



MONITORING TIMES

Volume 3-Number 12

BRASSTOWN, NORTH CAROLINA 28902

December, 1984



LOW BAND PANORAMA

As winter arrives and low band skip opens up, more and more intriguing communications will be intercepted. This guide will prove invaluable in helping MT readers identify those elusive transmissions!

We would like to thank Mike Britt, low band skip

editor of the Radio Communications Monitoring Association (RCMA, P.O. Box 4563, Anaheim, CA 92803), the world's largest scanner-oriented listening club, for his contribution of information on low band skip monitoring, some of which is reflected in this article.

TUNE IN EXCITING NORTH AMERICAN SKIP!

By Chuck Robertson

This list of low band frequencies centers on the U.S. Military plus unusual Canadian allocations.

29.96 TO 30.36 MHz

An "open carrier" was heard sweeping through this frequency segment on 5/21/84. Could be propagation studies conducted by the U.S., or even foreign industrial RFI.

On other days "The Sweeper" has been heard covering other segments of the 29.80 to 32.00 MHz area. The operation may even extend beyond these limits. The sweeper is only heard on days when the band is open for F₂ long haul skip, so it's likely this noise maker is located outside the U.S.

To monitor the sweeper listen for a re-occurring "pip" or short burst of static. Then monitor frequencies in the general area. If pips are heard on other channels, but at different times, you have

probably located the sweeper. Using two or more scanners makes the job easier! Sweeping seems to occur from high to low frequencies.

MILITARY MANEUVERS 29.90 (telemetry), 30.00, 30.10, 30.15, 30.20, 30.25, 30.35, 30.45, 32.00, 32.05, 32.15, 32.60, 32.70, 34.65 MHz.

On April 30, 1984, the U.S. Army, Navy, Air Force and Marines participated in a mock "D-Day" assault on Vieques Island, Puerto Rico.

The official purpose of these exercises, named Ocean Venture 84, was to show that the U.S. can protect sea lines of communications in the Caribbean. However, some observers have pointed out that the scenario followed in Ocean Venture 84 could be easily applied to the invasion of Central America!

This was one of the largest exercises ever conducted in the Caribbean, lasting 17 days with over 32,000 military personnel, 30 ships, and 250 Navy and

Air Force aircraft.

Propagation conditions were just right on the 30th to allow these intense war game communications to reach stateside. The activities began when the 26th Marine Amphibious Unit launched the attack from the helicopter carrier Iwo Jima.

The command "Splash" was often heard as the Marines made for shore. Straight fire missions (aircraft), and implementation of various plans were also monitored.

According to the May 14, 1984 Newsweek article Invasion/War Games, "As a real Soviet intelligence-gathering ship sat watching on the horizon, 800 Marines, backed by helicopters and F-16s, hit the beaches in amphibious vehicles and moved inland to secure an 'embassy'."

All in all, April 30th was a truly outstanding day for long haul skip. The Argentinian paging station

on 31.35 was heard till 2100 CDT, and the Dutch West Indies military operations on 33.65 were heard till 2210...over two hours past official sunset!

30.00

MX Missile Radio Net, Channel 48.

30.00, 32.15, 37.10

U.S. aircraft and port operations located on southern California coast. The frequency 37.10 is used for general operations including aircraft (Sugar Bear and Dragon) and landing zones (LZ-1 and LZ-2).

The 30.00 MHz channel is air-to-air comms, and 32.15 is a land airstrip with tower and aircraft comms. The land airstrip is located some distance from port, but Sugar Bear and Dragon aircraft are often heard using it. Can anyone tell me which military facilities I'm hearing?

Ⓢ p. 3

ATTENTION DXERS CLUB OF SAN FRANCISCO MEMBERS

A YEAR AGO, LARRY BROOKWELL, PRESIDENT AND FOUNDER OF THE SAN FRANCISCO-BASED CLUB, PASSED AWAY UNEXPECTEDLY. THROUGH A SPECIAL ARRANGEMENT WITH WARD BROOKWELL, LARRY'S SON AND EXECUTOR OF THE ESTATE, MONITORING TIMES IS BEING SENT TO FULFILL ALL UNEXPIRED SUBSCRIPTIONS TO THE CLUB NEWSLETTER.

PRESENT MT SUBSCRIBERS WHO ARE ALSO MEMBERS OF THE FORMER SAN FRANCISCO CLUB WILL HAVE THEIR SUBSCRIPTIONS EXTENDED AUTOMATICALLY.

WE ARE PLEASED TO OFFER THIS GESTURE IN LARRY'S MEMORY AND TRUST THAT IT WILL PROVE A SATISFACTORY ARRANGEMENT FOR ALL.



TO GROVE ENTERPRISES CUSTOMERS

THE OFFICES OF GROVE ENTERPRISES AND MONITORING TIMES WILL BE CLOSED DURING THE HOLIDAYS, DEC. 24 THROUGH JAN. 1, SO THAT OUR EMPLOYEES MAY ENJOY THIS JOYOUS SEASON WITH THEIR FAMILIES.

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MONITORING TIMES

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Viewpoint

Monitoring Times' commitment to readers' thoughts and ideas cannot be outdone by any other publication. So keep up the excellent work; it's greatly appreciated on this end.

I read with interest the letter of reader L.M. of Massachusetts concerning his or her thoughts on a column for CB operators. I favor a small column on this subject if you find enough room in Monitoring Times and enough reader interest. But I'd like to pass some information for L.M. and any other reader interested in this subject; there is a publication out for CB'ers and it's called THE ELEVEN METER TIMES & JOURNAL. A sample copy can be obtained for an SASE in the U.S. or \$2.00 outside the U.S. The address is:

THE ELEVEN METER
 TIMES & JOURNAL
 P.O. Box 10723
 Edgemont Station
 Golden, Colorado 80401

Dennis Richards
 New Haven, CT

A tip of the hat to you. Your new format, which provides better continuity, is very welcome. Your old format caused endless page flipping, and had me ready to let my subscription lapse.

On a different subject - A reader who, it may be noted, did not wish to identify himself, requested a column for those fine folks who have "modified" (read "illegal") CB rigs which operate "above 27.405" (read, "I know I should not be there, but I wish to be there, so I am there!").

ABSOLUTELY NOT. Please do not condone the use of the airwaves for transmission of signals by anyone who wishes to get on them, just to please themselves. Yes, you have a column on pirates. Personally, I wish you didn't. Monitor them if you must, but don't urge

them on. We have all heard what is being said and done on the CB band. Do we have a need to monitor THAT?

It is illegal for the CB fans to be anywhere but on the portion of the airwaves which has been given to them. They are only there because they want to be, not because they need to be. Please do not urge them on with tips such as, "Turn Your CB rig into a Super-broadcaster on 5150 kHz With Just a Few Adjustments"! You out there in monitoring land may well pay dearly for such articles, for the fellow next door might have someone read it to him and he will give it a try--wiping out the front end of your equipment in the process.

Your publication is about monitoring, not about how to transmit. Please keep it that way. Let the CB people who operate illegally do whatever they must, but not with any help from your fine publication.

Ron Sowinski
 Cantonment, FL

>>><<<<
 Reader suggests topics for writers:

I imagine there are many different nets on the ham bands that work with a particular area; maybe a listing of these nets in MT would be of general interest. And the man who just crossed the Atlantic ocean in a balloon...did he use HF communication for long range?

Around-the-world boat races, I would guess, use HF radio. Is there a rule of thumb for predicting frequencies used and probable times for schedules?

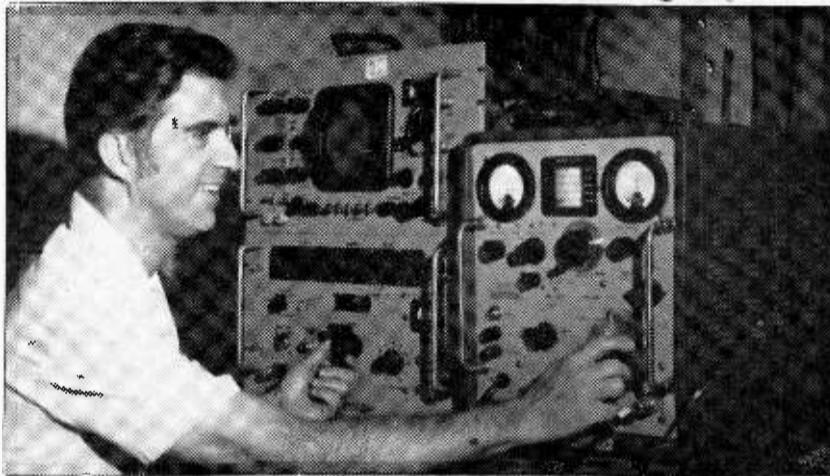
When I go on vacation I like to look at equipment stores with radios for sale. Perhaps some reader has a comprehensive directory of such stores he would be willing to share. I have a feeling I might not be the only one who would enjoy a copy of this list!

Zel Eaton
 Kirksville, MO

>>><<<<
 In response to the many complaints about the format of (y)our publication I would like to defend the current system. I would rather have a monthly publication which is delivered on time than a magazine full of old news. Of course I am also interested in getting as much as possible for as little cost.

I am currently using a system, recommended in a past issue by an innovative reader, which makes use of computer printout binders (available from any computer

FROM THE EDITOR



Computer Poll Results

A couple months back we asked our readers whether they would like more computerization in their radio equipment; some readers mistook the question to mean, "Would you like more computer coverage in MT?"

There are more than enough computer publications out there; we will never become another "me, too" magazine. But microprocessor control is becoming firmly entrenched in communications control and cannot be ignored.

Since MT is a wholly-owned publishing arm of Grove Enterprises, we occasionally ask our readers what they would like to see in new equipment. That way, readers get the unique opportunity to have a hand in designing new products, and Grove Enterprises gets a head start on the competition!

The results of the poll were interesting. Just over half (57%) of the respondents did not want computer control of new equipment while the remainder (43%) favored computer control.

We interpret this to mean that a substantial number of equipment users resent being told what to do by an on-board computer; they would like to make a few decisions themselves when tuning their receivers. This presumptuous over-design was evident in the ICOM R70 receiver, but relaxed in the R71A.

The considered comments from our readers have been taken seriously and we thank you for your input. Some exciting things are on the way and, as always, MT will be the first to tell you about them!

UNIDEN CR-2021

FADES INTO HISTORY

Unquestionably, the Uniden CR2021 at its close-out price of under \$100 was one of the greatest values ever made available to SWLs. Unfortunately, the stock is now depleted and only the Radio Shack DX400 (at \$299) will continue to be made by Uniden. No replacement is expected.



REMEMBER!
 "S.A.S.E."



We at Monitoring Times constantly receive letters from readers which begin, "Please send me everything you have on..."

As much as we would like to help, we are not a public library service. Letters received with a Self-Addressed Stamped Envelope will be answered.

And as always, my telephone line is open for pre-paid calls weekdays 1-5 pm Eastern (704-837-2216)..Bob



NORTH AMERICAN SKIP cont'd

30.02 Paging, Canada. Next to the Argentinean paging operations the Canadian paging stations are probably the most consistently monitorable. Everyone knows about the U.S. pagers on 35.22, 35.58, 43.22 and 43.58, but the Canadian stations make wide use of guard tones and open carriers on their paging and business frequencies to eliminate skip interference from stations using the same frequency. Unfortunately, this technique presents drawbacks for the scanner user.

First, the continuous carrier will cause the scanner to "lock up" on the frequency. Second, any other skip which one might hope to receive on that frequency will meet with heavy interference due to interaction with the carrier or guard tone.

In the U.S. only the mobile telephone frequencies, 35.26 to 35.66 and 43.26 to 43.66 in 40 kHz steps, may be assigned guard tones. These so-called "idle tones" are used by paging services which are allowed to use the mobile telephone allocations on a non-interference basis.

Locating these Canadian businesses is easy since your scanner will lock up on the carrier! Paging emissions are often in the AM mode, and power varies up to 250 watts with 25 to 50 watts most common.

30.05, 30.10, 30.15, 30.20, 30.25, 30.30, 30.35, 30.40, 30.85, 30.95, 31.05, 31.93, 31.96, 31.98, 32.00, 32.30, 35.15, 36.40

All these frequencies have been logged carrying DES-Fed scrambling. The origin of most of these transmissions is probably inside the U.S.

DES-Fed scrambling sounds similar to DVP scrambling: A high-pitched tone burst is heard, followed by "static." This static is the digitized information which may be the human voice or data flow.

30.06 Ferry or ship-to-shore transportation. Probably a U.S. Government (non-military) operation, maybe New York. This is "Channel One."

30.15 U.S. military security patrol, New Orleans area.

30.15 This is a military radiotelephone-base station thought to be located on the eastern U.S. coast. A con-

tinuous carrier with high-pitched guard tone is always heard, even during conversations. -

30.15, 30.25, 30.45, 30.50, 31.00, 31.35, 31.40, 31.45, 31.50, 31.60, 32.55, 37.40, 39.30

Ft. Rucker, LA, 189th Attack Helicopter Co. Multi-use range control is on 30.50. Also, DES-Fed scrambling has been heard regularly on 31.80 during Ft. Rucker training exercises.

30.17 Paging, Minneapolis, Minnesota Veterans Administration Hospital.

30.20 Military navigational beacon (?). The letters W R are repeated in Morse code non-stop.

30.22 Paging, Canada.

30.225 Radiotelephone, San Francisco, CA, maybe the GAO (General Accounting Office). A relatively new allocation, and more bases and mobiles are currently coming on the air.

Note that this channel is skewed 5 kHz off the "standard" U.S. channel spacing. Most likely this is an attempt to avoid skip interference from the military.

30.25 Military personnel were heard using Cipher (DES-Fed type scrambling). A continuous high-pitched guard tone was also logged on 30.15 at this time.

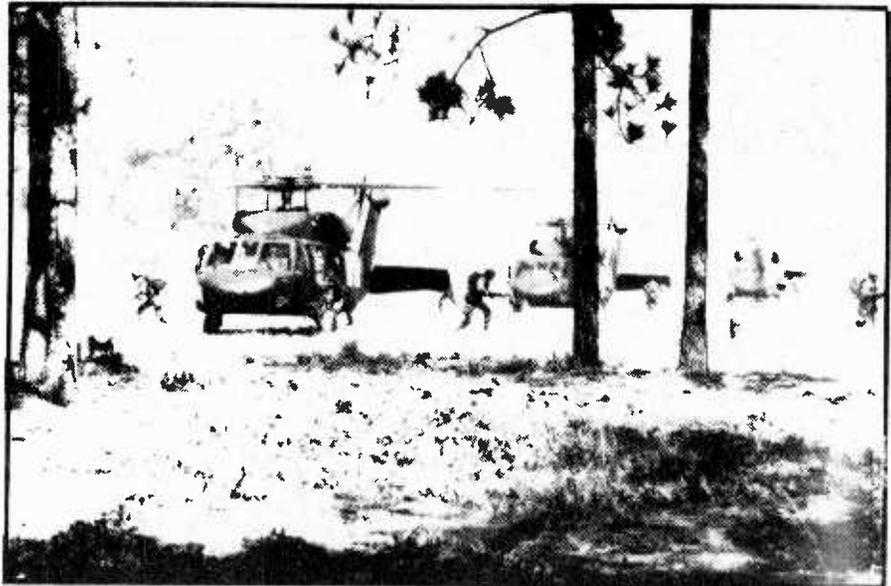
30.30, 30.50, 32.30, 32.70, 33.10 and 46.55

Canadian military. For the most part the Canadian military uses a 100 kHz spacing between channels, although a 50 kHz spacing has also been noted.

30.34 Canadian ships on west coast of Canada.

30.35 Camp Pendleton Marine Corps base safety net, California. Range control "Long Rifle," "Crest Line," "Red Beach," "Red Eye," "Range 407," and "Short Pistol." Many 30.00 to 30.55 channels are used on a temporary basis. Several other frequencies could prove active: 38.45, 40.35, 44.61, 47.30, 65.10 and 249.9 (Aircraft). During the fall, winter, and spring F₂ skip season it's not unusual to hear these operations almost daily here in mid-America.

Training missions provide exciting listening fare



30.35 and 32.95 Buffalo Base (U.S. mil)

30.42 Paging, Canada.

30.45 Ft. Hood range control net, Texas. Military police are on 45.00 and aircraft/tower coms are on 46.65.

30.46 Beeping tones and open carrier. Probably non-voice signalling from Canada.

30.50 U.S. Military "Ballroom"

30.60 U.S. military aircraft

"Sky King" mentioned the frequency 387.9 MHz. Probably SAC operations.

30.58 Canadian nationwide mobile telephone and paging.

30.84 and 31.15 More Canadian mobile telephone.

31.42, 31.43, 31.44, 31.45, 31.46, 31.47

DES-Fed scrambling; apparently an automated data relay communications system. It's only heard when the long haul F₂ skip is bringing in Central and South America.

Channels are operated



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JANUARY 1, 1985

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NORTH AMERICAN SKIP cont'd

in a semi-duplex mode, although 31.44 and 31.46 are sometimes keyed simultaneously. On April 22, 1984 AP wire release refers to a highly complex coding system that is changed daily in an effort to maintain secrecy, used by Nicaraguan and Salvadoran Leftists. We can only wonder if these frequencies with their digitized information have anything to do with the covert war in Central America.

- 31.42
Paging, Canada.
- 31.50, 32.50, 32.60, and 39.40
U.S. military.
- 31.60 and 46.10

Florida National Guard.

- 31.65
U.S. war games, aircraft.
- 31.66 and 31.92
Paging, Canada.
- 31.70
U.S. military, "Roadmaster"
- 31.85
U.S. military aircraft, Washington, D.C. area. Also Mexican State Police repeater output (32.20 MHz input).
- 32.00
Embassy transportation, may be New York.
- 32.20
Aircraft, Fort Campbell, Kentucky

32.22

A New York taxi service! Heavy Caribbean accents, but location information made it clear they were operating in the Big Apple.

Were they issued an experimental license by the FCC? Or might they have brought their radios into the U.S. from their homeland, not realizing that the frequency 32.22 is in the federal band? Or are they simply "pirates"?!
The next day, around noon, German operations were heard on 31.30! These comms may have been coming from a ship in port or off the east coast of the U.S. Multi-hop F₂ skip from Germany was unlikely during this low point in the sun spot cycle.

31.30 is allocated to state conservation in the

U.S.; it seems doubtful that German conservation officers were out stomping through our state forests!

32.23
("Alpha") White House/Camp David comms.

32.25 (Channel 1), 32.75 (Channel 2)
Range control, San Francisco area.

32.36
Canadian phone patch, Ontario. Other radiophone operations thought to originate in Ontario include 33.46, 34.82, 37.06, 37.86, 39.90, 41.82 and 41.86.

32.42
Paging, Canada.

32.53
VIP taxi service, maybe New York or Washington, D.C.

32.60 (Alpha Channel), 32.75 (Bravo Channel)

AWACS or NORAD training missions. Bases include Headmaster and Doubloon, possibly located in the desert west. Guard tones, carriers and DES-Fedscrambling have all been heard on these two channels during training.

32.65
U.S. military.

32.70
U.S. military "Pathfinder Control," southern U.S.

32.70
Ft. Erwen range control net.

32.70
U.S. military; Ft. Bragg, North Carolina was mentioned.

32.85
U.S. military "Langley 4"

33.42, 33.62, 33.92, and 33.96
Paging, Canada.

34.00 Repeater (36.00 input)
Canadian trucking, Burnaby, British Columbia. A 2 MHz separation is often noted between repeater input and output on Canadian low band repeaters.

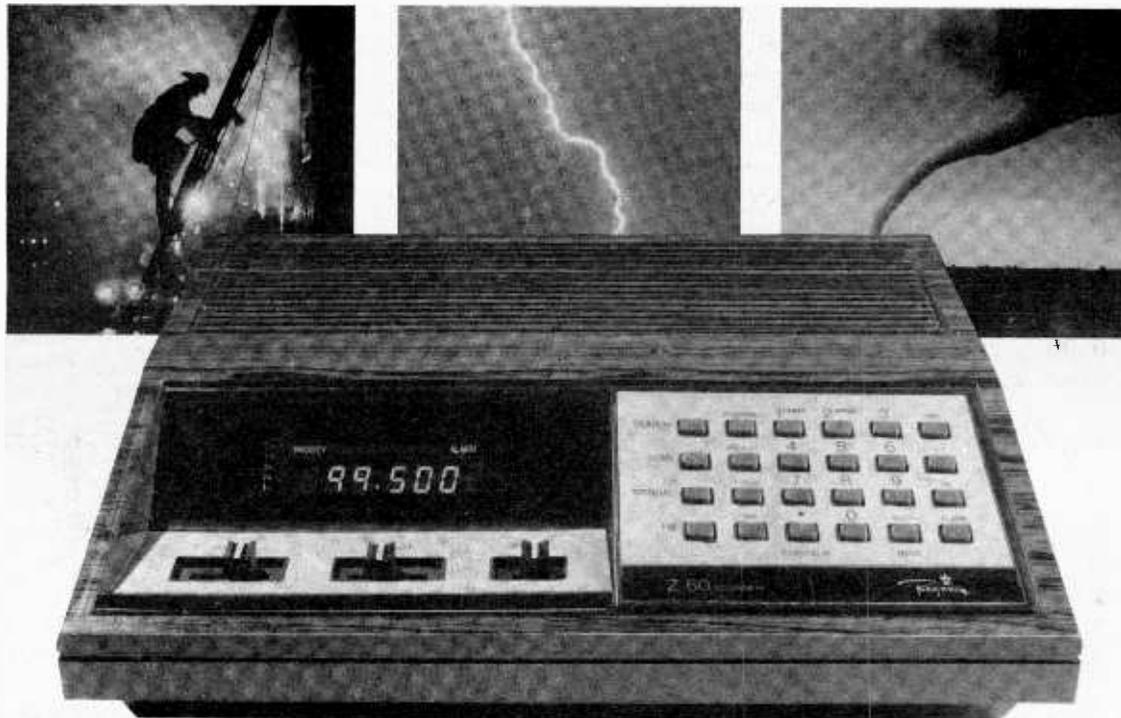
34.15, 47.00
Illinois National Guard.

34.60
Nellis AFB and Nuclear Testing Range, Nevada.

36.05
MX Missile Radio Net, Shoshone Receiving Site, Nevada. Maintenance.

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For the guy who wants to tune into the aircraft and tower transmissions, we've got the Z 45. It's got the same coverage as the Z 30 with the addition of the aircraft band with forty-five total channels.

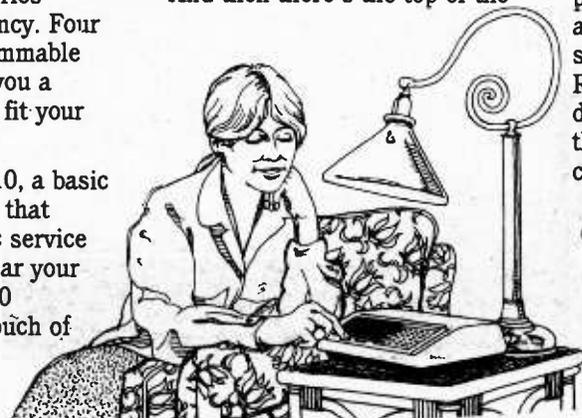
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NORTH AMERICAN SKIP cont'd

36.33
Antenna relay-keying channel, Nevada. Tones similar to those heard on common pushbutton telephones are used to switch microwave antennas. The technicians can also be heard talking on this frequency. An identical tone keying system is used to switch antennas at March AFB, California.

36.69
VIP taxi service; two bases heard, probably Washington, D.C. area.

37.04 Repeater (37.34 input)
French-Canadian shared business repeater, about 150 miles northeast of Quebec City.

37.60
March AFB, California, aircraft.

38.10, 41.10, 46.70
U.S. military range control, maybe northeast US. **41.10** is the Medivac frequency.

38.15
U.S. military range control.

38.27, 49.79
Telemetry, probably U.S.

38.30
Wheeler SAC operations.

39.30
Camp Merrill, GA, range control.

41.00, 41.95
Holland DCSO, Red Devil range control.

41.70
McGregor range control

net. Heat-seeking missile launch operations.

41.80
Range control, Camp Grayling training site, Michigan Air National Guard.

41.85
Aircraft Control, Camp Grayling.

41.90
Guide net, Camp Grayling.

42.00
Fire fighting, Camp Grayling.

42.10
Pagers, Camp Grayling.

42.40
Maintenance net, Camp Grayling.

46.60 to 47.00
Military in the U.S., Natural Resource fire services (conservation) in Canada. The frequency 46.70 is a province-wide fire channel in Ontario, and 46.74 is a Canada-wide fire channel.

A 20 kHz spacing between frequencies is used by both the U.S. and Canada. But Canada uses the "even numbered" channels while the U.S. uses the "odd numbered" frequencies.

49.60 to 50.00
Military in the U.S., hydroelectric operations in Canada (starting at 47.00 MHz).

49.90
Canadian military nationwide allocation. U.S. military range control operations also.

49.93
Ohio MARS net.

Chuck Robertson
Route 2, Box 850
Creal Springs, IL 62922

Known as the Department of Defense Surplus Sales, this service, unlike some other federal programs, is a model of simplicity and reasonable practice that is open to everyone and ready to serve them.

A few hobbyists have come to buy some (or all) of their military surplus direct from DoD Surplus Sales to save middleman costs in acquiring high quality milspec materials.

HOW TO GET ON THE LIST

There are a few procedures Surplus Sales participants follow: First, request a new bidder application form from DoD Surplus Sales, P.O. Box 1370, Battle Creek, MI 49016.

A card or letter

reaches the Defense Property Disposal Service of the Defense Logistic Agency at Battle Creek, which will respond with forms to be complete indicating geographical and equipmental choices inside and outside the U.S.

There are many categories to select, but bear in mind that auction catalogs (known as invitations for bid, or IFB's) are drawn up from just three general categories: vehicular and power equipment, electrical and electronic components and miscellany.

Inside the U.S., IFB's are generated monthly by Defense Property Disposal Offices in Columbus, Ohio; Memphis, Tennessee; and Ogden, Utah. When the Battle Creek center has processed your application, you'll start to receive IFB's relevant to your geographical/equipmental interests.

The Battle Creek computer continues to send the indicated IFB's as long as one returns the bidder list extension form that is on the back of all IFB's from one of each five IFB's you receive, or bid in one of every five sales you're notified of.

Contrary to some scuttlebutt, all DPDS sales are open to everyone, and no bidder gets any special favors.

WHAT'S THE NEXT STEP?

Let's say you've gotten friendly with the Battle Creek computer and you maintain your name on it. At last your quarry, a small lot of AN/PDQ-2 manpack pneumonia meters, shows up on the auction block. Their point of sale at Robins AFB is close enough to your Okefenokee home to make transport feasible, and you decide to bid.

Established selling prices can be researched from lists of successful bids of previous similar IFB's which are available on request from the regional DPDS offices which generated those IFB's. A bid deposit of 20% in a cash instrument is required with each bid (returned uncashed if bid is low).

Assuming your bid is mailed in time to reach the regional contracting officer before the opening day indicated on the AFB and you're contracted by DPDS as high bidder, you must pay off and collect your lot or forfeit your deposit.

Payoff can be done within thirty days by mail or in person when you collect the lot at the base within the same period. And if you can't spare the time to collect the lot, note on the contract form that the

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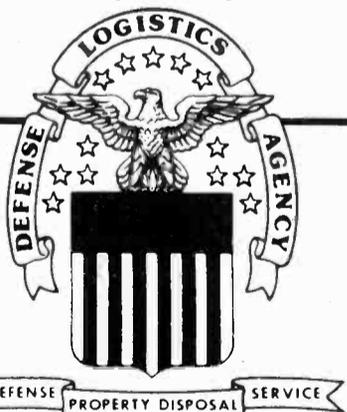
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Most IFB's indicate that base personnel are available to load the lot on your vehicle, but in some cases you'll have to fetch and load it yourself.

Some problems to avoid are: over/under bidding by not researching the established range of values; pig-in-the-poke purchases; defaulting contract payoff; and delay in collecting the purchase (the most common problem).

If delays appear to be unavoidable, phone the regional DPDS officer who is indicated on the first page of the IFB to coordinate a storage extension with holding facility personnel. A small storage fee is charged.

DPDS people are as helpful as possible, but the Surplus Sales program does intend to move the merchandise.

The bulk of DoD Surplus Sales are sealed-bid (mail-in) auctions, although there are also some local spot (in-person) auctions. It's been my experience that the best of surplus electronics

show up in the sealed-bid sales.

Most sealed-bid IFB's carry fifty to five hundred lots of equipment, a significant fraction of which weigh less than one ton and which are tailored to hobby interests.

Most of these sorts of lots sell well under \$500, and first class electronics are gotten for pennies a

pound. While most tales of \$38 jeeps are baloney, \$38 R390 receivers are common fare.

Since most military electronics are too specialized to resell in volume, dealers become inundated with "junk" and their overheads prevent them from inflating the direct surplus market. Poke around in the field; I doubt you'll come away empty handed.

down on the best electronic components.

Good service on military equipment manuals is available from...

MIKE CONSALVO, 7218 Roanne Drive, Ox'on Hill, MD 20745

TAYLOR SPECIALTY CO, 329 Merritt Street, Hawkinsville, GA 31038

TUCKER ELECTRONICS, P.O. Box 401060, Garland, TX 75046

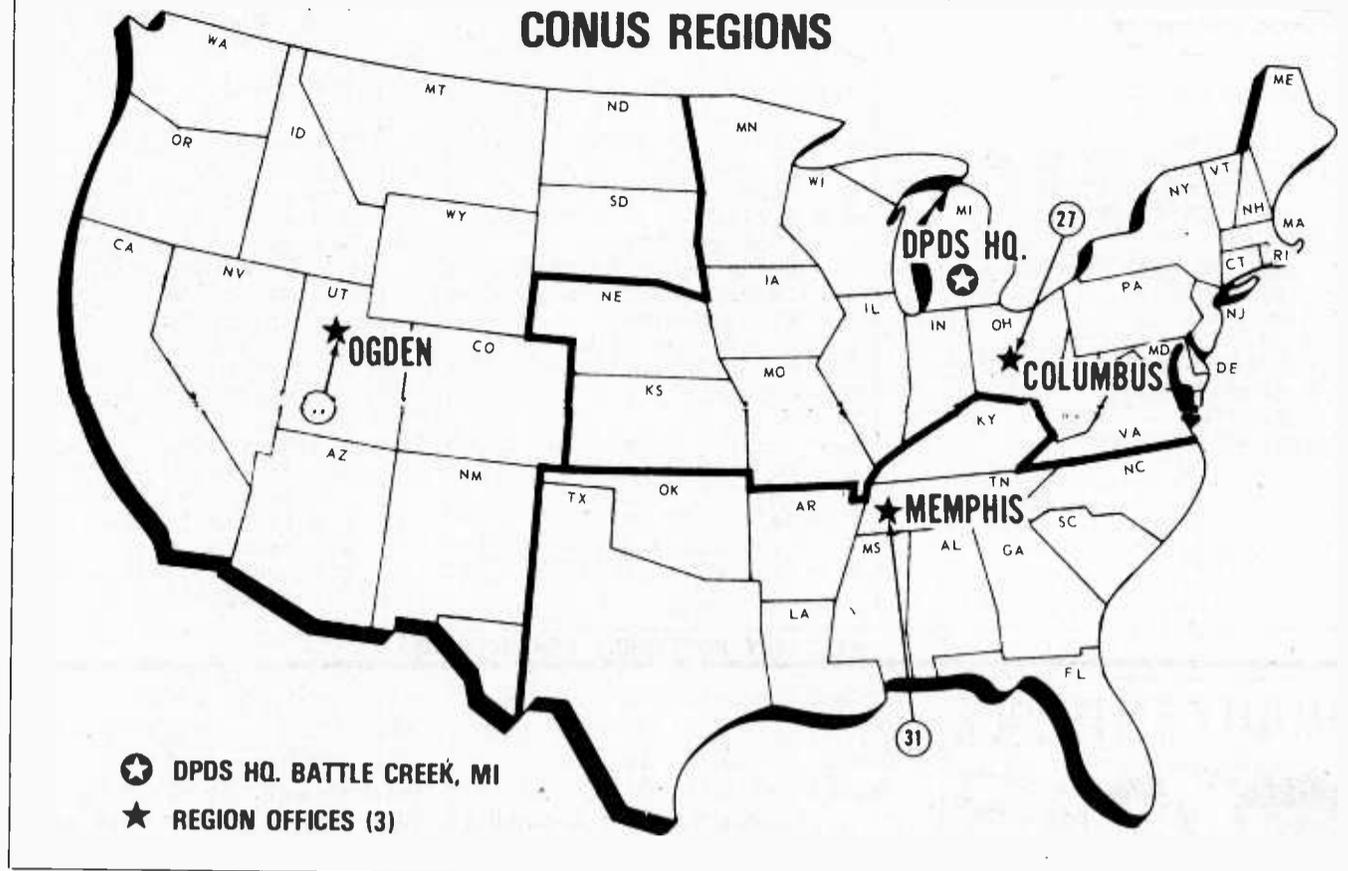
WINDSOURCE CO., P.O. Box 280, Wamsutter, WY 82336

Specific questions on DoD Surplus Sales can be directed to...

JOAN NICELY, DPDS-MMS, Defense Logistics Agency, Federal Center, Battle Creek, MI 49016.

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D-12 Deluxe Base
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DNE, INC.

Rt. 7, Box 257-D
Hot Springs, AR 71901

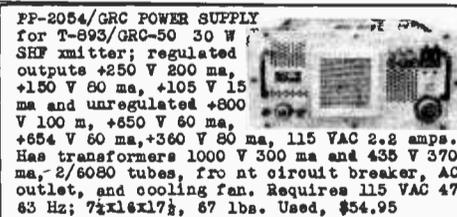
Don Nobles Electronics, Inc.

*Not For TV

A LOOK AHEAD

Three indicators forecast a boon to surplus radio hobbyists in the next couple of years. First is the technology explosion as it relates to current military electronics; second is the IC's coming of age, marked by its first exposure in military surplus; third is the current low level of direct surplus exploitation by hobbyists, keeping prices

Winning bids are a matter of public record. Here we see how an invitation for bid was won by a prominent surplus dealer and became an item in his catalog.



PP-2054/GRC POWER SUPPLY for T-893/GRC-50 30 W SHFmitter; regulated outputs +250 V 200 ma, +150 V 80 ma, +105 V 15 ma and unregulated +800 V 100 ma, +650 V 60 ma, +654 V 60 ma, +360 V 80 ma, 115 VAC 2.2 amps. Has transformers 1000 V 300 ma and 435 V 370 ma, 2/8080 tubes, fro at circuit breaker, AC outlet, and cooling fan. Requires 115 VAC 47-63 Hz; 7 1/2 x 1 1/2, 67 lbs. Used, \$54.95

107. POWER SUPPLY: RCA, Type PP-2054/GRC, Power, Output: 600 to 105 VDC, 200 to 15 MA in seven steps, operating power 115 VAC, 60 cycles, 1 phase. Intended use with radio set Type AN/GRC-50. NSN 5820-00-889-0857. Inside - E010352A0 - Unpacked - Used - Poor Condition
Total Cost \$229,240
Est. total wt. 4680 lbs. 72 EACH

FAIR RADIO SALES CO INC		183
P O BOX 1105		
LIMA OH 45802		
084 ELECT&ELECTR EGP	21	LT 253.93
091 ELECTR EGP	21	LI 318.93
092 CUM CPTS	21	LI 318.93
107 POWER SUPPLY	21	EA 6.58
108 POWER SUPPLY	21	EA 6.58
109 ELECT&ELECTR CPT21		LT 2593.93
113 ELECT&ELECTR EGP	21	LI 318.93
131 CAELE ASSEMBLY	21	EA 21.88

system indicator		model number
Installation	Type Equipment	Purpose
A - airborne	A - invisible light	A - auxiliary assembly
B - underwater mobile submarine	B - pigeon	B - bombing
C - air transportable	C - carrier (wire)	C - communications
D - pilotless carrier	D - radiac	D - direction finding
F - fixed	F - photographic	G - gun/searchlight directing
G - ground, general use	G - telegraphic/teletype	H - recording
K - amphibious	I - interphone/public address	L - searchlight control
M - mobile	K - telemetering	M - maintenance & test
P - pack or portable	L - countermeasures	N - navigational aids
S - water surface craft	M - meterological	P - reproducing equipmen
T - ground transportable	N - sound in air	Q - special types
U - general utility	P - radar	R - receiving
V - ground vehicular	Q - sonar & underwater sound	S - detecting and/or range and bearing
	R - radio	T - transmitting
	S - special types	W - remote control
	T - telephone (wire)	X - identification and recognition
	V - visual & visible light	
	X - facsimile or television	

MILITARY EQUIPMENT NOMENCLATURE

UTILITY INTRIGUE



by Don Schimmel

Since adding the RTTY capability to the UTILITY INTRIGUE intercept position, I have been very impressed with the performance and ease of operation of the INFO TECH M-600 Demodulator. It was more expensive than

other methods but I particularly desired a dedicated unit so that my computer would not be tied up.

I have further expanded the equipment configuration with the installation of a FDM Demodulator (Frederick 1202RA) and will be including this type of transmission mode in future loggings.

Several MT readers have written me concerning special characters encountered in monitoring some foreign transmissions. The reference aid I use for identification is the "LIST

OF SPECIAL RTTY AND CW ALPHABETS AND CODES" by Klingenfuss which may be purchased from Universal Shortwave as well as other MT advertisers.

Are you looking for a particular manual for surplus equipment? Another publication dealer is M. Consalvo, 7218 Roanne Drive, Washington, DC 20021. Although a catalog is not presently being published, availability and cost information will be provided on specific pieces of equipment if your request is accompanied by an SASE.

In case you are interested in updating some of your reference books, two new Reader's Digest publications are now available. The "WIDE WORLD ATLAS" is a fine presentation of maps plus a helpful gazetteer section. It has large-size pages, 11" x 14", thus providing maps with lots of details but yet not cluttered up.

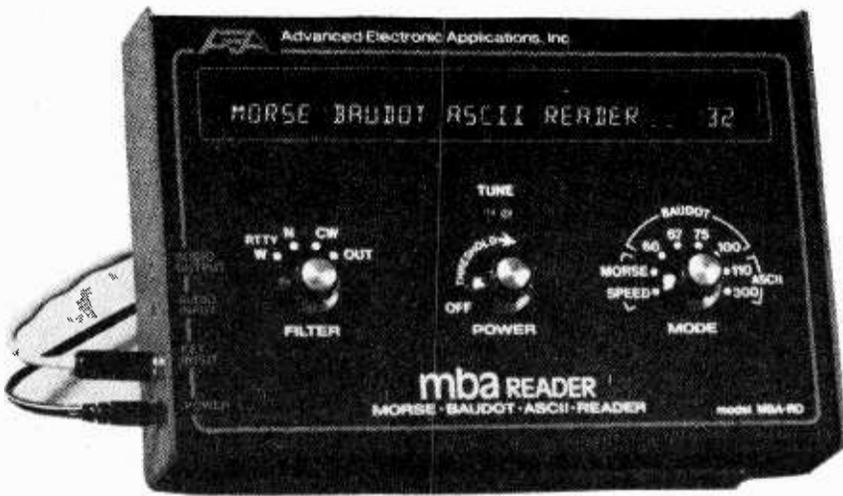
The other Digest book is the "READER'S DIGEST 1985 ALMANAC AND YEARBOOK" which lists a chronology of 1984 events, descriptive details on the nations of the world, plus a wealth of facts on numerous subjects. The books can be obtained from the Reader's Digest and are also found at some bookstores.

In an effort to conserve space in the loggings section I find it necessary to use some abbreviations. Most of these are consistent with the listings presented in the June and August 1984 issues of MT. Next month I will give you a list of some additional abbreviations used for designating various elements of information.

Please bear with me regarding format changes for the loggings because I am trying to arrive at the most efficient use of the allotted space while including desirable details.

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LOGGED DURING SEPTEMBER

KHZ	MODE/DTOI/IDENTIFICATION AND COMMENTS
3054	CW/080032/5 CHARAC GRPS(LTRS & FIGS 2,3,8)
3209	CW/150428/6F GRPS, 5 GRPS PER MSG
3233.8	RTTY ASCII 110/080106/APPEARANT ENCPIPHERED XSMN
3468	CW/030115/XTY DE IJT QSA IMI
3493	CW/080118/SHORT BURSTS BUBBLY SOUNDING CARRIER
4012.1	RTTY 50-170/080306/CODED WX
4397	CW/160313/BOF DE XRL QSA IMI
5870	CW/150406/5L GRPS(HEADING SENT WORDS TWICE)
6278.4	CW/150148/2L,3L,4L GRPS (LOOKS LIKE 13279 TFC)
6274.5	CW/150150/LFD DE LJUU (NORWEGIAN ALLOC)
11164.9	CW/232224/285 DE ? HW HW
12979.6	CW/192340/CLP(HAVANA) DE ?(POSS MINFORNAFF FREQ)
13014	CW/052043/DE IAR (ROME ITALY)
13153	USB VOICE/072021/CONVERSATION IN GERMAN
13155	CW/102113/SPANISH PT, POSS PERUVIAN NAVY
13161.2	CW/151235/4F GRPS (USUALLY SENDS FIGS FULL BUT WHEN REPEATING GRPS SOMETIMES SEND REPEATED FIGS CUT.
13177.9	USB VOICE/072024/CONVERSATION IN ITALIAN
13215	RTTY 50-170/242258/LOR LOV IN HDNG (ARGENTINE ALLOCATION)
13243.5	SSB VOICE/031839/AIR/GND CONTACT (TALKING ABOUT CHECKING AREA NEAR HURRICANE BERTHA)
13259	CW/072016/SPANISH PT
13283.5	CW/122100/TUNES & SEND V'S THEN GOES RTTY 75-170 & SENDS TFC/CLP2 (EMBACUBA PANAMA) DE CLP1 (HAVANA)
13293.6	CW/011831/FRENCH PT MSG ADDRESSED TO FRENCH EMBASSY IN SAUDI ARABIA
13300	CW/031253/4F GRPS 3 4 5 6 7 SENT FULL, OTHERS CUT
13315.3	CW/022012/CLP1 (HAVANA) DE CLP16 (?) QSY 13975
13349.8	CW/091321/LOP6(ARGENTINE STN) DE JZBP(INDONESIA)
13395.5	CW/042039/V'S DE PWSN(BRAZIL ALLOC)QSY 103 QSV-K
13396.5	RTTY 75-170/122001/5F GRPS
13457.5	CW/151320/5L GRPS. SPEC CHARAC IM OE OT AA
13508.7	RTTY 75-170/091410/WX AT CANADIAN LOCATIONS
13528.8	RTTY 50-170/161223/RV'S DE RWW/73 RBK/75 RVW/53 (MOSCOW, SOVIET UNION)
13540.7	CW/062254/5L GRPS,2ND GRP OF TEXT PHONETICIZED
13602.5	CW/061928/53 DE 11 QSV D3(ALSO CALLS 55,52)
13625.7	CW/052254/SHIFTS TO RTTY 50-170, JMS (JAPANESE ALLOC) TEST TAPE THEN INTO TFC OF 5L GRPS
13635	CW/081301/F MARKER, BAD ECHO
13704.5	USB VOICE/PI1303/ETA REPORT, POSS COLOMBIAN AF
13760.8	CW/062238/SPANISH PT, LA MILITARY TYPE TFC
13767.2	CW/151716/UCT DE UXDX (SOVIET ALLOCATION)
13937	CW/021606/ONY24(?) DE ONY27(ROUVEROY BELGIUM) TFC IS MIXED LTR/NBR GRPS
13963	CW/151234/472 472 472 1 (RPTS CALLUP FOR SEVERAL MINS) 592 50 THEN INTO 5F GRPS(ZERO CUT AS T)
13973	RTTY 50-170/011814/PRESS ITEMS IN FRENCH,ANSA (ITALIAN PRESS SERVICE)
13975	CW/022024/UNIDEN,STN CALLS CLP1(HAVANA)SEE 13315.3
13981.9	CW/081317/5 CHARAC GRPS, -1 2 8 9 0 SENT CUT AS A U D N T, REMAINDER SENT FULL. VY WEAK, SLIGHT ECHO
13996.4	RTTY 50-170/032004/PRESS ITEMS IN SPANISH
15737.6	CW/072236/POSS POLICE TFC, MSG MENTIONS FINGER-PRINTS
18363.2	RTTY 75-170/022009/FJA (FRENCH STN) DE 6WW (DAKAR, SENEGAL) RY'S
18419.8	RTTY 50-170/312208/SPANISH LANG PRESS (ARGENTINE NATIONAL NEWS AGENCY)
19438.2	RTTY 45-170/081331/NO IDENT, SENDS RY'S FOR 10 MIN THEN GOES DOWN
19858.6	RTTY 75-170/151814/PWZ33(RIO DE JANEIRO BRAZIL) DE LOL (BA ARGENTINA) RY'S
19864	RTTY 75-170/061611/TANJUG (YUGOSLAVIAN NEWS SVC)
20648.7	RTTY 50-170/252016/DE NAU (SAN JUAN PR) RY'S
20765.8	CW/151801/SERIES OF MUSICAL TONES PLAYED OVER AND OVER



by James R. Hay

Recently, in the mail, I received several reports of loggings from Michiel Schaay in Holland who distributes a "DX Report" on a selective basis. This month I would like to share some

of Michiel Schaay's loggings. If readers would like to see more ship loggings in future columns, then please send any loggings to me and I will be happy to share them with other readers.

It must be remembered that all of the loggings are radioteletype, and thus special equipment is needed to receive and print the messages transmitted, but the loggings give an idea of what can be heard. The loggings were all heard from Doorn, Holland.

CALL	SIGN	SHIP	POSITION	MO/DAY/TIME/FREQ
A8XS	Felipes		near Singapore	7/4 1431 16680.5
EDXA	Tarraco		Gulf of Guinea	7/6 1257 12497
	Augusta			
PFKC	Klipper 2		Puerto Rico	7/4 1920 16680.5
PGJO	Noordzee(tug)		Laguaira, Venezuela	7/4 1423 16680.5
PFIH	Kildrecht		east of Bermuda	7/13 1130 12497
			(Readers living on the St. Lawrence Seaway may recognize this ship.)	
HCIG	Islas		1 hour out of Cork,	7/12 1318 8346
	Galapagos		Ireland	
ONPA	Tielrode		Singapore	7/21 1737 12499
PDNX	Deepwater 1		near Peterhead, Scotland	8/2 0820 4172
SQLE	Stefan Starzynski		600 mi. W. of Brest	8/6 1312 12497
ELCQ9	Exporter		200 N, San Luis, Braz	8/8 1937 16686
JXJS	Polarbjorn		near Karlsland	8/12 0949 12517
			(Does anyone know where Karlsland is?)	
LJXV	Oranus		60 mi NE Caicos Is	8/11 1957 16686
5MVQ	Venture Independence		Norway	8/11 2106 6258.5
DASZ	Maersk Bravo		near Abidjan, Ivory Coast	8/21 0921 16684
HBFJ	Cervin		near Brazil	8/21 0911 16668
PEPT	Heemskerkgracht		New Mangalore, India	8/17 1924 8352
FNBG	Capricorne		Gulf of Guinea	9/6 1846 16664
GPIG	British Avon		Skikda	9/6 1808 12505
PHOX	Smit Lloyd 71		near Hong Kong	9/9 1436 16680.5

Below are a few SSB loggings from Michiel Schaay.

PCEG	Adriatic		near Varna, Bulgaria	9/3 1140 12367.2
PHBS	Rio Frio		near Panama Canal	9/6 2048 16568.5
PJYH	Stella Rigel		near Aruba, Netherland Antilles	9/6 2012 16568.5

For those wanting to know to which countries the various call signs belong, below is the table of prefixes allocated by the International Telecommunications Union.

INTERNATIONAL CALL SIGN PREFIXES	COA-COZ	CUBA
AAA-ALZ	CPA-CPZ	BOLIVIA
AMA-AOZ	CQA-CUZ	PORTUGAL
APA-ASZ	CU	CUBA
ATA-AWZ	CVA-CXZ	URUGUAY
AXA-AXZ	CYA-CZZ	CANADA
AYA-AZZ	C2A-C2Z	NAURU
A2A-A2Z	C3A-C3Z	ANDORRA
A3A-A3Z	C4A-C4Z	CYPRUS
A4A-A4Z	C5A-C5Z	GAMBIA
A5A-A5Z	C6A-C6Z	BAHAMAS
A6A-A6Z	C7A-C7Z	WORLD METEOROLOGICAL ORGANIZATION
A7A-A7Z	DAA-DRZ	WEST GERMANY
A9C-A9Z	DSA-DTZ	SOUTH KOREA
BAA-BZZ	DUA-DZZ	PHILIPPINES
BVA-BVZ	D2A-D2Z	ANGOLA
CAA-CEZ	D4A-D5Z	CAPE VERDE
CFA-CKZ	D5A-D5Z	LIBERIA
CLA-CMZ	D7A-D9Z	SOUTH KOREA
CNA-CNZ	EAA-EHZ	SPAIN
	EIA-EJZ	IRELAND
	EKA-EKZ	USSR
	ELA-ELZ	LIBERIA
	EMA-EOZ	USSR
	EPA-EQZ	IRAN
	ERA-ERZ	USSR
	ESA-ESZ	ESTONIA
	ETA-ETZ	ETHIOPIA

Interplanetary Paging Proposed



On Page Enterprises of Sudbury, Massachusetts has applied to the FCC for a license to send one-way radio messages to the Sun, the Moon and "any of the planets in our Solar System"! The application for "specialized extraterrestrial communications" requests operation on 903.0125 megahertz.

HIGH SEAS cont'd

EUA-EWZ	BIELORUSSIA SSR	TLA-TLZ	CENTRAL AFRICAN REP
EXA-EZZ	USSR	TMA-TMZ	FRANCE & TERR
FAA-FZZ	FRANCE & TERR.	TNA-TNZ	CONGO
GAA-GZZ	UNITED KINGDOM	TOA-TQZ	FRANCE & TERR
HAA-HAZ	HUNGARY	TRA-TRZ	GABON REPUBLIC
HBA-HBZ	SWITZERLAND & LIECHTENSTEIN	TSA-TSZ	TUNISIA
HCA-HDZ	ECUADOR	TTA-TTZ	TCHAD REPUBLIC
HEA-HEZ	SWITZERLAND	TUA-TUZ	IVORY COAST
HFA-HFZ	POLAND	TVA-TXZ	FRANCE & TERR
HGA-HGZ	HUNGARY	TYA-TYZ	BENIN
HHA-HHZ	HAITI	TZA-TZZ	MALI REPUBLIC
HIA-HIZ	DOMINICAN REPUBLIC	T2A-T2Z	TUVALU
HJA-HKZ	COLOMBIA	T3A-T3Z	KIRIBATI
HLA-HLZ	SOUTH KOREA	T4A-T4Z	CUBA
HMA-HMZ	NORTH KOREA	T5A-T5Z	SOMALI DEM REP
HNA-HNZ	IRAQ	T6A-T6Z	AFGHANISTAN
HOA-HPZ	PANAMA	UAA-UZZ	USSR & TERR
HQA-HRZ	HONDURAS	VAA-VGZ	CANADA
HSA-HSZ	THAILAND	VHA-VNZ	AUSTRALIA
HTA-HTZ	NICARAGUA	VQA-VOZ	CANADA
HUA-HUZ	EL SALVADOR	VPA-VSZ	BRITISH COLONIES
HVA-HVZ	VATICAN CITY	VTA-VWZ	INDIA
HWA-HYZ	FRANCE & TERR	VXA-VYZ	CANADA
HZA-HZZ	SAUDI ARABIA	VZA-VZZ	AUSTRALIA
H2A-H2Z	CYPRUS	V2A-V2Z	ANTIGUA
H3A-H3Z	PANAMA	V3A-V3Z	BERMUDA
H4A-H4Z	SOLOMON ISLANDS	W11-W2Z	UNITED STATES
I1A-I2Z	ITALY AND TERR	XAA-XIZ	MEXICO
JAA-JSZ	JAPAN	XJA-XOZ	CANADA
JTA-JVZ	MONGOLIA	XPA-XPZ	DENMARK
JWA-JXZ	NORWAY	XQA-XRZ	CHILE
JYA-JYZ	JORDAN	XSA-XSZ	CHINA
JZA-JZZ	WESTERN NEW GUINEA	XTA-XTZ	UPPER VOLTA
J2A-J2Z	DJIBOUTI	XUA-XUZ	KAMPUCHEA
J3A-J3Z	GRENADA	XVA-XVZ	VIET NAM
J4A-J4Z	GREECE	XWA-XWZ	LAOS
J5A-J5Z	GUINEA BISAU	XZA-XZZ	PORTUGUESE COLONIES
J6A-J6Z	SAINT LUCIA	XYA-XZZ	BERMA
J7A-J7Z	DOMINICA	YAA-YAZ	AFGHANISTAN
J8A-J8Z	ST VINCENT & THE GRENADINES	YBA-YHZ	INDONESIA
KAA-KZZ	UNITED STATES	YIA-YIZ	IRAQ
LAA-LNZ	NORWAY	YJA-YJZ	VANUATU(NEW HEBRIDES)
LOA-LWZ	ARGENTINA	YKA-YKZ	SYRIA
LXA-LXZ	LUXEMBOURG	YLA-YLZ	LATVIA
LYA-LYZ	LITHUANIA	YMA-YMZ	TURKEY
LZA-LZZ	BULGARIA	YNA-YNZ	NICARAGUA
L2A-L9Z	ARGENTINA	YOA-YOZ	RWANDA
MAA-MZZ	UNITED KINGDOM	YSA-YSZ	EL SALVADOR
NAA-NZZ	UNITED STATES	YTA-YUZ	YUGOSLAVIA
OAA-OCZ	PERU	YVA-YYZ	VENEZUELA
ODA-ODZ	LEBANON	YZA-YZZ	YUGOSLAVIA
OEA-OEZ	AUSTRIA	Y2A-Y9Z	EAST GERMANY
OFA-OJZ	FINLAND	Y5A-Y5Z	VANUATU
OKA-OMZ	CZECHOSLOVAKIA	ZAA-ZAZ	ALBANIA
ONA-OTZ	BELGIUM	ZBA-ZJZ	BRITISH COLONIES
OUA-OZZ	DENMARK	ZKA-ZMZ	NEW ZEALAND
PAA-PIZ	NETHERLANDS	ZNA-ZOZ	BRITISH COLONIES
PJA-PJZ	NETHER. ANTILLES	ZPA-ZPZ	PARAGUAY
PKA-POZ	INDONESIA	ZQA-ZQZ	BRITISH COLONIES
P2A-P2Z	PAPUA (NEW GUINEA)	ZRA-ZUZ	SOUTH AFRICA
P3A-P3Z	CYPRUS	ZVA-ZZZ	BRAZIL
P5A-P9Z	NORTH KOREA	Z2A-Z2Z	ZIMBABWE
QAA-QZZ	SERVICE ABBREVIATNS	2AA-2ZZ	UNITED KINGDOM
RAA-RZZ	USSR	3AA-3AZ	MONACO
SAA-SMZ	SWEDEN	3BA-3BZ	MAURITIUS
SNA-SRZ	POLAND	3CA-3CZ	EQUATORIAL GUINEA
SSA-SSM	EGYPT	3DA-3DM	SWAZILAND
SVA-SZZ	GREECE & ISLANDS	3DN-3DZ	FIJI
S2A-S2Z	BANGLADESH	3EA-3FZ	PANAMA
S6Z-S6Z	SINGAPORE	3GA-3GZ	CHILE
S7A-S7Z	SEYCHELLES	3HA-3UZ	CHINA
S9A-S9Z	SAO TOME ET PRINCIPE	3VA-3VZ	TUNISIA
TAA-TCZ	TURKEY	3WA-3WZ	SOUTH VIETNAM
TDA-TDZ	GUATEMALA	3XA-3XZ	GUINEA
TEA-TEZ	COSTA RICA	3YA-3YZ	NORWAY
TFA-TFZ	ICELAND	3ZA-3ZZ	POLAND
TGA-TGZ	GUATEMALA	4AA-4CZ	MEXICO
THA-THZ	FRANCE & TERR	4DA-4IZ	PHILIPPINES
TIA-TIZ	COSTA RICA	4JA-4LZ	USSR
TJA-TJZ	CAMEROON	4MA-4MZ	VENEZUELA
TKA-TKZ	FRANCE & TERR	4NA-4OZ	YUGOSLAVIA
		4PA-4SZ	SRI LANKA
		4TA-4TZ	PERU
		4UA-4UZ	UNITED NATIONS
		4VA-4VZ	HAITI
		4WA-4WZ	YEMEN
		4XA-4XZ	ISRAEL

4YA-4YZ	INTERNATIONAL CIVIL AVIATION ORGANIZATION
4ZA-4ZZ	ISRAEL
5AA-5AZ	LIBYA
5BA-5BZ	CYPRUS
5CA-5GZ	MOROCCO
5HA-5IZ	TANZANIA
5JA-5KZ	COLOMBIA
5LA-5MZ	LIBERIA
5NA-5OZ	NIGERIA
5PA-5QZ	DENMARK
5RA-5SZ	MADAGASCAR
5TA-5TZ	MAURITANIA
5UA-5UZ	NIGER
5VA-5VZ	TOGO
5WA-5WZ	WESTERN SAMOA
5XA-5XZ	UGANDA
5YA-5ZZ	KENYA
6AA-6BZ	EGYPT
6CA-6CZ	SYRIA
6DA-6JZ	MEXICO
6KA-6NZ	SOUTH KOREA
6OA-6OZ	SOMALIA
6PA-6SZ	PAKISTAN
6TA-6UZ	SUDAN
6VA-6WZ	SENEGAL
6XA-6XZ	MALAGASY
6YA-6YZ	JAMAICA
6ZA-6ZZ	LIBERIA
7AA-7IZ	INDONESIA
7JA-7NZ	JAPAN
7OZ-7OZ	SOUTH YEMEN
7PA-7PZ	LESOTHO
7QA-7QZ	MALAWI
7RA-7RZ	ALGERIA
7SA-7SZ	SWEDEN
7TA-7YZ	ALGERIA

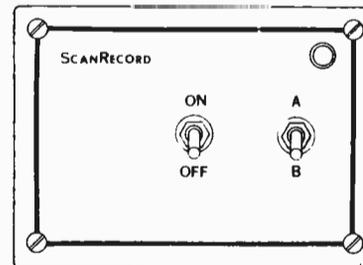
7ZA-7ZZ	SAUDI ARABIA
8AA-8IZ	INDONESIA
8JA-8NZ	JAPAN
8OA-8OZ	BOTSWANA
8PA-8PZ	BARBADOS
8QA-8QZ	MALDIVE ISLANDS
8RA-8RZ	GUYANA
8SA-8SZ	SWEDEN
8TA-8YZ	INDIA
8ZA-8ZZ	SAUDI ARABIA
9AA-9AZ	SAN MARINO
9BA-8DZ	IRAN
9EA-9FZ	ETHIOPIA
9GA-9GZ	GHANA
9HA-9HZ	MALTA
9IA-9JZ	ZAMBIA
9KA-9KZ	KUWAIT
9LA-9LZ	SIERRA LEONE
9MA-9MZ	MALAYSIA
9NA-9NZ	NEPAL
9OA-9TZ	ZAIRE
9UA-9UZ	BURUNDI
9VA-9VZ	SINGAPORE
9WA-9WZ	MALAYSIA
9XA-9XZ	RWANDA
9YA-9ZZ	TRINIDAD & TOBAGO

That's all for this month. If you would like to share any loggings with other readers, please send them to me. Address any correspondence about this column to me, James R. Hay, 141 St. John's Blvd., Pointe Claire, P.Q. Canada H9S 4Z2.

**MT RATES INCREASE JANUARY 1 -
RENEW TODAY FOR 36 INFORMATION-PACKED
PAGES AT THE CURRENT RATE!**

**While you were out...
SOMETHING HAPPENED!**

Now you can record all the scanner action that occurred while you were away for playback later. The Scan Record recorder coupler will automatically turn on your tape recorder when your scanner is receiving a message and route the audio from the scanner to the recorder.



The recorder runs only when a message is received. It does not run when the scanner is just scanning. This lets you record a lot of traffic on one tape. In addition to scanners, it will work with any receiver that has a squelch control.

The easy to use ScanRecord features user selectable drop-out delay, adjustable sensitivity, activity indicator and recorder control switch. The unit is all solid-state with no relays to stick or wear out. It operates on 9 to 15 volts DC and can be powered by a 9 volt battery or AC adapter.

All you'll need in addition to your scanner and the ScanRecord is a tape recorder with a microphone jack and a remote control jack. The ScanRecord comes complete with all connecting cables.

Your complete satisfaction is guaranteed. Order your ScanRecord today for only \$35.75 plus \$2 shipping and handling.

Mail and phone orders are welcome. Send check or money order or we can ship via UPS COD. We also accept VISA and MASTERCARD. Please include your card number and expiration date.

FREE CATALOG featuring scanner accessories, carrier/subcarrier detectors, voice scramblers and unusual kits sent on request.

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BOOST WEAK SIGNALS

Get clearer distant reception using ACT-1 POWER ANTENNA instead of scanner's built-in whip. This compact 21 - inch antenna has integral preamplifier, gives up to 15 dB gain (30 times as strong), plus all the advantages of a high antenna away from noise pickup. Often outperforms much larger outdoor antennas! Easy to install on any vertical surface indoors or out. No mast required. Covers all bands: 30-900 MHz. Complete with 50 ft. cable, ready to plug into scanner. +12V power obtained directly from most radios.



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ONLY \$79 + \$3 S & H

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Converts out-of-band signals to vhf or uhf scanner bands. Cables provided. Simply plug into scanner.



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240-270 MHz Navy/Air Force Fleet Satellites
135-144 MHz Weather & Geophysical Satellites
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Cordless Phones Have A Mind Of Their Own

One of the weirdest complaints we have ever heard was voiced recently by the prestigious Associated Public-Safety Communications Officers (APCO).

It seems that police and fire personnel nationwide are puzzled by a phenomenon plaguing their 9-1-1 emergency centers. Cordless phones are dialing them up without human intervention!

According to the FCC, the phantom phone calls are made by cordless phones which are either off hook, low in battery power or exhibiting some other defect.

SIGNALS FROM SPACE



by Larry Van Horn

This month we will start looking into communications satellites around the world. The first part of the series will cover the Soviet communication satellite system. For several years now the Soviets have been quietly building a geostationary giant. There are several different systems that closely parallel western satellite systems.

Russian communications satellites for both civilian and military applications are following the U.S. to higher frequencies. In 1979, Aviation Week and Space Technology quoted an Air Force official who said that it is difficult to distinguish between military and civilian systems. This is because of the interoperability of their systems and the uncertainties associated with attempting to tie down a particular mission of a particular satellite in an ever-changing operational approach by the Soviets.

Some of the veil of Soviet secrecy has been lifted due to the fact that all nations have to file geostationary positions and frequencies with the International Frequency Registration Board of the ITU.

The first system I will discuss is the Stationary (Russian for "stationary"); this is the name of the Soviet Union's global satellite system, similar to Intelsat. Stationary satellites are used by (among others) the Intersputnik, which is the international satellite cooperative of the communist countries established in 1971.

There are 14 countries in the Intersputnik satellite system: Soviet Union, Bulgaria, Hungary, Czechoslovakia, Poland, East Germany, Romania, Mongolia, Viet Nam, South Yemen, Cuba, Nicaragua, Syria, and Laos.

The Soviets have filed with the ITU the following Stationary positions:

35E	Stationary 2
40E	Stationary 12
45E	Stationary 9
53E	Stationary 5
80E	Stationary 1/13
85E	Stationary 3
90E	Stationary 6
95E	Stationary 14
99E	Stationary T

130E	Stationary 15
140E	Stationary 7
170W	Stationary 10
25W	Stationary 8
14W	Stationary 4
8.5W	Stationary 11

As of this writing each Stationary position could contain a variety of satellites and transponders; this month we will discuss the Gorizont (Russian for Horizon) satellite.

The Gorizont satellites are the most active in the Soviet Stationary system for broadcast radio and TV transmission. A variety of programs are carried throughout the Soviet Union.

Gorizont satellites have been located at Stationary positions 5, 6, 7, 4.

Gorizont signals can be received on TVRO systems in the States and abroad. Channels frequently seen are:

FREQ	1) PATTERN
MHz	2) PROGRAMMING
3675	Spot or global beams Full time Soviet TV
3725	Zone or global beams Occasional video
3775	Northern Hemispheric Occasional video
3825	Zone or global beams Occasional video
3875	Northern Hemispheric Full time Soviet TV
3925	Zone or global beams Occasional video

It is my belief that the Soviets have 5 channels below the coverage of normal TVRO receivers--3425, 3475, 3525, 3575, and 3625 MHz--but I have no verification of this or the type of programming carried.

The Gorizont satellite most frequently viewed in the U.S. is Gorizont 7 (Stationary 4, 14W); this bird should be visible to most viewers east of the Mississippi River. Gorizont 7 carries several channels of Soviet TV and Intersputnik programming.

The breakdown of the channels is as follows:

MHz	
3675	1st TV program from Moscow
3775	SCPC Telephony
3825	2nd TV program from Moscow and O.I.R.T.
3875	1st program and Intersputnik TV program exchange as well as

Intersputnik news and UPI/TV News.

Viewers can expect to see Soviet life, space missions and a variety of other TV programs by watching Gorizont 7. Programming of the 1st program starts at 0400 UTC and runs on average till 2400 UTC. There have been programs noted as late as 0200 UTC for late night Moscow residents.

With the Gorizont system continuing to launch satellites at the rate of 1-2 per year, those of you in Europe, Asia, Australia and the Pacific region will continue to watch Soviet programming for years to come.

Soviet HF satellite watcher, Len Merkoske in Thunder Bay, Canada, has received Soviet satellite signals on 19.545 kHz with his Drake R7. Len noted PDM-type signals, FSK but using coarse tones, like the "gurgle" of Cosmos 1443. Len is still using his 100 foot longwire and the R7's preamp.

Best results were obtained in USB, 1.8 kHz filter. Len first discovered the signals on September 27 from 1530-1540 LOS with an S-9 signal. Based on observational data Len believes the period of the spacecraft to be 107 minutes.

My early conclusion is that he has received Cosmos 1579, a mission with characteristics of the Soviet nuclear reactor powered radar ocean surveillance satellites. Normally the satellite has a period of 89.9 minutes. But toward the end of the mission the Soviets separate the nuclear reactor from the rest of the spacecraft and boost it into the high orbit to slow down the decay of the nuclear material.

More than likely Len monitored the reactor section shortly after it was boosted in orbit and the Soviets had the beacon on for tracking information to insure that another Cosmos 954 incident did not repeat itself. Cosmos 1579 was launched June 29, 1984 from Tyuratam on an F-1-m booster rocket. Many thanks to Len for his (what I believe to be first Canadian) observation of Soviet Ocean recon activity.

As you can see satellite monitoring is possible and fancy equipment is not needed. I have listed possible Soviet frequencies in past columns. Give it a try and be sure to report your results to Signals from



SIGNALS FROM SPACE cont'd

Space, c/o Larry Van Horn,
1111 N. Carrier Pkwy, B-107,
Grand Prairie, Texas 75050.

MONITORING THE SHUTTLE

While the majority of space shuttle communications are conducted at s-band (2.3 GHz), some UHF backup activity is still reported. During the last mission (October) we monitored the voice communications of astronauts Kathy Sullivan and Sally Ride on 259.7 MHz AM with nothing more than a Regency MX5000 and a Grove ANT-5B OMNI antenna.

Considering that the communications were taking place over Arkansas and we are in North Carolina, that's good DX!

The alternate UHF frequency is 296.8 MHz; 279.0 is also used from space suit to orbiter, but its 1-watt transmitter is too weak to be heard direct; fortunately, those communications are repeated on the other two frequencies when they are used.

The two UHF channels are used only intermittently, most often in association with EVA (extra vehicular activity) assignments. And don't expect to hear any direct transmissions from the shuttle if they are in an equatorial orbit and you are in the northern states; the low altitude of the shuttle and the curvature of the earth puts the line-of-sight radio signals over the horizon.

Remember, the shuttle completes one full orbit every 90 minutes; that's 4 degrees every minute, so it will be in radio range for only about 3-4 minutes.

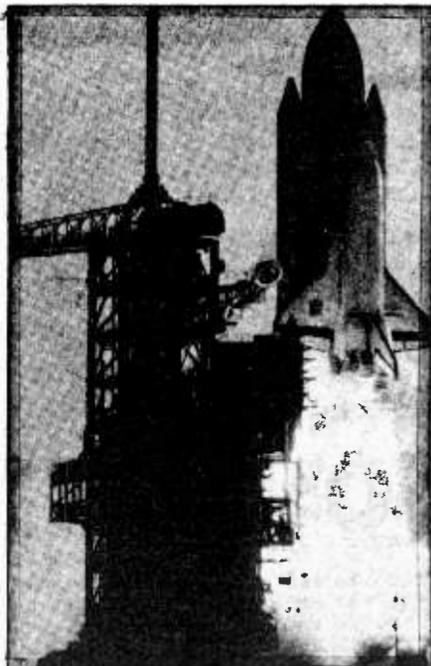
During polar orbits there are times when every location on the earth is in a favorable position to monitor the space shuttle communications; and shuttle missions will be more and more frequent. Get your equipment ready for the next launch!

HAM NETS CARRY**SHUTTLE TRANSMISSIONS**

While it is increasingly difficult for SWL's to pick up HF space-related NASA communications, two amateur club stations regularly rebroadcast shuttle communications during their missions.

Goddard Space Flight Center at Greenbelt, Maryland, and Johnson Space Center at Houston, Texas, both have active ham radio clubs, authorized by the FCC to rebroadcast the NASA audio links.

Listen for the trans-



missions on 3860, 7185 and 14295 kHz single sideband during space shuttle flights.

For direct NASA communications, prospective listeners might wish to tune to 5810 and 10780 kHz upper sideband, NASA's Cape Kennedy primary call-in frequencies for support ships and aircraft.

Solid rocket booster recovery ships are commonly heard on 7765 kHz upper sideband, and countdowns are reported there as well. The HF activity peaks an hour or two before liftoff, but disappears immediately thereafter.

For a complete list of NASA HF frequencies and identifiers, consult Bob Grove's **SHORTWAVE DIRECTORY** (\$12.95 from Grove Enterprises).

Presstime Newsbreak...**Radio Shack to Enter Home Satellite TV Market**

Monitoring Times has learned that Tandy Corporation is getting ready to announce a low-cost home satellite TVRO system. While the industry spokesman refused to provide additional details, it is expected that Radio Shack may attempt to break the \$1000 barrier in the downward trend in that volatile marketplace.

The system will be designed for the present 3.7-4.2 GHz band, still dominating the TVRO industry. The 12 GHz direct broadcast satellite (DBS) thrust has lost much of its steam with major contenders dropping by the wayside.

For those readers waiting for the higher frequency technology to spring up, better plan on investing in a 4 GHz system. It could be a long wait!

As dishes become smaller and low-noise amplifiers become cheaper, the present satellites are looking more attractive.

BEHIND THE DIALS**RTTY TUNING INDICATOR FROM AEA**

The TI-1 tuning indicator presents an economical (\$119.95) alternative to more expensive oscilloscope devices for accurately tuning in radioteletype signals.

Eminently simple to operate, the TI-1 plugs into the speaker jack of the receiver or transceiver and mark/space tones are displayed on an LED light bar.

Three positions of common shifts (170, 425 and 850 hertz) and their respective frequency offsets are switch-selectable from the front panel. A 12 volt power supply is required.

An internal speaker may be switched in for audible monitoring of the signal during tune-up if desired; parallel audio input jacks allow the addition of an external speaker if desired. This way, the unit may be left on line at all times, whether powered up or not.

A DC cord for attachment to your 12 volt supply and a 3.5 mm (1/8") audio plug are provided.

A LOOK INSIDE

The circuit is very straightforward. An EXAR

2211 FSK demodulator feeds its detected two-tone signals to two LM3914 LED light bar drivers.

Attached to our ICOM R-71A receiver, the TI-1 proved reliable and extremely easy to use. For additional information, contact one of the amateur radio equipment suppliers in MT or your local amateur radio dealer.

TI-1 RTTY TUNING INDICATOR**VLF CONVERTER FROM LF ENGINEERING**

Interested in extending the lower frequency range of your general coverage receiver down to 1 kHz? Then give serious consideration to buying the new L-101 VLF converter (\$49 from LF Engineering, 17 Jeffry Rd. Dept. MT, East Haven, CT 06512).

A two-FET circuit in a small (4" x 2" x 1-3/4") utility box provides excellent gain, sensitivity and image/intermod rejection.

NRD-515

JRC Japan Radio Co., Ltd.



The JRC NRD-515 offers more features and performance than any other receiver in its class. Exceptional selectivity and stability make this an excellent radio for RTTY and FAX reception. Designed for the serious DXer who demands the best!



NRD-515 Receiver .1-30 MHz.
\$995.00

NDH-518 96 Channel Memory
\$224.00

NCM-515 Keypad Controller
\$149.00

NVA-515 External Speaker
\$ 39.95

Call or write:

Universal Amateur Radio
Fred Osterman - SWL Dept.
1280 Aida Drive
Reynoldsburg, Ohio 43068
Phone: 614 866-4267



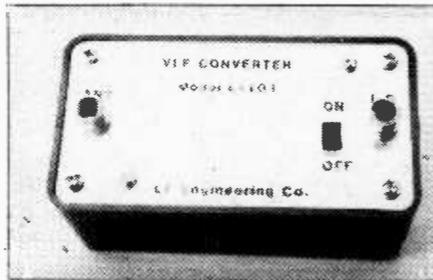
BEHIND THE DIALS cont'd

Connected to our R-71A test receiver, a 100 foot random wire antenna was able to pick up 10 kHz Omega navigational signals loud and clear.

Best of all, there was absolutely no trace of front-end overload from two local AM broadcasters, one on 600 kHz, right next to the top end covered by the nifty little converter.

In actual measurement, the rejection of the broadcaster was 45 dB, showing the steep cutoff characteristics of the three-section low-pass input filter.

Another neat feature: When the unit is switched off, the antenna is automatically re-routed back to the receiver so that the converter does not have to



be taken out of line. An internal battery delivers nine volts at only 2 milli-amperes, assuring long life even under extended use. An LED signals the converter's "on" status.

A crystal-controlled oscillator, accurate to 0.0025% (100 Hz), assures excellent stability.

Circuit design follows good engineering practice and quality of construction is excellent, utilizing glass-epoxy board and solder plating.

The L-101 is equipped

with RCA phono jacks for antenna and receiver connections, easily adapted to PL-259 use by plug-in UHF/Motorola adaptors available from Radio Shack.

An internal neon bulb protects the FETs from static burnout. But don't plan on pushing the mike button on your ham transceiver while using the converter or you'll be buying replacement parts!

For 3.5-4.0 MHz amateur transceiver applications, order model L-101/80; for 4.0-4.5 MHz receivers, specify L-101/70.

assists the operator in correct tuning of the desired signal. Mark and space filters also allow the attachment of an external oscilloscope for X-Y displays.

The rear apron exposes a wide assortment of jacks for interfacing the clever accessory to the equipment of your choice. A plug-in wall transformer is included, as are several plugs to affix to your cables.

The instruction manual is well written and liberally illustrated.



AEA RTTY/MORSE SYSTEM FOR THE COMMODORE 64

SWL-TEXT™

MORSE, BAUDOT RTTY, ASCII RTTY and AMTOR RTTY MODES
Receive Only Software with Automated Features developed especially for the SWL Enthusiast.

Just Look At Some Of These Features:

- * CW receive speeds from 5 to 99 wpm, auto speed track and lock.
- * 7 bit ASCII speeds from 45 to 300 bauds, preset and user set speeds.
- * 5 bit Baudot speeds from 60 to 132 wpm, preset and user set speeds.
- * TOR, ARQ MODE L. Allows reception of ARQ transmissions.
- * TOR, FEC MODE B. Allows reception of FEC Broadcasts.
- * Selects COMMAND MENU.
- * Selects OPTIONS MENU.
- * Selects TIMING ANALYSIS ROUTINE, AUTOMATICALLY DETERMINES RTTY SPEEDS.
- + Complete split-screen display with status information.
- + Allows RUSSIAN RTTY Reception.
- + Allows RUSSIAN and JAPANESE MORSE reception.

- * AUTOMATICALLY DETERMINES RTTY SPEEDS.
- * Indicates reception of data for BIT TEST.
- * Indicates bit inversion and transposition patterns from BIT TEST.
- * Indicates signal problems or non-standard data.
- * Speed of RTTY data in words per minute and bauds.
- * Indicates type of RTTY data, either ASCII or BAUDOT.
- * Indicates that the signal is NORMAL or INVERTED.

- * Allows the Timing Routine to be repeated.
- * Allows the use of an Alternative Timing Routine.
- * Samples data to determine bit inversion and transposition pattern.
- * Allows usage of Timing Analysis data with a single keystroke.
- + Complete Printer Control.
- + Complete Buffer Control.
- + CW SPEED LOCK for enhanced copy in noisy conditions.

- * 24 hour clock, displays time in hours, minutes and seconds.

- * Allows loading buffer from either DISK or CASSETTE storage.
- * Allows viewing of buffer in text format, no control characters.
- * Word processor type edit functions on buffer, normal file display.
- * Allows you to save buffer data to DISK or CASSETTE storage.
- * Allows setting the time of day clock.
- * Choose among any of 16 colors for each, Character, Screen & Border.

- + Now available for the COMMODORE 64 and VIC-20 Computers.
- + Complete with cables for the AEA CP-1 or MP-1 INTERFACES.
- + Keyboard overlays and manual.
- + For more information, contact your AEA Dealer or AEA.

AEA P.O. BOX MT-2160 • LYNNWOOD, WA 98036 • (206) 775-7373

One of the most sophisticated and effective systems we have ever seen for the shortwave enthusiast has been released by Advanced Electronics Applications, Inc. of Lynwood, Washington, and is now available from AEA dealers such as those who announce their services in the pages of MT.

The combination is the SWLTEXT (an EPROM) and CP-1 Computer Patch (interface).

THE CP-1 (\$199.95)
Handsomely constructed in an all-metal cabinet, grey and black with the AEA blue highlighting signature, the CP-1 houses a sophisticated and flexible signal processor.

While the CP-1 is intended for both ham (transceive) and SWL use, we will concentrate on the receive-only functions since this application is of greatest interest to our readers.

The CP-1 Computer Patch plugs into the receiver's headphone or external speaker jack and converts audio signals into TTL level and RS-232 signals in order to be understood by your computer. A variety of plug-in software is available for many of the home computers on the market today.

Controls on the CP-1 include a filter selection (170 hertz fixed, or continuous-tuning variable shift) for the many types of RTTY systems encountered as well as CW tones. In the variable mode, center frequencies from 100-1000 hertz may be selected.

An LED light bar graph

SWLTEXT-64 (\$99.95)
Hardly bigger than a cassette, the plug-in EPROM cartridge for the Commodore 64 is the most powerful package ever available for communications use.

A variation on the eminently-successful amateur MAP ROM from AEA, the SWLTEXT comes with a printed overlay for the C64 keyboard. An interconnecting cable is included.

While the vast majority of the program can be run on the C-64 alone, the use of a cassette or disk I/O is recommended to realize the total potential of the AEA package.

The SWLTEXT allows text display on your C-64 screen of RTTY (60, 67, 75, 100 and 132 WPM), ASCII (110, 150 and 300 baud), TOR (FEC and ARQ), amateur and commercial), and Morse code (5 WPM and above).

But the multimode capability is just the frosting on the cake; just take a look at the following list of additional perks: text editing, word wrap, automatic carriage return/line feed, time of day clock, printer output, cassette/disk dump/retrieve, RTTY unshift on space (UOS), buffer on/off, keyboard audio feedback, dedicated function keys, screen color selection, bit inversion and transposition for RTTY encryption and decoding, RTTY timing analysis, Russian third-shift Cyrillic RTTY, and Russian and Japanese Morse reception!

Program documentation



The first no-crystal hand-held scanner.



Now you can have the one scanner you've always wanted—a no crystal, fully synthesized hand-held scanner. The incredible, Uniden® Bearcat® 100.

Push button programming.

The Uniden® Bearcat® 100 works just like the full size, no crystal Uniden® Bearcat® Scanners. Push button controls tune in all police calls, fire calls, weather warnings, and emergency information broadcasts, the split second they happen. Automatically.

All the features you want.

16 channels for storing frequencies. 8 band coverage—including high, low,

UHF and "T" public service bands; both the 70 cm and 2 meter amateur bands; plus, for the first time ever, both the military and federal government land mobile bands. Both automatic and manual search, lockout, scan delay, direct channel access. Even a liquid crystal display. Flexible antenna, ear-phone, AC adapter/battery charger and carry case are included.

Your Uniden® Bearcat® Dealer wants to hand you an earful.

See your Uniden® Bearcat® Dealer now for a demonstration of the amazing Bearcat® 100. Get complete information about the world's first hand-held, no crystal scanner.

SCAN's 30,000 members know what others miss! Insider news. Frequency info. Tech tips. Awards. SCAN Magazine...and more! Send \$12 for 1-year membership to the Scanner Association of North America, 240 Fencil Lane, Hillside, IL 60162.

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Bearcat®

Uniden® Corporation of America, Personal Communications Division
6345 Castleway Court, Indianapolis, IN 46250
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To find out more about where to buy the Uniden® Bearcat® 100 or other Uniden® Bearcat® Scanners, call 1-800-S-C-A-N-N-E-R toll free.

BEHIND THE DIALS cont'd

is included to help the newcomer adjust to the enormous flexibility of the program which may at first glance be slightly intimidating. However, after a few minutes of successful copy, the AEA package rapidly becomes addictive!

RECEIVER PROTECTION FROM DESIGN ELECTRONICS AND ALPHA DELTA

Few questions come through our offices as often as "How can I protect my receiver from lightning?" Equally important is, "How can I protect my receiver from nearby transmitters?"

Fortunately, there are two companies which produce excellent solutions to these common problems.

RECEIVER GUARD

Design Electronics Ohio (4925 S. Hamilton Rd., Groveport, OH 43125) has introduced their "Receiver Guard 2000", a modern version of a classical circuit. Consisting of a pair of cross-polarized signal diodes and a series incandescent lamp, the 2000 is available in three models: model P with phone plugs

(\$29.95); model U with SO-239 connectors, as pictured in adjacent ad (\$29.95); and the CTT which is the model U with an integral Alpha Delta "Transi-trap" (see description below; \$49.95). Include \$4 for shipping.

A Look Inside

Designed for 1.8-30 MHz and housed in an all-metal die-cast box, the 2000 has less than 0.3 dB insertion loss. Lower level (above one volt) overload signals are clipped by the two diodes while higher power levels from nearby transmitters are dissipated by the filament in the internal lamp which can act as a fuse, opening under excessively high antenna voltages.



TRANSI-TRAP

Alpha Delta Communications (P.O. Box 571, Centerville, OH 45459) is the first company to make use of the ceramic gas tube lightning protectors now widely employed in the telephone

NEW ARRIVALS

EXTERNAL ANTENNAS FOR THE EARLY BC-100

Owners of the early Bearcat 100 hand-held programmable scanners are frequently stymied by the absence of an antenna connector for hooking up an external antenna in place of the screw-in rubber duckie.

industry.

Fast reaction time (better than 100 nanoseconds) and high crowbar current ability (thousands of amperes). At normal operating conditions there is a resistance of some 10,000 megohms to ground; a 30 volt or greater potential will reduce this to only a few milliohms, shorting the spike to ground to before it has an opportunity to injure the delicate solid-state components in the front of your receiver.

The model R-T, equipped with standard UHF coax connectors, shows an SWR of only 0.1 dB at 500 MHz and can be used with scanners or shortwave receivers. It sells for \$29.95 plus \$2 shipping.

One excellent source for an effective adaptor is Centurion International (P.O. Box 82846 Dept MT, Lincoln, NE 68501; phone 402-467-4491). Their model BC-BN is a screw-in adaptor which terminates in a standard BNC connector suitable for attaching the new Grove ANT-8 full-length telescoping whip for extended range, or coax from an external antenna.

Cost of the BC-BN is only \$7.50 plus shipping. Contact Centurion for additional information.

UPDATE ON NEW SCANNERS

A few surprises will be in store for scanner enthusiasts in 1985. Several Uniden Bearcat models are expected to be shown at the Consumer Electronics Show in Las Vegas this coming January, as will new products from Fox Marketing (their new Tracer series).

News from Regency is that the anticipated MX7000 will be delayed until after the first of the year. Problems with spurious signals ("birdies") are suspected by industry spokesmen.

CLUB CORNER

**Paul Swearingen
7310 Ensign Ave
Sun Valley, CA 91352**

I've very quickly developed a backlog of information from DX organizations which have sent me items, so let's get right to the good stuff.

ANARC, of course, is the umbrella organization for North American DX Clubs, and its counterpart in Europe is the European DX Council, or EDXC, which includes about 30 clubs in and outside of Europe.

Nineteen of these are member clubs and 11 are observer member clubs, with six broadcasting organizations sponsoring EDXC: Adventist World Radio Europe, the BBC, Austrian Radio (ORF), Radio Nederland Wereldroep, Radio Sweden International, and Spanish Foreign Radio (REE).

Various publications of interest to DX'ers and SWL's are made available by the EDXC, including their Land List adopted by many DX clubs. It publicizes its own activities and gives wider publicity to its member clubs through "Euro DX," published 10 times yearly, and various programs broadcast over international radio stations.

The EDXC Progress Report is broadcast every other month on Shortwave Listeners Digest over Radio Canada International. EDXC's

next Annual Conference will be held in Madrid May 24-27, 1985.

Secretary General Michael Murray notes that the renewal date for the newsletter is January of each year, with the current cost being 14 IRC's in North America, although with a possible postage hike coming up it would be best to ask for a sample copy and current subscription rates. Send 3 IRC's to P.O. Box 4 - St. Ives Huntingdon - Cambs PE17 4FE - England.

If you are learning a European language other than English, you could practice your reading techniques and gain valuable DX information by subscribing to a DX bulletin, and EDXC's club list will guide you to the right clubs.

A North American club which arose, phoenix-like, from the ashes of the old Newark News Club, is the Association of DX Reporters, now in its third year of publication of "DX Reporter." Based in Baltimore, ADXR covers all bands except perhaps longwave and, as a general-purpose club, is an excellent one to join if you are interested in more than

RF OVERLOAD PROTECTION RECEIVER GUARD 2000

Lightning and static are not the only enemies of modern receivers! Sensitive receiver "front-ends" can also be damaged by nearby high power radio signals from the ham across the street, CB operators running illegal power, commercial radio & TV broadcasters, and public service broadcasters. We have developed a series of diode-activated devices which will switch your antenna automatically to ground in the presence of a high-power RF field. The Receiver Guard 2000™ series offers protection with very low insertion loss. All but a replaceable protection element is covered by a five year limited factory warranty. The "U" model uses standard SO-239 connectors (mates with PL-259s). Made in USA.



Receiver Guard 2000 "U"
(for standard PL-259 coax connectors) \$29.95/\$3.25 UPS

Receiver Guard 2000 "P"
(Not shown. RCA-type phono connectors).....\$29.95/\$3.25 UPS

The Receiver Guard 2000 model CTT combines the model "U" version with an Alpha Delta LT Transi-Trap™ device to offer both RF and lightning protection. This combination offers the maximum protection.

Receiver Guard 2000 "CTT"
\$ 49.95/\$3.50 UPS



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DESIGN ELECTRONICS OHIO
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CLUB CORNER cont'd

one band and can't afford to join more than one or two clubs.

In addition to the usual DX reports, "DX Reporter" contains mailbag items from members, miscellaneous articles selected from the press, and other items. Their broadcast band sections (domestic and foreign) have continued in the tradition of the NNRC in being very comprehensive. Annual dues are \$15 per year in NA; send them to 7008 Plymouth Road - Baltimore, MD 21208.

One of the most respected DX clubs is the American Shortwave Listener's Club (ASWLC), now in its 25th year. Dedicated to "World Friendship Through Shortwave," the club's main activity is publication of the monthly bulletin "SWL."

Although the main coverage in SWL is shortwave broadcasting, comprehensive columns on utilities and broadcast band DX are included, as well as articles on computers, various features, editorials, the time index of hour-by-hour loggings, and the QSL corner, which includes tips on pennants, stickers, decals, IRC's, and

HAP activities.

SWL is the official news source for the "DX Party Line" over HCJB. The club features a special reduced membership rate for those up to 16 years of age. For membership information and a sample bulletin, send \$2 to General Manager Stewart MacKenzie - 16182 Ballard Lane - Huntington Beach, CA 92649.

MT would appreciate it, of course, if you'd mention this column when you send inquiries to various clubs, and I'd like to know from clubs if you're getting any responses as a result of our listings. Also, if you're an officer in a club which has not yet received coverage in Club Corner, forward a copy of your bulletin and membership information to the address at the head of the column.

Finally, occasionally here in Southern California DX'ers will almost spontaneously get together and DX or just chew the fat. Most of these meetings are on such short notice that they receive no printed publicity. If you live near LA and would like for me to give you a call or drop you a note when these meetings come up, send me a request by letter. And if anyone else around the country would like to serve as a focal person for similar gatherings, let me know. Who knows...a new DX club might evolve from such a meeting!

Our next deadline, for the January issue, is December 10. And until next time, the best of DX to everyone!



WHAT IS ANARC?

The Association of North American Radio Clubs (ANARC) was founded in 1964 as a uniting organization for the non-profit hobby radio listening clubs in North America. All ANARC member clubs are reliable, responsible volunteer organizations. Full member clubs are generally older and larger than Probationary member clubs, but both groups meet ANARC's membership standards.

ANARC's objectives are to promote closer ties among radio clubs, to promote the interchange of information and ideas among member clubs, to work for the common good of the hobby, and to provide a medium to speak out for radio clubs and listeners in North America.

ANARC holds an annual summertime convention at a different site in North America each year. Listeners from all over the world attend the convention, which is usually three days long and filled with discussions, demonstrations, exhibits, speeches, and presentations. ANARC conventions offer unique opportunities for listeners and broadcasters to meet with others who share their hobbies, interests, and professions.

ANARC publishes a monthly newsletter of interest to SW listeners. A subscription to the monthly ANARC NEWSLETTER is available for \$7.50 in NA; \$10.00 elsewhere.

Sample copies are 60 cents and a SASE in USA; 75 cents in mint stamps in Canada or 4 IRCs elsewhere. Additional copies of the ANARC CLUB LIST are available for 25 cents and a SASE in the USA; 50 cents in mint stamps in Canada or 3 IRCs elsewhere. These publications may be ordered from

ANARC PUBLISHER, 1500 BUNBURY DRIVE, N. WHITTIER, CA 90601, U.S.A.

TERMS AND ABBREVIATIONS USED IN THIS LIST

- DUES:** Annual membership fee, which includes receipt of the club's publication. North American amount applies to USA, Canada & Mexico. Overseas amount applies to the rest of the world. All fees are in US currency unless otherwise specified. Overseas fees include airmail delivery unless otherwise indicated.
- HQ:** Club headquarters address.
- IRC:** International Reply Coupon - available at most post offices.
- LW:** Longwave band
- MW:** Mediumwave (AM) band
- NA:** North America
- Sample:** Sample copy of the club's publication.
- SASE:** Self Addressed Stamped Envelope, business size (#10).
- SW/SWL:** Shortwave/shortwave listener/shortwave listening.

AMERICAN SHORTWAVE LISTENERS CLUB (ASWLC) Founded in 1964
 Address: 16182 Ballard Lane, Huntington Beach, CA 92649 USA
 Coverage: SW, MW, utilities
 Publication: "SWL", monthly
 Dues: \$18.00 worldwide, first class or surface mail
 Sample: \$2.00; overseas 8 IRCs

ASSOCIATION OF CLANDESTINE radio ENTHUSIASTS (A* C* E.) Founded in 1981
 Address: P.O. Box 452, Moorehead, MN 56560 USA
 Coverage: Clandestine and pirate stations
 Publication: "ACE", monthly
 Dues: USA \$8.50; Canada/Mexico \$9.00; overseas airmail \$14.00; overseas surface mail \$11.00.
 Sample: \$1.00

CANADIAN HANDICAPPED AID PROGRAM (CHAP) Founded in 1972
 Address: P.O. Box 1143, Pointe Claire, PQ H9S 4H9 Canada
 Coverage: Same as HAP-USA
 Publication: Same as HAP-USA
 All physically handicapped and shut-ins residing in Canada are eligible for membership. Write to CHAP HQ for details of services

CANADIAN INTERNATIONAL DX CLUB (CIDX) Founded in 1962
 Address: 6815 12th Avenue, Edmonton, AB, T6K 1J6 Canada
 Coverage: All wave
 Publication: "CIDX Messenger", monthly
 Dues: USA \$18.00, Canada C\$19.00, elsewhere \$23.00 (in Canadian funds)
 Sample: NA \$1.00; overseas 4 IRCs

CLUB ONDES COURTES DU QUEBEC (COCQ) Founded in 1974
 Address: C.P. 37, Succ. Youville, Montreal, PQ H2P 2V2, Canada
 Coverage: SW, MW, ham, utilities
 Publication: "L'Onde", monthly (in French)
 Dues: Canada/USA \$29.00; elsewhere \$31.00
 Sample: NA \$1.50; overseas 5 IRCs

HANDICAPPED AID PROGRAM USA INC. (HAP-USA) Founded in 1972
 Address: 2105 N. Illinois, Arlington, VA 22205 USA
 Coverage: Promotes shortwave radio for the physically disabled and housebound, through education and services.
 Publication: "HAP-pennings", monthly (center insert of ANARC Newsletter); extensive cassette tape library available to members
 Dues: None to qualified members
 Sample: Not available. All physically handicapped persons in USA are eligible for membership. Write HAP-USA for details of services.

INTERNATIONAL RADIO CLUB OF AMERICA (IRCA) Founded in 1964
 Address: P.O. Box 26254, San Francisco, CA 94126 USA
 Coverage: MW
 Publication: "DX Monitor", 34 issues annually
 Dues: \$20.00 USA & Surface Mail overseas; \$26.00 to Canada. \$27.00 airmail to Central America, Colombia, Venezuela and the Caribbean; \$30.00 to the rest of Latin America, W. Europe, N. Africa and the Middle East; \$34.00 to the rest of the world.
 Sample: NA \$0.50, overseas 3 IRCs

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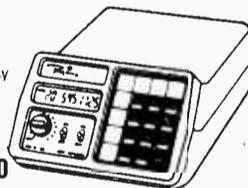
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20 ch, covers 25-550 mhz continuous. Scan, delay, search priority, led display, clock, display light, has AM/FM/WFM modes. Search up/down, dual speeds. much more!! IN STOCK!

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R-2000 KENWOOD R-2000

100 khz 30 mhz, 10 memories store frequency & mode, will scan, search. Has full AM/FM/CW/USB/LSB capabilities. Digital readout, plus much more!!

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ICR-71A

100 khz 30 mhz, 32 programmable memories, manual or keyboard entry. PBT has 2 3 ssb filter pre amp, scans. much more!! IN STOCK!

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HX-1000

30 ch covers 28-54 136-175 400-515 mhz. Scan, search priority, led display, delay, clock. ONE WATT AUDIO. much more!! IN STOCK!

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 R-600 150 khz-30 mhz, Digital Receiver. 344.50
- ICOM**
 ICR-71A 100 khz-30 mhz, Digital, 32 Memory. 669.50
- PANASONIC**
 RF-799 AM/FM/SW, Digital, 10 Memories, More!! 229.50
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 RFB-300 1.6-30 mhz, Digital, S/Meter, More!! 214.50
 RFB-600 1.6-30 mhz, Digital, Memories, Scans. 429.50
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 SONY 2002, AM/FM/SW, Digital, Memories, Scans. 219.50
 BEARCAT DX-1000 10 khz-30 mhz, MEM/DIGITAL. 474.50
 NRD-515 1 khz-30 mhz, Digital Receiver. 949.50
 RADIO TAP CW/RTTY DECODER FOR COMM-64. 189.50
 RADIO TAP CW/RTTY DECODER FOR VIC-20. 189.50
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 BC-201 16ch, 30-50, 118-174, 406-512 + REBATE* 214.50
 BC-210 18ch, 30-50, 144-174, 421-512 + REBATE* 229.50
 BC-20/20 40ch, 30-50, + AIR+ -512 + REBATE* 289.50
 BC-250 50ch, 30-50, 144-174, 420-512 (SPECIAL) 265.50
 BC-260 16ch, 30-50, 138-174, 405-512 + REBATE* 269.50
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TLL 11-25-84

- LONGWAVE CLUB OF AMERICA (LWCA)** Founded in 1974
Address: 45 Wildflower Road, Levittown, PA 19057 USA
Coverage: LW
Publication: "The Loudness", monthly
Dues: NA \$10.00; overseas \$18.00
Sample: NA \$0.85; overseas 5 IRCs
- MIAMI VALLEY DX CLUB (MVDIC)** Founded in 1973
Address: 4666 Larkhall Ln., Columbus, OH 43229, USA
Coverage: All wave, with emphasis on SW
Publication: "DX World", monthly
Dues: NA \$7.00; overseas write to HQ for rates.
Sample: NA \$0.75; overseas 6 IRCs
- MINNESOTA DX CLUB (MDIC)** Founded in 1973
Address: 5212 Drew Ave. South, Minneapolis, MN 55410 USA
Coverage: SW, MW, utilities
Activities: Meetings are held monthly in the Minneapolis area
Send a SASE for dates and details. "MDIC Newsletter" sent to members only. Membership limited to residents of Minnesota
- NATIONAL RADIO CLUB (NRC)** Founded in 1933
Address: P.O. Box 118, Poquonock, CT 06064 USA
Coverage: MW
Publication: "DX News", 30 issues annually
Dues: USA \$20.00; Canada \$21.00; other countries write to HQ for details and rates
Sample: NA \$0.60; overseas 3 IRCs
- NORTH AMERICAN SHORTWAVE ASSOCIATION (NASWA)** Founded in 1961
Address: 45 Wildflower Rd., Levittown, PA 19057, USA
Coverage: SW
Publication: "FRENDY", monthly.
Dues: NA \$16.00; Cent.Am/Carib./S. America/Europe \$25.00
Africa/Asia/Pacific \$28.00; worldwide by surface mail \$16.00
Sample: NA \$1.00; overseas \$2.00
- ONTARIO DX ASSOCIATION (ODXA)** Founded in 1974
Address: P.O. Box 232, Station Z, Toronto, ON M5N 2Z4, Canada
Coverage: SW, MW
Publication: "DX Ontario", monthly
Dues: Canada and USA \$20.00; elsewhere \$25.00
Sample: \$1.50 worldwide
- RADIO COMMUNICATIONS MONITORING ASSOCIATION (RCMA)** Founded in 1975
Address: P.O. Box 542, Silverado, CA 92676, USA
Coverage: VHF/UHF public service bands, SW utilities
Publication: "RCMA Newsletter", monthly
Dues: USA \$16.50; Canada/Mexico \$18.50; Europe \$20.00; Asia/Pacific \$21.50
Sample: NA \$1.00, overseas 6 IRCs
- SOCIETY TO PRESERVE THE ENGROSSING ENJOYMENT OF DXING (SPEEDY)**
Founded in 1971
Address: 7738 E. Hampton, Tucson, AZ 85715, USA
Coverage: SW, utilities
Publication: "SPEEDY", monthly
Dues: NA \$18.00; Carib/Cent.Am \$24.00; Europe/S.Am \$28.00; Asia/Pacific/Africa/USSR \$31.00; surface mail worldwide \$18.00
Sample: NA \$1.50; overseas \$2.00 or 8 IRCs
- WASHINGTON AREA DX ASSOCIATION (WADIA)** Founded in 1978
Address: 606 Forest Glen, Silver Spring, MD 20901 USA
Coverage: SW, MW, utilities
Publication: "WADIA News", quarterly
Activities: Meetings held regularly in the Washington, DC area
- WORLDWIDE TV-FM DX ASSOCIATION (WTFDA)** Founded in 1967
Address: P.O. Box 514, Buffalo, NY 14205 USA
Coverage: TV, FM, VHF/UHF public service bands.
Publication: "VHF/UHF Digest", monthly
Dues: NA \$15.00; overseas \$24.00
Sample: NA \$1.00; overseas 6 IRCs

***** ANARC PROBATIONARY MEMBER CLUBS *****

ASSOCIATION OF DX REPORTERS (ADXR) Founded in 1982
Address: 7008 Plymouth Rd., Baltimore, MD 21208
Coverage: Allwave
Publication: "DX Reporter", monthly
Dues: NA \$15.00; overseas surface mail \$17.00
Sample: \$1.00

***** ANARC AFFILIATE ORGANIZATIONS *****

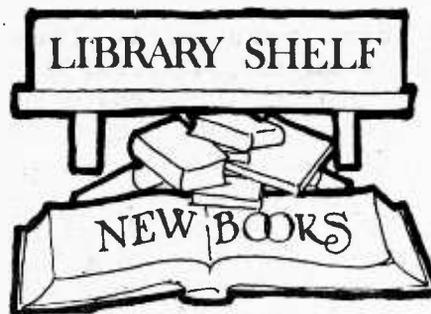
EUROPEAN DX COUNCIL (EDXC) Founded in 1965
Address: P.O. Box 4, St. Ives, Huntingdon, Cambs PE17 4FE, England
Coverage: EDXC is the European equivalent of ANARC
Publication: "EDXC Newsletter", 10 times per year
Dues: Send 3 IRCs for list of member clubs

SOUTH PACIFIC ASSOCIATION OF RADIO CLUBS (SPARC) Founded in 1982
Address: P.O. Box 1313, Invercagill, New Zealand
Coverage: SPARC is the equivalent of ANARC in the South Pacific
Dues: Send 3 IRCs for list of member clubs

IMPORTANT NOTICE!

From time to time, for varying reasons beyond our control, our member Clubs must raise, (in some cases, lower) their dues and also change the location of their Headquarters' address and although we do our best to keep up with these changes through their input, the normal revision schedule of this Club list is that of twice a year. In extreme circumstances we will update it more often, but we must advise you on two very important points:

- 1) Check FIRST with the Club of your choice to see if there have been any significant changes in either dues or HQ address, before you send any funds for membership.
- 2) Last but certainly not least, if you require an answer to a specific question or problem, please include with your request a SASE (Self Addressed, Stamped Envelope, #10 business size, preferably), because none of these clubs are profit making enterprises and with postage costs rising so much, your gesture will be greatly appreciated as well and will surely get you a speedy answer. Good luck, and happy DXing!



THE BEST OF MONITORING TIMES: 1982 and 1983, edited by Bob Grove (8-1/2" x 11", 56 and 80 pages respectively, softbound, \$8.95 and \$9.95 each or \$15 for both with free book rate shipping from Grove Enterprises, P.O. Box 98, Brasstown, NC 28902).

Approximately 100 of your favorite articles to appear in the pages of MT in its first two years of publishing, updated where necessary. The most popular articles we have ever published and still in high demand--technical topics, programming scanners out of band, monitoring Air Force One, laws about listening, monitoring the space shuttle, military communications, insights into international broadcasting, TV and communications satellites, drug smuggler communications, ship to shore and aircraft radio, equipment modifications and home-built projects, antennas, equipment reviews and much, much more.

CONFIDENTIAL FREQUENCY LIST by Oliver P. Ferrell, 6th edition (6" x 9", 304 pages, softbound; \$13.95 plus \$1.00 shipping from Gilfer Associates, P.O. Box 239 Dept MT, Park Ridge, NJ 07656).

Posthumously published, this last edition of Perry Ferrell's CFL retains the integrity of his previous works. Better yet, it also contains the RTTY guide which was previously published as a separate book.

All data are arranged in frequency order, from 4 to 28 megahertz, and includes mode, call sign, location, service, power and remarks to further identify the listed user.

Services in the aeronautical, military, government, maritime, common carrier and industrial are included.

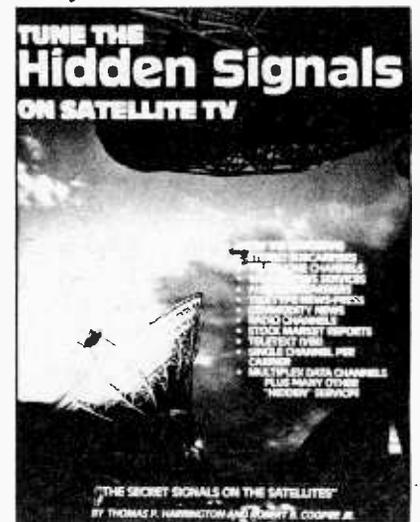
THE HIDDEN SIGNALS ON SATELLITE by Thomas P. Harrington and Bob Cooper, Jr. (179 pages, 8-1/2" x 11", paperbound; \$14.95 including shipping from Grove Enterprises, P.O. Box 98, Brasstown, NC 28902)

The most carefully guarded secret of satellite TV is now out. Hidden

between the entertainment channels is a world of two-way communications intrigue and special subscriber services.

Stock market reports, long distance telephone, news and press teletype, business teleconferencing, scientific dialog, special sports events, background music and National Public Radio -- all regular listening fare if you are properly equipped. And this book tells you just how to do it!

If you have satellite TV setup, or plan to install one, you can't afford to be without this information-packed book which will open a new horizon of monitoring for you.



MONITORING AMERICA edited by Rick Prelinger (5-1/4" x 8-1/2", 592 pages, paperbound; \$14.95 including book rate shipping from Grove Enterprises, P.O. Box 98, Brasstown, NC 28902)

Comprehensive both in depth and breadth of content, MONITORING AMERICA delivers what its title promises: an intense, concise listing of the most productive frequencies in use across the country, both for scanners and AM/FM radios as well. Let's take a look at Florida as an example.

Law enforcement frequencies and channelization plans; turnpike unit numbers and post identifiers with channels, dispatch signals; State agencies, educational institutions, amateur repeaters, hotel and shopping mall security, airports, AM and FM broadcasting frequencies and program formats, Cape Kennedy space shuttle operations, Walt Disney World, and more--all conveniently arranged by location for optimum referencing. (See adjacent ad.)

Special nationwide tables list frequencies for CAP, HEAR, Red Cross, racing and sports teams, entertainment companies.

A massive undertaking and expertly successful; highly recommended.



LIBRARY SHELF cont'd

39 ONE-EVENING ELECTRONIC PROJECTS by Robert J. Traister (172 pages, 5" x 8", softbound; \$9.95 from TAB Books, Dept. MT, Blue Ridge Summit, PA 17214).

Got your soldering iron hot? If you're ready to learn some basic techniques in electronics and finish up with clever, (almost) fool-proof one-evening projects, then this little handbook is for you.

Test circuits, crystal oscillators, simple radios, audio oscillators, power supplies and converters, miniature transmitters, dummy loads, audio amplifiers--just a taste of the tantalizing simple projects in this affordable book from TAB.

FOX SCANNER RADIO LISTINGS edited by Norm Schrein (130 pages, 8-1/2" x 11", softbound, \$9.95 from Fox Marketing, 4518 Taylorsville Rd. Dept MT, Dayton, OH 45424.)

Yes, our own "Tune in Canada" Norm Schrein has been busy again. These latest two scanner directories from Fox cover the Columbus, Ohio, area (most of southern Ohio) and Fort Wayne, Indiana/Lima, Ohio area.

As always, the listings

have been meticulously researched, verified by on-air listening whenever possible. And as with all Fox directories, listings are cross-referenced by frequency, licensee, and type of service.

A special Alaska directory has just been released from Fox, containing 205 pages of previously-unpublished data. A wealth of hot information from our coldest state.

WORLD STATUS MAP (11" x 17", double-sided, glossy; subscription \$36 per year from WSM Publishing Co., P.O. Box 2533 Dept MT, Fairfax, VA 22031)

For those listeners--and travelers--who wish extremely timely information regarding State Department traveler advisories, war zones and danger areas, disease areas and quarantine information, passport and visa hints and other pertinent data, this is a handy publication.

Suitable for posting, the three color map shows world country borders with comments of current interest. A single sample is \$4.50

LONG WAVE UPDATE Edited by Ken Stryker (12 pages, 5-1/2" x 8-1/2", paperbound).

In 1980 the late H. John Clements published his

last edition of the popular Beacon Guide, a comprehensive list of 190-512 and 1550-1921 kHz navigational beacons to be heard worldwide.

Ken Stryker has since taken on the laborious responsibility of tying together all of the loose threads to periodically update the directory, and this latest publication shows his success.

Thousands of listings are cross referenced by frequency and call letters (in the guide and updater), and additional information such as location and nature of beacon are included.

For a copy of the BEACON GUIDE and updater send \$7 to Century Print Shop, 6059 Essex Street Dept MT, Riverside, CA 92504. And for additional information on monitoring the low frequency bands, write to the Longwave Club of America, 45 Wildflower Rd., Levittown, PA 19057. A subscription to their newsletter, LOWDOWN, is \$10 per year.

DISCOUNT AMERICA GUIDE: DIRECTORY OF COMMUNICATIONS EQUIPMENT DISCOUNTERS (31 pages, 8-1/2" x 11", paperbound; \$3.30 from Discount America Publications, 51 East 42nd St., Room 417T, New York, NY 10017).

Most Americans live far from major metropolitan

areas where cut-throat discount rules the day. Mail order then becomes a way of life. A series of discount source directories covering tools, travel, automobiles, printing, publications, music, hobbies, appliances and other needs are available from this publisher.

We sampled their communications directory and found well over 100 mail order discount dealers listed with products and services for the radio hobbyist. A helpful section on consumer laws to protect the mail order recipient was also included.

SHORTWAVE FACSIMILE FREQUENCY GUIDE by Joop Balneger and Michiel Schaay (8" x 12", 64 pages, softbound; \$14.95 plus \$1.75 shipping from Universal Electronics, 1280 Aida Drive Dept MT, Reynoldsburg, OH 43068).

Anything written by Netherlands' Michiel Schaay is bound to be carefully-researched and accurate; this latest publication is no exception. With sample facsimile photos, letters from the agencies monitored, and an introduction regarding equipment, the FAX DIRECTORY additionally provides frequencies and schedules for dozens of facsimile stations worldwide. A comprehensive listing by frequency is included.

Finally

a highly detailed and accurate National Scanner Manual

- State Police/Highway Patrol
- Civil Defense
- National Parks/Forests/Minmmts
- State Transportation/Highway

- Ham C.D./Emergency Nets
- News Media/Traffic Copters
- Hollywood
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- Sports Teams
- Amusement Parks

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BROADCASTING.

HANK BENNETT ON SHORTWAVE

ECHOES FROM THE PAST - CONTINUED

Last month we began a series of questions of nostalgia interest and we're continuing them this month. Readers will recall that in the October issue I mentioned a duck salesman and you'll also find this as the first question in the November column.

While there hasn't been sufficient time to receive replies on the November questions, we did receive an interesting letter from Donald L. Sass, somewhere in the air (he was flying at the time but his home is in Tigard, Oregon). He correctly identified the duck salesman as Joe Penner, a comedian from many years ago who had as his pet line "Ya wanta buy a duck?" to any unsuspecting soul.

There was another one but time has faded our memory. Perhaps someone can assist - Do you remember another radio personality named Phil Cook? He, too, may have been a comedian. By the way, to correct any possible thoughts about the source of our stumpers, we have not made reference to any existing publication on any of our questions. They're all "home-brewed."

Here we go with this month's batch and again we ask you to send in your replies numbered as we have numbered the questions. All replies, please, to Hank Bennett, P.O. Box 3333, Cherry Hill, New Jersey 08034.

31-What is the presently-announced location of WOR-TV, channel 9?

32-What was the beer, supposedly plugged by comedian Henry Morgan, that was said to have the foam on the bottom?

33-On what show was the Kingfisher?

34-Who played the part of Baby Snooks?

35-Eddie Cantor introduced many people on his radio program. Name a lad with a high singing voice and the initials BB and a lass with a beautiful voice and the initials DD.

36-Who brought in New Years Eve for many years?

37-What old radio show had names of playing cards in their title?

38-A very popular male singer of many years ago had the initials MD.

39-On what station (or stations) were the Adams Singers once heard?

40-Who was Eddie Startz?

41-A very popular female singer, along with Winston Churchill, were once claimed to be the two people who kept England afloat during World War II. She is still in great demand today. Who is she?

42-Another very popular singer, now deceased, has the name of Harry Louis ... Who was he?

43-Two singers who often teamed together on popular and semi-classical music on the old Arthur Godfrey Show. Who were they?

44-Who was the announcer on the Garry Moore show?

45-Name at least one female singer on the Garry Moore show.

46-What was the Golden Terror of old radio days noted for? Name his profession and the reason behind his title?

47-Does anyone remember the Mariners? On what show were they heard primarily?

48-Who is considered to be the world's oldest radio columnist in terms of continuous service? (Perhaps in age as well.)

49-A young lady from Paulsboro, New Jersey, made a recording. She probably also made a flip side though I've never heard it. The first side was an instant and top hit. To my knowledge she never made another recording. Name the singer and the record.

50-Who were the Bickerson's? Who played the parts?

51-Who was considered to be the King of Jazz?

52-In years past many radio stations would have a five-minute newscast at 11 P.M., often sponsored by ESSO, then go into a form of programming that is virtually non-existent today. Any guesses?

53-What radio station once used the slogan "The World's Playground"?

54-What radio station once used the slogan "The World's Foremost Playground"?

55-Has anyone ever received a QSL card or letter solely from WBZA in Springfield, Massachusetts?

This will conclude another batch of stumpers. Try your hand at answering them and good luck. And to all of our readers, best wishes for the upcoming Christmas and New Years holidays.

ENGLISH LANGUAGE BROADCASTS

by Tom Williamson

UPDATE - PACIFIC/ASIA

It isn't easy to obtain current information and news from these areas of the world, and short-wave monitoring is often limited by inadequate station performance. Potential sources of news like All India Radio, the Voice of Indonesia, Radio New Zealand, and even Radio Japan, are all uncertain in their "service" aspect due to inadequate power or lack of suitable frequencies.

So, to take a look at the area realistically, we must turn to the programming of RADIO BEIJING CHINA or RADIO AUSTRALIA.

RADIO BEIJING (formerly Peking)

Despite some problems with long-path transmissions, Beijing has continued to provide quite consistent reception to North American over their 19 and 31 meter channels.

They have services to our east coast from 0000-0300 on 11650-15385-15520 kHz; then from 1100-1300 over 11650-9820 kHz.

To the west coast they are on from 0300-0500 on 17795-15385-15520 kHz.

Here are some of the program highlights:

SUNDAY-China Anthology: this is a commentary/profile type of program about historic events in China (such as the Epic Long March) or personalities. It's similar to Profile (interviews with coach of Olympic volleyball team; director of a clothing fac-

tory, etc.)

MONDAY-Across The Land; Chinese Cooking; Learn to Speak Chinese

TUESDAY-Travel Talk; Listeners Letterbox (rebroadcast of a Sunday program; they also have a fortnightly "Listeners Calling" program (Fridays) and both of these seem to feature propaganda about old Chinese inventions, modern products, and artistic achievements.

WEDNESDAY-The Third World marches on; rebroadcast of Learn to Speak Chinese.

THURSDAY-China in Construction (the developing food industry, etc.) and Culture in China (opera, traditional music; the Central Conservatory of music. They are currently featuring a series on prominent artists of the traditional school of painting; these are about contemporary artists, and a leaflet brochure is available from Radio Beijing with 12 photo reproductions.

FRIDAY-Profile; Listeners Calling; The Land and the People.

SATURDAY-Chinese proverbs and stories; music from China (traditional, classical and modern).

Schedules and information can be obtained from Radio Beijing, English Dept., Beijing, China.

Receiving Antennas

Butternut Introduces SC-3000 A Scanner Antenna for the "Pros"!

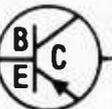
Butternut's patented "trombone" phasing sections increase capture area and let you pull in the weak signals that aren't even there on conventional scanner antennas.

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Tune in the weak ones. Butternut's exclusive inductive stub-tuned dipole requires no heavy lossy traps. Specifically engineered for maximum signal to noise on the popular 13, 16, 19, 25, 31 and 49 meter foreign broadcast bands. Covers 2-30 MHz. Includes 50 ft. of feedline. Maximum overall length 73 ft.

Dealer inquiries invited



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ENGLISH LANGUAGE cont'd

RADIO AUSTRALIA

One of the happy sounds on the dial is the overseas service of A.B.C.! From "down under" comes the bright and breezy sound of Radio Australia with its regular morning signal on 31 meters. RA was founded in 1939 as "Australia Calling" with broadcasts in English, Dutch, German, Italian and Spanish. By 1941 it was decided to concentrate on Asian nations, along with Papua New Guinea and the Pacific area. Currently, English, French, Neo-Melanesian, Japanese, Thai, Vietnamese, Indonesian, and Chinese languages are used.

The name "Radio Australia" was adopted in 1945 and the A.B.C. has operated the service since 1950.

English programs are broadcast around the clock (24 hours) to Asia and the Pacific; for 23 hours daily to Papua New Guinea; 2-1/2 hours to Africa; and the following schedule for North America:

- 0200-0300 17795 kHz
- 0200-0400 15320 kHz
- 0300-1600 9580 kHz
- 2100-0100 17795 kHz
- 2200-0100 15320 kHz
- 2200-0400 15395 kHz

Radio Australia oper-

ates from Burwood East, Melbourne, where they have 18 studios and news and control booths. A staff of 170 functions here with more than 50 persons employed in the news and public affairs section. Programs from this section have an unrivalled reputation for accuracy and reliability.

Transmitter locations and powers are: Shepparton, Victoria (6 x 100 KW, and 3 x 50 KW); Lyndhurst, Victoria (2 x 10 KW); Carnarvon, West Australia (300/250/100 KW); and Darwin, Northern Territory (3 x 250 KW).

PROGRAM DETAILS

WORLD NEWS is heard on the hour for 10 minutes; PACIFIC NEWS is included at

0900 1000 1800 1900 2000; AUSTRALIAN NEWS (10 minute bulletins) is at 0130 1430 0830 1230 1630 1830 2030 and 2330.

COMMENTARY PROGRAMS (both excellent!): FOUR CORNERS 1810 2010 2210 0010 0210 1210 Monday through Friday; REPORT FROM ASIA (by RA correspondents) Saturdays 1410 1710 2010 2310.

Then there are several programs with background news about Australia itself, such as: AUSTRALIAN INSIGHT (1112 1310 1510 1710 1910 2310 Mon-Fri); THE WEEK IN CANBERRA (Fridays 1410 1810 2010 2210); AUSTRALIAN EDITORIAL OPINION (Saturdays 0210 0410 1110 1310).

These programs are perhaps of more interest to

expatriate Australians than to us in North America unless you are especially interested in that country. Other programs include Business World and a report from the Melbourne Stock Exchange.

Further details and program schedules may be obtained by writing Radio Australia, GPO Box 428G, Melbourne 3001, Australia. Good listening!

WORLD'S BIGGEST SOUNDER

By D. K. deNeuf, WA1SPM

The largest "telegraph sounder" ever constructed was presented to WU in New York City by the Liberty Loan Committee of the Second Federal Reserve District in October of 1918. This mammoth replica of a sounder was mounted in Herald Square at 35th Street (NYC). It measured 5 feet 6 inches long by 3 feet wide at the base; from base to top was 3 feet 4 inches; the coils were 18 inches high and the armature was 3 feet 6 inches long.

Had it been an actual working model it probably would have outdone a jackhammer breaking up pavement from a noise standpoint, and certainly telegraph operators could have "read" it several blocks away!

INTERNATIONAL BROADCASTING SCHEDULE. !UPDATE!

BRITAIN:BBC		1100-1330	15215	15070	11775	7325	5965
		2000-0000	15260	11750	6175	(9915/7325 from 2200)	
		0000-0300	11750	9915	9590	9515	6175 5975
		0500-0630	9510	6175	5975		
RADIO AUSTRALIA		0800-1600	9580				
ECUADOR:HCJB		1200-1430	26020	17890	15115	11740	
		0030-0700	15155	11910	9745		
USA:VOA		0000-0200	11740	17640			
		0000-0400	5995	6130	9455	9650	11580 11675
			11740	15205			
SOUTH AFRICA		0200-0256	9615	6020	5980		

BOOK BONANZA!

SAVE 60%!

TAIL GUNNER ON A SUPERHETERODYNE (limited edition)

Larry Brookwell, the dynamic founder and president of the International DXers Club of San Diego, passed away just a year ago, closely following the publication of this delightful autobiography. We are pleased to offer those few remaining copies from his estate at a fraction of their original cost.

During author Brookwell's lifetime, he experienced more living than most of us dream about! This spicy autobiography is a colorful, often-hilarious chronology of his exploits in Mexico where his unbridled mischief kept him running from senoritas and policia alike!

Brookwell's irrepressible wit shines through all his exploits, from his throttling by his first divorce to his playboy lifestyle among the movie stars.

This 237 page photo-illustrated autobiography reads like a novel, reflecting often on his radio hobby, sprinkled generously with wry wit. BOK18

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\$10 VALUE
(422 in stock)

EQUIPMENT REVIEWS

1981/1983 edition (361 pages). A bonanza for used and new equipment buyers! Equipment descriptions, specifications, complaints and recommendations. Covers receivers and accessories, past and present. Includes popular classics like military R-388 and R-390 series, commercial R-1000, R-7/DR-7, RF-2200/2600/2900/4900/9000, SPR-4, SX-110, 51J4, NRD-505/515, AX-190, AN/GRR5, CRF-1, DX-300/302, and dozens more. An indispensable resource.

BRK5 \$5 (55 IN STOCK)

1983 SUPPLEMENT WITH 3 UPDATES (350 PAGES)

Dozens of receivers, tuners, antennas, speakers RTTY equipment and other radio accessories thoughtfully examined and critiqued. Includes Sony, Yaesu, McKay Dymek, MFJ, Grove, Kenwood, Magnum, Panasonic, Radio Shack, Datong, Eavesdropper, Sherwood, Drake, GE, Hammarlund, Grundig, ICOM, Bearcat, Regency, and many others.

Includes many fine articles on broadcast and utilities monitoring along with frequency lists.

BRK2 \$5 (33 IN STOCK)

Same as above but with two updaters totalling 289 pages

BRK3 \$4 (43 IN STOCK)

Same as above but no updates included.

BRK4 \$3 (94 IN STOCK)

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☆ BCB DX'ing ☆

By Paul Swearingen

Broadcast band DX'ing is considered by many aficionados to be the king of specialty band DX'ing. Born just about the time KDKA and other pioneers went on the air in the early 1920's, BCB DX'ing has long held a fascination for die-hard enthusiasts, many of whom started their DX career at a single-digit age on the family radio in the living room.

SWL's tired of listening to the last tirade from R. Moscow, ham-band DX'ers yearning for more interesting fare than what equipment everyone is using, and scanner fans turning away from rag chewing and terse exchanges between pilots and control towers may only need to return to BCB DX'ing to remind them of how interesting radio listening and DX'ing can be.

Tuning in stations from across the continent was relatively easy for BCB DX'ers until about 1965 when deteriorating propagation conditions, congested frequencies, the breakdown of the clear channels, and more stations staying on the air

24 hours a day frustrated many veteran DX'ers to the point of giving up and turning to shortwave and other bands.

Gone was the time when a DX'er could pick a given frequency and listen to the stations sign off the air at a local midnight Monday morning across the continent, finally leaving a 1000-watt (or lower power) station in the clear on the west coast. Then, after it signed off, they could expect a signal from Hawaii or even the South Pacific to come up from the noise level.

Nevertheless, better receivers, antennas, and above all DX techniques, have enable the broadcast band DX'er of the '80s to dig out DX just as rare as his father did decades previously.

Although some DX'ers (whose varies number in the thousands) are still logging new stations at a regular pace, the beginning BCB DX'er would do well to shoot for quality, rather than quantity; DX.

Using an unsophisticated receiver, he could expect to log several hundred stations in a year's time of concerted listening, and perhaps a thousand or so over the next few years as

he upgraded his equipment and improved his techniques.

However, it probably would be more fun for him to concentrate on foreign stations, stations over a thousand miles from his QTH, stations on selected frequencies, split-frequency stations, daytime-only broadcasters, stations in his home state, pirates, clear-channel 50 kw'ers, or whatever tickles his fancy.

A few DX'ers utilize only the ultimate equipment: either a very sophisticated receiver like the R-390A or solid-state equipment such as the Kenwood R-1000.

Not to be ignored are many of the receivers and tuners which form part of stereo systems, or even car radios, although many suffer from poor selectivity through the manufacturer's attempt to deliver better audio to match FM sound.

The point is that nearly everyone has readily available at least one receiver which will provide him with decent DX, so that he doesn't have to rush out and invest in a new radio. I own six or eight DX-grade radios, and I paid the grand total of \$385 for all of them; only two were new.

The portables include their own antenna, although performance could be improved with an outboard antenna. The communications receivers will need to be connected to a random-length longwire, a beverage antenna, an amplified loop, an unamplified box loop, or an active whip antenna. All are readily available.

Finally, the DX'er will need information on stations, other equipment, and many other topics of use to him through commercial sources, or better yet through such clubs specializing in broadcast band DX'ing such as the National Radio Club or the International Radio Club of America.

These clubs can provide printed material on DX techniques, equipment, station lists, and timely bulletins listing what has recently been heard...and how. Best of all, through the clubs, one can get to know other DX'ers who have been through it all, and instead of attempting to reinvent the wheel a friendly conversation with another DX'er can open up new horizons for the beginning broadcast band DX'er.

Although QRN is indeed at an all-time level, and more noticeable on the LW and BCB bands than others, programming has changed markedly, making listening to broadcasting stations

more enjoyable. Rock and country are still available, but now all forms of music, from easy-listening to ethnic can be heard.

As we head into the Age of Information, more news, sports, weather, and talk programs are heard. Dramatic offerings, including rebroadcasts of vintage programs, are sprinkled across the dial. Even swap 'n' shop call-in programs are available, especially from small-town stations.

And with the decline in the number of stations which eject wall-to-wall over-modulated music, adjacent-channel DX'ing with little splatter covering up distant reception is becoming possible.

If you stay up late at night...or into the grey hours of the morning...and hear faint stations in unusual languages in between standard 10 kHz frequency segments, you may be hearing stations from Central and South America, or even Europe, Africa, or Asia.

You may hear KFI on 640 or KSL on 1160; WBZ on 1030 or WSB on 750. If it's Saturday night, you can hear the Grand Ol' Opry on WSM's 650. And almost anywhere in the United States you can hear WLS on 890 still playing rock, and WWL a notch below on 870 with country, or WHO, 1040, with talk programs and WGN, 720, with anything from classical music to sports.

These three-letter call stations are all part of Americana. And if you're not hooked on broadcast band DX'ing by the time you've finished listening to them, you probably don't like apple pie, either!

Interested in getting your ham ticket?...

Amateur Radio Now Accessible to Everyone

By Gordon West, WB6NOA

The Federal Communications Commission is now officially out of the ham radio test-giving process. If you are planning on becoming an amateur radio operator, the test you take will be from a fellow ham operator.

Public Law 97-259 amended the Communications Act of 1934 that allows the FCC to accept the voluntary services of licensed radio amateurs in preparing and administering the amateur radio service exam.

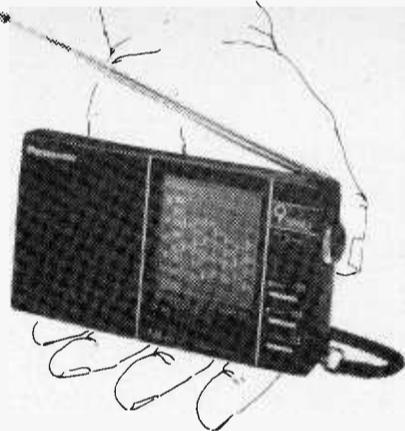
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AMATEUR LICENSE cont'd

NO SECRET QUESTIONS

The FCC has also published every single question with exact wording that may be found on any amateur radio examination. Questions will be multiple choice and will be taken from the following question pools:

Class License	Actual Questions on Exam
<u>Novice</u>	20 selected out of 200 by a single volunteer examiner. 5 wpm code sending and receiving test.
<u>Technician</u>	50 questions selected from 500 by FCC. No further code test if you hold Novice license.
<u>General</u>	13 wpm code sending and receiving test. No theory test if you hold Technician license.

Advanced 50 questions selected out of 500 by the FCC. No further code test if you hold General license.

Extra 40 questions selected out of 400 by FCC. 20 wpm code sending and receiving test.

While you may initially select any license class, you may wish to start with the Novice license--the entry level ticket. The code is easily learned at 5 wpm in 30 days or less. The written material can be digested by reading books, but it's much better to get involved with a ham radio class.

Many amateur radio clubs sponsor free ham radio novice classes. Go to your local ham radio store or library and look on their bulletin board or ask for ham club information.

The novice test is given to you by your instructor. You'll first take the code test, sending and receiving; next you'll take the 20 question multiple-choice exam. The instructor will inform you how well you did.

The instructor then sends away for your call letters, which you will receive in about three weeks from the Federal Communications Commission in Gettysburg, Pennsylvania.

The novice license allows you worldwide code privileges on four amateur radio bands. You are not

permitted to use voice with a novice license at the time of this writing; however, there may be a move to allow novice operators some voice privileges on the 220 MHz band next year.

UPGRADING

Three volunteer examiners, appointed by a volunteer exam coordinator, will administer all other tests beyond the novice. The technician and general class licenses are your next steps up the amateur radio ladder and will take approximately 60 to 90 days of book study. Since all questions are published, there is no chance of getting any question that you didn't know was coming.

Several organizations are publishing the multiple-

choice answers that will be on the FCC tests. Check with your local amateur radio store for testing material.

The technician class license allows voice privileges on VHF frequencies above 50 MHz, and code on novice bands. If this is all that you're looking for, you won't need to increase your code speed beyond 5 wpm. The technician class license allows use of the 2-meter repeaters as well as taking advantage of the orbiting amateur radio satellite. If you're into computers, radio teleprinter, slow scan television, and talking with handie-talkie radios, the technician class license with only a 50-question test may be just the thing for you.

However, if you want to talk to the world, you will need to pass the general class 13 wpm code test. This takes about the same amount of time as the technician written, and you study both at the same time. An ideal classroom situation would be tech theory for two hours, and general class code for one hour. About three months of this and you are ready to pass your general class 13 wpm sending and receiving code test.

The local FCC field office will tell you whom to contact for taking an amateur radio examination. The American Radio Relay League, Newington, Connecticut 06111, can also be contacted for information about volun-

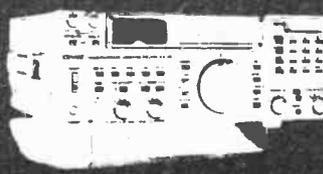
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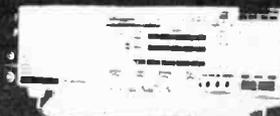
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- 24-hour clock-timer
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R-2000 \$599.95	SALE \$499
R-1000 \$499.95	SALE \$429
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Sale \$399



- 150 KHz-30MHz
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Options:

FRA-7700 active antenna	\$59
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AMATEUR LICENSE cont'd

teer examinations in your immediate vicinity.

The general class license allows worldwide privileges on all amateur radio bands. Recent band expansions give you plenty of room to take full advantage of this coveted license. The general class license is "the biggie" that you should shoot for.

The advanced and the extra class licenses give you more exclusive frequencies in addition to general class frequencies. These higher licenses don't give you any new bands, just a little bit more elbow room to communicate.

LOCATING HAM CLASSES

Most amateur radio clubs and community colleges will offer ham radio licensing courses. There is bound to be a ham radio store and a ham radio club in your area. If you can't find one, stop by the house of the fellow who lives down the street who has that huge tower. Chances are he will know of a ham club in your area, or he will be able to tell you where classes may be given.

The American Radio Relay League (Newington, Connecticut, 06111) can also assist you in finding volunteer exam coordinators who will tell you about upcoming classes, tests, and courses. The ARRL also has an excellent information sheet about the amateur radio service.

If you are good at studying on your own, you might take advantage of the many ham radio home study courses that are available. Radio School (2414 College Drive, Costa Mesa, California 92626) offers a \$65.00 home study course that will easily lead you to your novice class license.

The Radio School course consists of tape cassettes and a fully illustrated text book. Also included are the 200 novice class questions as well as all 500 technician/general class questions. They also give you all of the information on how to contact any local ham to give you the novice test. There is a special package expressly for the volunteer ham to give you the test--even including the 5 wpm code test tape.

Also included in the \$65.00 mail order program is an expensive Morse code oscillator key and tone oscillator, completely assembled including the battery. This will help you send and receive Morse code easier as you practice with the tapes.

BUT YOU DO HAVE TO PASS!

Volunteer examiners are under close scrutiny by the exam coordinators as well as the FCC. Any impropriety of test-giving could result in the extra class operators losing their own license. No one is given an amateur radio license who doesn't actually pass all the test elements.

If you've always been interested in getting your ham license, but were afraid of the code or the theory, put away those fears and get started now. The more relaxed atmosphere of test-taking will surely make the code easier to copy and you'll be less jittery when you start sending out those first few words.

There are only 425,000 licensed hams in the United States--until now the ham radio service has been stymied in its growth by tough test questions that applicants weren't prepared to answer. Now, with every test question published, it's easy to prepare yourself for passing any element in amateur radio licensing.

Welcome to the world of amateur radio, and don't hesitate to drop me a note here at Radio School if you should require more information about the testing process.

THOSE NEW HAM BANDS

The World Administrative Radio Conference held in Geneva, Switzerland in 1979 (WARC '79) created several new amateur radio allocations; only the 10.1-10.15 MHz band is presently authorized in the United States. Pending comments on the Notice of Proposed Rule Making (PR Docket 84-960), the following measure could be enacted.

30 METERS The band 10.100-10.150 MHz may be used inclusively (there was a hole at 10.112 MHz protecting a military RTTY frequency which has now been moved) for CW and RTTY, 200 watts maximum power (no voice), general class and higher. It is shared with the foreign fixed service.

17 METERS To be shared with the fixed service, the band 18.068-18.168 MHz will not become authorized for amateur use before July 1, 1989 because of continuing use by the U.S. federal government. General class and higher.

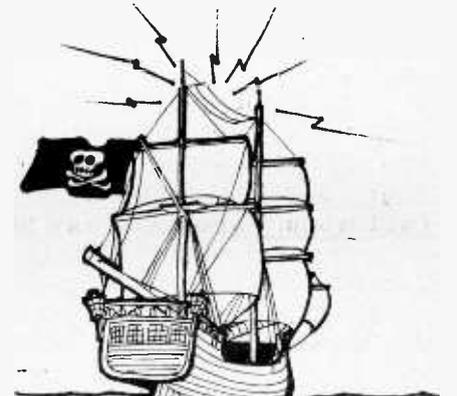
12 METERS Scheduled to be released to U.S. amateurs on or before July 1, 1989, the 24.890-24.990 MHz portion of

GROVE RECEIVES AWARD

Bob Grove, editor of Monitoring Times and president of Grove Enterprises, Incorporated was recently presented an honorary life membership by the Radio Communications Society of the World.

The Society presents these awards to individuals who, in their judgement,

make outstanding contributions to better worldwide human relations through the medium of radio communications.

PIRATE RADIO

by **John Santosuosso**

CENTRAL AMERICA:

For obvious reasons we have to be somewhat vague about this, but one leftist Central American clandestine has now set up an office in the United States and is soliciting material for its operation. Among the items wanted are a stereo mixer, 1000 watt signal amplifier, a transceiver for the 41 meter band, radio technician tools, and a variety of other useful things.

This is an unusual development and may be the first time anything of this nature has been attempted. What sort of response the station will receive remains to be seen. However, the Central American revolutionary movements probably have more support in this country than is commonly believed.

PROGRAMMING PERSPECTIVE BY JOHN T. ARTHUR:

"From the dark deserted streets of a city destroyed" comes Tangerine Radio to

the spectrum' will be divided into two subbands: 24.89-24.930 (CW/RTTY) and 24.930-24.990 MHz (all conventional HF modes). General class and higher.

3/4 METERS The 420-450 MHz amateur band has had some realignment. Canada has withdrawn the first 10 megahertz (420-430 MHz) of that allocation, substituting for it 902-928 MHz. The FCC is awaiting Canadian reaction along its borders to U.S. continuation of that segment, now awarded in Canada to their fixed and mobile service.

U.S. amateurs are apprehensive about what impact the decision will have on amateur television (ATV) networks extensively used in the larger cities, many of which border Canada, utilizing that band. An FCC waiver is a possibility.

MICROWAVE MOBILE The explosive growth of 806-960 MHz also includes a new amateur portion: 902-928 MHz (except Colorado, Wyoming and U.S. possessions in Region 3 where defense installations use the band), shared on a secondary basis with government, microwave ovens (part of the "ISM"--industrial, scientific and medical allocation), and automatic vehicle monitoring systems (AVM). All amateur privileges, technician class and above.

PIRATE RADIO cont'd

provide relief from radio indigestion. The only known North American anarchist station, TR combines selected relevant music, not-so-subtle comment and anti-establishment activities. Raunchy Rick tells you to punch holes in computer billing cards and plays music from "Imagine" to "Lynch the Landlord."

Programs are "produced in a commercial studio in downtown Miami and flown to the Bermuda Triangle transmitter site in unmanned airships." TR originally had problems getting out, but they have been heard in Kentucky and Tennessee, so problems may be fixed.

TR has a terrific tangerine-colored QSL card available if you hear their 20-watt signal. To get one send a complete and detailed reception report with three mint 20-cent stamps to Box 5074, Hilo, HI 96720; tapes and fresh tangerines accepted. "Watch for the soft Tangerine glow in your mind's eye; a sure sign you have tuned to Tangerine Radio."

Look for the station on 7373, 7430, and 14535 kHz on the first weekend of the month and the night of the full moon. Europeans may be able to hear the station relayed by stations in their area. There may even be a few shows in German.

ANARCHIST RADIO:

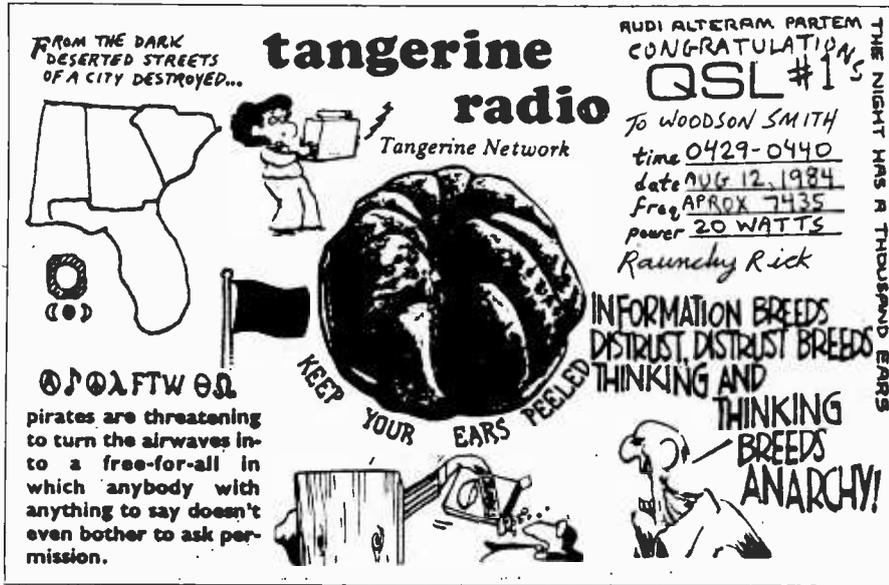
From Tangerine Radio's Raunchy Rick comes news of the growth of anarchist radio in Europe. The current resurgence of anarchism has led to the creation of several anarchist clandestine stations. "Radio Liberdade" has been testing in Portugal. "Radio Liberaire," an FM station in Paris, started out as a pirate but became legal when FM radio was somewhat deregulated there.

"Our Radio" in London has not yet resumed operations. "Radio Klara" in Valencia, Spain, was closed twice by the authorities, but there was such a public outcry the government is tolerating the station--for a while, anyway. Squatters in Amsterdam also have a station, and Rick points out Tangerine Radio is North America's "anarcho-pirate."

Our thanks to Rick for his help. We wish more stations were as helpful in keeping us up to date on their operations and general pirate news as is Tangerine Radio.

CANADIAN CONFIDENTIAL:

Readers in major metro-



politan areas of Ontario may want to look around the dial for a new FM pirate. He likes Bruce Springsten music and does take phone calls. Sorry, we cannot give out any additional details.

MAILBAG:

From Alberta, Canada, we have heard again from Bill Dang, who is having considerable success bagging pirates. WIMP was heard August 12 from 0500 to 0543 with rock music and letters on 7410. Radio Heartland checked in September 1 from 0330 to 0349 on both 7427 and 6280. Bill also had an unidentified August 11 from 0420 to 0429 on 6255.

Our very own "Programming Perspective" editor sent along a log of KQRP. It made it all the way to Hawaii on September 22. KQRP was using 9430 and 9460 kHz and could be heard from 0505 to 0615. Programming included an oldtime "The Shadow" segment. It is interesting to pirates increasingly going to dual frequencies for their broadcasts. The operations are obviously becoming more sophisticated.

In Florida David Crawford has heard a variety of things. On September 15 he came across the return of the mysterious Voice of Tomorrow with its usual anti-Semitic programming. The frequency was 7410 at 2220 GMT with a solid S9 signal. Also heard was KQRP on September 17 on 7432 signing off at 0045 but returning 15 minutes later. An unidentified pirate was logged on 7431 the same date, with a very weak signal fading out at 0115.

Dave also heard the new anti-Sandinista clandestine Radio Monimbo on September 17 on 6230 for 0000 to 0100 and from 0200 to 0300. He notes the signal was quite strong. The Baghdad Masses program has been logged by Dave at 1930 on a variety of frequencies. These are 9685, 9689, 11695, and 13700. A different program, but using

the same ID, is on 9745.

QSL ADDRESSES:

Here is the final portion of the latest edition of John T. Arthur's QSL address list. All of the following can be reached via Box 5074, Hilo, HI 96720: WEAK, WROT, KEXJ-105.9, KFAT-1560, KFRO, KMTL-750, KQSB, KSOS-88.0, KTEL, Radio USA, Rolling Thunder Radio, Secret Mountain Laboratory, Tangerine Radio, Voice of Bob, and Voice of the Rainbow.

The following can be reached via Box 40554; Washington, DC 20016: WBST-666, Pirate Radio New England-1616, and Radio Bag.

Other addresses are Voice of Redemption, Box 1411, Calumet City, IL 60409; KHAM and KMA, Box 3192, Joliet, IL 60434; and Fantasy Broadcast Station, Box 23792, Phoenix, AZ 85063.

Some of the FM and medium wave stations listed above can also be heard on short wave. Remember to include three 20-cent stamps with your report, and let us know what you are hearing.

**A Pirate's Life...
The Victor J. Alcorn
Story**

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By William J. Martin

**PART TWO
CONCLUSION**

THE WBUZ-FM BUST

Victor Alcorn's second run-in with the FCC occurred in September of 1981, when a Central Islip listener contacted the FCC Watch Officer to complain that an unlicensed FM broadcast station was operating on 103.1 MHz and utilizing telco-loop lines.

On September 3, 1981, engineers Suffa and Mansback took one of the Commission's MADF vehicles and drove to

the Sayville area. At 6:29 p.m. they monitored the unlicensed transmissions from a station using the call letters "WBUZ" on 103.0 MHz. By 6:50 the engineers had completed their close-in DF and determined that WBUZ's signals originated from a house on Alfred Street in Sayville.

Using the equipment in the MADF vehicle, Suffa measured the station's field strength as 1,585 microvolts at 335 meters from the house on Alfred Street...leading the engineers to conclude that the station was transmitting with nearly 4,000 times the RF power permitted under the FCC's Part 15 rules for low power wireless microphones.

As the engineers approached the house, they were advised by a neighbor that the upstairs tenant of the two-family house was Victor Alcorn and that Mr. Alcorn had erected the prominent VHF collinear antenna on the roof of the house during the past month.

At that point, the engineers knocked on Alcorn's door and asked that he permit them to inspect his transmitter. Although Alcorn again refused the FCC permission to see his station, he did speak with the engineers and admitted operation of WBUZ. Alcorn was apparently using a modified ARC-3 military surplus transmitter at the time.

According to the engineers' report, Alcorn also admitted at that time that he had operated WPOT and WBLO in the past, and that although he would not resume operations on the 108.5 MHz frequency due to the risk it created in the radio navigation service, he would probably resume his operations on other FM frequencies since he was not causing anyone harm and the FCC would never grant him a commercial broadcast license.

Alcorn indicated to Noel and Suffa that he didn't expect the FCC to do anything to prosecute or fine him, since nothing had happened as a result of his earlier busts.

Nonetheless, the local FCC office was getting quite perturbed by Alcorn's antics. Engineer-in-Charge Alex Zimny, in a written report to Washington with respect to the case, made it very clear that his office was recommending that the severest penalties be imposed against Alcorn. After summarizing the history of the enforcement actions taken by the FCC

A PIRATE'S LIFE cont'd

against WPOT, WBLO, and WBUZ, Zimny wrote:

"This case is concerned with repeated unlawful operation of a radio transmitter, with potential harmful interference to Commission licensees on the FM broadcast band, as well as demonstrated harmful interference to the Aviation Radio Services. Furthermore, unless the Subject (referring to Alcorn) is permanently restrained in his unauthorized activity, he will again and again repeat his unlawful operation from different locations, thereby putting a heavy toll on Commission manpower and equipment to track him down and stop, if only temporarily, his potentially dangerous operation."

As a result to the September 1981 bust, a Notice of Apparent Liability (NAL) was issued against Alcorn and a \$750 monetary forfeiture imposed. Alcorn, however, refused to pay this fine.

WBUZ-FM CONTINUES TO CHALLENGE THE FCC

Incredibly, Alcorn continued to broadcast over WBUZ regularly on 103.1 MHz and vigorously publicized his pirate radio operations. In a detailed story in the April 24, 1982 edition of The New York Times, Alcorn--using the pseudonym "Steven Roach"--was featured and a photograph of him in his bedroom studio was prominently displayed.

According to that article, the WBUZ transmitter was, at that time, rated at 18 watts and was sometimes on the air as much as 20 hours a day. When asked why he persisted his transmissions despite the repeated FCC fines and warnings, Alcorn reportedly said, "I always wanted to be a disk jockey. This is the only way I can do it."

The continuing broadcasts and publicity generated by Alcorn had not escaped the FCC. Their response came July 1982, when FCC field officers and federal marshals surprised Alcorn in the midst of a broadcast and arrested him.

ALCORN'S CRIMINAL PROSECUTION

The specific details of the Alcorn criminal case are not available; however, we do know that--as its "standard operating procedure"--the FCC Field Operations

"Los Numeros"

32444 69213 88816 52196 63811 94216

Havana Moon

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One of Webster's definitions for the word "intrigue" is "to arouse the interest or curiosity of." In that sense, LOS NUMEROS is the place to be this month and every month. Many strange happenings to report.

STRANGE SOUNDS

A reader's report of some strange sounds between 4914 and 4920 kHz is almost intriguing ... except the reader failed to communicate just what type of sounds are being monitored.

From this QTH I have often monitored ELT-like sounds on or about these frequencies and, once in a while, 5-digit Spanish transmissions are noted.

DRIVER EDUCATION

A source with impeccable credentials tells me that he is confident that NO 5-digit Spanish transmissions originate from the Driver, Virginia, site. He's also confident that NO "numbers" transmissions originate from the USN/USCG Northwest receive facility.

What has been observed, however, are active SSB, RTTY, CW and FAX signals.

This source would like to put an end to the long-

Bureau itself does not handle criminal prosecutions of unlicensed broadcasters. The Field Operations Bureau, once it determines that a violation of the Communications Act of 1934 warrants criminal prosecution rather than administrative sanctions, recommends such criminal prosecution to the Department of Justice.

An Assistant U.S. Attorney is then assigned to the case and he or she makes an independent analysis of whether the case is serious enough to warrant criminal prosecution. In fact, in several recent cases such as the highly publicized "Commandante David" case in Miami, the U.S. Attorney's Office has decided against

standing rumor of a Norfolk area "numbers" site. The Northwest and Driver areas of Virginia are not to be confused with the Remington/Warrenton sites. The confusion is understandable.

WONDER WHY

I often wonder why no MT reader has mentioned Virginia's Tyson's Corner. This is a most intriguing area to visit. I doubt, however, if you'll find "numbers" transmissions originating from this area. Any MT readers live nearby?

BIZARRE

This is the only suitable word I can think of to describe the transmissions monitored on 6824 kHz on Saturday evenings. Times vary.

Here's what you'll hear: Gypsy-like song with violins and a "whistler" whistling along with the music, then "Terminia, Terminia, Terminia."

I wonder if a message is buried somewhere in the music. I also wonder if those responsible for these strange transmissions are of Basque separatist groups.

Monitors might be interested in knowing that the Basque people are of unknown origin and their language is unrelated to any other known language.

RADIO DIRECTION FINDING

Classification of Bearings		
Class	Bearing	Error in Deg.
A	+ or - 2 degrees	
B	+ or - 5	
C	+ or - 10	
D	More than 10 degrees	

prosecuting unlicensed broadcasters despite the recommendations of the FCC.

In Alcorn's case, the Assistant U.S. Attorney was faced with a situation where Alcorn (1) had admittedly caused harmful interference to the radio navigation services; (2) had continued his operations despite repeated warnings from the FCC; and (3) had apparently changed his call sign in each instance to avoid detection.

Unlike Commandante David, Alcorn did not have thousands of anti-Castro political supporters lobbying in his defense. The Department of Justice decided to press the criminal charges against Alcorn.

At his trial in U.S.

You'll be darn lucky if your simple loop gives you anywhere near a + or -10 degree error when RDFing "numbers" transmissions in the short-wave spectrum.

Even the smallest percentage of sky-wave when mixed with ground-wave gives adverse readings. Couple this with the 180 degree ambiguity and you've got big problems! There are even times when the FCC has trouble with the 180° ambiguity!

This is not to imply that simple loops are of no value. They can be very reliable on VLF frequencies, on AM broadcast frequencies during the day and when you are receiving ground wave signals close to the transmitter site.

I'll have more on RDF in a future issue.

SOVIET HIGH-TECH

There's a Soviet version of the American AWACS now in the developmental stages. This aircraft--the IL-86--has every appearance of the Boeing 747. Communications gear is said to be nearly identical with that of the United States.

SENSITIVE SOVIET AREA

Seems that in late September a chartered plane enroute from Alaska to the Netherlands encountered navigation problems that caused it to drift to about 15 minutes flying time of the highly sensitive and strategic Kola Peninsula.

Had it not been for the quick thinking of two Norwegian Air Force F-16 fighter pilots there was a very real possibility of another KAL007 incident.

These Norwegian pilots were very quick to intercept this "stray" with some 200 souls on board.

The Kola Peninsula flanks the northern borders

District Court in New York, Alcorn pleaded guilty to the four counts. Although it is not known whether a plea bargain was struck between the government and the defense, the punishment handed out by the Court--18 months probation and a \$750 fine--was relatively light in view of the maximum penalties of up to four years imprisonment and up to \$40,000 in fines which could have been imposed.

So ended the story of WPOT, WBLO and WBUZ. Other pirates are sure to continue to be heard from Long Island, though it is unlikely that any will ever cause as much havoc with the FCC as Victor Alcorn's stations from Sayville.

LOS NUMEROS cont'd

of Finland and Norway, the site of sensitive Soviet Army, Navy and Air Force installations.

SPYING AND MORE SPYING

Front page news these days seems to be "top-heavy" with spy adventures and misadventures of all types. The California case is especially interesting in the fact that "code books" were found with other spy-type paraphernalia.

It's unfortunate that the "code-book" find was omitted from most newspaper accounts. It's my opinion that "code-books" imply radio transmissions of some type--maybe even some of those obscure "numbers" like transmissions that are reported on rare occasions.

MUY SUCIO y MUY LIMPIO

Wonder why the 5-digit Spanish transmission are "muy sucio" (very dirty)? I also wonder why the 4-digit Spanish transmissions are so "muy limpio" (very clean).

This is all very curious when some knowledgeable sources strongly believe both types of transmissions are related. Maybe it's a city cousin and country cousin type of relationship.

REDUNDANCY

6848 kHz is a HOT FREQUENCY to watch! There seem to be no end to the various types of "numbers" transmissions to be monitored there. I've recently noted British military transmissions mixed with "numbers" transmissions of the CI02 type. Very curious!

Let me know what YOU hear on this frequency.

TRIVIA TIME

Remember when some Spanish "numbers" transmissions used to intro with "music-box" sounds? It hasn't been that long ago.

THE NSA AND TELEPHONES

The New York Times reports that the National Security Agency has proposed that the government as well as private industry be equipped with as many as 500,000 or more telephones that can be secured against interception.

Seems that the phones proposed by the very secret NSA would be used by the CIA, DIA and the DOD. Usage by private industry would include prime defense contractors and banks.

Guess the Soviet Glen Cove mansion and their consul in San Francisco have the "super-spooks" of NSA just a little upset. I would

imagine they're even more than a little upset about other Soviet intercept sites within our borders. Those KGB nasties are everywhere these days.

WHAT THE X#0! IS GOING ON IN FLORIDA AND CUBA?

Cuba prepares for an imminent invasion by the United States and a Florida "think-tank" spokesman comes down with Fidel being in the terminal stages of LEUKEMIA! That's pretty heady stuff.

The Cuban defense plans could be nothing more than Cuban Intelligence (DGI) psychological warfare. The same might also be true of the Florida statement.

A usually reliable source that's close to the Florida exile community tells me of a "hush-hush" type of EVERGLADES BRIGADE that's in training at several TOP SECRET Florida locations. This source also indicates that this mysterious group uses frequencies around 45 MHz for its training communications. Next time skip rolls your way you might give a listen.

A very reliable Cuban AM broadcast monitor says that there has been a very marked increase of Cuban AM civil defense type broadcasts.

Parts of this story I've heard so often that...

INTERCEPTS AND UNUSUAL INCIDENT

THIS SECTION IS UP TO YOU. Your reports are most welcome. How about a few of YOUR intercepts?

THERE'S NO MYSTERY

I often see reports of mysterious "ticking" sounds behind Cuban AM broadcast stations and questions of what or why. What's happening is this: these are simply transmissions of Radio Reloj with 24 hour "clock-like" second pulses. The time is given every minute. This is often reported on 570 kHz.

If you want to try for a QSL you might try this address: Radio Reloj, Radio-centro, Calle P y 23, Vedade, Cd, Havana, Cuba.

TRADECRAFT

Worried about your phone and the possibility of a tap? NEVER discuss anything of even minor importance on your phone. Always assume that you are being monitored.

If you want to part with a few dollars you can rush down to Radio Shack and buy their latest device that flashes a red LED when the line is clear. When this LED is off it only means that someone in your home or

office has picked up an extension phone. It--or any of the other advertised low priced devices on the market --will not detect voltage drops further down the phone lines. It's highly unlikely that you would ever detect a PROFESSIONAL tap.

This little device is useful if you just happen to be talking to your girl friend and...

APOLOGY

That unique crypto system that I promised still has a few bugs and I want to clean it up just a bit before publication. You'll see it next month for sure.

CARDS AND LETTERS

Always remember that these two items are very welcome. Let's hear from more of you.



Time now for a Tecate and ...

Adios,
Havana Moon y Amigas

CIPHERS: As Old As History

By Bob Russ

Almost as soon as man invents a form of writing, he becomes afraid that what he has written might get him in trouble. So man must then find a way to hide the meaning of his written words, and cryptology is born.

Once he learns how to hide meaning, other men then find a need to know that which is hidden. And cipher experts are born. These men are a rare breed. They must have very special qualities to be good at their work.

First, they must be able to see patterns where most see chaos. Then, they must have patience, for many days may pass without reward.

This writer was surprised how frequently ciphers are used. Political figures are forced to use them, as are military and economic leaders.

But you do not have to be in the six o'clock news to need ciphers. Medical doctors use some form of cipher when they write your history in their files. Or you hope they do. And Mama used a simple code when she wrote to you at Camp Mosquito, that first summer you went away from home.

X X X () () () X X X

SLIDING INTO CIPHER

Except for the puzzling

glyphs on some Egyptian tombs, the oldest means of hiding meaning probably is the "alphabet slide."

We have several examples of this in the words written by Baruch, at the dictation of Jeremiah.

A generation earlier, Isaiah, son of Amoz, had used a slide cipher in his writings. In the years that followed, the "A-N" slide was in favor with the Talmudic scholars.

Since the temple at Jerusalem was about average as temples go, it may be guessed that slide ciphers were probably quite widely known and used wherever the Semitic traders had carried their alphabet.

We find this method centuries later, when Caesar wrote "D" for "A", in Latin. In fact, the experts call one slide by his name. Graybeards like me know it by the modern variation--the Orphan Annie code wheel which we drank Ovaltine to get; younger kids ate wheaties toward a later version!

Many complex modern ciphers are, in fact, elaborations of the slide. Learn how a slide works and you are ready for bigger fish.

ASTRADDLE THE GRECIAN GRID

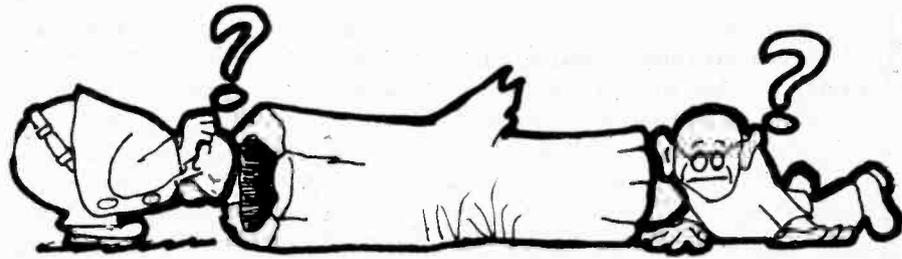
The Polybius grid cipher has been around since the first marathon was run, when Athens warred with Persia over control of the sea. It was a considerable stride in the art of hiding meaning. The alphabet slide was already green with the moss of time, and something different had to be developed.

The Polybius is made of several rows of letters with letter or numbers along two edges of this block. To one experienced in ciphering, the pairs of cipher symbols will give it away, and it is not difficult to re-build the grid.

Sixteenth century Europe was a mess politically; to hide meaning, the secretaries of the Vatican developed the Polybius cipher to its highest form. This variation we call the "straddle". It is set up so that some letters have only one cipher symbol.

Cipher-text is written with no spaces or commas. Unless you guess its nature, the straddle is a hard nut to crack.

So effective is this cipher, it has remained in use by major political entities every since. Following WWII, the straddle was favored by Russian agents, so it probably is used by the "liberation" forces around the world. ●



Listeners' log

CALIFORNIA SCANNING

- Contributed by Ken Jillson, Coulterville, CA
- 35.960 Dodge Ridge Ski Resort
 - 36.750 USFS Northern CA North Zone Net
 - 149.570 Mather AFB Commanders Net
 - 149.750 Castle AFB Commanders Net
 - 155.400 Inter-county Emergency Channel
 - 158.235 Pacific Gas & Electric
 - 163.415 Dept. of Water Resources
 - 163.485 McClellan AFB Transport
 - 163.600 USA Military Comnet
 - 166.585 USFS North Zone Net
 - 166.625 USFS North Zone Air Net
 - 166.325 Bureau of Reclamation New Melones
- 168.200 USFS Crew Net
 - 168.625 USFS Forest Net
 - 170.000 USFS ground to air
 - 171.475 USFS Forest Net
 - 172.425 Bureau of Reclamation New Melones
 - 453.875 State of California
 - 460.450 Calif. State Police

Hope this will fill the hollow log those two scanner nuts are listening to with much interesting noise. We also hope more West Coast readers will share their frequencies with MT readers.

IOWA STATE HIGHWAY PATROL

- Contributed by Louis Darrah, Cedar Rapids
- Des Moines
 - 155.640 F1 base rptr
 - 155.790 F2 LEA rptr
 - Cedar Rapids

- 155.655 F1 base rptr
- 156.685 F2 LEA rptr
- Fairfield/Burlington
- 155.565 F1 base rptr
- 155.700 F2 LEA rptr
- Statewide car to car
- 155.430 simplex

CENTRAL OHIO MONITORING

Contributed by Barry Rader, Fostoria, OH

FINDLAY

- 47.340 State Hwy Dept
- 45.260 O.S.P. mobiles
- 155.760 City crews, water, street depts
- 155.430 Repeater hear both sides
- 44.940 O.S.P. base
- 37.700 Ohio Power base
- 37.740 Ohio Power mobiles

FOSTORIA

- 155.730 P.D.-Putnam City Sheriff
- 460.575 Fire Dept
- 461.950 E.M.S. mobiles only
- 126.100 Airport
- 146.520-146.500 2 meter FM Ham

BOWLING GREEN

- 47.220 State Hwy Dept
- State Weather Off
- 155.070 P.D.-Sheriff North Baltimore
- 155.310 Ohio University

WOOD CITY

- 153.890 -West Millgrove Fire Dept.
- 158.940 Local gov't net
- 155.820 Sheriff
- 153.950 C.D.

HANCOCK CITY

- 154.055 Parks
- 453.150 Road Maintenance
- 155.535 Sheriff
- 154.250 Fire Dept.

NORTH BALTIMORE

- 155.280 E.M.S.
- 451.200 Hancock Wood Elect Coop-Power

TIFFIN

- 39.580 P.D.
- 46.060 Fire Dept.

MISC

- 154.935 L.E.E.R.N. Hwy patrol all stations
- 34.680 Seneca City Sheriff
- 45.020 O.S.P. Patrol F-3 Scale House I-75 Air speed check
- 45.100 O.S.P. Patrol F-4 Air speed check
- 160.300 Conn-Rail Rd Ch 1
- 159.450 Van Buren Forestry Service
- 44.520 Ottawa City State Patrol car to base
- O.S.P. patrol-Fremont

NEW HAMPSHIRE AREA PRIVATE SECURITY

- Contributed by Steven Donnell, 210 S. Main St. Newmarket, NH 30857
- 464.225 R N.Shore Protect.
 - 451.175 R Rockingham Sec.
 - 464.565 R " "
 - 464.925 R " "
 - 151.775 American Sec.
 - 155.775 County Sec.
 - 151.685 NH Sec.
 - 152.420 Newington Mall
 - 151.625 Pinkertons U.S.
 - 467.800 " " "

(Steve would like to exchange lists of private security frequencies with other listeners. Write him at address above.)

NSA Beefs Up Security

President Reagan has signed a classified directive ordering top-secret National Security Agency to coordinate the efforts of major private carriers to thwart communications espionage.

While inside experts agree that robbing wastebaskets and bribing computer operators is still the least expensive and widely-used method of obtaining information, the government is showing growing alarm at satellites' abilities to sweep and evaluate intercepted communications.

Upward of 500,000 secure telephones are expected to be ordered as well as other equipment to protect intrusion into data banks and correspondence transactions.

Five vendors (Motorola, RCA, ITT, AT&T and GTE) are competing for the telephone bid, expected to be awarded around press time.

Last April President Reagan created by executive order the National Communications System (NCS), headed by the Secretary of Defense, to "serve as a focal point for joint industry-government national security and emergency-preparedness telecommunications planning."

That same month, Monitoring Times' lead article featured the NCS communi-

tions complex near Warrenton, Virginia and its role in the mysterious "spy numbers" broadcasts.

Late in September, President Reagan issued another classified measure, his National Security Decision Directive 145 in which he stated that electronic eavesdropping equipment was being used extensively by foreign nations and could also be used by terrorists and criminals.

This formal document was the first time in history that a president had admitted the vulnerability of security in this electronic age. It was drafted to establish a new Systems Security Screening Group which is now composed of the three secretaries of State, Defense and Treasury, the Attorney General and the Director of the Central Intelligence Agency (CIA).

The September order charges NSA with the responsibility to monitor official government communications to determine their "vulnerability to hostile interception and exploitation."

It is expected that the government will pursue the possibility of building a massive trunk-line encryption system, the enormous cost of which would be partially borne by NSA.

TUNE IN CANADA



by Norman H. Schrein

In last month's issue of MT I began a special three-part column regarding scanner monitoring between Baja California and Alaska; This month will concentrate on frequencies monitored on the Canadian portion of the trip.

From San Diego we went by Rent-a-Car to the Los Angeles International Airport once again. This time we took a flight to the Seattle Airport (frequencies monitored from there will appear next month). After arriving in Seattle we drove up Interstate 5 to the Canadian border. We drove between Sumas, Washington and Abbotsford, British Columbia.

The Abbotsford airport had a fair amount of activity including the ATIS station on 119.800, tower on 119.400 and 121.000 with ground control on 121.800

MHz. The RCMP was on 139.350 MHz (simplex), while the fire department was on 155.055 MHz.

The Royal Canadian Mounted Police serve as the city police and/or county police for most of British Columbia's and Alberta's smaller cities. Larger cities such as Vancouver, Victoria and Calgary have their own police departments.

From Abbotsford we traveled Route 1 east to Chilliwack where the RCMP is on 139.770 MHz (dispatch), 139.215 (Tac 2), 139.290 (Ch 8) and 140.640 (C Unit), the fire department is on 154.190 MHz. Airport activity can be found on the UNICOM frequency of 122.800 MHz.

Route 1 traverses a large amount of country and passes many little towns and a lot of beautiful country, including such cities as Hope where the fire department is on 154.355 MHz and the RCMP is on 139.350, 139.470, 140.100, and 139.530 MHz. From Hope the next city was Boston Bar where the RCMP operates on



TUNE IN CANADA cont'd

139.470 MHz (simplex) also 139.350 MHz, the fire department is on 143.895 MHz. The airport can be heard on 122.200 MHz.

The next city of any size was Kamloops. Here the fire department can be found on 169.500 and the RCMP can be found on 138.945 MHz. I was also able to activate two amateur radio repeaters VE7 ROK can be heard on 146.850 MHz and VE7 KAR can be heard on 146.940.

The airport can be heard on 122.100, 126.700, 121.900 (ground), 125.700 tower, and 115.700 for the VOR (YKA).

Then it was on to Salmon Arm where the RCMP operates on 138.765/138.945, 139.080 and 139.140 all under call sign XJA 68. BC Telephone company operates on 149.770, 150.100, and 152.550 all under call sign CFW 67.

The public works department for both the District of Salmon Arm and the municipality of Salmon Arm can be heard on 154.070 MHz, while the airport can be heard on UNICOM frequency 122.900 MHz.

Finally, for those who will monitor anything, the Salmon Arm Ready Mix Company can be heard on 165.000 MHz using call sign VGD 251!

Further to the east one can listen into RCMP communications on 139.560 in Revelstoke. You can also listen to the Revelstoke airport on 122.800 or Kamloops FSS on 126.700. For even better reception I would suggest a trip to the top of Mount Revelstoke, where you can overlook the entire area and get even greater reception.

If you go east long enough you will cross over into Alberta, and such was the case with us. While in Lake Louise I primarily used my amateur two meter radio on 146.520 MHz, and got surprisingly good communications. Our motel at Lake Louise was across from the RCMP station there.

The RCMP operates on 142.035/138.045 (XJD 712), 154.905/155.595, 155.640/155.460, and 155.670 MHz (simplex). From Lake Louise it was on to Baniff where the RCMP uses 155.670 (simplex), then on to Calgary.

Calgary Police Department uses UHF repeaters; any with an "M" indicates that I heard activity on that frequency; "R" indicates repeater.

CALGARY CITY POLICE:

462.00/467.0125 RM
462.275/467.2875RM
462.575/467.5875 R

462.975/467.975 RM
462.125/467.1375RM
462.375/467.3875 RM
462.650/467.6625
462.875/467.8875 RM
The Calgary Fire Department operates several UHF repeater channels the outputs of which are:
413.1375, 413.3375,
413.6625, 413.7825,
413.1375, 413.4375,
413.5625, 413.8625,
413.4875, 413.2125.

The RCMP in the Calgary area (outside the city) operates on 155.670 MHz (simplex), 155.460, 155.310, 155.700/154.950 RM, 155.640/154.040R, 155.580/154.890R, 155.430/154.800R, 155.030/154.070 R.

Some other Calgary frequencies I heard are Yellow Cab on 162.150/150.935 (duplex but no repeater); Shamrock Cab on 143.475/148.405 (duplex but no repeater); Calgary Airport tower on 118.700, ground on 121.900; arrivals on 125.900, departures on 119.800; Canadian Pacific RR on 160.515, 160.365, and 161.115 MHz.

I also heard data transmissions on 450.7875 and a radio station link (from studio to transmitter) on 450.6125 MHz. I monitored the Alberta government mobile telephones on 152.840, 152.945, 152.510, 153.540, 152.555, 152.585, 152.600, 152.630, 152.690, 152.720, 152.735, 152.780, 152.795 and 152.810 MHz. Weather Radio Canada from the Calgary weather office could be heard on 162.400 MHz.

From Calgary we started another method of transportation: We boarded the VIA rail train #1 to Vancouver. The officials on the train use RCA Tac Tec radios for communication, but specific channels were not stamped on the back of the unit's cover.

I will conclude the frequency information from Canada concerning Vancouver and Victoria areas in the next "Tune In Canada" column. Next month's special column will contain information on frequencies monitored in Juneau, Fairbanks and Anchorage, Alaska.

Until next time--good monitoring.

HELPFUL HINTS**ICOM, KENWOOD AND YAESU USERS**

We would like to call our readers' attention to a broad-based service center for ICOM, Kenwood and Yaesu equipment. Robert Pohorence

of International Radio, Inc. sent us recent literature which is quite impressive.

His repair and modification facility is accessible to all brands of amateur radio equipment and service includes alignment and performance testing as well.

International Radio also carries new and used ham gear and publishes newsletters featuring modifications and updates on the three major brands of equipment.

An ICOM users' net is conducted on the air each Sunday: Tune in around 14317 kHz at 1600 UTC or 21440 at 1800 UTC.

For additional information, write International Radio, Inc., Suite L, Dept. MT, 1532 SE Village Green Drive, Port St. Lucie, FL 33452, or call 305-335-5545 weekdays 10:00 AM to 5:00 PM weekdays.

DO-IT-YOURSELF: GET RID OF THOSE LOW FREQUENCY GREMLINS

By Joe Thompson

The SWL hobby has been a part of me since I was about 13 years old. Finding the old Zenith radio, replacing a couple of cracked tubes and getting it on the air was, to say the least, quite a milestone in my life. The overseas broadcasts, hams, and military receptions of the fifties provided a unique, interesting and often addictive pastime.

As the years grew the hobby somewhat faded, and until about five years ago kept a very low profile in my life. It was then, around 1979, the old memories resurfaced and brought me back into the wonderful world of the SWL.

Today my den is quite a communications room, as most of yours are. The scanner, the short-wave radio, the CB and various AM and FM radios accompany my home computer in their own fraternity.

The antennas strung throughout the backyard and the wires leading into the window bring occasional questions to those who happen to observe them. Just a typical SWL'er--that's me. I'm in it again and I love it.

From 1.6 to 30 MHz, the maritime emergency frequencies to Radio Australia, Coast Guard to air navigation, it's all there, and it's all mine. But static was fierce. Every evening when I went into the den and turned on the radio it was there. It was as if there was some intentional jamming

on my low bands, from 1.0 to 3.0 MHz. On AM it was unbearable; on side-band it was still very noticeable. Where was it coming from?

There are no major power lines nearby, so I ruled that out. I'm not near any major corporation, not even a hospital. Was it coming from the antenna or the power source?

My radio was equipped with a 12VDC battery connection so I placed the radio on battery power. No difference. The static on the low-band was still there. It must be an external radiation. Could it be coming from something in the house? I continued to pursue the gremlins.

I walked throughout the house unplugging everything that was plugged in--the TV, the cable TV box (often a source of interference), the clocks (ridiculous), everything. Nothing helped. Everything was unplugged but the interference was still there.

I went to the fuse box (Yes, the "fuse box"). It's a very old house so I considered the wiring as a possible source of the gremlins. The volume on the radio was turned up so I could hear it.

One fuse at a time, I un-screwed it, then replaced it. All the digital clocks were blinking, the microwave oven beeped and the living room went dark for a moment. And then the static on the radio went away. I went into the den. The radio was still on, but the static was gone. Which circuit was THAT fuse on?

It was the outside FLOODLIGHT. I have always had that light, but not the static. It appeared about the time I installed the light-sensor on the floodlight, that screw-in receptacle sensor that automatically turns on and off the outside light. That was the source of my interference.

If you want your low-frequency gremlins out of your radio, check around your house first. You may be creating them without even knowing it. Keep your radio interference to a minimum and enjoy the wonderful world of the SWL.

THOSE SCHEMATIC DIAGRAMS... WHERE DID THE SYMBOLS ORIGINATE?

While all of us have seen or even used schematic radio diagrams, the origin of many of the symbols is obscure. Reader Don deNeuf sent this informative collection of sketches which



HELPFUL HINTS cont'd

shows radio components in common use around the 1920's which influenced the artwork.

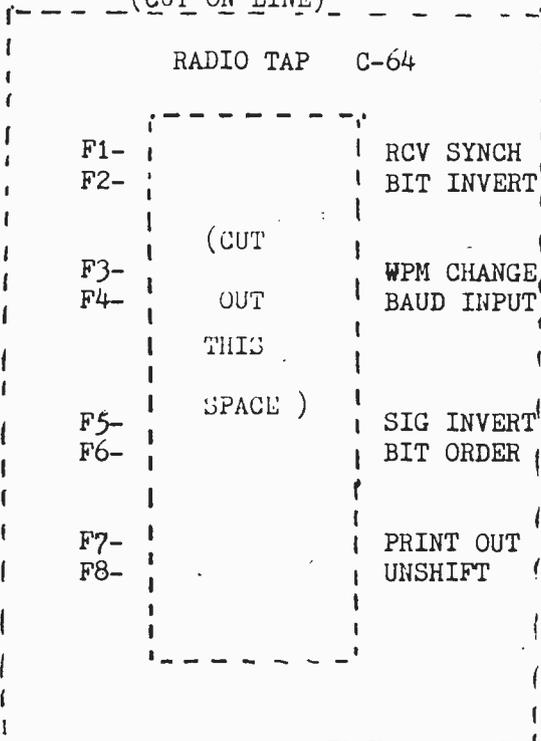
	ANTENNA	
	LOOP ANTENNA	
	"A" BATTERY DRY CELL	
	"A" BATTERY STORAGE	
	"B" BATTERY	
	BUZZER	
	CHOKER COIL AUDIO FREQ.	
	INDUCTANCE COIL FIXED	
	INDUCTANCE COIL TAPPED	
	CONDENSER FIXED	
	CONDENSER VARIABLE	
	CONNECTION	
	VOLT-METER	
	CRYSTAL DETECTOR	
	GRID LEAK FIXED	
	GRID LEAK VARIABLE	
	JACK SINGLE CIRCUIT	
	JACK DOUBLE CIRCUIT	
	JACK FILAMENT CONTROL	
	NO CONNECTION	
	POTENTIOMETER	
	RECEIVER TELEPHONE	
	RHEOSTAT	

	RESISTANCES	
	SWITCH FILAMENT	
	SWITCH S.P. S.T.	
	SWITCH S.P. D.T.	
	SWITCH D.P. S.T.	
	TRANSFORMER AUDIO FREQ.	
	TRANSFORMER RADIO FREQ.	
	TRANSFORMER TUNED RADIO FREQ.	
	VACUUM TUBE	
	VARIOMETER	
	VARIOCOUPLER	
	LIGHTNING ARRESTER	
	GROUND	

RADIOTAP OVERLAY FOR THE C-64

MT reader Bob Skwirsk shares this nifty idea with fellow listeners. If you have the Kantronics Radiotap for RTTY/Morse reception on the Commodore 64 computer, simply place this overlay on the function keys for rapid reference.

(CUT ON LINE)



TECHNICAL TOPICS by Bob Grove

Q What can I do to increase my scanner's "listening power"? Does a signal splitter like the Grove CPL-1 multicoupler weaken signals? How can I reduce ignition interference? (O. Badghaish, Jeddah, Saudi Arabia)

A If you are in a remote area unplugged by strong metropolitan signals, put up a good directional beam antenna. The addition of a mast-head preamplifier will give greater range, especially at UHF; otherwise, use an indoor preamplifier for VHF.

Don't forget to use a good grade of coaxial cable; RG-6/U or RG-8/U low-loss, foam dielectric is recommended.

A signal splitter will ideally reduce incoming strengths by only 3 dB, barely perceptible on even the weakest of signals.

Automobile ignition interference is very difficult to diagnose; most of it comes from radiation from

the high voltage lines, so use either resistor plugs or resistor ignition wires.

Try bonding the hood to the frame with a heavy-gauge woven wire like the shielding from a piece of coaxial cable. This is easiest done near the hinges.

Bypass capacitors on the regulator and ignition coil might help depending on the model of the vehicle.

You may wish to contact a local two-way radio service company for additional ideas.

Q I would like one of the new MX-7000 scanners to get the 800 MHz band, but can't afford it. How about a converter for this range to add on another scanner? (Paul Longway, Keego Harbor, MI)

A An 800 MHz converter is available from Hamtronics, 65 Moul Rd., Hilton, NY 04468. They are an MT advertiser, so send for their catalog.

EXPERIMENTER'S



WORKSHOP

SUB-AUDIBLE SQUELCH SYSTEMS

By Larry R. Antonuk

Have you ever listened to your scanner and wondered how four or five companies can share the same channel without driving each other crazy? The answer is simple - they never hear each other!

The key to the system is the fact that any given receiver will only recognize signals from transmitters within its own group, ignoring all others. This allows several companies to share a common frequency, yet only hear transmissions from members of their own company. The system that makes this possible is called sub-audible coded squelch.

In the early days of two-way radio (yes, even before transistors!) coded squelch wasn't used. As more users were licensed, more and more channels were allocated. It soon became apparent, especially in the larger cities, that companies would have to share frequencies.

Coded squelch was developed for two reasons. First, it cut down on the confusion created by having several non-related fleets of vehicles on the same channel. Secondly, it gave each fleet a feeling of privacy - all anyone in the fleet heard was business among their own group.

In actual use, a radio channel may have several different companies using it, all happily going about their business, only hearing their own vehicles and thinking that they have a private channel.

"Wait a minute," you say. "If none of these companies can hear each other, what prevents them from transmitting when another company's station is already on the air, thereby screwing up both transmissions?" Good question.

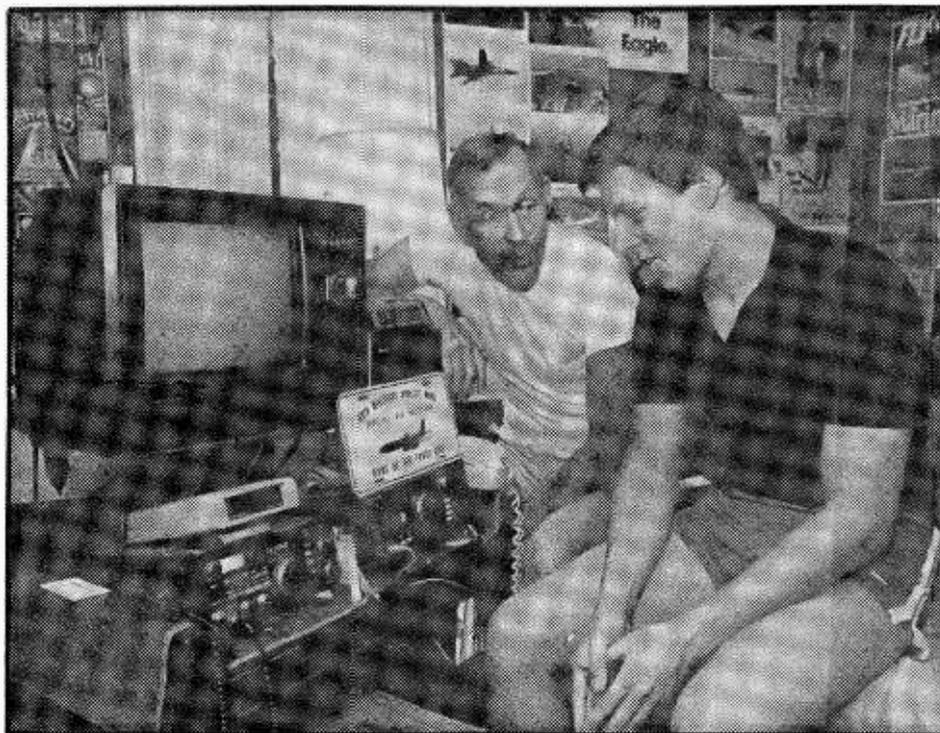
The answer is that, by law, before any station transmits, the operator must disable his coded squelch decoder and listen to make sure that the frequency is not in use. On most radios this consists of a button (usually marked "Monitor") that lets the receiver pass all the signals on the channel, regardless of squelch coding.

On mobiles the button is often placed on a special microphone holder that automatically disables the coded squelch when the mic is



PROFILES

MT Reader Enjoys Tuning In On Air Force One



Tim Tyler (right) treats Air Force One specialist Earl E. Van Valkenberg (left) to an inspection of his modest, but effective, listening post. (Photo courtesy Birmingham, AL "Eccentric").

One of the most tantalizing targets of shortwave utilities monitors is Air Force One, the presidential flight.

Operating on hundreds of discrete frequencies throughout the 2-30 MHz HF spectrum, these lower side-band transmission comprise the classified "Mystic Star" network.

Voices are heard in clear speech, often discussing matters of state in a casual, unguarded manner. Rarely is the president himself heard; usually cabinet-level and other dignitaries utilize the unscrambled system.

Tim Tyler (307 Phelps Hall, EMU, Ypsilanti, MI 48197) is captivated by the challenge to intercept the transmissions. A senior in college, Tyler is particularly interested in exchanging information with other active listeners regarding the elements of the National Military Command System.

Some of his new quarry include code-named military projects like Looking Glass, Night Watch, Cover All, PACCS, Silk Purse, TACAMO, Blue Eagle, GWEN, Scope Signal, Escort, NMCC, ANMCC, Cartwheel, WHCA, DCA, NSA, NCS, DIA, and, of course, Mystic Star.

This fact makes for some interesting applications.

Imagine a busy taxi company. They use their frequency constantly, and don't share the channel with anyone else. Can they use their 0 Hz to 300 Hz slot for anything? Of course!

One of the easiest applications is tone-only paging (no voice messages; only a beep). Page's tuned to the taxi company's frequency listen for the specific tone or tones that will set it off, instructing the user to perform a pre-arranged function - return to the shop, call the office, etc.

The same idea can also be used for controlling various devices such as remote lighting or alarm systems in places where it would not be feasible to run control wires.

The advantage of sub-audible paging and control is that the majority of the equipment is already paid for; the sub-audible system is simply added to an existing two-way operation.

Sub-audible coded squelch is one of the major advances of two-way FM radio, providing more efficient use of the radio spectrum; additionally, it gives a feeling of private communications and can be inexpensively retrofitted to older two-way systems or monitors. It's that kind of simple idea that makes people say, "Hey, why didn't I think of that??"

MODS FOR THE PRO-2001 SCANNER

By Jean Pronovost
P.O. Box 454
St.-Jean, Quebec
Canada J3B 6Z8

This article concludes a series of modifications for the Realistic PRO-2001 scanner, and as stated before, if you own a different type of scanner, you can most probably perform the same conversion. Consult your service manual, and have a technician help you if in doubt. In this last segment, we have combined together several minor conversions and tips to improve the performance of our scanner.

ADDITIONAL SCAN DELAY TIME

The scan delay time of the PRO-2001 scanner is two seconds; a toggle switch on the front panel selects between this delay and no delay at all. -But two seconds is just not long enough in the search mode when you are looking for unknown stations. I like to scan while doing other chores at my desk and I found it very difficult to press the "MONITOR" key within two seconds to stop the scanning. And once the

EXPER. WORKSHOP cont'd

picked up, forcing the operator to listen for a clear channel. So all receivers have two modes of operation - carrier squelch (like a scanner), and coded squelch.

TECH TALK

Useful information (voice, code, etc. "modulation") is impressed upon a radio signal and transmitted to a distant receiver where the information is extracted. The radio signal is called the "carrier," and the range of modulated frequencies is called the "baseband." Since we are transmitting the human voice, our baseband will extend out to about 4000 Hz.

After the baseband is demodulated at the receiver it's filtered by the audio stages, producing a frequency response at the speaker of about 300 Hz to 3000 Hz to allow for a natural-sounding voice without unwanted noise.

CARRIER SQUELCH

Noise pulses have a frequency of about 6000 Hz. When a carrier comes on frequency it will quiet the noise. All we need, then, is a squelch circuit that recognizes 6000 Hz on the baseband. If it sees 6000 Hz, the circuit will know that it's just noise and will shut the speaker off.

Frequencies less than 6000 Hz will be recognized as information, and passed through to the speaker. The squelch control lets us select just how noisy a signal can be and still "open the squelch."

CTCSS

If carrier squelch

operates on noise (or no noise) at the high end of the baseband, why not design a circuit that looks at the low end of the baseband? We only listen to 300 Hz to 3000 Hz; could we put specific tones in that 0 - 300 Hz slot, corresponding to squelch circuits that look for one and only one tone?

We sure can. This system is called the continuous tone coded squelch system (CTCSS) and is in use in thousands of radios across the nation. There are 37 different tones in the 67 Hz to 210 Hz range. One of these tones is transmitted continuously along with the voice modulation, opening the squelch of those radios designed to respond to that same squelch code. Since the tones are below the frequency range that is heard in the speaker, they're referred to as sub-audible.

DIGITAL ENCODING

CTCSS radios make use of sine wave tone to identify various groups of users. But there is a better way: digital coded squelch. Rather than tones, the digital system uses a binary word (along with parity bits and a little redundancy) that is transmitted in the 0 Hz to 67 Hz portion of the baseband.

The main advantage of a digital system is the larger number of codes -- 178 compared to 37. This system is also more reliable under weak signal conditions, and is more economical than older tone systems.

If you've followed me this far, you understand that the 0 Hz to 300 Hz portion of the baseband is a separate entity, independent of the voice modulation.

EIA STANDARD CTCSS (TONE SQUELCH) TONES

Group A	Code	Group B	Code
67	XZ	71.9	XA
77	XB	82.5	YZ
88.5	YB	94.8	ZA
100	IZ	103.5	1A
107.2	1B	110.9	2Z
114.8	2A	118.8	2B
123.0	3Z	127.3	3A
131.8	3B	136.5	4Z
141.3	4A	146.2	4B
151.4	5Z	156.7	5A
162.2	5B	167.9	6Z
173.8	6A	179.9	6B
186.2	7Z	192.8	7A
203.5	M1	210.7	M2
218.1	M3	225.7	M4
233.6	M5	241.8	M6
250.3	M7		

EXPER. WORKSHOP cont'd

scanning has resumed, it is a very frustrating job trying to figure out on which frequency the scanner was previously.

A look at the schematic diagram revealed that the scan delay switch merely grounds an electrolytic capacitor. This capacitor is charged while a station is received; when the signal disappears, the capacitor is discharged keeping a transistor switch circuit closed. To increase the scan delay time all we have to do is to increase the value of this capacitor.

(See schematic)

An easy way to do it is to add another capacitor/toggle switch circuit as shown. We can increase the total capacitance, and thus the delay, by closing one toggle switch, or the other, or both.

The original capacitor value is 100 uF for a delay of two seconds. The new added 400 uF capacitor will yield a six seconds delay, and if both capacitors are switched in, the total delay will be eight seconds.

Since space is restricted on the front panel of the Realistic PRO-2001, the new switch is installed on the rear panel without much inconvenience. Alternatively, the larger capacitance may be substituted for the original value, using the original switch.

PART OF PRO-2001 R.F./I.F. P.C. BOARD

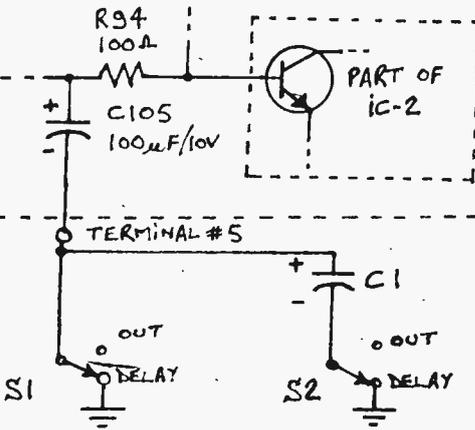


FIGURE 'A' - ADDITIONAL SCAN DELAY CIRCUIT

- C1: 400µF/10V
- S1: ORIGINAL OUT/DELAY SWITCH
- S2: S.P.D.T. TOGGLE SWITCH

ANTENNA CONNECTORS

The Realistic PRO-2001 scanner comes equipped with Motorola type antenna jacks as do virtually all other scanners. These connectors are mainly used on AM-FM car radios and suffer from reduced performance at VHF and UHF.

Several alternative types of connectors are suitable for scanners and our choice will depend upon the size of the coaxial cable used and our personal preference for a particular type.

The UHF series of connectors are certainly the most popular with SO-239 receptacle and the PL-259 plug. They can be used with either small or large diameter coaxial cable. However, they have a frequency range of 0-300 MHz. Their performance is questionable on UHF.

BNC connectors are widely used by the military and have tight specifications. Their frequency range is 0-4 GHz (that's 0-4000

MHz). On the other hand, except for one type, BNC connectors are available only for small diameter coaxial cable.

Type N is another line of connectors used commercially and by the military; their frequency range is 0-11 GHz and both small and large diameter coaxial cables can be used.

Changing the antenna connectors is simple: Remove the original connectors, enlarge the main holes with a round file and drill new mounting holes. Be sure the filings don't fall into the circuitry.

A COMMON ANTENNA FOR VHF AND UHF

It is possible to use only one antenna for both the VHF and the UHF inputs. The best method is to solder both inputs inside the PRO-2001 scanner to a common receptacle. A signal generator and "S-meter" readings of several stations proved there was no degradation of sensitivity on VHF or UHF.

- ENG. LANGUAGE: Africa
- LISTEN-WORLD: State-Owned R
- BITS: Compuserve
- NEW ARRIVALS: New Scanners
- GET.STARTED: Set Up A Listening Post, Conclusion
- EX. WORKSHOP: Mount Your Preamp On The Antenna; Audio Switchbox for Your Monitoring Post

- *HINTS: RF Interference Filters
- CLUB CORNER: Handicapped Aid Programs for Listeners

- Frequencies**
- ARINC AIRCRAFT FREQS
- L.LOG: New Jersey/New York
- CANADA: Prince Rupert, Ottawa

APRIL: Features

- *U.S. NUMBERS STATION FOUND!
- *DISASTER COMM: OpSecure
- INDEPENDENT NEWS WATCH
- RADIO SPECTRUM IV, Canadian Mil. Aviation Weather
- *THE PACIFIC AM BROADCASTERS TUNING RUSSIAN BROADCASTS
- MULTIMODE VIDEO ON THE 6060

- Columns**
- SCANNING: Interstates
- *HIGH SEAS: Tune Up Down Under
- ENG. LANGUAGE: National Music
- LISTEN-WORLD: Guide to BBC
- BITS: Coleco Adam Computer
- BEHIND-DIALS: Midwest Mobile Monitor Antenna; MCM Digital Capacitance Meter; Tech Talk Personal Comm Radio

- NEW ARRIVALS: ESP Equipment Protection Catalog; FDK Pocket Synthesized VHF Monitors; Eska Pocket Shortwave Receivers; Sinclair Pocket TV; Datong Woodpecker Blanker; REGENCY MX5000

- *GET.STARTED: AM/FM & Kilo-hertz/Megahertz
- *EX. WORKSHOP: \$10 Broadcast Band Loop Antenna;

- *DX'ers Vertical
- *HINTS for Storm Season;
- *Connecting Two Scanner Antennas Together (Don't); Want to Get Your Ham License?

- Frequencies**
- *NEW CORDLESS PHONE FREQS
- LOGGING 170 METERS
- LISTENERS LOG: Milw. Co, WI
- CANADA: Quebec, Brantford

- RTTY/FAX: Facsimile Log

MAY: Features

- *ICOM R-71A: MAGNIFICENT!
- *TUNE IN SECRET SERVICE
- RADIO SPECTRUM V, Marine WX
- DOING IT DOWN-UNDER
- DX HIGHLIGHTS
- NOAA WEATHER SERVICE CHANS
- *PROF: Outbender
- *WORLDWIDE CB
- START YOUR OWN CLUB

- Columns**
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- ENG. LANGUAGE: Asia
- LISTEN TO WORLD: Canada
- BITS: Hamnet; TRS-80 Freq File
- NEW ARRIVALS: CompuScan Software; Build own Bearcat

- LIBRARY SHELF: ARRL books
- *GET.STARTED: Preamps & Tuners
- *EX. WORKSHOP: Add S-Meter to Scanner; Shortwave Pre-amplified Preselector

- HINTS: Want to Get Your Ham License, Answers

Frequencies

- LISTENERS LOG: Amarillo, TX; Philadelphia, PA; New Jersey; NC Nat'l Guard
- CANADA: Quebec; New Brunswick; Whitehorse, Yukon
- RTTY/FAX: Fax Log, cont'd

JUNE: Features

- *FLY WITH HURRICANE HUNTERS
- WHAT ABOUT "OTHER" RCVR'S?
- RADIO SPECTRUM: Decoding CW Marine Weather
- *WORLD OF AMATEUR RADIO
- *DX LOWEST-POWER SW BCer
- DECODING HURRICANE WX DATA

- Columns**
- HIGH SEAS: Arctic Update
- BEHIND DIALS: Bearcat 250 vs. the JIL SX-200
- NEW ARRIVALS: The MX-5000
- ENG. LANG.: News Commentaries
- LISTEN-WORLD: Addresses
- BITS: BASIC; Commodore Progs

- *GET.STARTED: Rcvr Specs; Most Popular Receivers
- *HINTS: TV Interfer. Control; Abbreviations
- *EX. WORKSHOP: Surplus Equip.

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- LONG DISTANCE INDUST COMMS
- *RTTY/FAX: RTTY Freqs

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Although previous issues of 1984 MT are now out of print, the 1984 "Best of Monitoring Times" will be available in January. Articles coded with an asterisk are slated to be included in that anthology.

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- EMP: Effects on Comms
- THE RADIO SPECTRUM I--VHF
- LIBYA: AGGRESSION ON AIR
- SEE SHUTTLE VIA NASA SAT
- *LISTENING LAWS: Sec. 605
- MILLIMETER WAVES: Part II
- NOSTALGIA: No Power Rcvr
- COMPUTERS ON THE AIR: Part I

Columns

- PIRATE RADIO: Grenada
- LISTEN-WORLD: Middle East
- HIGH SEAS: CW
- *SIGS-SPACE: Getting Started;
- *TV Satellite Reception
- ENG LANG: Reliable BCers
- *RTTY/FAX: Russian RTTY
- BITS: Documentation

- BEHIND THE DIALS: RS PRO-2003; PRO-30; Sony AN-1, Electra Freedom Phone; Kay-Townes TV Antenna; MFJ digital clock

- NEW ARRIVALS: Grove OMNI II, Scanner Beam II
- GETTING STARTED: Exact Freqs
- EXP. WORKSHOP: Cordless Phones on AM; "Ancient Mod.?"

- *HELPFUL HINTS: S.A. Utilities

Frequencies

- AMATEUR BEACONS PREDICT LOW BAND SKIP
- LISTENERS LOG: Springfield, MO; Charlottesville, VA; Toledo, OH area; West Point & UN
- CANADIAN AIRCRAFT
- TUNE IN CANADA: Salmo, BC; Essex Co, Ont
- AUSTRALIAN CB SERVICE
- TV CHANNEL ASSIGNMENTS

FEBRUARY: Features

- TUNE IN USAF COMMS WW
- ELECTRA DX-1000 SW RECEIVER
- PHOTOVOLTAICS
- THE RADIO SPECTRUM II: MAFOR
- GETTING MORE QSL'S
- COMPUTERS ON AIR: Concl.
- AM RADIO & GRENADA INVASION

Columns

- *SCANNING: Chasing Choppers
- HIGH SEAS: Caribbean
- *SIGNALS FROM SPACE: OSCAR
- ENG. LANGUAGE: Europe
- *RTTY/FAX: A RTTY Primer
- *BITS: Select a Computer

- BEHIND THE DIALS: MX-6000Z Digital VOM; SRPK-01 Solar Porta-Pak; Handie-Talkie antennas; HP-8-1/4-SP Headset; RFI001

- Interference Filter; Electra BC-260 Scanner; Kantronics Radiotap

- NEW ARRIVALS: ESP Lightning Protection
- GET.STARTED: Set Up A Listening Post, Part I
- EX. WORKSHOP: Build a 225-400 MHz Beam; Receiver Protection from Transmitter Overload

- HINTS: Selectable Band Ant.

Frequencies

- LISTENERS LOG: Rockingham Co, NC; Atlantic City; Bozeman, MT; Minneapolis
- TUNE IN CANADA: Ottawa, Little Current, Smithers,

MARCH: Features

- RUSSIANS DOMINATING SPACE
- OUT-OF-BAND CB'ers
- ACARS
- VINTAGE VLF RECEIVERS
- SOLVING TENT. STATION ID'S
- RADIO SPECTRUM III, HF
- *GLOSSARY OF COMPUTER TERMS
- PROFS: SW BROADCAST MONITOR

Columns

- SCANNING: 800 MHz

Community

1984 INDEX cont'd

LISTENERS LOG: Atl. Coastal CANADA: Dept. of Communications; Lethbridge, Alb.

JULY: Features

- *CIA STATION IN NICARAGUA
- *HAM MONITORS GUERRILLA TFC NCS: TWO VIEWPOINTS
- *LISTEN.LAWS: State-by-State RADIO SPECTRUM: OBS WX Rep. DX'ING THE HAM BANDS CONSUMER ELECTRONICS SHOW
- *WHO DECIDED AND WHY?
- *HAWKER AND THE OSS
- *BONAIRE RELAY STATION

Columns

- *SCANNING: Cellular Radio HIGH SEAS: "Tall Ships"; KLC BEHIND DIALS: Yaesu FT-575GX; *Sony AN-1 NEW ARRVLs: DGM RTTY/CW Computer Interface; Scan-memory DH-1000 Memory Expander
- ENG.LANG.: News Analysis LISTEN-WORLD: Deutsche Welle BITS: BASIC; COMDEX/Spring '84 GET.STARTED: Audio Processing

*** FCC Monitoring Stations**

- HINTS: VHF Hamming in Eur; Propagation Reports
- *EX.WORKSHOP: Eliminate Hum Recording from Your Scanner; *Cure IF Feedthrough

Frequencies

- RTTY/FAX: Weather Fax Sta LISTENERS LOG: Atl. Coast

AUGUST: Features

- *FEMA: PLANNING FOR SURVIVAL
- *SAC: FLYING WITH SAC
- *LISTEN.LAWS: Pro-Scan Legis RADIO SPECTRUM VIII, Low and Medium Freq

- *WHERE DID "HAM" COME FROM?
- *FCC SERVICE CODES SOUNDS FROM S.PACIFIC, I

Columns

- HIGH SEAS: Listen to Ships; *Ship to Shore Freq Channelization
- BEHIND DIALS: Fox EMP 10/60; Vaco Coax Stripper; Azimuth Clock; Heil Audio System

- *RTTY/FAX: Getting Started, I ENG.LANG.: BBC, VOA, R.FRANCE LISTEN-WORLD: Austria & Belg BITS: BASIC; Impedance Matching on TRS-80C

- *GETTING STARTED: AGC; *50 or 75 Ohm Cable

- *HINTS: RFI Prob in MX-5000 Radio Abbreviations

- *EX.WORKSHOP: BNC/Motorola Adapter; *Add COR to Your Scanner

Frequencies

- *UNLICENSED BCers, I
- *COLLINS RADIO NETWORKS
- *THOSE MYSTERIOUS BEACONS LISTENERS LOG: Atl. Coast CANADA: Vancouver, BC MILITARY UHF AIR TO GROUND EXPO '84

SEPTEMBER: Features

- REALISM & RADIO: Army Training THE DX'ERS DREAM
- *SAC: DON'T BELIEVE EVERYTHING YOU READ!
- VLF SOLAR FLARE OBSERVATIONS
- *GWEN AND VLF
- SOUNDS FROM S.PACIFIC, II
- *SUN BEAM TELEGRAPHY
- EAGLE & THE OSS, Follow-Up

Columns

- *HIGH SEAS: US MF & HF Stations; *VHF Maritime Channels

- *BEHIND DIALS: RTTY/Morse

- *RTTY/FAX: Get. Started II ENG.LANG.: Religious BCing LISTEN-WORLD: Way Up North BITS: BASIC; Games for 64
- *GET.STARTED: Odd Reception
- *HELPFUL HINTS: Safety First
- *EX.WORKSHOP: A Discriminator Meter for your Scanner; *Button the Beep on your MX-5000

Frequencies

- *UNLICENSED BCers: Concl.
- *SCANNING: U.K. LISTENERS LOG: Atl. Coast THE UNKNOWNs

OCTOBER: Features

- FCC SEIZES ILLEGAL CB GEAR
- *SAC: COMMAND POSTS
- *WHAT TIME IS IT?
- *(ALMOST) EVERYTHING ABOUT THE MX-5000!

- HCB ON 11 METERS
- FAR EAST MONITORING
- *THE PRESENCE OF PIDGIN
- *MIL HELPS SNARE SMUGGLERS

Columns

- *SCANNING: JIL SX-400 Receiver
- *HIGH SEAS: coastal stations
- *RTTY/FAX: Russian Keyboards ENG.LANGUAGE: South America BEHIND DIALS: Panasonic RF-9; Dressler Active Antenna
- NEW ARRVLs: Transmitter Detector; Steward HF Loop Antenna; Fidelity Impact Reader

- BITS: Ham Computer Comms
- *HINTS: *Improvements for the ICOMs; *Improvements for the Kenwood R-2000; Hear 2-Meter SSB on an FM Rig
- EX.WORKSHOP: FRG-7700 256-Ch. Memory; Improved UHF on MX-5000

Frequencies

- LISTENERS LOG: Atl. Coast

CANADIAN MIL MONITORING TUNE IN CANADA: Toronto

NOVEMBER: Features

- SCANNING HONDURAN HOTBED FACTS, FABLES AND FUN
- *SAC: WHAT IS IN FUTURE?
- *C³I
- *PROJECT ELF
- *NATURAL POWER SUPPLIES JUSTICE & TREASURY DEPT PEN PALS
- *MORE FREQS ON "GLOBESCAN" FAR EAST BROADCASTING SWL VISITS NEWFOUNDLAND A PIRATE'S LIFE, Part I "EAVESDROPPING"

Columns

- SCAN: W.COAST.DXPEDITION
- *HIGH SEAS: Middle East NEW ARRVLs: Atari Scanner Log; CCS Communications Control
- ENG.LANGUAGE: Sports BITS: Crumtronics Contender; New Atari Machines
- HINTS: Spray Shielding; Preserve Magnetic Antenna Mounts; *Try This Quick Computerized Logging Program; The Four Commandments of Locating HF Transmitters
- GET.STARTED: Verification Report
- EX.WORKSHOP: The Problem of Unwanted Stations

Frequencies

- *LISTENERS LOG: Sports

DECEMBER: Current issue

COMING NEXT MONTH:
A SIMPLE FILING SYSTEM FOR MT ARTICLES

VIEWPOINT from p.2

store) and index tabs are glued to each issue so that I can get to a month easily.

My only suggestion is that you print a yearly index in the December issue that would recap what major articles and what areas frequencies were given for, for each month. The index would show quickly what month to go to when info is needed. Keep up the good work; I always anticipate the next issue!

James Eberhart
Mt. Vernon, NY

(ED.NOTE: No sooner said than done! See index of features and reviews above.)

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What I read in MT:

1. English language (scheds, freqs)
2. Ads

What I listen to:

1. Mostly news. AFRN, VOA, R. Australia
2. Time signals: WWV, WWVH (best in the world)
3. A few minutes now & then in poking around

Equipment:

Kerwood R600 (purchased ARS Seattle store)
Antenna--15 ft of wire hanging on the hooks of a swag lamp. Gets all I need.

Conjecture about MT: The Russian Embassy (KGB) has twenty subscrip-

tions to MT. What a gold-mine of anti-American intelligence information!! And how much intelligence info on the Russians do I see in MT? Zilch.

How about an article on Russian tactical/strategic jamming capability (HF, VHF, UHF, satellite)??

Robert E. Johnston
Gig Harbor, WA

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Thank you for the article on SAC. It helped allay some misconceptions in listeners and was an interesting timely topic in general. Is there any way MT may be able to get a similar series on NORAD?

I have become a utility DXer thanks to Grove Enterprises when I bought the Uniden CR-2021. Today, for example, I monitored the space shuttle's preparation for and landing. Havana Moon has a very useful column for my uses! I have also noticed an increase in military traffic (may be related to the NATO wargames).

I would like to praise the excellent service of Grove Enterprises for your fantastic service. I would also like to compliment you on the "Expanded Second Edition Shortwave Directory 1.6-30 MHz." It is a superb aid to utility DXers like myself and naturally I'll mention you and this publi-

cation to my friends!

Bruce Johnston
Schenectady, NY

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I would like to comment further that the October format is a significant improvement to an already excellent publication; you and your staff are to be complimented in all respects.

Regarding the computerization of radio receivers, I would like to see a lessening of this trend or at least a more balanced approach. Even the Space Shuttle has retained a "stick" for direct pilot intervention. The idea of having to "enter" codes or detailed commands to initiate each and every function appears self-defeating when viewed from the point of simplicity of operation not to mention operator "satisfaction." Too, the additional complexities to achieve this automation have not necessarily resulted in overall improved performance as regards long term equipment reliability the lack of which gets us back to the satisfaction factor.

Gerald Guske
Willingboro, NJ

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Thank you for the sample issue of MT which you included with my order (Oct. 84). I enjoyed it very much especially John Henault's

article about monitoring while in the hospital.

I was hospitalized two years ago (I was 13) for 3 weeks. I had only had my scanner for 4-1/2 months and I didn't want to be parted from it so I kept it with me. The nurses enjoyed it. It was especially funny when the fire alarm went off in the hospital. We learned on the scanner that they'd burned some toast in the kitchen!

I also got to know my doctor better, because he also like scanners (he has 5). He goes on ambulance calls when he can and is very active. The best reason to have a scanner in the hospital is very simple - NO BOREDOM! Please pass this on to John with my best wishes for a speedy recuperation.

Susan M. Moll
Sanford, MI

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Enjoying your MT articles more and more. David Beauvais' exhaustive MX-5000 article was very good, but I'm writing to hm about his Microwave Reception Formula (Desired Freq.-750). After so much success in the 806-894 MHz band (371 different freqs. logged, so far) with the MX-5000, CVR806B and RCMS's 861 MHz 1/4 wave ground plane antenna in my area, I thought



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INFORMATION PLEASE

Monitoring Times will print at no charge (as space permits) announcements and questions of a non-commercial service nature.

Anyone have information on the Air Force's "GWEN" or ground wave emergency network? Would be very happy to share information with other readers on this subject.

Michael Hawke, P.O. Box 73, Uniondale, NY 11553

Assistance Please: Would like to learn how to program a computer (Epson QX 10) to receive RTTY via an appropriate modem or terminal unit and the RS232 port. Familiar with BASIC and Pascal but not Assembler. Need plans for the UT and programming examples for the various codes and protocols. David Crotty, 41 Eason,

All equipment is new or in mint condition with all accessories, manuals and crystals where required. All prices firm. UPS shipment on receipt of postal Money Order. No checks. Add \$5 shipping. BEARCAT BC160, 16 chan., 30-50, 144-174, 420-512 MHz--\$100. REGENCY ACT-720 16 channel, digital aircraft scanner--\$200. REGENCY 10 channel mobile R-106, 5 band scanner--\$100. MIDLAND 4 channel handheld scanner--\$50. RADIO SHACK DX160--\$100. R.D. Carter, P.O. Box 418, Vass, NC 28394.

Highland Park, MI 48203.

NEEDED: Anyone with access to a high speed cassette duplicator willing to assist the blind and visually handicapped in duplicating cassettes of Monitoring Times and other material for the blind. Will supply cassettes and all related material. Phillip M. Dampier, 3176 Elmwood Avenue, Rochester, NY 14618-2535 U.S.A.

WANTED: Lists of weather ships and their frequencies; do they use standard weather codes? Also need almanacs to share with Australian DX club. Please write Chuck Reville K3FT, 2812 Christopher Ave., Baltimore, MD 21214.

WANTED: Need information how to go out of band on the following scanners. Regency D-100, Regency M-400, Bearcat 250. Please send this information to the address below. Also would like to hear from other shortwave listeners and scanner listeners. Please write to Kenneth E. Macleod, WDX1IEB, P.O. Box 4125, Westboro, MA 01581.

INFORMATION NEEDED: I have an Hammarlund HQ-140-XA I would like info concerning the ear his receiver was manufactured and its list price when new. ALSO: I am going to Kunsan Air Base, South Korea in December, anyone wanting to use me as a "point of contact" concerning SWL'ing in the far east, please feel free to write me.

Paul G. Williams/HL2D-XIA, c/o 47B Camellia, Shaw AFB, S.C. 29152

WANTED: Service-restoration manual for a National #57 SW receiver. Also a military SG3 USM70 signal generator.

Kevin Neal, Route A, Box 221A, Flippin, AR 72634

I would like to exchange scanner freq. lists with

VIEWPOINT cont'd

that perhaps David had really discovered something. Sad to relate, Desired Freq.-750 does not work on any of my logged 806-894 MHz freqs. Perhaps, it's an item that should work in theory, but does not in practice.

On the plus side, Dan Mulford's SSB scanner reception article while using a 2nd scanner as a Sig/Gen. (BFO) does work in most cases, but the 2nd scanner must have Sig/Gen capability which all scanners do not have. Example - I've been unable to use a BC101, BC220RC, BC250 or MX-5000 as 2nd scanner Sig/Gen's. However, I have used either my BC210 or SX-200 interchangeably as 2nd scanner Sig/Gens on the 4 previously mentioned scanners and succeeded in picking up SSB very intelligibly.

Enclosed chart which describes the test freq. coverage and the two different formulas might be of interest to you and BC210 & SX-200 owners who might wish to try out Dan's column.

Rene Borde
Sunnyvale, CA

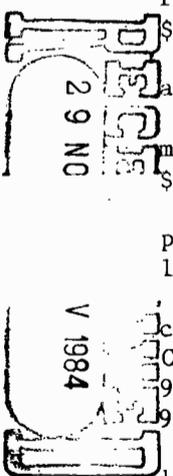
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Go with the kits! You only need to warranty the component parts of the kit, not the finished product. If you were to offer some of the kits you mention in your article I would be tickled pink! (Especially filter, audio processor, and frequency convertors.)

I really believe there is a large segment of us out here that want that kind of equip but cannot afford to purchase it already assembled. There are also those of us who would enjoy sitting down to the old radio desk on a cold, rainy winter evening and engulfing ourselves in a simple, but effective kit. DO IT!

Mike Chinakos, Camas, WA

anyone in Watertown, NY, Battle Creek, MI, or Quincy, IL. Kevin Trickey, 312 Jackson St., Delta, OH 43515.



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