include home scanner use than it would be to squash those laws, especially since the FCC has long taken the attitude that they are unconcerned about local regulation of receiving equipment. But, as long as we scanner owners stand by silently and watch ourselves be depicted as criminals—and do not question the reasoning for enormous amounts of public money being invested in voice scramblers by our municipal, county, and state agencies—then we are surely inviting the loss or reduction of our rights.

After all is said and done, maybe it's time for a closer examination to be given to the use of scramblers on the airwaves as used by public safety agencies; to wipe away the ballyhoo of the manufacturers of these devices and see them on a much broader level than most people have viewed such equipment. They may well be unjustified from anti-crime and cost perspectives. Moreover, they seem to offer the potentials for a number of rather ominous uses which are hardly worth any of their supposed virtues.

What do *you* think?

Number Please

I had an interesting conversation with a person who, in the past, has been a reliable source of hard-to-get information. This time the topic was the famous and mysterious "numbers" transmissions that come from the United States and have been monitored for about 25 years by shortwave enthusiasts.

My friend claims that these stations operate on frequencies that are allocated under the auspices of IRAC; a shadowy government agency which is to federal radio operations what the FCC is to civilian stations. IRAC's clerks monitor the "numbers" frequencies to make certain that all allocated are in use and (therefore) actually required. The concept is that should a particular frequency fall into a disuse, it will be spirited away from those to whom it is allocated and given to others for their uses. Therefore, under the long-standing tradition within communications that calls for retaining frequencies at all costs, many of the "numbers" transmissions are simply endless repeats of messages which originated many weeks or months earlier—these being sent primarily to "hold" the frequencies, lest they be repossessed by IRAC.

The "numbers" transmissions themselves were originally conceived to communicate messages to various intelligence operatives, however in the many years that have transpired since the broadcasts commenced, "other methods" of communication have been developed to handle high-level traffic. That has left most of the "numbers" transmissions for rather routine low-level messages that aren't especially vital and could probably be sent by regular mail. Furthermore, the people who staff the "numbers" stations in the United States have been with the operation right from the beginning. While this has contributed to maintaining the cloak of secrecy that has long surrounded the transmissions, it also means that these government employees are virtually all coming up for retirement in the near future. This could, perhaps, herald the end of "numbers" transmissions from the United States within the forseeable future. I can't guarantee this scenario. You can, however, add it to whatever else you may have heard about these transmissions and wait and see what happens.

From Canada

Even though our editorial last October related only to American-based DX clubs, I did want to take the time here to suggest that listeners in Ontario might wish to contact the Ontario DX Association, c/o Sedric Marshall, PO Box 232, Station Z, Toronto, Ontario M5N 2Z4. They have a fine publication and membership, and while membership is open only to Ontarians, subscriptions are accepted from anywhere. A sample copy of DX Ontario is $1.50.

ON THE LINE

BY GORDON WEST, WB6NOA

NEW AND EXCITING TELEPHONE TECHNOLOGY

How To Choose Long Distance

Competition is getting fierce among telephone companies that offer long distance service. With the divestiture of the Bell System a year ago, a new process allowing customers to select a long distance company for easy dialing—"one," plus the area code and number—was put into place.

This relatively new process is called "Equal Access," and it will eliminate the need to dial as many as 13 extra digits when using alternate long distance services other than AT&T.

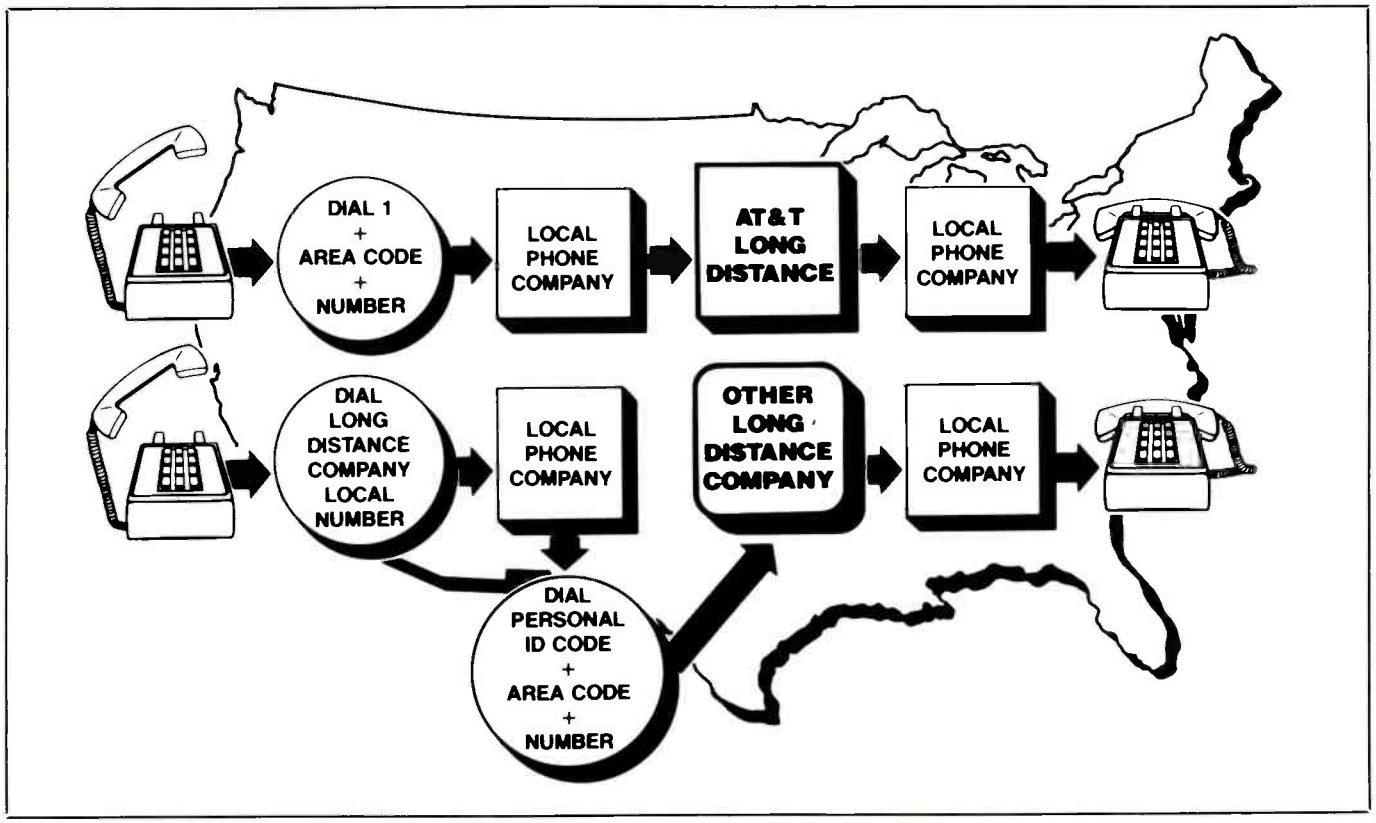
Although you probably don't realize it, you may be dealing and dialing with two separate companies for your local and long distance telephone service. The "Equal Access" scheme will allow *any* long distance carrier to become connected to local telephone company switching equipment in the exact same manner as the traditional AT&T long distance service.

When "Equal Access" becomes available in your area, your local telephone company will send you a notice that will offer you a choice of one long distance company as the primary carrier for your telephone calls. You won't need to modify your dialing procedures—you will simply dial the long distance call like you have always done before. This will be a blessing in getting away from dialing all those extra numbers for alternate long distance services in order to cut down on your long distance bills.

While your traditional long distance carrier (probably AT&T) will desperately try to keep your present business with them, you should carefully consider the alternatives to another long distance company. These alternatives should be clearly spelled out in promotional literature that you will soon be receiving from various telephone companies. Here are some important things to remember if you should decide to switch long distance companies:

- Some long distance companies may not offer operator assisted calls, such as collect calls or person-to-person calls. Traditionally, AT&T will continue to offer this service to their customers—other companies may or may not.
- Will your new long distance carrier offer international direct dialing to most major worldwide locations? If the majority of your phone calls are overseas, you may wish to investigate this carefully with any new carrier.
- Can your long distance carrier under consideration provide crystal clear long distance hook-ups that are free from static and particularly free from annoying echoes and delays? It has been my personal experience that the majority of my long distance calls always seem to have an echo on them, and I spend half of my long distance time accidentally interrupting or asking for repeats in messages because of this delay and echo effect. You may be assured that the delay/echo effect adds up for more profits for the phone company and a less-than-desirable long distance connection. Hopefully, the new companies will eliminate the nuisance echo effect.
- How will you take care of wrong numbers? Will you be able to reach an operator to obtain instant credit, or must you wait until the phone bill arrives and then go through a lot of paperwork and letter writing to correct the wrong number dialed billing?
- Evaluate all fees that would be associated

AT&T managers at the company's Network Operations Center in Bedminster, New Jersey, monitor the routing of nearly 33 million domestic long-distance calls that travel through the company's network on an average business day. AT&T's network includes more than 600 million circuit miles of coaxial cable, microwave radio, lightguide and satellite facilities.



Equal Access: *The illustration above shows how long-distance calls are made today. AT&T customers simply dial 11 digits — "1" plus the area code and number they are calling. Other companies may require their customers to dial up to 24 digits. As cities across the country get equal access, any long-distance company that chooses will be able to offer 11-digit dialing. Each long-distance company, however, will remain responsible for the quality and service it provides on its own network.*

with switching over to a new long distance company. Will the initial sign-up fees and monthly subscription fees amount to more money being spent on a few long distance calls? Go over your past bills and add up the number of long distance calls per month, and then evaluate which service offers the best rates. Watch out for those hidden subscription and sign-up charges in fine print!

It's also a good idea to check with friends who may have already signed up with this new type of long distance service. Are they pleased with the service, and do all calls sound crystal clear? Is the billing usually straighforward, or are there hassles in incorrect bills or incorrect charges on the bills?

If you make no decision at all, or ignore the offers sent you in the mail, your local phone company may simply route your long distance calls to a single company, such as AT&T, or they may allocate the calls among several long distance companies, or direct the calls to a recorded announcement that gives instructions on how to choose a long distance company. They will probably select the option that makes best financial sense to both you as well as your local telephone company.

Literature that you may receive from the competing long distance companies should also be scrutinized to insure that the rates they quote are for the times that you make your phone calls. If you make most of your phone calls to relatives on the weekends or in evening hours, many services offer substantially lower rates during these times.

The new "Equal Access" plan may mean a tremendous savings for large businesses that traditionally place hundreds of long distance phone calls per day. These large companies may spend months sorting out the different offers to find the best long distance phone service for their particular type of operation. It's quite possible that many businesses may change their in-house phone call schedules to take better advantage of discount rates for a particular time of day.

For those of us who only place a few long distance phone calls, things won't change that much when it comes down to our monthly phone bill. However, the quality of service may dramatically improve by going to a new type of long distance carrier.

You should start receiving long distance offers shortly in the mail. It's estimated that by 1986, about 70 percent of the nation's telephones will be affected by the new "Equal Access" rule, and you will be able to take advantage of other long distance services rather than the AT&T service.

It will now be up to you as to whether or not you want to switch. If it means no delays and echoes, I'll switch tomorrow! PC

COMMUNICATIONS SHOP

Advertising Rates: Non-commercial ads are 30 cents per word including abbreviations and addresses; minimum charge $6.00 per issue. Ads from firms offering commercial products or services are $1.00 per word; minimum charge $20.00 per issue. Leading key words set in all caps at no additional charge. All classified ads must be prepaid in full at time of insertion; a 5% discount is offered for prepaid 6 time insertions. All ads must be typewritten double spaced.
Approval: All ad copy is subject to Publisher's approval and may be modified to eliminate references to equipment and practices which are either illegal or otherwise not within the spirit or coverage scope of the magazine.
Closing Date: The 10th day in the third month preceding date of publication. Because the advertisers and equipment contained in Communications Shop have not been investigated, the Publisher of Popular Communications cannot vouch for the merchandise listed therein. Direct all correspondence and ad copy to: PC Communications Shop, 76 N. Broadway, Hicksville, NY 11801.

ELECTRONIC SPYING is the name of the game. It's also the title of a startling book which reveals the closely guarded methods & equipment used by professionals & amateurs who eavesdrop on homes & businesses with (sometimes) legal and (usually) illegal *bugs & wiretaps*. Written in non-technical language everyone can easily understand. ELECTRONIC SPYING has photos & illustrations clearly revealing exactly how they do it & where they get the equipment (much of it inexpensive & easily available). Leaves nothing to the imagination! Latest techniques covered & offers an in-depth wealth of information on the ever increasing electronic invasion unavailable from any other source. This book is used by law enforcement agencies as a reference manual. Only $7.95 (plus $1.00 postage) per copy from CRB Research, P.O. Box 56, Commack, N.Y. 11725.

SCANNER OPERATORS! Are you registered? Be assigned your own personal monitoring ID letters inscribed on beautiful 2-color bordered certificate. Thousands already registered! Only $5. ppd. from CRB Research, Box 56PC, Commack, NY 11725.

COMMUNICATIONS PLANS, KITS, BOOKS. 1750 Meter transceivers, AM/FM broadcast transmitters, ham/CB amplifiers, surveillance bugs, much more! Catalog $1.00. PAN-COM, Box 130-PC2, Paradise, CA 95969.

SURVEILLANCE RECEIVERS. LTV G166H, 250-1000 MHz, $450. G175C, 30-260 MHz, $425. Both in good condition. SASE for specs. Frank Moreland, 3748 Yosemite, San Diego, CA 92109.

URC-68 TRANSCEIVERS, 38-42 MHz FM, 230-250 MHz AM, crystal controlled, 11-15 VDC Handi-talkie. Complete but needing repair, 3 for $70. Frank Moreland, 3748 Yosemite, San Diego, CA 92109.

ALL SCANNERS, DESCRAMBLERS, ACCESSORIES—2% ABOVE COST!! SAVE!! Become a Spotlight-VIP! Great monthly newsletter! Nation-wide frequency bank-printouts for members! Much more! Send stamp for complete information. SPOTLIGHT-VIP, Box 3047, Greenville, NC 27836-3047.

NEW! AIR-SCAN 4th Edition by Tom Kneitel. At last, a complete directory of aero communications stations/frequencies! Now in gigantic 120 page large-size (8½ x 11) format containing 40,000 listings (USA/Canada/Mexico/PR), including worldwide HF (2-30 MHz) freq. guide. In addition to 118-136 MHz VHF aero band scanner listings, also covers 30-50, 138-174, & 400+ MHz aero freqs. never before published. AIR-SCAN covers civilian/military airports, also "unlisted" airports not open to public, FAA freqs, FSS, towers, Unicoms, airport security and operations freqs, new airfone air/ground telephone freqs, "hidden" business-band aero stations, military, traffic choppers, aero weather, federal agency aero, flight schools, aircraft mfrs., crop dusters, air ambulances and much more throughout USA. Largest directory of all-band aero radio communications ever published. Includes how-to text on aero monitoring and equipment selection. Only $10.95 + $1 shipping to USA/Canada/APO/FPO. Order from CRB Research, P.O. Box 56, Commack, NY 11725.

FREE BROCHURE AND PRICE LIST on hard to find CB equipment and accessories. EF Electronics, P.O. Box 61-1052, N. Miami, FL 33261-1052.

POLICE CODE UNSCRAMBLERS, lets you hear the coded messages of Police, Fire, and Medical channels; other scanner accessories, satisfaction guaranteed: DNE, Inc., Rt. 7, Box 257B, Hot Springs, AR 71901 (501-623-6027).

CHESS BY AMATEUR RADIO. License unnecessary. Information: K2VJ, Box 682A, Cologne, NJ 08213.

RECEIVERS FOR SALE: (13) R1121/TRC-87 $150.00 ea., (4) R392/GRC-19 $150.00 ea., (4) R278/GRC-27 $50.00 ea., (3) R482/URR-35 $20.00 ea. Have parts, modules, and manuals for the above call 419-726-2249.

SCANNER WORLD, USA

10 New Scotland Ave., Albany, NY 12208 518/436-9606

Special

The Regency D310

30 Channel Automatic/Programmable Scanner

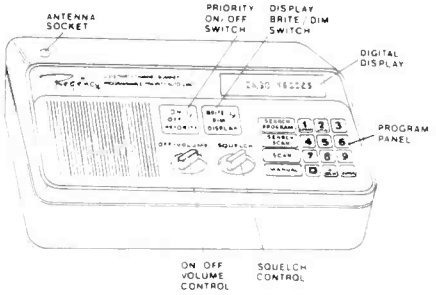
FEATURES

- ***30 Channels*** *For full coverage and easy selection.*
- ***No Crystals Required*** *Your choice of over 15,000 frequencies just by pushing a button.*
- ***6 Bands*** *Covers high and low VHF, UHF and UHF "T" plus two FM Ham Bands.*
- ***Search or Scan*** *Scan frequencies you have entered or search for exciting new frequencies.*
- ***Priority Control*** *Automatically overrides all other calls to listen to your favorite frequency.*
- ***Permanent Backup System*** *Memory requires no batteries. Capacitor saves frequencies entered up to one week during power outage or storage.*
- ***Dual Level Display*** *Selects brightness level of vacuum fluorescent digital display.*
- ***Channel Lockout*** *Skips channels not of current interest.*
- ***Scan Delay*** *Lets you set a delay so that replies to calls will be heard before scanning resumes.*
- ***Display Messages*** *Display flashes verbal messages to aid in programming.*
- ***External Speaker Jack*** *Standard connection allows use of external speaker.*
- ***AC or DC*** *Use at home or on the go. Both power cords included.*

Scanner World Price

$129.99

(plus 4.50 Shipping)



Suggested Factory List Price $259.95

The Regency D310 is a compact, programmable 30 channel, multi band, FM monitor receiver for use at home or on the road. It is double conversion, superheterodyne used to receive the narrow band FM communications in the amateur, public safety and business bands: 30-50, 144-174, and 440-512 MHz.

Sophisticated mircoprocess-controlled circuitry eliminates the need for crystals. Instead, the frequency for each channel is programmed through the numbered keyboard similar to the one used on a telephone. A "beep" acknowledges contact each time a key is touched. The D310 scans approximately 15 channels per second.

Any combination of two to thirty channels can be scanned automatically, or the unit can be set on manual for continuous monitoring of any one channel. In addition, the search function locates unknown frequencies within a band.

Other features include scan delay, priority and a bright/dim switch to control the brightness of the 9-digit Vacuum-Fluorescent display. The D310 can be operated on either 120VAC or 12VDC. One year warranty from Regency Electronics.

- ***Telescoping Antenna*** *Electronically optimized for all frequencies, included.*
- ***External Antenna Jack*** *Permits maximum reception range.*
- ***UL Listed/FCC Certified*** *Assurance of quality, American made design and manufacture.*

Optional Mobile Cigarette Lighter Plug (RGMPC . . . . 4.95)

REGENCY D310 *only*

$129.99

(plus 4.50 Shipping)

REGENCY D-310 30 Channel Digital	129.99(4.50)
REGENCY MA-506 Carry Case for HX-650 & H-604	12.99 (*)
REGENCY ACT-R-92AP Aircraft Crystal	119.99 (4.00)
REGENCY POLARIS MT-5500XL Marine	229.99 (5.50)
REGENCY R1050 AC 10 Chan. Programmable	114.99 (4.00)
REGENCY C403 AC 4 Channel Crystal HLU	66.99 (4.00)
REGENCY Z-30 — 30 Channel Digital	172.99 (4.00)
REGENCY Z-10 — 10 Channel Digital	146.99 (4.00)
REGENCY MX5000 All Band Scanner	369.99 (5.50)
BEARCAT 160 16 Channel Scanner	134.99 (4.50)
REGENCY MX3000 30 Channel Digital	186.99 (4.00)
RCD Listen-In	38.99 (3.00)
REGENCY R106 AC/DC 10 Chan. HLU Crystal	96.99 (4.00)
FOX BMP 10/60 10 Channel Scanner	149.99(4.00)
JIL SX-100 16 Channel Scanner	159.99 (4.00)
JIL SX-200 16 Channel Scanner	269.99 (4.00)
JIL SX-400 All Band DC Scanner	549.99(12.00)
FANON M8HLU 8 Chan. Mini Mobile Crystal	99.99 (4.00)
FANON PSK-1 AC adapter for M8HLU	12.99 (*)
FANON SlimLine 6 HLU Handheld Crystal Scanner	103.99 (4.00)
FANON CHB-6 Charter/AC Adpater for Slim 6	12.99 (*)
FANON CAT-6 Carrying Case with Belt Clip	11.99 (*)
FANON AUC-3 Autolighter Adapter/Charger	12.99 (*)
FANON SCMA-6 Mobile Adapter/Charger/Amplifier for Slim Line 6 HLU	38.99 (3.00)
FANON PSK-6 Base Power Supply for SCMA-6	14.99 (*)
BEARCAT* 350 AC/DC 50 Channel	298.99(7.00)
BEARCAT* 5 HLU AC Crystal Scanner	94.99 (4.00)
BEARCAT* **FIVE-SIX** Pocket Scanner	126 99 (4.00)
BEARCAT* **SP-55** Carry Case for BC5/6	12.99 (*)
BEARCAT* **BC-260** AC/DC Scanner	278.99 (4.00)
BEARCAT* **DX-1000** Shortwave Radio	499.99 (12.00)
BEARCAT* **20/20** Digital Scanner	279.99 (4.00)
BEARCAT 220 Digital Scanner	249.99 (4.00)
BEARCAT 250 Digital Scanner	265.99 (4.00)
BEARCAT 100 Digital Hand-Held	234.99 (6.50)
BEARCAT 300 Digital Scanner	346.99 (5.50)
BEARCAT 201 Digital Scanner	194.99 (4.00)
BEARCAT 180 Digital Scanner	168.99 (4.00)
BEARCAT 210 XL Digital Scanner	214.99(5.50)
BEARCAT 15 Crystal Scanner	126.99 (4.00)
REGENCY RH-250 High Band 2-way Radio	399.99(5.50)
REGENCY Z100 watt High Band Amplifier	209.99 (4.00)

Uniden/President CB Radios - All Models in Stock
Fox & Whistler Radar Detectors - in Stock

Super Special Package Sale!

REGENCY HX-650

Pocket Scanner

6 CHANNELS — 4 BANDS

VHF-Lo	30 to 50 MHz
VHF-High	146 to 174 MHz
UHF	450 to 470 MHz
UHF-T	470 to 512 MHz
Small Size	3¾"W x 5½" H x 1" D

Quality features included in the Regency HX-650 are 6 channels - 4 band coverage, lockout switches, manual step switch, scanning speed of 15 channels per second, long lasting LED's, volume & squelch controls, AC adapter/charger jacks.

Scanner World's Special Package Deal Includes the following:

- Regency HX-650 Pocket Scanner
- MA-506 Carry Case with metal belt clip
- Set of 4 AAA Nickel Cadmium Batteries
- 6 Monitor Crystals (specify frequencies needed or wil will include certificates for unknown frequencies)
- Flexible Rubber Duckey Antenna
- AC Adapter & Charger

Scanner World Package Price

$109.99

(Plus $5.50 Shipping)

VISA MasterCard

Ordering Information

Call (518) 436-9606 to place orders by phone or mail orders to ***Scanner World,*** 10 New Scotland Ave, Albany, NY 12208. Orders will be shipped same day received by United Parcel Service. ***Scanner World*** accepts VISA, MasterCard. C.O.D. shipments by United Parcel will be for cash or certified checks only. Mail orders with personal or business checks will be held 4 weeks for bank clearance. Orders with cashiers checks or money orders shipped same day received. Prices, specifications and terms subject to change without prior notice. If items are out of stock we will backorder and notify you of delivery date. All shipments are F.O.B. ***Scanner World*** warehouse in Albany, NY. We are not responsible for typographical errors. All merchandise carries full manufacturers warranty. Bid Proposals and Purchase Orders accepted from Government agencies. Free full line catalogue available upon request. No minimum order. New York State Residents add 7% sales tax. Dealers send business letterhead for dealer wholesale information.

Shipping Charges

Add ($) per scanner, and $3.00* for all accessories ordered at same time. C.O.D. shipments will be charged an additional $3.00 per package. Full insurance is included in shipping charges. All orders are shipped by United Parcel Service. Shipping charges are for continental USA only. Outside of continental USA, add $15.00 per scanner.

Scanner World, USA

10 New Scotland Ave, Albany, NY 12208

(518) 436-9606

CIRCLE 52 ON READER SERVICE CARD

AD INDEX

Winter S/W Specials

The new Sony ICF-2002 is here! From one of America's largest Sony SWL dealers.

Reg. $249.95
INTRODUCTORY SPECIAL
$214.95
Plus $3.00 UPS

AVAILABLE NOW!

MAKE WAY FOR THE NEW LEADER IN SW!

After selling over 1,000 ICF-2001's we didn't think Sony could top this performer, but they did!

FEATURES

Ten memory channels • 12/24 hour quartz clock • PLL tuning for drift-free performance • Dual conversion Superheterodyne for high sensitivity • SSB/CW

SPECIFICATIONS

150 kHz-30 MHz AM, 76-108 MHz FM • 1 uV sensitivity @ 6 dB S/N @ 10 MHz • 72 dB @ 10 MHz image ratio • 3 kHz @ −6 dB

ICOM IC-R71A

- **100 KHz—30MHz**
- **PLL Circuitry**
- **Digital Display**
- **Passband & Notch**
- **Memory & Scan**

Call For Your Very Special Price

★★★★ We recommend this receiver for really serious listeners who want to hear just about anything that's out there. Especially suited for SSB, RTTY, DXers and avid SWL. Extremely stable, selective & sensitive for digging out the weak ones. A good antenna is a must in order to utilize all the performance this unit has to offer.

PANASONIC RF3100

$269.95
+ $6.00 UPS

- **PLL Synthesized • Digital Display**
- **.5-30MHz+AM/FM • Wide/narrow filters**

★★½ Our most popular table model SWL receiver. Selective & sensitive. About all the casual SWL will ever need. Built-in, or external antenna capability. Stable for dabbling in SSB. Easy to use, even for big fingers. Recommended for those who don't want to spend big $$ but want a decent receiver.

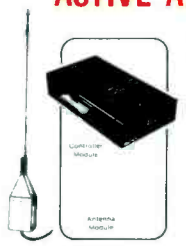
NEW! PANASONIC RFB600

ONLY
$424.95
+ $7.00 UPS
List Price $599.95

- **Digital Display • Wide/narrow Filters**
- **PLL • Dual Voltage • Sounds Great**

★★★ All the convenience features of the more expensive units plus a pleasant surprise...performance. It is fast becoming our most popular mid-price receiver. Ideal for all types of listening needs.

SONY AN1 ACTIVE ANTENNA



- 100KHZ-30MHz
- Remote 59 inch Telescoping Whip
- Battery or Optional AC Powered

$74.95
+ $3.00 UPS

When you're stuck in an apartment with no other choice, this may just be the answer. The unique design offers numerous mounting & hook up options. You will be surprised how well it works.

POCKET PORTABLES

RFB50

$124.95
+ $3.00 UPS

- $4^{7}/_{16}$Hx$7^{1}/_{4}$Wx$1^{5}/_{16}$"D
- AM, FM+8 SW bands
- Dual selectivity

PANASONIC RF9

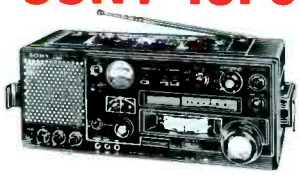
$84.95
+ $3.00 UPS

- AM/FM+75,49,31,25, 19,16,13mtr SW
- $2^{7}/_{8}$Hx$5^{3}/_{8}$x$1^{1}/_{8}$"D
- Only 7.1 ounces

FREE!

With any radio purchased from this ad, you will also receive a FREE copy of White's Radio Log!

SONY ICF6800W



SALE PRICE
$529.95
+ $8.00 UPS
$ List

- **Digital Display • Wide/narrow Filters**
- **PLL • Dual Voltage • Sounds Great**

★★★ This long time favorite is ideal for listening to your favorite SWL broadcast station. Selective enough to remove most annoying interference and it has excellent audio for taping your favorite news or music program.

FAMOUS "EAVESDROPPER" SWL RECEIVING ANTENNA

ONLY
$54.95
+ $3.00 UPS

- Automatic bandswitching
- Completely weatherproof
- 60,49,41,31,25,19,16,13 & 11mtrs.
- Complete, no assembly needed

All the world's shortwave broadcast bands are yours with the Eavesdropper All-Band antenna! Individually tuned traps make the Eavesdropper work like seven separate antennas, each tuned to a different international broadcast band. Its 100 foot, 72 ohm balanced feedline provides an exact match to the antenna on every band. Completely assembled, and ready to install with 50 ft. of 450 lb. test nylon rope. Overall length: 42' 10". Wire: #14 copper. Bandswitching: Automatic, impedance to rcvr: 50-75 ohms balanced.

SPECTRONICS, INC
1009 GARFIELD STREET, OAK PARK, IL 60304
(312) 848-6777

MasterCard VISA

CIRCLE 149 ON READER SERVICE CARD

ICOM HF Receiver IC-R71A

The World Class World Receiver

ICOM introduces the IC-R71A 100KHz to 30MHz superior-grade general coverage HF receiver with innovative features including keyboard frequency entry and wireless remote control (optional).

This easy-to-use and versatile receiver is ideal for anyone wanting to listen in to worldwide communications. With 32 programmable memory channels, SSB/AM/RTTY/CW/FM (opt.), dual VFO's, scanning, selectable AGC and noise blanker, the IC-R71A's versatility is unmatched by any other commercial grade unit in its price range.

Keyboard Entry. ICOM introduces a unique feature to shortwave receivers...direct keyboard entry for simplified operation. Precise frequencies can be easily selected by pushing the digit keys in sequence of frequency. The frequency will be automatically entered without changing the main tuning control.

Superior Receiver Performance. Passband tuning, wide dynamic range (100dB), a deep IF notch filter, adjustable AGC (Automatic Gain Control) and a noise blanker provide easy-to-adjust clear reception even in the presence of strong interference or high noise levels. A preamplifier allows improved reception of weak signals.

32 Tunable Memories. Thirty-two tunable memories, more than any other general coverage receiver on the market, offer instant recall of your favorite frequencies. Each memory stores frequency, VFO and operating mode, and is backed by an internal lithium memory battery.

Options. FM, RC-11 wireless remote controller, synthesized voice frequency readout, IC-CK70 DC adapter for 12 volt operation, MB-12 mobile mounting bracket, two CW filters, FL32-500Hz and FL63-250Hz, and high-grade 455KHz crystal filter, FL44A.

ICOM

First in Communications

CIRCLE 178 ON READER SERVICE CARD

ICOM America, Inc., 2380-116th Ave NE, Bellevue, WA 98004 / 3331 Towerwood Drive, Suite 307, Dallas, TX 75234