



MONITORING TIMES

Volume 3-Number 3

BRASSTOWN, NORTH CAROLINA 28902

March, 1984

RUSSIANS DOMINATING SPACE

by Larry Van Horn

(Editor's Note: One of the most frequently asked questions this writer receives from hobbyists is, "What is up there and what is it doing?" This article has been specially prepared from the author's files for the year 1983 to provide that insight and to anticipate what the coming year may hold.)

1983 was a year for the Russians to continue to show their dominance in space. Of the 127 launches that occurred during 1983 the Soviets launched 98 of the rockets. The United States was a distant second with 21 launches.

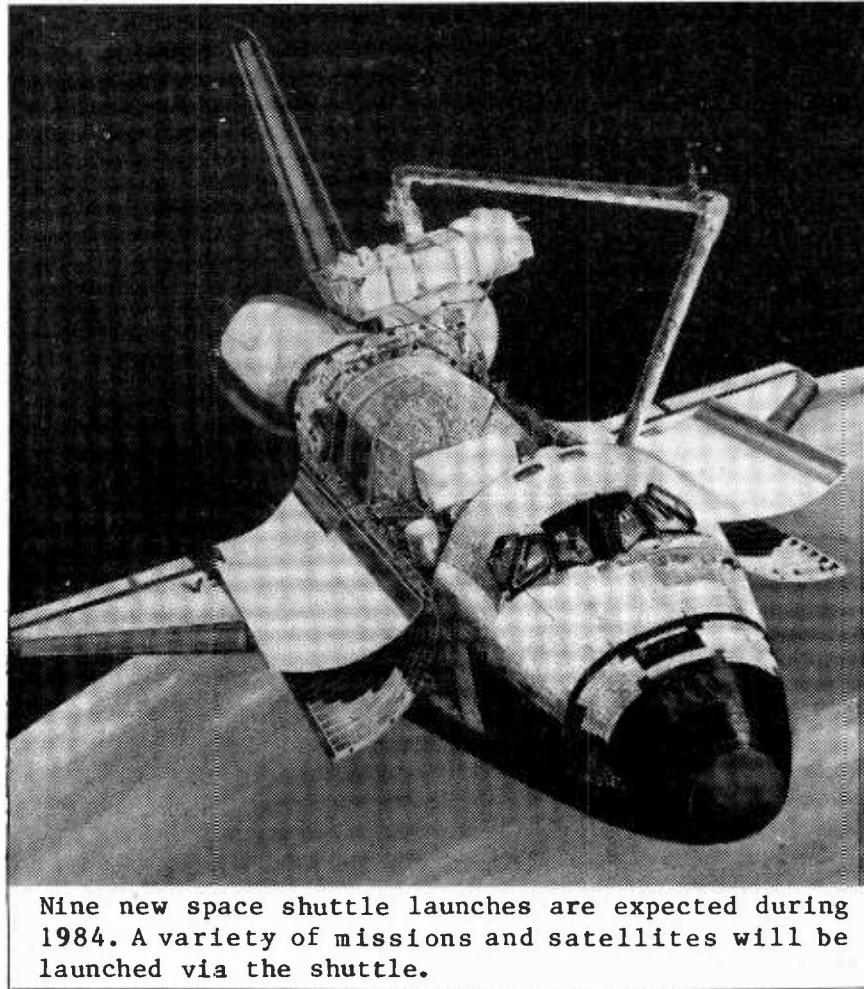
1983 saw 154 payloads reach orbit. The Soviets accounted for 116 payloads, while the United States launched 29 payloads.

To aid listeners in determining the types and variety of missions the author has compiled a synopsis of the launches of 1983. Monitor enthusiasts can get an idea what types of missions they might be interested in listening to.

The Soviet space program is divided into two divisions determined by mission usage: civilian and military. The following is a synopsis of civilian launches for 1983.

Civilian launches

Standard NAVSATs: Cosmos 1428, 1477 (SAR transponder), 1448, 1459, 1463 (failure), 1464, 1506, 1508 (failure), 1513
 New NAVSAT series: Cosmos 1490, 1491, 1492 (3 payload launch), 1519, 1520, 1521 (3 payload launch)
 Earth Resources: 1440, 1458, 1468, 1472, 1483, 1484, 1487, 1495, 1498
 Scientific: Astron spacecraft, Prognoz 9
 Weather: Meteor 2-10
 Planetary Probes: Venera 15,16
 Oceanographic: Cosmos 1455, 1470, 1500, 1515
Manned and related missions
 Soyuz: T-8, T-9
 Space Tug: Cosmos 1443
 Space Tankers: Progress 17,18



Nine new space shuttle launches are expected during 1984. A variety of missions and satellites will be launched via the shuttle.

Winged Vehicles (prelude to STS type vehicles): 1445, 1517

Communications Satellites

Molniya: 3-20, 1-56, 1-57, 1-58, 3-21, 1-59, 3-22

Ekran: 10, 11

Gorizont: 7, 8

Raduga: 12, 13

Military missions in 1983 were just about at a normal launch rate. All military satellites are launched under the Cosmos program veil of secrecy. Most Soviet launches are military in nature, a majority of which are photo recon missions. Most are of the 14 day mission variety, brought back to earth so their film can be processed.

Missions of 43 days are considered long duration and supplement short duration missions. The following is a synopsis of 1983 Soviet military missions.

Tactical Communication satellites: 1429-1436 (8 satellite launch), 1473-1480 (8 satellite launch)
 Large Elint Ferret: 1437, 1441
 Minor Military: 1450, 1453, 1465, 1494, 1501, 1502
 Military Store/Dump COMSAT:

1452, 1486, 1503
 Early Warning: 1456, 1481, 1518

Ocean Surveillance: 1461 (Solar power), 1507 (Solar power)

Military Photo Recon: 1438, 1439, 1444, 1446, 1449, 1451, 1457, 1460, 1462, 1467, 1469, 1482, 1485, 1488, 1493, 1497, 1499, 1505, 1509, 1512, 1514, 1516

Photo Recon (long duration): 1442, 1454, 1466, 1471, 1489, 1496, 1504, 1511.

Unknown classification: 1510

U.S. LAUNCHES

The U.S. space program can also be divided into the civilian and military classifications. The following is a summary of 1983 activity.

Civilian program

Scientific: IRAS, EXOSAT, Hilat
 Weather: NOAA 8, GOES 6
 Communications: TDRSS-A (launched STS-6), RCA SATCOM 6, ANIK C2 (launched STS-7), Palapa B1 (launched STS-7), Hughes Galaxy 1, Telestar 3A, INSAT-1B (launched STS-8), RCA SATCOM 2R, Hughes

Galaxy 2
 Manned Mission: STS-6, 7, 8, 9
Military program
 OPS 0252 Naval Ocean Surveillance Sat
 OPS 2925 KH-9 High Resolution Photo Recon
 OPS 6432 Naval Ocean Surveillance Sat
 OPS 0721 Suspected Early Warning launch
 OPS 1204 NAVSAT, GPS Block 1
 OPS 7304 Suspected Early Warning launch
 OPS 1294 Block 5D-2 DOD weather sat

OTHER COUNTRIES

Japan launched three satellites in 1983. CS-2A and B are COMSATs. Astro B was a scientific research satellite. India launched a scientific satellite labeled Rohini 4. China launched one satellite dubbed PRC 13. This was probably a photo recon mission. ITSO launched two Intelsat V COMSATs designated F6/F7.

Finally European Space Agency launched two rockets in 1983; one carried a dual payload of ECS-1 (COMSAT) and the OSCAR 10 satellite. The other launch carried the above-mentioned INTEL SAT V F7 for ITSO.

Cont'd p.21

MYSTERY NET TERMINATED

For months a mysterious voice single sideband net has been reported repeatedly using 6660 and 12996 kHz. RDF stations finally determined that the operation was being conducted on the east coast of North Carolina and the military operators were requested to shut down to avoid interference with legitimately-authorized users.

So far as MT has been able to determine, the request has been complied with and the errant operation has switched to authorized frequencies.

SEE PAGE 24 "NEW ARRIVALS" FOR SCOOP ON NEW ICOM IC-R71A RECEIVER AND POSSIBLE NEW WIDE-RANGE SCANNERS!

MONITORING TIMES

Bob Grove.....Editor
 Judy Grove.....Office & Advertising Manager
 Mitzi McCoy.....Subscriber Services
 Rachel Thomas.....Production

Monitoring Times is published by Grove Enterprises, Inc., 140 Dog Branch Road, Brasstown, NC 28902. Phone 704-837-9200. Copyright 1984. Subscription rate: \$10.50 for one year, \$20 for two years, \$30 for three years. Canada and Mexico add \$9.50 per year. Foreign subscribers: surface mail add \$9.50 per year or air mail add \$28.00 per year.

TABLE OF CONTENTS

Russians Dominating Space..1
 From the Editor:.....2
 Viewpoint.....2
 Guest Ed:CB'ers.....3
 Scanning: 800 MHz.....4
 Pirate Radio.....5
 ACARS:Airline Comm.....6
 ARINC:Enroute Freqs.....6
 Listener's Log: NJ.....7
 Utilities Intrigue.....8
 Tune in Canada.....9
 High Seas Radio:.....10
 The French Community
 Signals from Space.....11
 NASA Launch Schedule.....11
 Los Numeros.....12
 Vintage VLF Receivers.....13
 Broadcasting:
 Hank Bennett on SW...16
 Solving Tentative ID.16
 English Language.....17
 Listening.....17
 Gift to the Weatherwise...18
 BITS: Compuserve.....22
 Glossary of Terms.....22
 Profiles:Be a SW Monitor..23
 New Arrivals.....24
 Library Shelf.....25
 Getting Started:.....26
 Experimenters Workshop...27
 Technical Topics.....29
 Monitoring Post.....29
 Helpful Hints:.....30
 Club Corner:HAP & CHAP...31
 Stock Exchange/Info Plse..32

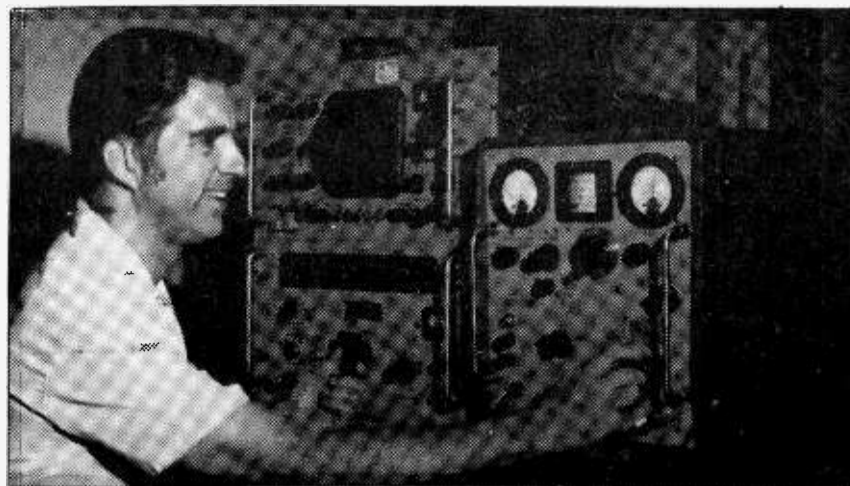
REMEMBER! "S.A.S.E."

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

FROM THE EDITOR



Equipment Improvements

Do manufacturers reserve the right to change product design in midstream? You bet. More often than not, after a new product is well along in production, someone will discover an oversight, an improvement or, in some (fortunately) rare instances, a blunder.

Early models of the popular Grove Scanverter was a case in point. Initial users reported low sensitivity and frequency drift. In these cases, Grove offered a free update service to correct the deficiencies.

Later, it was determined that the addition of a preamplifier would improve sensitivity even more and that option was made available as a retrofit.

The changes were incorporated into a new model and the present CVR-1B Scanverter has been in production for a year with no further design problems.

Similar to the Grove experience, large corporations like Electra, manufacturer of the Bearcat scanner line, introduce improvements as production moves forward.

I presently own my third BC-300. Why? Because I personally feel that it is the best scanner made at the present time. It has stood the test of time and this latest generation employs a series of minor production improvements, all of which cumulatively add up to improved performance.

The most impressive improvements I noted with my new BC-300 were the absence of spurs (spurious oscillator products), commonly encountered in earlier models, which would stop the unit from searching. To be sure, some were still present, but the spectrum was much cleaner in the new receiver.

In most cases, responsible manufacturers are willing to update their products when possible; obviously, with old model equipment this may be impos-

sible. But if the unit is of reasonably-recent manufacture, improvements may be available at the factory (or even at home for some talented owners!).

Naturally, there may be a charge for the services, but these are usually passed on to customers at a reasonable cost to offset the out-of-pocket expense of the manufacturer who, after all, did sell the unit originally in good faith and stood behind its initial specifications with their warranty.

Why not check with the service departments of the companies who manufactured your equipment to see if there are any updates or improvements available? Be sure to include the purchase date and/or serial number, along with a self-addressed, stamped envelope for their reply.

Was Orwell Right?

(Quoted by James Bamford, author of "The Puzzle Palace: A Report of NSA, America's Most Secret Agency," as printed in Common Cause Magazine, January/February 1984).

"In 1984 the public will learn less and less of what the government is doing, while the government will learn more and more about what the public is doing.

"Once securely wrapped in envelopes or thick black wire, by 1984 a large percentage of everyday mail and telephone conversations will travel naked through the air by satellite signals, which will be as easy to intercept as Home Box Office.

"At the same time, the eavesdroppers at the National Security Agency (NSA) will have more money than ever before and legal authority to engage in domestic surveillance."



VIEWPOINT

I am prompted to write to you by the article "Ancient Modulation - Not by a Long Shot" by Arnold Timm on p. 28 of the January 1984 MT. Mr. Timm's article struck two cords of interest in me. First is Mr. Elmer Osterhount of Modern Radio Labs who I have been doing business with for several years. I agree with Mr. Timm, Elmer is a very interesting character.

Secondly is SPAM (Society for the Promotion of Amplitude Modulation). While he did not mention SPAM by name, most of the amateurs using A.M. are SPAM members. Don Chester, K4KYV, is a long time member; I am a short time member.

The president of SPAM is Floyd Dunlap WA5TWF. His address is 14113 Stoneshire, Houston, TX 77060. Any radio amateur holding a Technician or higher class license can send an SASE to Floyd for further info about SPAM.

Incidentally, Floyd is also known as Duke Alexander on Radio RSA South Africa. His program, Duke Alexander's DX Report, is aired on the third week of the month on Saturday at 02:43 UTC on 9.615, 11.730 and 5.980 MHz.

The Texas SPAM group meets at about 16:00 to 18:00 UTC Saturdays on 7.160 MHz. There is also A.M. activity on ten meters on 29.00 to 29.20 MHz. A.M. activity is to be found on all ham bands; you just have to look for it.

I use a B&W 5100 transmitter and a National NC-300 receiver or a Viking Ranger and a Kenwood R-1000 on A.M. I also operate A.M. mobile with an Icom IC-730.

73
 Louie Poirrier, K5DAH
 2731 Hearne
 Pasadena, TX 77502

>>> <<<<<

(In reference to the February editorial on computer interference)...Record the tape or disk output of the computer; match the scope "profile" against the RFI profile on the same time interval. That should tell you if there is an apparent correlation between machine function and hash.

Why not begin with an article on how you cleaned up the RFI in the micros you own, step by step? First you

Cont'd p.9

Special Guest Editorial:**THOSE "NOTORIOUS" OUT-OF-BAND CB'ERS...A Brief History**

by Bill Cheek, editor
Eleven Meter Times & Journal*

For years, SWL's and hams alike have encountered CB operations on unauthorized frequencies between 26 and 28 MHz. Is there a general band plan agreed upon among the unlawful operators? Bill Cheek provides an eloquent insight... and some fascinating history.

Freeband is that band of frequencies between 26 and 28 MHz, not counting the Citizen's Band. FB does include the "RC" channels that are located between certain channels in the CB.

FB all got started back in, maybe as early as 1959...certainly not later than 1961, when the more industrious CB'ers learned that the transmit and receive crystals could be reversed, thus operating 455 kHz below the CB channel for which they reversed the crystals. This still works in walkie-talkies and other transceivers that require one crystal per channel for Tx and for Rx.

Well...455 kHz was quite a bit "out of band" and not all radios worked very well, but most worked to an extent provided that only the upper CB channel crystals were reversed. Thus, the most popular low-band frequency was 26.800 MHz...which was available for switching around the ch-23 crystals: 27.255 MHz-26.800 L.O = 455 kHz IF... see??? Image freq's abounded in the old radios anyway, so most radios could at least receive...if not Tx...but any tech could slightly realign the Tx for better performance. Thus 26.800 was one of the first and most popular out-band channels.

Ch-22 crystals, when reversed yielded 26.770; ch-21=26.760...etc. 26.760 was about as low as most radios would go without realignment, but even a few would drop into the 26.600's. Thus 26.620, the CAP freq, became very popular for monitoring, though more than a few CB'ers got on it just to hassle the musters and role-calls. Until 1965, the two most popular frequencies were 26.800 and 26.760, and quite a net grew into being!

Circa 1963-1967, when SSB was introduced and accepted by CB'ers, it was kind of worked out that low frequencies would be for AM operation and channels above ch-23 would be for SSB. However, with the advent of

the 23-ch synthesized radios, it was very easy to make any radio function below or above band...So in the same time frame, AM'ers kind of took over what is now ch-26 to 30, with 27.305 being the call-channel and available to the "Big Straps."

By 1970, the situation was basically etched in stone...Channel 16, and the RC below it, 27.145 MHz were used by SSB'ers, and all freq's above 27.315 were for SSB...few violations, too! Other RC channels and all freq's below ch-1 were for AM'ers.

Even in 1970, AM'ers seldom ventured below 26.760 except to monitor CAP...but then there was plenty of room between .760 and 26.965, and major settlements occurred on 26.760, 26.800, 26.845, 26.875, 26.915 and 26.945 MHz. By settlements, I mean either an organized group or Club had made that frequency their "home channel."

In this same time frame, 27.325 became a national calling channel for SSB...QSO's weren't allowed, but an operator could go there and get his party and QSY off to another frequency. Plenty of "Channel Bosses" monitored 27.325 for violators and wandering AM'ers...none of whom were welcome very long!

For some reason, SSB radios after 1972 were quite wide-banded in terms of performance without realignment! This encouraged SSB'ers to either load up a box of crystals or get a VFO...and thus the spectrum up to 27.995 MHz became available.

PAL and SILTRONIX cornered the market on VFOs, and these were easily modified to reach the 27.995 border!

Circa 1970, "HF International" was born. This was an outlaw club that promoted operation above ch-23, specifically 27.315 and up to 27.500 maximum. In later years, HF International grew to unbelievable size with 50,000+ members. HF called for some order out of the chaos; thus 27.325 became a calling channel, 27.480 and 27.505 were used for Morse Code practice and technical discussions. 27.505 seemed about the limit that HF encouraged, however.

Another organization sprang up and called itself, "VHF International" and took over cognizance of 27.515 MHz to 27.715 MHz...similar sort of a deal as HF. And

then another organization called "UHF International" popped in with its operations from 27.715 MHz to 27.995 MHz! Neither of the latter two were as strong or as powerful as HF, but they did their thing.

By the middle 70's, there were several other groups operating across the "high frequency" band...the "APRIL" group, "The Whiskey" group, and the "Mike" group. Later..."Old Codgers."

As SSB was developing, growing and refining itself, the AM'ers on the low bands below ch-1 remained pretty much unorganized, officially. Each frequency, in 10-kHz increments, had a small, cliquish "family"-type group scattered over the country, the sizes of which rarely exceeded 20-50 members.

By the late 70's, the small, homespun group had to organize or face extinction by other power groups, so the family atmosphere stuck, and the groups became organized under names such as "Tucker," "Walker," "Hatfield," "McCoy," "Finger," and there were some oddballs called "Gay Caballeros," "Texas Niggershooters," "Earpluggers," "Wickerbill International" and others.

There was one club that started up on 26.915 MHz in the mid-60's that has lasted to the present through varying periods of inactivity, called "HIGHWAY 7." This was a large, pleasant group... Still is, though not very active anymore.

Newly organized, there is a neat group starting up called "The Loyal Order of Falcons"...home-based on ch-39LSB...composed of more serious and dedicated operators who have had enough of the rules, power, and self-gratification so evident with the leadership of most other prevailing clubs.

CLUBS

Late 60's and early 70's saw two major ones rise: "The Appliance Operators" and "United Bullshippers," both monitoring ch-5 and using 26.995 as overflow channel. Later, the "Armadillos" out of Texas joined these two groups.

The mid to late 70's saw a rise in technology, both in the hardware of newly manufactured radios and in the skill levels of the CB store technician. This resulted in radios modified with the capability of 25.800 to 28.200...with decent performance across this entire band.

Since late 60's, 26.915

GROVE TO SPEAK IN DAYTON

Bob Grove, editor of Monitoring Times and president of Grove Enterprises, will be a featured forum speaker at this year's amateur radio "hamfest" in Dayton, Ohio.

The Dayton Hamvention has become the largest hamfest in the western hemisphere, covering several floors of equipment display space indoors at the Hara Arena, and covering several acres of outside flea market as well.

This year's Hamvention will be held from Friday through Sunday, April 27 (noon) through April 29. For additional information write to the Dayton Hamvention at P.O. Box 1288, Dayton, OH 45402 or call 513-433-7720.

Grove's topics will include hot frequencies for monitoring, new equipment and accessories, trends in technology and answers to the most common questions about listening throughout the spectrum.

The listening forum will begin Sunday, April 29th at 10 AM.

SHORTWAVE LISTENING AT ALLTIME HIGH

Published studies indicate that there are some 500 million shortwave receivers in use worldwide! Time magazine recently reported that 18 million shortwave receivers had been sold over the past ten years in the United States alone.

With prices and sizes coming down, and quality of performance going up, the shortwave bug has bitten a good many listeners!

MHz has been an "independent" operators channel where many of the better stations in the country meet to lock horns and test their "strength." Today, it has a congenial group standing by on it, but it is still the frequency where the "Big Straps" go to test their mettle...

26.875 is homesteaded by the "Gay Caballeros."

26.660, 26.680, 26.760, 26.800, 26.875, 26.895, 26.905, 26.915 MHz are heavily occupied when DX is in.

Operations can be regularly monitored to 26.500 and worldwide DX frequently clutters up the 26.000-26.500 band.

*Free sample of EMTJ available by writing P.O. Box 10723, Edgemont Station, Golden, CO 80401.

- SCANNING ->

800 MHz: THE NEW FRONTIER

by Allen Ray Odell
Columbus, OH

All major cities have communications systems: VHF-LOW BAND, VHF-HIGH BAND and UHF. The larger cities--New York, Los Angeles, and Chicago--have 800 MHz systems as well because of the congestion on the lower frequencies. In the large cities, even the 800 systems are crowded.

While the entire "800 MHz" allocation bandplan extends from 806-960 MHz, the vast majority of "trunked" repeater operations are from 806-866 MHz.

The transmit range here in Columbus is as follows:
806-825 Motorola Base/Mobile
806-821 " " Hand Held
816-821 GE Units; 5-20 channels usable.

The receive range is as follows:
851-870 Motorola Base/Mobile
851-866 " " Hand Held
861-866 GE units; 5-20 channels usable.

Understanding the 800 System

Unlike its lower frequency counterparts, the 800 system is not an independent system. It is dependent on a fixed repeater for its operations. Only in the event of repeater failure will the units act independently as their own repeaters.

The higher you go in MHz the more wattage it takes to push the signal the same distance. For example, it takes 7 watts to transmit a signal 15 miles at 460MHz; at 800 it may take 15 watts to cover the same distance. Generally, the repeaters work the same way; some have 4 selector channels while others have 5 or more, depending upon the amount of traffic to be handled.

The 800 system is the

most complex of all domestic land mobile communications systems. If your base starts transmitting to the repeater it gives your mobile units a selector channel to work from. If you have a 5 channel base or mobile, these channels are divided in 25 kHz spacings. For every 1 MHz in frequency there are 40 channels to choose from. The repeater selects which ones it will use within that range.

The operator has no control over which frequency he is using. The base or mobile units have the channels marked (1,2,3,4,5), but have no frequency designations. You may be talking on channel 1 with all other units but only the repeater knows which of the five channels you are talking on, and it selects at random any five channels within the 40. Just think of the scanner you would need to cover 40 channels per megahertz, times 20 MHz; that's 800 channels!

To make things even more difficult than they already are, the repeater changes its frequencies at random! For example, if you stop using the system at 10 a.m. and turn it back on at 11 a.m., the system central controller (SCC) will have already selected 5 other channels and update all your units as to which frequency you will be using. The SCC can also select from any of the 800 channels, in any order, and designate 5 separate ones for that particular user to access at that particular time.

Currently, the 800 system is overly qualified for most applications except where high security is needed. Only major cities have 800 systems and even those are not always used for this application. Most uses in major cities may be to relieve heavy congestion on other VHF or UHF Bands.

806-906 MHz Allocations

- 806-809.75 Conventional dispatch, mobile
- 806.0125 Ch 1; Mobile, conventional system
- 851.0125 Base, " "
- 806.0375 Ch 2; Mobile, conventional system
- 851.037 Base, " "
- 806-821 Mobile, low power (45 MHz lower offset from base) private radio system (base 851-866)
- 809.75-816 Conventional & trunked mobile (reserve)
- 816-821 Trunked dispatch, mobile
- 820.9875 Ch 1; Mobile, trunked system
- 865.9875 Base, " "

SWL HEADQUARTERS

ELECTRONIC EQUIPMENT BANK THE NAME IN SHORTWAVE LISTENING

NEW FROM KENWOOD

Kenwood R-2000

Now you can extend the R-2000 frequency range to cover the VHF bands 118 to 174 MHz with this new VC-10 VHF converter. Easily installed in your R-2000 or EEB will install it for you with R-2000 VC-10 purchase.

VC-10 VHF Converter

VC-10 **\$149.95**

Kenwood R-2000*

\$499.95

List \$599.95



- 150KHz to 30MHz
- All mode AM-CW-SSB-FM
- 10 Memories (Memorizes Mode)
- Memory Backup
- Memory Scan
- Programmable Band Scan
- 24 Hour Clock-Timer

Option 1—Mechanical Filter **\$95**

Option 2—RIT modification **\$35**

*Free 90 day extended EEB warranty

SPECIAL PURCHASE

Save **\$208.00**

Yaesu FRG-7700*

\$499.95* Limited Quantity



FREE MU-7700 12 Channel Memory
FREE FRT-7700 Antenna Tuner

EEB's best buy now only \$499.95 with FREE MU-7700 and FRT-7700 tuner—a \$707 value.

*Free Extended 90 day EEB warranty.

Kenwood R-600*

AM-SSB-CW Modes, noise blanker, 30 bands 200KHz to 30 MHz wide/narrow I.F. Filtering. Excellent performance at a budget price.



R-600 List \$399.95

Sale \$329.00

*Free 90 day extended EEB warranty.

NEW FROM SONY ICF-2002

A new generation receiver. The best features of the famous ICF-2001 PLUS!



- Less than 1/3 the size of 2001
- Low battery drain (4) AA cells (2) AA cells for memory/clock
- 10 station memory presets
- 12/24 hour clock (local or GMT)

• Synthesized PLL tuning—most accurate, drift free method known

- AM, SSB, CW 153KHz to 30MHz
- FM 76 to 108MHz

\$249.95

ICOM R-70*

Special Purchase **\$599.00**

SAVE **\$150.95**

You have read the details on this revolutionary receiver. It's getting rave reviews.



- Frequency Range 100KHz-30MHz
- Pass Band Tuning
- Notch Filter
- Fully Synthesized
- AGC Control Fast/Slow/Off
- Noise Blanker Wide/Narrow

The Best just got Better

EEB offers the upgraded R-70 SWL Receiver tailored to your needs.

Option 1— AM Wide/Narrow. Switch between AM 6KHz filter and the 2.3KHz SSB filter while in the AM mode.

*Option 2— 2.3KHz Mechanical Filter. Replaces ceramic SSB filter to give much sharper skirt selectivity, wider dynamic range. \$95 installed

*Option 3— 8 Pole Crystal Filter. Replaces 2.3KHz ceramic SSB filter—allows you to experience the full potential of this fabulous receiver. \$179 installed

(*Option 1 required for use in the AM mode)

All EEB modified R-70's are realigned for optimum performance.

*Free 90 day extended EEB warranty.

G.E. World Monitor II

SALE **\$169.96**

Best Buy under **\$250**



- 6 Bands 3.5 to 31 MHz-SWL-MW-FM
- World Power 120/220 V 50/60 Hz
- DC operation from internal batteries

• EEB test results show this receiver to be superior to many selling up to \$250. Physical layout and electrical specifications similar to the popular Panasonic RF-2900.



World Radio TV Handbook

1983 SWL Bible in Stock

Reserve your 1984 WRTVH now.

Order by December 31st—Free postage and 1983 pricing.

\$17.50

postage paid (USA) book rate

NEW FROM SONY

Sony Active Antenna

Our tests show the Sony AN-1 antenna equal to or better than other antennas costing twice as much and less susceptible to overload from strong signals.



Why pay \$159? SONY AN-1 **\$79.95**



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



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

Electronic Equipment Bank

516 Mill Street, N.E.
Vienna, Virginia 22180

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



PIRATE RADIO



by
John Santosuosso

BURMA: An old, established clandestine dating back to 1971 is the Voice of the People of Burma, operated by the Burmese Communist party. There has been much speculation as to the location of the station transmitter, with most assuming it is in China.

Through a reliable source we have learned this transmitter is actually in the Communist-controlled border town of Panghsang near the Nam Hka River, which forms the border between Burma and China. The fact that the station is actually on Burmese soil probably explains why it continues to freely operate, even though the Chinese have pulled the plug on stations such as the Voice of the People of Thailand and the Voice of the Malayan Revolution which were broadcasting from Chinese territory.

Although most easily heard on the West Coast, the Voice of the People of Burma can be received over most of North America. It transmits in Burmese, Chinese, and various Burmese tribal languages. Try for this one in the mornings. The frequency of 7575 has been used in the past.

HAITI: Although perhaps already inactive, a new clandestine hostile to the government of Haiti has been reported. It identifies as Radio Libertie and broadcasts in French and Creole. The schedule that was being observed included transmissions on 9610 Sunday and Wednesday at 2100 and 2300 GMT.

HOLIDAY PIRATES: As we have noted in this column before, major holidays are a favorite time for American pirates. This past holiday season was no exception. Radio USA was heard here December 24 on 14470 in LSB, while on January 1 the Voice of Laryngitis was received with a really first class program of music and comedy on 15050.

Mark your calendar for

July 4. Most likely the pirates will be back.

New Jersey's George Primavera checks in with reception of popular KPRC on December 18, with host Pirate Joe. This station was heard on December 18 and was announcing frequencies of 1626 and 6240. KPRC always makes for interesting listening, as Pirate Joe is one of the more political of the pirate broadcasters.

George also sends along an update on the Philadelphia "2001 Label Pirate," which has been mentioned in past columns. This outfit is starting to replace its old labels, which were appearing all over Philadelphia, with new larger ones. However, George says they apparently have not yet made an actual broadcast. He notes that maybe they are waiting until the conclusion of their "ad campaign"! Still, it might not hurt to monitor 6250. You may hear something interesting one of these days!

RADIO MARTI: Although incorrectly identified as the start of Radio Marti by much of the media, Ronald Reagan made a Voice of America broadcast to Cuba January 6 publicly announcing the administration's plans to begin Radio Marti broadcasts to that country.

Radio Marti programming will not start until spring. Look for it most likely on 1180, via the VOA transmitter at Marathon, Florida. Also be looking for certain Cuban retaliation which will probably come in the form of jamming, increased power for domestic Cuban stations and counter-Voice-of-Cuba broadcasts.

ANOTHER CRYPTOGRAM: Havana Moon presented his readers with a very interesting cryptogram last month. Now, if you solved that one, here is another little puzzle for you. What do Korean Airlines and Finnaire have in common? Sorry, the answer will not appear next month. We expect some of our readers already know the answer anyway!

KILLER PIRATE TV: Did the Philadelphia Mafia use a pirate TV message transmitted over an Atlantic City cable system to warn several mobsters they would be "eliminated"? So claims Murray Waas in the premier issue of porn king Larry Flynt's new magazine, "The Rebel." It contains no "skin," but based on the first two issues, if this publication manages to stick around it is going to upset a lot of people, especially in Washington.

On a less sinister note, George Primavera in-

forms us that someone in a Darth Vader costume managed to make several pirate broadcasts over a south Florida cable system. Interestingly enough, he made a sales pitch for illegal signal decoders!

PLO: In addition to sometimes operating its own broadcasting facilities, the Palestine Liberation Organization often transmits clandestine programs using the facilities of governments friendly to its cause. One of the easiest of these to hear is the daily 1700 GMT broadcast in Arabic on 15370 kHz, transmitted from Algeria.

IRELAND: From Dublin, Tony Donlon sends us an update of the Irish short-wave pirates. Those currently active are: Mi Amigo International on 6245 or 6285 (1045 to 1300 GMT); Westside Radio on 6280 (1000 to 1300); Radio Ireland International, 6310 (0830 to 1300); Radio Enterprise, 6317 (0900 to 1200); Radio Dublin on 6910; and Westside Radio International, 11463 (0600 to 1000 GMT).

All of these are in the Dublin area, and all of them transmit Sundays only except Radio Dublin which broadcasts 24 hours a day every day. Radio Enterprise is on an irregular schedule.

PIRATE QSLING: Several months ago we published a portion of John T. Arthur's pirate address list. Now here is another portion of it. The following stations, some of whom are inactive, may be contacted via Box 982, Battle Creek, MI 49816: WCRS, WHFO, WOIS, WOOF, WPOT, KTGR, Radio Alpha Corona, Radio Amity, Radio Clandestine, Radio Confusion, Radio Free Wombat, Radio Flying Dutchman, Radio Indiana, Radio Northstar International, Radio Paradise International, Radio Toronto, Radio Xenon, Sumari Radio, Voice of Laryngitis, Voice of the Pyramids, Voice of Syncom, and Voice of the Voyager.

Remember to include three 20 cent stamps if you want a reply, and remember that no maildrop can guarantee you a reply. It can only forward your letter. While some of the above stations are excellent verifiers, other have seldom--if ever--responded to reception reports.



Books for the Ham Shack from WAYNE GREEN BOOKS



Novice License Study Guide
by Timothy M. Daniel
N8RK

This book emphasizes the practical side of getting a license and putting a station on the air. Complete with information about learning Morse code, the latest FCC amateur regulations and application forms, this guide is easily the best path into the exciting world of ham radio.
SG7357 \$4.95

General License Study Guide
by Timothy M. Daniel
N8RK

Learning rather than memorizing is the secret. This is not a question-and-answer guide that will gather dust when the FCC issues a new test. Instead, this book will be a helpful reference, useful long after a ham upgrades to General. Includes up-to-date FCC rules and an application form.
SG7358 \$6.95

Behind the Dial
by Bob Grove

This book explains, in detail, what's happening on all the frequencies, from shortwave up to microwave, including some of the secret stations of the CIA and FBI. Surveillance, station layout considerations, antenna systems, interfacing, and the electromagnetic spectrum are included.
BK7307 \$4.95

The New Weather Satellite Handbook
by Dr. Ralph E. Taggart
WB8DQT

This revised edition contains all the information on the most sophisticated and effective spacecraft now in orbit. The book is also an introduction to satellite watching, providing all the information required to construct a complete and highly effective ground station. Not just ideas, but solid hardware designs and all the instructions necessary to operate the equipment are included.
BK7383 \$8.95

The Magic of Ham Radio
by Jerry Swank WB8HXK

Under various call signs, WB8HXK has been heard on the ham bands since 1919. He has watched amateur radio grow from the days of Model A spark coils to an era of microprocessors and satellite communications. Drawing on his own colorful experiences and those of many other hams, Jerry has compiled this word-picture of ham radio during the past six decades.
BK7312 \$4.95

World Repeater Atlas

2000 repeater listings are indexed by location and frequency, pinpointed on more than 50 maps covering the USA, Foreign listings include Europe, the Middle East, South America, and Africa. In addition to covering the popular two-meter repeaters, the **World Repeater Atlas** lists repeaters for six meters, 220 MHz, and the other bands.
BK7315
Special price \$2.00

LIVE BOOKS

CALL TOLL-FREE 1-800-258-5473

Ask for FREE retail catalogue of over 100 ham and microcomputer titles.

ORDERING INFORMATION

Please enclose \$1.50 first book, \$1 each additional book. Allow 4-6 weeks for shipment. No C.O.D.'s please. We accept VISA, MC and AMEX.

DEALER INQUIRIES INVITED

Wayne Green • Book Sales • Peterborough NH 03458

ARINC ENROUTE AIRCRAFT FREQS

Aeronautical Radio Incorporated is the largest aircraft communications leasing corporation in America. With extensive communications facilities at every major airport in the coun-

try, ARINC equipment and personnel virtually control all air to ground VHF radio which the listener is likely to hear while monitoring the aircraft band

The accompanying map

shows some of the most-used channels used by commercial air carriers nationwide. Frequencies shown are in megahertz and the mode is amplitude modulation.

Thanks to MT reader Art Kimball for the timely map.

ACARS: COMPUTERIZED

AIRLINE COMMUNICATIONS

A new development in communications for the airlines automatically provides vital flight information to ground personnel over an ARINC (Aeronautical Radio, Inc) VHF network at a cost, speed, and accuracy not possible through present manual/voice communications. ACARS (ARINC Communications Addressing & Reporting System) is an addressable digital data link system which permits routing of messages to and from a particular aircraft.

Included in these reports will be the flight out/off/on/in times, flight crew identification numbers, departure/destination stations, flight number, fuel quantity and various ETA reports. Additionally, provisions have been made to allow incorporation of cockpit printer and/or card readers as well as complete cabin passenger service terminals.

The cockpit mounted control unit interfaces with the crew; nearly 80% of all operation is prepared while the aircraft is in the gate.

ACARS ON HF

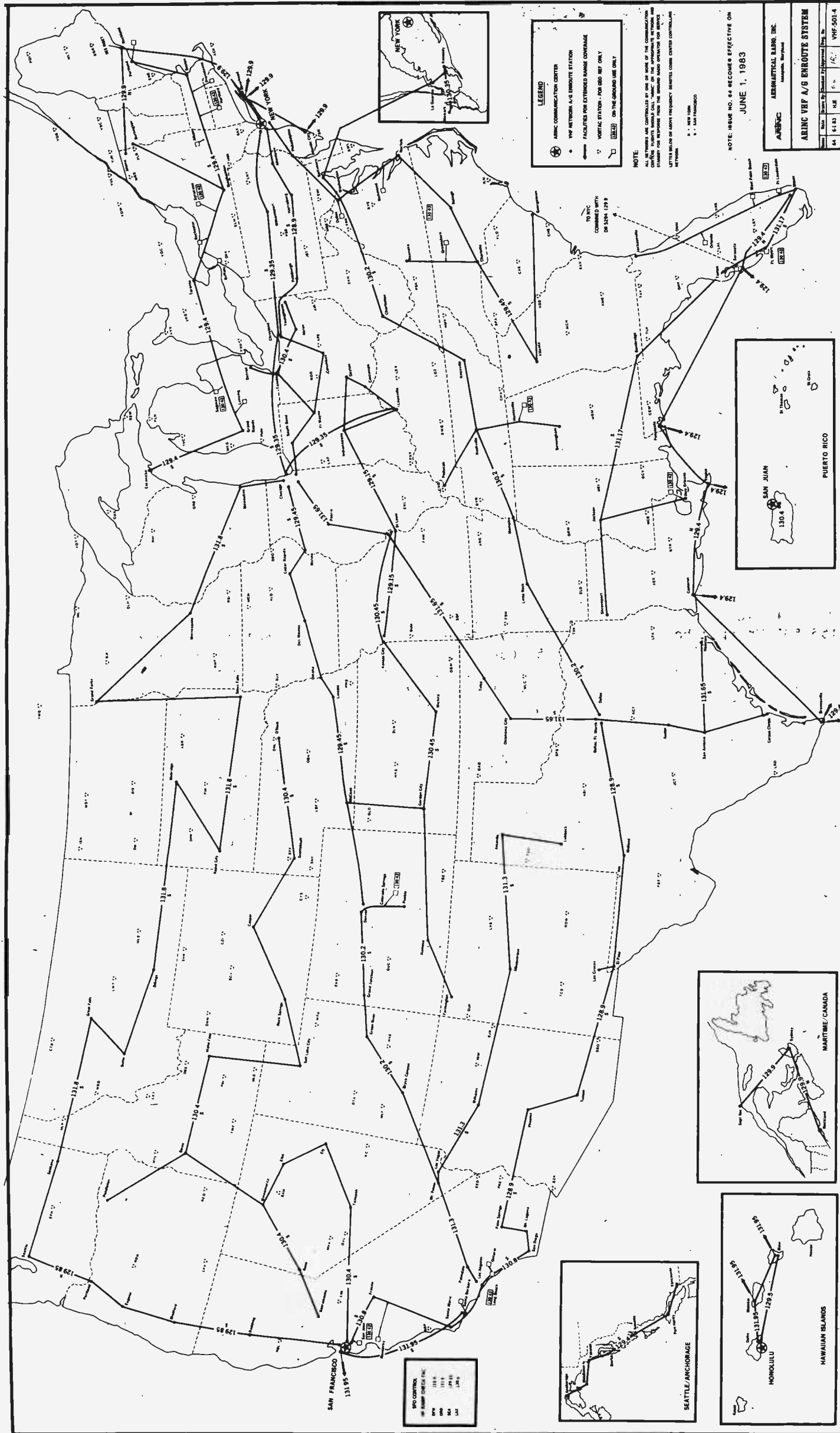
ARINC's domestic United States data-link system uses VHF exclusively for air-ground radio at this time, consisting of 160 ground stations. There are additional data-link stations at Vancouver, Edmonton, Calgary, Toronto and Montreal, Canada; Bermuda, San Juan, Anchorage, Honolulu, Miami and Hilo; Mexico City, Monterey, Acapulco and Guadalajara, Mexico.

Data-link coverage beyond line-of-sight, as in the case of oceanic routes, suggests the use of high frequencies for the air-ground radio path.

ARINC has been engaged in a project to adapt data-link to HF for several months, presently in cooperation with American Airlines and Teledyne Controls.

Existing HF SSB airborne transceiver equipment will be used at a data rate of 300 bps. The flight tests of the ARINC HF data-link are being conducted on the normal Long Distance Operational Control Facility (LDOCF) HF channels. The ARINC aeronautical stations at New York and San Juan are being modified to accommodate the equipment.

To permit unrestricted use of the LDOCF channels in the voice mode, the data



NEW JERSEY

Scanner Monitoring

contributed by Jim Sutton

County/County Seat

ALLEGANY CO; Belmont

155.310 Sheriff Dispatcher
 155.970 Mobile/RI
 46.36 Fire Dispatcher
 155.340 UHF;Hosp/Ambulance
 45.20 Hiway Maintenance
 154.785 All Police Depts
 46.36 Ambulance Dispatch
 39.18 " " "

SP Troop A

CATTARAUGUS;Little Valley

39.14 Sheriff Dispatcher
 39.34 Mobile/RI
 33.70 Fire Dispatcher
 33.74 " "
 33.68 " "
 155.340 UHF;Hosp/Ambulance
 45.80 Hiway maintenance
 39.24 Olean Police Dept

SP Troop A

GENESEEE; Batavia

154.875 Sheriff Dispatcher
 46.12 Fire Dispatcher
 155.175 Hosp/Ambulance
 37.98 Hiway Maintenance
 453.800 " "
 453.450 " "
 460.225 Batavia Police Dept
 46.12 Ambulance Dispatcher

SP Troop A

LIVINGSTON;Geneseo

155.595 Sheriff dispatcher
 154.950 Mobile/RI
 46.16 Fire dispatcher
 155.340 Hosp/Ambulance
 151.055 Hiway Maintenance
 155.130 All Police Depts
 155.595 Ambulance Disp
 46.16 " "

SP Troop E

NIAGARA; Lockport

154.755 Sheriff Dispatcher
 46.06 Fire Dispatcher
 155.175 Hosp/Ambulance
 45.72 Hiway Maintenance
 155.25 Lewiston Police Dept
 46.06 Ambulance dispatcher

SP Troop A

ONTARIO;Canandaigua

154.815 Sheriff dispatcher
 155.850 Mobile/RI
 46.42 Fire dispatcher
 155.340 Hosp/Ambulance
 151.010 Hiway maintenance
 155.970 All police depts
 46.42 Ambulance dispatcher

SP Troop E

ORLEANS;Albion

155.430 Sheriff dispatcher
 46.08 Fire dispatcher
 155.175 Hosp/Ambulance
 159.000 Hiway Maintenance
 SP Troop A

SENECA;Waterloo

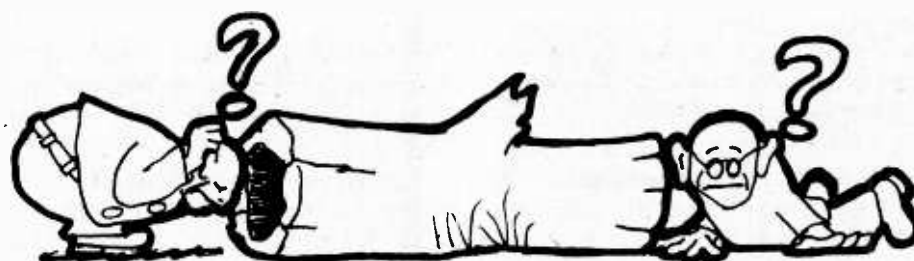
155.550 Sheriff dispatcher
 46.10 Fire dispatcher
 155.340 Hosp/Ambulance
 151.070 Hiway Maintenance
 46.10 Ambulance dispatcher

SP Troop E

STEBEN;Bath

155.310 Sheriff dispatcher
 155.970 Mobile/RI
 46.40 Fire dispatcher
 155.340 UHF;Hosp/Ambulance
 37.90 Hiway maintenance
 154.785 All police depts
 46.40 Ambulance dispatcher

SP Troop E



Listeners' log

WAYNE;Lyons

154.845 Sheriff dispatcher
 46.44 Fire dispatcher
 155.340 Hosp/Ambulance
 151.115 Hiway maintenance
 154.725 All police depts
 155.940 Ambulance dispatcher

WYOMING;Warsaw

155.010 Sheriff dispatcher
 154.710 Mobile/RI
 46.18 Fire dispatcher
 155.175 Hosp/Ambulance
 151.130 Hiway maintenance
 46.18 Ambulance dispatcher

YATES;Penn Yan

155.610 Sheriff dispatcher
 154.950 Mobile/RI
 46.50 Fire dispatcher
 151.085 Hosp/Ambulance

SP Troop E

STATEWIDE

155.370 Point to point all
 police and sheriff
 39.46 Sheriff dispatcher
 network
 45.88 Fire dispatch net
 46.22 Fireground Ch 2

STATE POLICE

155.505 Troop A base
 155.535 " " car
 154.905 Troop E base
 154.770 " " car
 155.625 " " data
 155.565 " " car
 159.150 Vehicle rpters
 154.665 Car-car;both
 troops
 155.475 " " " "
 154.695 Statewide;both
 troops

PARKS

39.24 Allegany State;
 police
 39.18 " "
 44.72 " "; maintenance
 151.745 Darian Lakes
 34.83 Iroquois Wildlife
 45.10 Letchworth State;
 police
 44.92 " "; maintenance
 163.4125 " "; Corps of Eng
 dam
 165.0875 " "; " " "
 34.83 Montezuma Wildlife
 155.685 Niagara State
 44.72 Stoney Brook State

MONROE COUNTY

159.030/Sheriff East
 156.030
 158.955/Sheriff West
 155.910
 159.210/CW/city records
 156.210
 patched with
 460.325
 159.090/Towns East: E Ro-
 156.090 chester/Fairport/
 Webster Police Depts
 158.730/Towns West:Ogden/
 156.150 Wheatland Police
 Depts

Rochester Fire:

154.130 dispatch
 154.250 Ch 2
 153.830 f/g
County Fire:
 154.310 Dispatch
 154.250 Ch 2
 154.175 Ch 4
 154.340 Ch 6
 154.385 Ch 3

Rochester Police:

460.025 Ch 1 East Disp
 460.450 Ch 3 West Disp
 460.500 Ch 4 c/c sp-ev
 460.125 Ch 2 data
 460.325 Ch 5 city rec
 460.525
 154.980 tow truck
 453.500 traffic
 453.400 paging

County Police Depts:

460:225 Brighton
 158.940 Brockport
 460.425 Gates
 460.350 Greece
 460.075 Irondequoit
Highway Depts:
 37.94 County
 161.430 Rochester
 37.10 Brighton

155.835 Churchville
 453.575 Gates
 453.650 Greece
 155.100 Irondequoit

COLLEGE SECURITY

453.050 Alfred SUNY
 154.515 Alfred University
 453.050 Amherst SUNY
 453.350 Brockport SUNY
 453.050 Buffalo SUNY
 151.955 Somm C Finger Lks
 158.460 Eastern Sch Music
 155.745 Geneseo SUNY
 151.805 Houghton College
 154.040 Monroe Community
 151.715 Roch Inst Tech
 461.375 Univ of Rochester
 151.895 St. John Fisher

OTHER SECURITY

461.650 Marketplace Mall
 151.655 Midtown Plaza
 153.530 RG&E
 151.655 Doyle
 460.975
 461.075 AEGIS
 463.500 AAA Alarms
 151.805 St Johns Home

OTHER STATE AGENCIES

159.225 Conservation mr
 151.430 " m
 159.300 " mr
 159.435 Forest Fire mr
 151.220 " " Fl m
 151.280 " " F2 m
 453.425 Thruway Authority
 453.525 " "
 47.32 DOT b/c
 47.40 " c/b
 47.22 " c/c

CORRECTIONS/MENTAL HEALTH

453.400 Albion Correction
 453.400 Attica primary
 453.750 " backup
 47.50 Buffalo State
 453.325 Buffalo Rehab

453.975 Groveland primary
 453.775 " backup
 155.070 Newark State,police
 154.995 " "
 33.04 Rochester State
 155.085 " "
 155.070 Sonyea
 155.070 Willard

MEDICAL

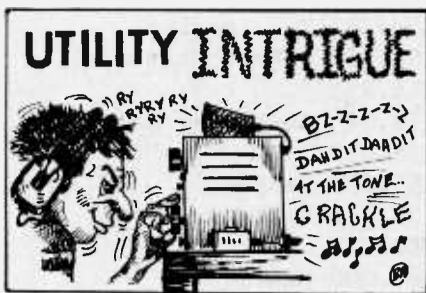
463.000 MED 1, UHF
 463.025 MED 2, Hospital/
 463.050 MED 3 Ambulance
 463.075 MED 4
 463.100 MED 5
 463.125 MED 6
 463.150 MED 7
 463.175 MED 8
 171.2625 Batavia VA
 162.225 Bath VA
 155.220 Bath Vol Amb
 155.220 Buffalo City Amb
 154.055 Farmington Vol Amb
 158.880 Gates Vol Amb
 154.055 Greece Vol (GVA)
 155.235 Henrietta Vol Amb
 155.160 Highland Hosp Sec
 155.295 LeRoy Vol Amb (LVA)
 155.295 Monroe Co Ambs
 47.58 National Amb Fl
 47.62 Rochester F2
 155.205 Monroe Amb Roch
 155.280 Roch Gen Hosp Sec
 461.375 Strong Mem Sec
 151.835 " " "
 169.000 Canandaigua VA
 47.42 Red Cross

SCHOOLS

463.150 Alexander
 33.04 Attica
 155.235 Brighton
 155.235 Chvl-Chili
 47.46 Dansville
 33.04 Gates-Chili
 461.025 Geneseo
 33.10 Greece
 47.50 Livonia
 151.865 Pavilion
 37.98 Rush-Henrietta
 47.62 Wayland
 461.675 Warsaw

UTILITIES

Niagara Mohawk
 47.98 " " c/c
 47.82 " " "
 37.62 RG&E
 48.10 "
 153.725 "
 173.3962"
 451.025 "
 451.100 "
 48.20 NY St E&G
 48.30 " " "
 48.32 " " "
 39.10 Conesus Lk Sewer
 155.820 Dansville Water
 153.845 Honeoye Lk Sewer
 153.410 Rochester Water
 47.94 Fairport Village
 451.200 Monroe Co Water
 151.805 Roch Gas & Energy
 158.190 RG&E gas
 158.220 " "
 451.500 Rochester Tel
TRANSPORTATION
 160.800 Conrail road
 161.130 " maintenance
 161.220 " police
 161.070 Amtrack
 160.500 C&W RR
 160.590 " "
 160.830 LA&L RR
 44.26 Shays Service
 154.515 Genesee Buses
 463.750 Henry Becker
 159.690 Empire St Lines
 44.04 Roch Air Freight
 Regional Transit



by Don Schimmel

From time to time I plan to make mention in the column of various publications I have found to be worthwhile "OPERATOR AIDS." Some of these books and/or pamphlets have been previously reviewed in depth in the LIBRARY SHELF column of MT so I therefore will simply list them, where they can be obtained and cost/shipping information. A few comments will be included where deemed appropriate. These publications can be very helpful in determining the identification of some utility stations.

1. **SPEEDX REFERENCE GUIDE TO THE UTILITIES, SPEEDX** (Dept. MT, P.O. Box E, Elsinore, CA 92730) \$12 bookrate, \$14 first class.

A dandy 3-ring binder (7" x 9") is included and it houses the 5 currently available sections. These cover Basic Information, Morse Code Primer, Commercial Aeronautical, HF Beacons, and US Coast Guard.

2. **CONFIDENTIAL FREQUENCY LIST** (\$10.95) and 3. **GUIDE TO RTTY FREQUENCIES** (\$9.95) by Oliver P. Ferrell. Available from EEB and Universal Amateur Radio, both Monitoring Times advertisers.

4. **SHORTWAVE FREQUENCY DIRECTORY, GROVE** (\$12.95)

5. **FEDERAL FREQUENCY DIRECTORY, GROVE** (\$15.95)

6. **SOUNDS OF SHORTWAVE** (Tape), GROVE (\$5.95)

Spending some time listening to this tape is an excellent means of becoming acquainted with many of the utility signals that appear on the airwaves. Also contains valuable information on some SWL technical subjects.

Items 4 and 6 available from GROVE ENTERPRISES (140 Dog Branch Rd., Brasstown, NC 28902). Items 4 and 5 available from EEB. By the way, I understand that Item 5 is in short supply and becoming difficult to locate. EEB does have some copies in stock, as has Century Print Shop, 6059 Essex St., Riverside, CA 92504.

7. **WORLD UTILITY FREQUENCY & CALLSIGN GUIDE, KLINGENFUSS** (\$12.95)

8. **LIST OF SPECIAL RTTY & CW ALPHABETS & CODES, KLINGENFUSS** (\$12.95)

9. **LIST OF WORLWIDE RTTY STATIONS IN FREQUENCY ORDER, KLINGENFUSS** (\$12.95)

10. **CALL SIGN LIST OF UTILITY (RTTY) STATIONS, KLINGENFUSS** (\$6.95)

Item 8 provides an explanation of the oddball CW and RTTY alphabets that are encountered in SWL.

Items 7-10 available from UNIVERSAL ELECTRONICS. Item 9 is available from GROVE ENTERPRISES at \$11.95.

All of these suppliers will ship the books US Postage Paid (via bookrate). If faster delivery is desired, UPS should be specified and the additional fee included. In most cases, as of 1 January 1984, this amount was \$2.00.

While this list of publications is primarily directed to the new utility listener, longtime buffs may also find a title mentioned here that they were not aware of.

Next month we will look at some other "OPERATOR AIDS" of a different type.

Before closing out UTILITY INTRIGUE for this month I want to comment about an unusual signal I have encountered a number of times. The transmission sounds like very high speed keying of some type and the signal is very wide, covering approximately 30-35 kHz. Frequently after the high speed keying has been on for a few minutes, it will stop

followed by hand sent QSA requests. When the signal is hand keyed it is very chirpy.

This type signal has been heard Oct 01 1230Z on 13420/13450 kHz; Nov 11 1950Z on 13352/13386 kHz; Dec 01 1318Z on 13784/13750 kHz; and Dec 31 1401Z on

13935/13900 kHz. Perhaps some of you readers have also noted this activity and can offer your observations.

And now to this month's frequency loggings.

*Don Schimmel
516 Kingsley Road SW
Vienna, VA 22180

FREQ. KHZ	DATE	TIME	COMMENTS
6477	12/30	1255	CW KPH TFC LST(SAN FRANRADIO,CA)
6493	12/30	1257	CW (VANCOUVER CG RADIO,BC,CANADA)
13176	12/18	1431	USB INT'L PHONE LINK; SPANISH
13216.5	12/29	2038	CW FUX (PORT NAVY RADIO, REUNION)
13270.5	12/18	1428	USB FEMALE ENG VOICE,CANADIAN AIR WEATHER.(POSS GANDER,NFLD,CANADA)
13327.6	12/10	1707	USB MALE SPANISH VOICE,PLAINTEXT SPANISH & SOME DIGIT GRPS.MENTIONED A FLIGHT NBR.ONE MALE ADDRESSED AS "CAPTAIN"
13352	12/10	1304	CW 5L GRPS.PROB SOVIET.USERS 4 SPEC CHARACTERS(AA OE CT IM)
13372	12/18	1420	CW NMN(COMMSTA PORTSMOUTH,VA)
13390	12/17	1222	CW NBR GRPS
13390	12/17	1224	CW HAND SENT.SIGNAL RIGHT UNDERNEATH ABOVE TFC.4F GRPS.
13424.5	12/15	2130	CW HAND SENT SPANISH PLAINTEXT. GOVT TFC
13429	12/15	2130	USB FEMALE SPANISH VOICE,"ACION 936 105" 5F GRPS
13471	11/19	1230	POSS FACSIMILE
13491	12/29	2112	RTTY(MAIQUETIA AERADIO,VENEZUELA)
13566	11/16	2042	VARIOUS TONES KEYED RANDOM FASHON
13702	12/29	2045	USB MALE SPANISH VOICE "RR" "73" "COMANDO MILITAR"
13710	12/10	1310	SAME AS ABOVE
13721	12/10	1323	CW TAPE(SENDS 721 THREE TIMES FOLLOWED BY TTT,THEN REPEATS
13966	12/20	2048	CW PORTUGUESE LANGUAGE
16473	12/29	2104	CW WLO(MOBILE,AL)
18650	12.29	2109	RTTY

MORE ON ELF

by Don Schimmel

The controversy continues regarding the North Woods US Navy project. (See MT May/June, July/August and September/October 1983 - three part series by Larry L. Ledlow, Jr.)

A recent Washington Post article indicated it is possible that the ELF Project will be completed by 1985. However, Marquette County in Upper Michigan and the State of Wisconsin have filed a joint federal environmental suit in an apparent last ditch attempt to block the project.

The controversy has arisen because questions have been raised regarding the cost--some view the ELF as not being cost effective--and concern about what effect it will have on the environment.

The General Accounting Office got into the act stating in one of its reports that the project could not be protected against sabotage nor against storm damage to the antenna system. The GAO also pointed out the necessarily long time (approximately 15 minutes) required to send the three letter message is not worth the construction bill of over \$200 million!

**GOVERNMENT RADIO SYSTEMS
Northern California**

Public Safety systems - 3500 entries
Comprehensive systems organization
7 information fields

Local Police Fire Public Works
Districts State Federal
Frequency input/output assignments
Net names Channel numbers Tone codes

Authoritative Verified accurate
IRAC unclassified listings
Esoteric systems included

For this attractively bound 64 page
postpaid directory send \$15 to
Mobile Radio Resources
2661 Carol Drive
San Jose CA 95125

For 8 page Justice-Treasury supplement
with your order ask for no charge
restricted distribution list

TUNE IN CANADA



CANADA

by

Norman H. Schrein

Greetings and welcome to another edition of the "Tune in Canada" column. I have received several requests for frequency information across the country, so let's begin with the Prince Rupert, B.C. first. Just as a matter of note, if you live in or near the state of Alaska, work has begun on a Fox "Scanner Radio Listings" for Alaska. More on that when it has been completed. Now on to the frequencies!

PRINCE RUPERT, BRITISH COLUMBIA FREQUENCIES:

Freq MHz/Agency & Callsign

- 151.430 BC Ministry of Hwys
Call: XMV 260
- 152.210 " " " "
- 160.365 Canadian Nat'l R.R.
Call: CHB 441
- 160.665 " " "
- 160.695 " " "
- 161.085 " " "
- 161.415 " " "
- 455.700 CBC; Call: CJY 50
- 153.230 CHTK Radio
Call: CJY 743
- 121.500 Dept. of Transport
Call: VAJ
- 121.900 " " "
- 122.200 " " "
- 126.700 " " "
- 130.800 " " "
- 156.800 " " "
- 156.950 " " "
- 161.650 " " "
- 161.900 " " "(input 157.300)
- 414.1125 " " "(input 419.100)
- 108.000 " " " Call: VE9 ECV
- 108.100 " " "
- 334.700 " " "
- 155.190 Chappell, Richard P.
Call: VGE 978
- " " "
- 155.910 " " "
- 151.775 Skeena Broadcasters
Call: VGE 987
- 151.565 Lindsays Cartage &
Storage/Call: VGG 881
- 168.780 Agriculture Canada
Call: VGH 623
- 169.200 " " "
- 168.780 " " Call: VGH 624
- 169.200 " " "
- 157.530 Whitewater Enterprises/Call: VGH 649
- 156.925 BC Marine Packers
Call: VGI 70
- 156.975 " " "
- 156.250 " " " Call: VGK 34
- 156.925 " " "
- 156.975 " " "
- 156.925 " " " Call: VGK 35
- 156.800 " " " Call: VGK 39
- 156.925 " " "
- 152.960 Boomaris Plumb&Heat
Call: VGK 315
- 149.020 Canadian Fishing Co.
Call: VGL 223
- 158.910 McLeans Shipyard
Call: VGL 247
- 156.800 O.W. Nickerson Co.
Call: VGL 811
- 156.850 " " "

- 163.020 Continental Grain Co
Call: VGM 632
- 163.020 " " " Call: VGM 633
- 29.960 Ritz Fishing
Call: VYA 52
- 138.525 RCMP (input 139.245)
Call: XJA 44
- 138.945 " "
- 139.080 " "
- 139.185 " "
- 138.945 " Call: XJD 682
- 139.080 " "
- 139.140 " "
- 139.185 " "
- 139.215 " "
- 138.525 " (input 139.245)
Call: XJE 933
- 138.945 " "
- 139.080 " "
- 139.185 " "
- 138.525 " (input 139.245)
Call: XJE 951)
- 138.945 " "
- 139.080 " "
- 139.185 " "
- 158.700 Prince Rupert Municipality/Call: XJF333
- 160.140 " " (input 153.830)
- 30.420 P.Rupert Reg. Hosp.
Call: XKC 524
- 151.205 Dept of the Environ.
Call: XLI 31
(Input 151.885)
- 151.865 " " "
- 163.125 BC Dept Land, Forests
& Water/Call: XLV 65
(Input 163.995)
- 163.830 " " " "
- 163.890 " " " "
- 151.430 BC Min. of Highways
Call: XMV 260
(Input 152.210)
- 152.210 " " "
- 165.030 Reliable Cabs
Call: XNA 77
- 155.940 Skeena Taxi
Call: XNA 340
(Input 150.935)
- 168.000 Cement Products
Call: XNB 437
- 157.620 TMC Transp. System
Call: XNF 947
- 165.300 BC Hydro&Power Auth.
Call: XOK 792
(Input 165.930)
- 165.930 " " " "

From Ottawa, Ontario, our list of frequencies continues:

- 32.260 Bell Canada
Call: CGD 21
- 149.770 " " "
- 152.510 " " (input 157.770)
- 152.570 " " (input 157.830)
- 157.590 " " Call: CGD 568
- 163.170 " " (input 165.540)
- 161.115 Canadian Pacific
Call: CHB 499
- 161.475 " " Call: CBB 499
- 161.085 Canadian Nat'l RR
Call: CHB 725
(Input 160.305)
- 148.510 Christie & Walther
Electronics
Call: CHC 95
- 163.740 " " "(input 167.520)
- 165.460 " " "(input 168.480)
- 451.525 " " "(input 456.5375)
- 143.685 Pagette Airsignals
Call: CHC 246
- 164.400 " " "
- 164.520 " " (input 168.540)
- 419.2125 " " "
- 419.5125 " " "
- 44.240 Time Communications
Call: CHC 300

- (Input 48.240)
- 143.220 " " "
- 143.775 " " "
- 164.340 " " (input 168.360)
- 164.925 " " (input 168.645)
- 414.300 " " "
- 451.400 " " (input 456.4125)
- 452.875 " " (input 457.875)
- 143.220 " " (input 416.2625)
Call: CHC 558
- 143.775 " " "
- 164.490 " " (input 168.510)
- 414.2625 " " "
- 414.300 " " "
- 451.675 " " (input 456.0875)
- 451.475 " " (input 456.4875)
- 463.525 " " (input 468.5375)
- 47.970 Canadian Gen. Elect.
Call: CHC 592
(input 48.970)
- 451.600 " " "(input 456.6125)
- 451.350 Time Communications
Call: CHC 615
(Input 456.3625)
- 451.500 " " (input 456.5125)
- 460.025 " " (input 465.0375)
- 463.325 " " (input 468.3375)

With that bit of information, this monthly column comes to a close. Now that I have located in a permanent office, I would like to give my U.S. Toll free number to any readers that wish to contact me. The number is 1-800-543-8513. Our main office number is 513-236-3591. Feel free to give me a call during routine working hours --generally from 8:30 AM to 5:00 PM. Until next time -- GOOD MONITORING.

VIEWPOINT from p.2

create a Faraday cage by painting the inside of the plastic case with metallic paint. Then you make an RF choke by wrapping a length of the AC line cord around a pencil, taping it inside the case. Then you place a sheet of plastic-covered foil under the keyboard.

These steps should reduce the hash escaping out to the lines to be radiated to the nearby TV and radio antennas.

Simple bypass capacitors can be added if there still is a problem.

Bob Russ
Walworth, WI

>>><<<

Thanks again for "Monitoring Times." My subscription paid for itself this morning when I found my first "numbers" station! I wouldn't have even known about these without MT.

Patrick L. Garrison
Long Island City, NY

>>><<<

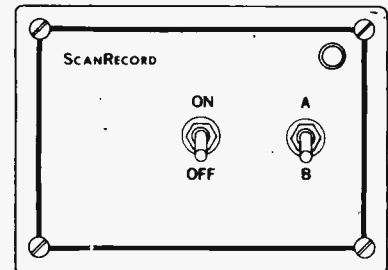
Amen to the article by James Beckett WA2KTJ of Corning NY titled "A Japanese Conspiracy?"

My experience is with a Yaesu FRG 7700 which cost me \$665 for the receiver with memory, and DC adapter kit, and optional (?) FF-5 filter kit which reduces the inter-modulation products produced

Cont'd p.10

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.

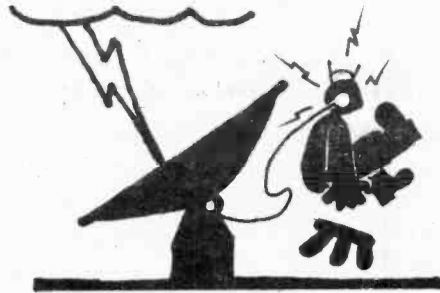
Your complete satisfaction is guaranteed. Order your ScanRecord today for only \$35.75 plus \$2 shipping and handling.

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.

CAPRI ELECTRONICS
Route 1-M
Canon, GA 30520
(404) 376-3712

SIGNALS FROM SPACE



by Larry Van Horn

AMSAT-OSCAR 10, launched on June 16, 1983, represents the most sophisticated amateur radio satellite launched to date. After three years and the loss of the first Phase III satellite, amateur radio operators around the world celebrated a major accomplishment in the history of amateur satellites with the successful launch of AO-10.

The satellite acts as a wideband repeater of amateur radio signals. The big pluses of this satellite are the high Molniya-type orbit and the long expected service life of AO-10. The high orbit allows the user a longer period of time to access and work stations. AMSAT officials estimate the lifetime of AMSAT OSCAR 10 around 7 to 10 years thanks to a spare battery flying in the spacecraft. Battery problems have been the most likely failure cause for all prior OSCAR satellites.

AO-10 frequencies all are in the VHF/UHF/Microwave regions. The following is a summary of AO-10 frequencies:

<u>Mode B</u>	
MHz	
145.810	General Beacon(GB)
145.987	Engineering Beacon (EB)
435.025-435.175	Uplink
145.975-145.825	Downlink

<u>Mode L</u>	
436.020	General Beacon
436.040	Engineering Beacon
1269.050-1269.850	Uplink
436.950-436.150	Downlink

AO-10 has several interesting frequencies that bear watching. There are four special service channels (SSC) for experiments, special nets, etc. These exist on Mode B only and are as follows:

MHz	
145.830	SSC L1
145.840	SSC L2
145.972	SSC H1
145.962	SSC H2

The AMSAT Calling and Net frequency is 145.957 MHz and is very active. Sunday international AMSAT nets are simulcast on this frequency when the satellite is in view of net control stations.

Those individuals not



Astronaut Dr. Owen Garriott tests the radio and antenna to be used on board the Columbia during the Amateur Radio operation on STS-9. (NASA photo)

equipped with a multi-mode 2 meter capability might want to invest in one of the 10 to 2 meter converters available from several sources. These converters could be used with a shortwave receiver and directional antenna to receive AO-10 transmissions. Check the latest copy of 73 or QST magazine for manufacturers who provide 2 meter converters.

* * * * *

The historic first ham-in-space mission of Owen Garriott came to a conclusion at Edwards AFB in Cali-

fornia on Thursday, 8 December. Thus W5LFL became the first amateur radio operator to operate from a space vehicle in earth orbit.

The first QSO between W5LFL and an earth-bound ham occurred on Wednesday, 30 November when STS-9 was on the southeast-bound portion of orbit #40. WA1JXN of Frenchtown, Montana was the first to nab W5LFL while still well off the coast of Oregon. WA1JXN is a prominent EME'er (Earth-moon-earth "Moonbounce") with a large array of 2 meter beams

Cont'd p.30

NASA 1984 LAUNCH SCHEDULE

NASA has a record-setting launch schedule set for this year, including ten shuttle flights with ten additional deployments of satellites from the orbiting spacecraft.

Two new orbiters, the Challenger and discovery, will replace the earlier Enterprise and Columbia.

1984 LAUNCH ACTIVITY

LAUNCH			
DATE	MISSION	SITE*	PURPOSE
Feb. 3	41-B Space Shuttle	KSC	SPAS-01A, Palapa B-2, Westar-VI
March	Landsat D ¹	WSMC	NOAA earth observation
1st Qtr	Navy-21	WSMC	Navy
April 4	41-C Space Shuttle	KSC	Solar Max Repair Mission; Log Duration Exposure Facility
May	Intelsat VA-A	ESMC	COMSAT international communications
May	NATO-IIID	ESMC	NATO communications
June	Galaxy-C	ESMC	Hughes commercial communications
June 4	41-D Space Shuttle	KSC	Telesat-I, Syncom IV-1, Large Format Camera, OAST-1
July 14	41-E Space Shuttle	KSC	DOD mission
August	NOAA-F	WSMC	NOAA weather satellite
August	Intelsat VA-B	ESMC	COMSAT internat'l communications
Aug. 9	AMPTE	ESMC	Active Magnetospheric Particle Tracer Explorer; space physics-NASA cooperative with Germany
Aug. 9	41-F Space Shuttle	KSC	Telstar 3-C, SBS-D, Syncom IV-2, SPARTAN-1
Aug.30	41-G Space Shuttle	KSC	OSTA-3, ERBS SPARX-1
3rd Qtr	Navy-22	WSMC	Navy
Sept.28	41-H Space Shuttle	KSC	DOD mission or TDRS-B
Oct.24	51-A Space Shuttle	KSC	MLS-1, Telesat-H, GAS Bridge
Nov.	Intelsat VA-C	ESMC	COMSAT internat'l communications
Nov.21	51-B	KSC	Spacelab 3
Dec.	San Marco D/L	SMR	Internat'l cooperative with Italy
Dec.17	51-C Space Shuttle	KSC	TDRS-B or TDRS-C, MSL-2
4th Qtr	AF-16(ITV-1)	WFF	Air Force

*Launch Sites:

- ESMC - Eastern Space and Missile Center, FL
- KSC - Kennedy Space Center, FL
- SMR - San Marco Range, Indian Ocean
- WFF - Wallops Flight Facility, Wallops Is., VA
- WSMC - Western Space and Missile Center, Vandenberg Air Force Base, CA

"Los Numeros"

32444 69213 88816 52196 63811 94216

Havana Moon



The other day I got a phone call from a freelance reporter regarding the FCC and those 5-digit Spanish transmissions. Eric (not his real name) was just a little concerned that meaningful "numbers" information was in such short supply at the FCC. It concerns me too, Eric!

More precisely, Eric's many phone calls to the FCC yielded everything from indifference to confusion. This in itself did not strike me as odd. Indeed, I was more struck by rumors that I've been hearing the past few weeks. Seems that one of those unknown sources close to the FCC has stated that the FCC has no information about 5-digit Spanish transmissions. There have been other variations to this rumor.

It's unfortunate that my own phone calls have also met with little success. I'm still waiting for one of the FCC press officers to return

my last call.

STATIC-LIKE SOUNDS

What about those rhythmic static-like sounds heard before many 4-digit Spanish transmissions? Could it be that this is nothing more than computer data information? Give a listen to one of your computer cassettes and let me know what you think.

THE POSTMAN-RINGS

A writer with no name says that on Dec. 3rd on a frequency of 6270 kHz that a YL with a "British" accent was heard repeating, "GBZ2." This reader says that this went on from about 0400 to 0430Z.

EXPERIMENTAL

Have you ever considered the possibility that some 5-digit Spanish transmissions come from sources that are operating with an experimental license? I've also asked the FCC about this.

THE BILITERAL

DNGWI TIWDT AWIRM NAWAW
GUARA WAWAU ITANM TIWDT
AWDTA WANAU ANGUA UARGW
AUMWD RMNDU AUAWG RDUGU
AWIUA

Here's how it was done:

	N	R	T	U	W
A	A	B	C	D	E
D	F	G	H	I	J
G	K	L	M	N	O
I	P	Q	R	S	T
M	U	V	W	X	Y

"FOR THE QUEEN BEE DRAW THE HEAD AND BODY GUIDELINES"

F O R T H E Q
DN GW IT IW DT AW IR
and so on.

Here's another one for you to try:

	A	D	G	I	M	N	R	T	U	W
A	A	B	C	D	E	F	G	H	I	J
D	K	L	M	N	O	P	Q	R	S	T
G	U	V	W	X	Y	A	B	C	D	E
I	F	G	H	I	J	K	L	M	N	O
M	P	Q	R	S	T	U	V	W	X	Y
N	A	B	C	D	E	F	G	H	I	J
R	K	L	M	N	O	P	Q	R	S	T
T	U	V	W	X	Y	A	B	C	D	E
U	F	G	H	I	J	K	L	M	N	O
W	P	Q	R	S	T	U	V	W	X	Y

IU IW GG II
N O W I and so on.

Try scrambling the alphabet on the inside of this grid.

DID YOU KNOW THAT

Around June of 1976, a Florida DXer wrote to the FCC requesting information on daytime 5-digit Spanish transmissions on 3060 and 3090 kHz.

Here's what the FCC had to say:

"...We have determined that the signals you described are emanating from outside the United States. Consequently, this administration has no jurisdiction over the operation. Regretfully, we have no definitive information to give you...

Time now for a Tecate while I await my phone call from the FCC.

Adios,
Havana Moon

More Shortwave Broadcasting Spectrum

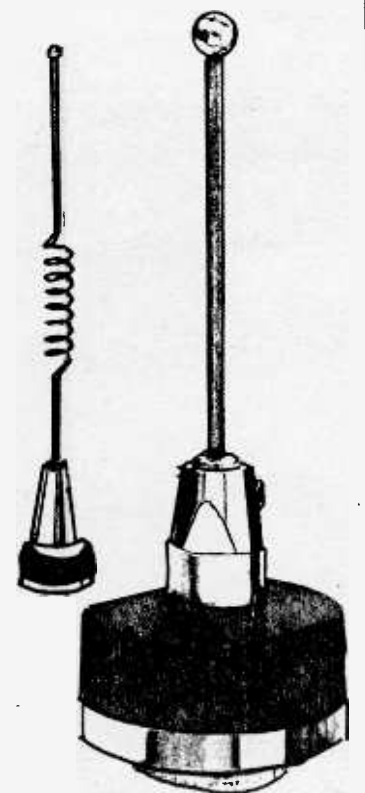
Over 100 participating nations of the WARC '79 (World Administrative Radio Conference, 1979) attended a week-long meeting in Geneva in January to discuss another vital step in the implementation of some 780 kHz of new broadcasting spectrum.

Topics included jamming and the use of single sideband broadcasting. While decision making will play a major role in the new conference, actual implementation of the agreements will not take place until after the next session in 1986.

SCANNING from p.4

- 820.9625 Ch 2; Mobile, trunked system
- 865.9625 Base, " "
- 821-825 (reserve) NASA petition for experimental mobile satellite
- 825-835 Radio common carrier mobile, low power (45 MHz lower than base)
- 835-845 Wireline common carrier, cellular mobile (base 880-890); cellular developmental
- 845-851 (base 890-896); (reserve) NASA petition hold till 1990 for possible commercial mobile satellite conventional dispatch, private base pending results of 821-825 experiments
- 851-866 Prime for private bases (45 MHz higher than mobiles) Every 25 kHz (dispatch)
- 250 channels:
 - 70 Public safety/special emergency
 - 50 Industrial/land transportation
 - 50 Business
 - 50 Manufacturers (SMRS)
- 856-861 Conventional and trunked base reserve
- 854.9625 Ch 159; public safety base--70 channels
- 860.9875 Ch 400; " " 70 ch
- 861.866 Trunked dispatch, base

- 866-870 (reserve pool; base) mobiles 821-825
- 870-880 Common carrier cellular, base (developmental; mobile 825-835)
- 880-890 Wireline common carriers cellular (base);(mobile 835-845)
- 890-896 (reserve;paired with 845-851)
- 896-898 Air (air-ground Western Union/airphone proposal) docket #80-30
- 941-943 Ground ("")
- 898-902 Mobile (Mobile cordless public telephone system;GE sponsored NPRM) docket 83-26
- 937-941 Base ("")
- 902-928 Hams, Canada; ISM & Automatic vehicle monitoring in US, also hams (future), fed-govet fixed/mobile
- 928-929 Private fixed (14 25 kHz channels paired with 952-953; 20 channel power radio service for utility load management, electric meter reading
- 929-930 Private paging unpaired channels for RCC paging transmitter links
- 930-931 Paging
- 931-932 Paging (RCC)
- 929.9875 METCOM Nationwide paging
- 931.8875/ Nationwide, re-through Westar
- IV, coordinated by Wash DC paging control centr
- 932-935 Gov't, non-gov't fixed shared (proposed) docket 82-243
- 943-946 " " " " "
- 935-937 Reserved
- 937-941 PRCS proposal
- 941-943 Aircraft mobile phone proposal (ground)
- 896-898 " " " " (Air)
- 943-946 Gov't, non-gov't fixed proposal (paired with 932-935)
- 946-947 Reserved
- 947-952 Broadcast studies to transmitter link
- 952-960 Private fixed (5000 active licenses) land, air, sea
- 960-1215 Air navigational aids (TACAN/DME) paired 108-118 MHz/JITDS military freq. hopping spread spectrum
- 928.8625- (12 unpaired channels for wide area paging, common carrier)
- 928.0125- (14 paired channels for operational fixed service)
- 928.3375/ (8 unpaired channels for operational fixed service)
- 956.2625-
- 956.4375
- DOCKET 82-10 FCC Proposal:
 - 512-608 Land Mobile/
 - 614-806 Broadcast shared



TYPICAL 800 MHZ MOBILE ANTENNAS

VINTAGE VLF RECEIVERS

A COLLECTIVE PROFILE

by Harold A. Loyer
AV-SF State U.
1600 Holloway Ave.
San Francisco, CA
94132

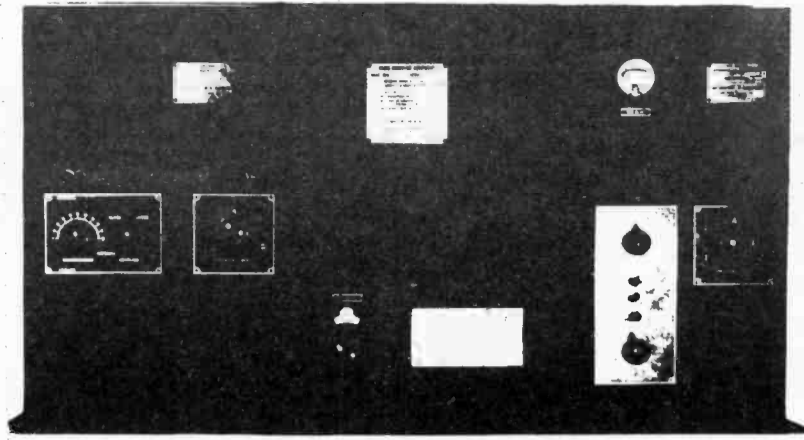
importance of these remarkable sets for military defense, RFI studies and scientific research cannot be overestimated.

Some were state-of-the-art military secrets; consequently, information about them is difficult to find.

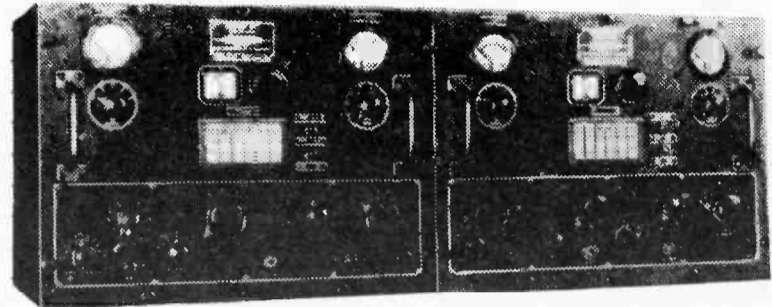
Not included in this list are fixed channel sets, untuned 'sferics direction finders and low-sensitivity tunable voltmeters. Corrections and additions are welcome.

This third edition of my directory attempts to list every vacuum tube radio receiver ever built that could tune within the bands of 3-30 kHz or even 3-3000 Hz.

Radio began in the longwave spectrum and the



RAA FIRST VLF SUPERHET



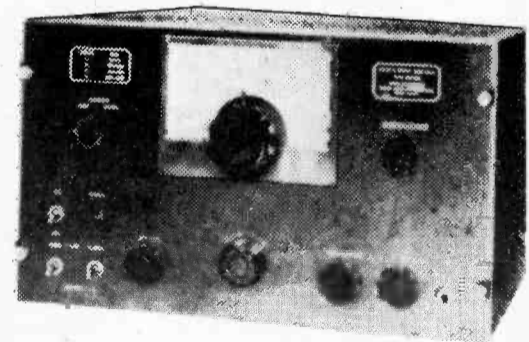
RAK & RAL



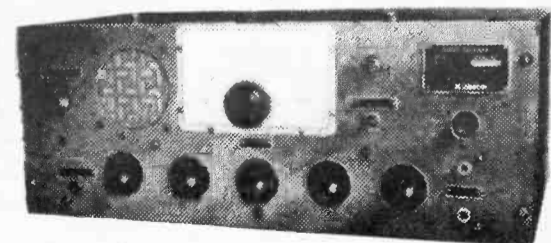
SARGENT MODEL II



117B



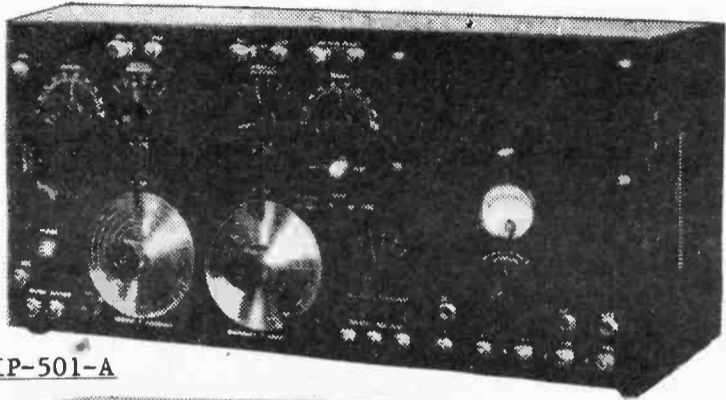
128AY



AR-8510



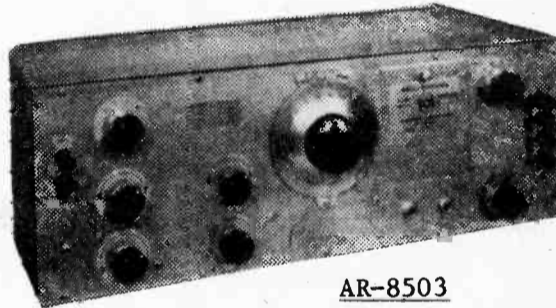
3001-A



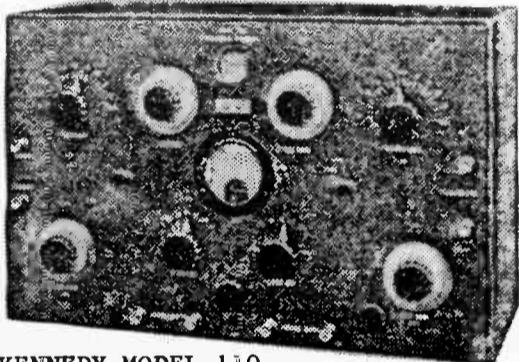
IP-501-A



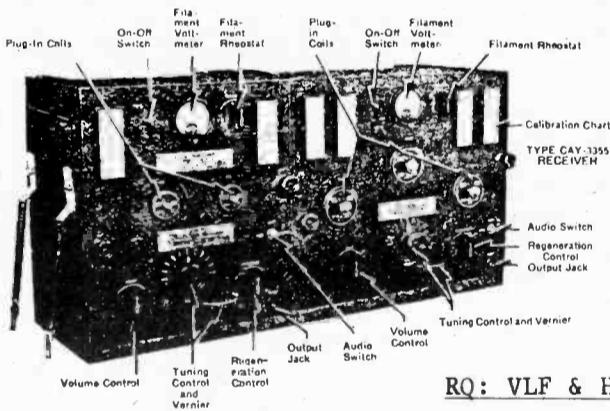
AR-8500



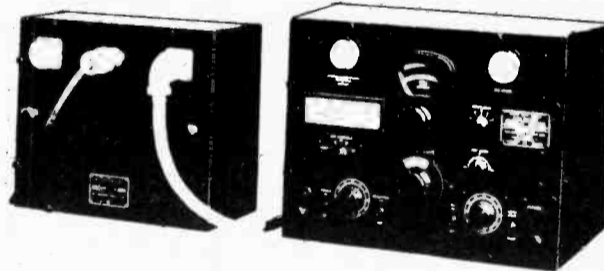
AR-8503



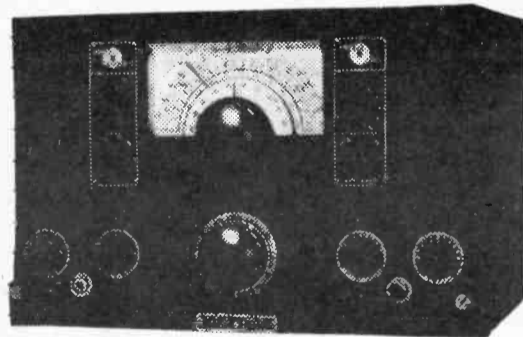
KENNEDY MODEL 110



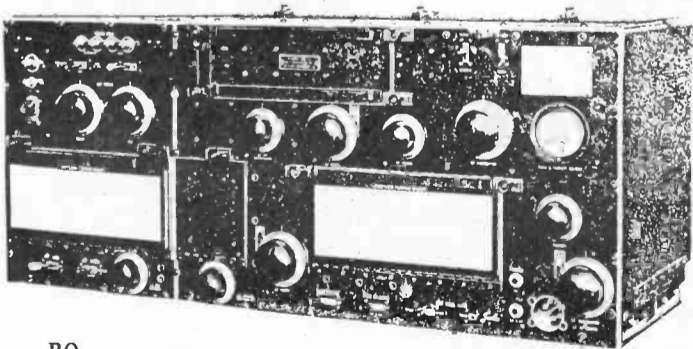
RQ: VLF & HF



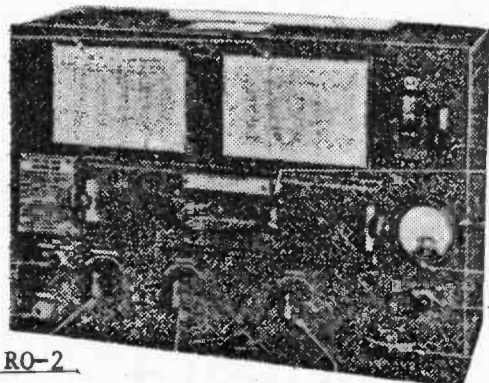
RBA W/POWER SUPPLY



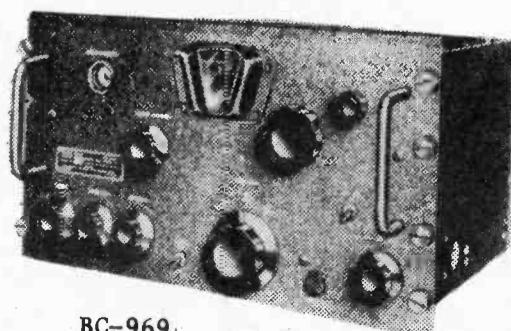
RBL



RO



RO-2



BC-969

Chart follows on next page.
Pictures continue on p. 19.

VINTAGE RECEIVERS from p.13

DATE	MODEL	MAKE	TUNING	SELECTIVITY	WT.	TUBES	PWR	FEATURES
c.1918	SE-1617		18k-43k			6	B	TRF;3 RF stages;reg. det.; 2 AF stages
c.1920	IP-501 & IP-501A	WSA, RMCA	15k-1.2M	var.coupling	55	3	B	Reg. det. or xtal det.;requires IP-503 long-wave loading unit for 15-37.5kHz range; 2 AF stages.
1920	CR-7	Grebe	15k-1.7M			1	B	Reg. det.
c.1921-	RA		16k-1.2M				B	TRF; submarine use
c.1921	RB		10k-40k				B	TRF; requires SE-1530 receiver unit
c.1922	110(Universal) (280)	Kennedy	12k-1.7M	var. coupling	27	1	B	Reg. detector
c.1922	RD		12k-1.2M				B	TRF
c.1924	RE	NRL	10k-100k	audio filter		6	B	TRF;requires SE-1834 PF amp with 3 peanut-tube stages; reg.det.;2 AF stages
c.1925	SE-2300	NRL	10k-2.3M			4	B	TRF; 1 RF stage; reg.det.; 2 AF stages
c.1926	RK		12k-375k				B	TRF
c.1929	RQ(CAY-3355)	Westing-house	15k-1.0M	700Hz audio ftr		5	B	TRF;3 RF stages;reg.det.;plug-in coils, HF twin is CAY-3356
1930	RO(CG-3362)	NRL & GE	15k-1.0M	500Hz audio ftr	100	6	B	TRF;2 RF stages;heterodyne det. below 45kHz, autodyne det. above;plug-in coils, HF twin
1930	RO-2(CAY-3940)	Westing-house	15k-1.0M	800Hz audio ftr	60	7	B	TRF;4 RF stages;reg.det.;plug-in coils, HF twin is CAY-3941
1931	RAA	RCA	10k-1.0M	1kHz audio ftr	465	11/3	AC	Superhet; 1 RF stage; 2 IF stages with four switched IF freq.;AVC;BFO;HF twin is RAB
1932	RAC	NRL	12k-80k	800 & 1kHz audio filter	170	7/2	AC	TRF:3 RF stages; heterodyne det.; 2 AF stages;requires SE-4511 RF amp/det.unit
1932	GK-1	Westing-house	15k-1.0M			7	B/AC	TRF;3 RF stages; heterodyne det.; variable AVC; HF twin is RAH
1933	RAG(CHS-46042)	Sylvania	14k-600k	multi-1 audio filter	93	8/1	B/AC	TRF;3 RF stages; heterodyne det.; variable AVC; HF twin is RAH
c.1935	AR-8500	RMCA	15k-1.7M	fixed bandwidth		4	B	TRF;1 RF stage;reg. det.; plug-in coils
1935	RAK	RCA	15k-600k	multi-1 audio filter	116	6/2	B/AC	TRF;2 RF stages; autodyne det.; variable AVC; HF twin is RAL
c.1937	11-U(Universal)	Sargent	15k-31.6M		35	4/1	B/AC/ DC Reg	TRF; reg.det., built-in speaker
1938	CXS	Bendix	15k-1.5M			10	DC	Superhet; directionfinder; 1 RF stage; 2 IF stages; BFO; does not tune 70 kHz-100kHz range
1939	DZ(ADF)	RCA	15k-1.5M	1020kHz audio	37	8	DC	
1939	RAZ(AR-8503)	RMCA	15k-600k	fixed bandwidth	29	4/1	B/AC	TRF;1 RF stage: reg.det.: optional preselector
c.1940	117B	Mackay	16k-20M	fixed bandwidth		5/1	B/DC	TRF;1 RF stage; reg.det.; plug-in coils
1940	RBA	Federal	15k-600k	1 kHz audio ftr	147	8/2	AC	TRF;3 RF stages; heterodyne det.; BFO; variable volume limiter
1941	128AY(R-212/SR) (RC-123)	Federal	15k-650K	fixed bandwidth	43	5/1	B/AC	TRF;1 RF stage; 1 RF regenerator; grid-bias det.
1941	RBL	National	15k-600k	var BW to 600Hz	75	6/1	B/AC	TRF:2 RF stages;reg.det.; variable volume limiter;HF twins are RAO or RBH
1942	AR-8510 (R-215/SR)	RMCA	15k-650k	fixed bandwidth	39	5/1	B/AC	TRF;2 RF stages; regenerative detector; speaker
1943	BC-969 (SCR-614)	Majestic	15k-150k	variable BW	119	11/2	AC	Superhet;1 RF stage;2 IF stages with crystal filter;AVC;BFO;noise limiter
c.1943	AN/URR-2	RCA	14k-32M					Small Navy craft use
c.1947	3001-A	Mackay	15k-650k	fixed bandwidth		5/1	B/AC	TRF;1 RF stage;1 RF regenerator;grid-bias det.;built-in speaker
1949	NM-10A (AN/URM-6)	Stoddart	15k-250k	var BW to 100Hz	51	16/5	AC	RFI-laboratory superhet;1 RF stage;3 IF stages;AGC;BFO;calibrator
1950	AN/SRR-11(R-439)	RCA	14k-600k	var BW to 300Hz	65	24/3	AC	Superhet;duo-conversion;2 RF stages;4 IF stages;BFO;noise & output limiters;
1954	AN/FRR-211(R-501) AN/MRR-1							xtal calibrator;peanut tubes;HF twins are SRR-12 and SRR-13
1954	R-389/URR	Collins	15k-1.5M	var BW;100Hz-8kHz	70	30/7	AC	Superhet;duo-conversion;2 RF stages;6 IF stages;crystal osc;AGC;BFO;variable noise limiter;digital tuning;HF twins are R-390 and R-391
1956	NM-40A (AN/URM-41)	Stoddart	30Hz-15k	var BW:8Hz-60Hz	120	33-4/ 4-1	AC	RFI-lab.superhet;3 RF stages;quad diode balanced mixer;4 cascaded IF stages; BFO;AGC;calibrator
1956	SP-600VLF Dero 2F	Hammar-Lund/Dero	10k-540k	var BW:200Hz-6kHz	70	17/4	AC	Superhet;duo-conversion;2 RF stages;3 IF stages with crystal filter;noise limiter;BFO;AVC;HF twin is SP-600
1960	AN/BRR-3(R-988)	Federal (ITT)	14k-30k	var BW:60/120/ 150Hz	85	26/3 & 17 diodes	AC	Superhet;single-conversion;3 RF stages; 5 IF stages;BFO;AGC;noise limiter;CRT display;digital tuning,built-in FSK decoder
1961	NF-105/TX	Empire	14k-1Ghz	fixed bandwidth	71	22 & diodes	AC	RFI-lab. superhet;calibraotr;5 large plug-in tuning modules with diff. IF stages;BFO
1962	AN/WRR-3(R-1134)	Magnavox	14k-600k	var BW:350/1k/ 3kHz	70	16-4/ 5	AC	Superhet;duo-conversion;2 RF stages; BFO;noise & ouput lim.;xtal calib.; digital dial

NOTE: "TUBES" column denotes number of tubes/diodes in receiver and tubes/diodes in power supply.

THE ULTIMATE SCANNER RADIO HAS ARRIVED.

Starting today, we're standing the scanner radio on its ear. Because we've forged ahead—way ahead—in radio frequency and digital technology.

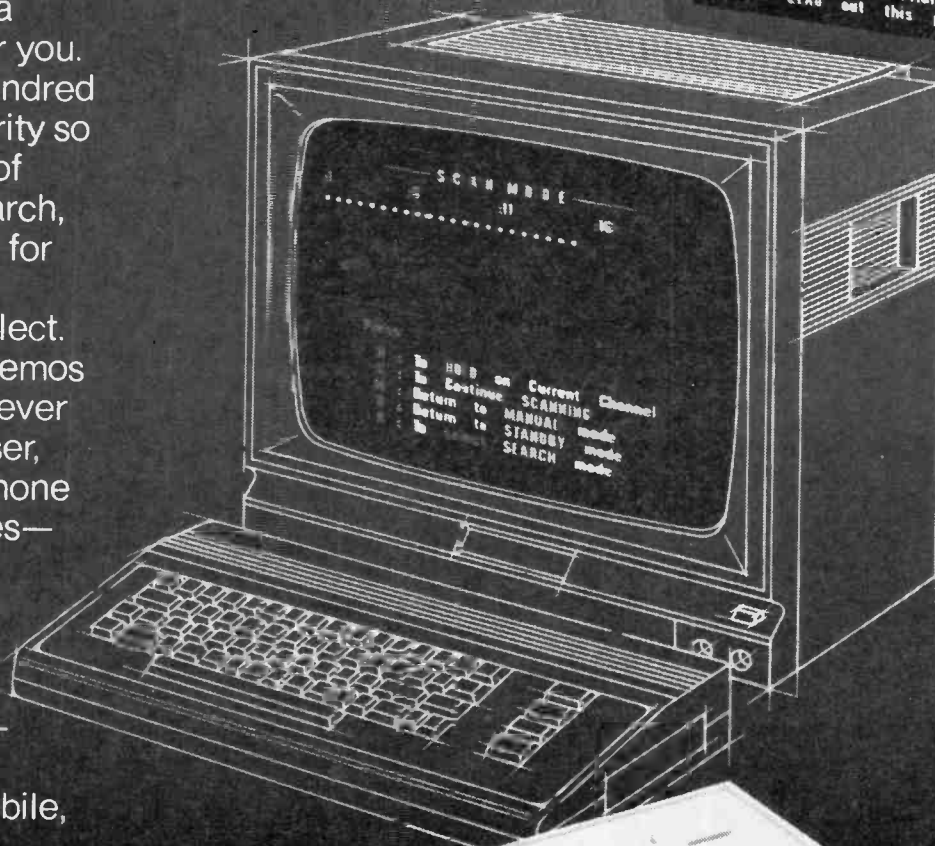
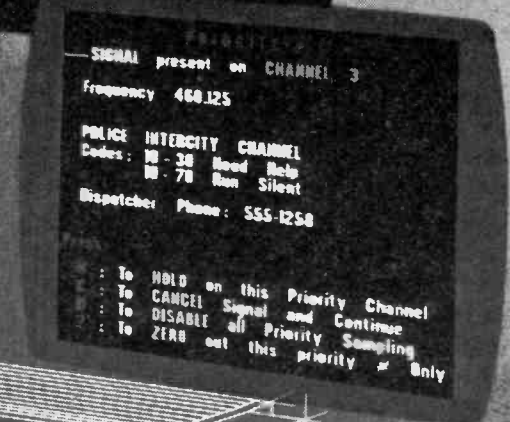
Introducing the Bearcat® CompuScan™ 2100.

It's the first scanner radio designed to put the power of a personal computer to work for you. Now you can scan up to two hundred channels. Stack levels of priority so you'll hear vital calls in order of importance. Automatically search, store and count transmissions for accurate "pictures" of activity within frequency limits you select.

And with automatic video memos you'll know more than you've ever known before. The channel user, specific codes, jurisdictions, phone numbers, alternate frequencies—any information you've programmed is automatically displayed when the channel is active.

With ten bands including 70-centimeter, 2, 6 and 10 meter FM Amateur, Military Land Mobile, AM Aircraft, plus Low, High, UHF and UHF-T bands.

For a real earful—and eyeful—see your Bearcat scanner dealer. For the name of the dealer nearest you, just call 1-800-S-C-A-N-N-E-R.



BEARCAT® SCANNERS

Electra
 Electra Company
 Division of Masco Corp. of Indiana
 300 East County Line Road
 Cumberland, Indiana 46229

©1983 Masco Corp of Indiana

BROADCASTING. . .

HANK BENNETT ON SHORTWAVE

Back in January we posed a number of questions to our readers concerning radio as it once was back in those so-called "good old days." We've had a lot of fun reading some of the replies that have been coming in. As was announced on page 20 of that issue, someone will win a book from the Grove library for the most correct answers. This will be announced later since we're sure that not all of the reply letters are yet in. Let's review some of the questions and give you some of the answers.

1) Back in the 1930's and early 1940's there were a number of high-powered Mexican border stations that inhabited the broadcast band. They were in violation of power agreements, but that didn't stop them!

XEAW in Reynosa was one of them and they operated, at one time, on 1020 kHz, the same frequency as used at that time by KYW in Philadelphia. XEAW was running power somewhere above 50 kW and they were reportedly beamed northeastwardly. This writer lived about 10 miles airline from KYW's 50 kW transmitter and, at times (during evening hours), XEAW completely dominated the frequency!

Another was super-powered XERA in Villa Acuna. I have an old QSL in my collection showing them for 840 kHz with a power rating in the six digits! XEPN in Piedras Negras was another as was XERB in Rosarita Beach; this latter was a favorite among west coasters since it was located in Baja California.

One other station, XENT, somewhere along the Rio Grande, reportedly exploded and burned to the ground!

All of these stations operated mainly in English, at least during evening hours, with country-western music and/or gospel programs and all of them, except XERB, used post office box addresses in various Texas communities. During the World War II years they all disappeared and we noticed in Broadcasting Yearbook the other day that virtually all of the old callsigns that used to prowl the Rio Grande have been assigned elsewhere.

2) There is a 50,000 watt broadcast station in operation today. It has had homes in three different cities, into two of them on

two different occasions. It has a distinctive callsign! KYW in Philadelphia. It was once in Cleveland, twice in Chicago, and is in Philadelphia for the second time.

The callsign is distinctive in that it is a "K" callsign, used in broadcast band service for stations west of the Mississippi River. This one has always been east of that great river. It is not alone, however; KQV and KDKA still share some of the distinctiveness from Pittsburgh. On the other hand, if memory serves me correctly, WCAT is in South Dakota.

3) There was once a station that broadcast time signals in the broadcast band. Only time signals. This was NAA, the Naval Observatory station, at the time in Arlington, Virginia.

It used to broadcast time signals on (and someone can check me for accuracy on this one) 695 kHz at high noon. I can recall my grandmother tuning this in occasionally when interference from WOR, New York, on a neighboring channel, was at a minimum.

4) What USA standard broadcast station, with 50,000 watts, still in service today, once used very high power after midnight on an experimental basis? The callsign changed as well at midnight but it was still the same basic station.

This was WLW in Cincinnati, Ohio on 700 kHz. After

Cont'd p.31

Solving Tentative Station ID's

by Peter J. DeHart

The challenge of solving those "tentative" station identifications can be quite simple or extremely difficult. With the help of your imagination and a few library resources, identifying stations can become one of the most rewarding aspects of your short wave experience.

What factors make station identification "tentative"? English language identification can be classified as tentative when atmospheric noise or adjacent station interference is high. Sometimes tentative English language identifications occur when the broadcaster chooses to abbreviate the station name. In rare instances English language broadcasts such as those originating from bilingual Cameroon use no formal identification at all.

Sometimes heavily accented English spoken by foreign broadcasters can unintentionally obliterate an identification. The foreign language broadcast presents, of course, its own unique identification challenges due to its non-English nature.

Yet, a surprising number of these "tentative" identifications can be entered as positive loggings with patience, some study procedures and the use of a local or university library. The process can be rewarding and educational.

Begin, if at all possible, by having access to a variable speed tape record-

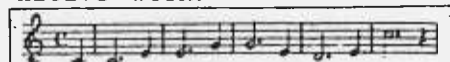
er. It can be invaluable in terms of identifying stations. Its ability to vary speeds on playback just might make a difficult identification comprehensible. It will also store vital program information which can unravel identification mysteries.

It is important, too, to be able to anticipate identifications. An identification may come quite formally in an interval signal at sign on. It may come during breaks in or after the news or even after long features or pieces of music. Since many programs run for half an hour, pay close attention for identification five minutes or so before the hour or half hour. If a stated identification comes, it will probably occur at these times.

If the identification is present but defies positive clarification for any reason, a bit of library detective work is in order. If an unidentified station uses an interval signal, analyze it thoroughly. Most interval signals contain two key elements - musical instrumentation or native sounds typical of the originating society. Birds or animals are commonly used.

The "World Radio TV Handbook," available at your library or from Grove Enterprises, lists dozens of interval signals of short wave stations. Listen to the signal and try to locate in the WRTVH by asking several questions: what instruments were used? Drums? Perhaps you have an African broadcaster such as Nigeria. Oriental bells or gongs probably originate from a station in the Asian continent. Does the instrumentation seem to be a portion of a patriotic song or national anthem?

If the WRTVH cannot pinpoint the identity with its notes to anthemed signals, turn to other library resources. Grove's "Dictionary of Music and Musicians" or a book of national anthems may help. Many identifications can be solved by tapping out a few piano notes heard via your taped material and matching them to anthems in Grove's definitive work.



The national anthem of Taiwan is easily recognized by this notation in the "World Radio Television Handbook" or "National Anthems of the World."¹

Cont'd p.21

Here's a closer look at some of your friends at RCI

	Aldo Marchini Announcer-Producer Wojtek Gwiazda Production-Assistant	Ian McFarland Announcer-Producer DX Specialist Lucien Côté Manager
--	--	---

BROADCASTING . . .

ENGLISH LANGUAGE BROADCASTS

by Tom Williamson

We are currently going through a very difficult period of radio reception conditions due to propagation problems associated with geomagnetic disturbances and continued low sunspot activity. The result has been a severe loss of high frequency band reception soon after darkness, with almost total lack of signals on the 19-25-31 meter bands (15/11/9 MHz), and even sometimes affecting 41m (7 MHz).

Hence, some stations with restricted frequencies have at times been inaudible; a noteworthy example is HCJB in Quito, Ecuador which transmits to North America in the evenings on 15155/9745 kHz. The audibility has been dependent on 9745 and this has often been poor to nil in readability.

There is, of course, no solution that the listener can make except to look for alternative times and frequencies, notably in the morning when the same station may be available at good strength. Correspondingly, I have thus added some times and frequencies to our regular "Big Six" chart.

The problem varies from night to night, but in the long term will be with us for some time as the sunspot cycle averages an 11 year period, although an accurate prediction of where we are in a given cycle is not so easy to make.

The importance and hindrance of this situation is best seen at present when the limited frequency space and gross overcrowding of international broadcast stations can be heard on the 49 meter band (6 MHz). Radio Moscow, the BBC, VOA, and Deutsche Welle (Köln), manage to get through, but slightly lesser powers such as Radio RSA, Radio Havana Cuba and AFRTS all have severe readability problems due to interference. Israel is poor if the 7410 kHz channel is not propagating. Some of these problems will disappear when summer returns, however.

DX'ING AFRICA

Let us now turn to the topic for the month, broadcasts in English from the continent of Africa. We will start with a look at our key station, listed in the Chart Summary each month, namely Radio RSA.

Radio RSA, the Voice of

South Africa, is the external service of the South African Broadcasting Corporation (SABC) from Johannesburg. It has six English language broadcasts daily, one of which - listed in our chart - is directed to North America. The others are directed to various parts of Africa, Middle East, and United Kingdom; some of these may be heard from time to time with variable signal strength. Here are the details:

	kHz
0300-0426	9585, 7270, 5980, 4990, 3230
1100-1156	25790, 21535, 15220
2100-2156	15185, 11900, 9585
0630-0730	17780, 15220, 11900, 7270
1300-1556	25790, 15220, 9585

Programs include: News, Under the Southern Cross, Our Wildlife Heritage (very interesting nature material), Africa Review (which may include political comments or business information), Spotlight on Africa and, on Sundays (Saturday night to us, in the America beam), P.O. Box 4559 Mail Program and DX Corner (for short wave enthusiasts).

In addition, from time to time you may hear the internal shortwave service in English on 4835 kHz (60 meters), and the commercial service, announced as "Radio Five" or "All Night Service," on 3250 kHz (90 meters).

Now we turn to a selection of other stations, none of which show the reliability of the SABC but may be well heard at times.

ALGERIA RTV Algerienne may be heard at 2000 on 9685 kHz.

CAMEROON This African Republic has made great strides in the last year with extended English language newscasts and reports such as election results. "Radiodiffusion Nationale du Cameroun" has an International Service which is not well heard in the Americas, since the English programs are too early for reception here. However, the National Service is frequently audible in English over Yaounde 4850/4972 kHz, and 9745 if interference permits; also, from Douala, 4795; and Garoua, 5010 kHz, all around 2100-2300 (mixed with French programming).

EGYPT Radio Cairo is an "in-and-outer," with very variable reception quality--and also variable announc-

Cont'd p.23

LISTENING TO THE WORLD



by Roger N. Peterson

State-Owned Radio

Who do you think leads the world in shortwave broadcasting by state-owned radio stations? The BBC? Voice of America? Neither. The answer is the U.S.S.R., which broadcasts in 80 languages for 2,100 hours each week!

The U.S. is second with the Voice of America with 905 hours per week, Radio Free Europe with 553 hours per week and Radio Liberty with 469 hours. This gives the U.S. 1,927 hours each week, broadcast in 46 languages.

Is the BBC third? Nope. They rank only fifth. China is in third place with 1,304 hours per week in 43 languages. West Germany is fourth with 785 hours per week in 37 languages.

Great Britain broadcasts in 38 languages for 743 hours each week, followed by Egypt with 644 hours per week in 30 languages.

Taiwan follows next with 633 hours in 17 languages followed by Voice of the Andes with the same number of hours but only in 11 languages.

Continuing down the list, North Korea, Albania, East Germany and Cuba follow with Australia far down the list--only 325 hours and 9 languages.

The source of this information is the U.S. Board for International Broadcasting, published in U.S.A. Today in November, 1983.

Radio Australia

In our last column we examined some of the broadcasters from the turbulent Middle East (Jan. MT). This month, let's skip over to another part of the world and see what the Australians can do for our listening pleasure.

Radio Australia was one of the first overseas broadcasters that I found on the dials of my old Hallicrafters receiver back* in the late 1940s when I first began fooling with shortwave listening.

The reason I found it was because it was one of

the few broadcasters on the air in the early morning hours that I could pick up on the East Coast.

In those days I didn't know about any DX clubs or publications devoted to shortwave listening. You just had to roam the dials to see what was there.

Today, Radio Australia still comes over best in the mornings on my receiver (Yaesu FRG-7700), although they broadcast to North America at other times as well.

The latest Radio Australia Transmission schedule for the period of November 6 to March 5 shows broadcasts directed to North America at 1200 to 1600 GMT on 9.580 MHz.

They are strongest for me in the Northeast from 1200 to 1400; then they begin to fade. This will probably not be a problem for those of you who live in the midwest and Pacific coast.

They broadcast again to North America at 2100 to 0100 GMT on 15.160 and 15.320 MHz. They resume again at 0200 GMT and go to 0730 on the same two frequencies plus 17.795 MHz. Some of you DXers may also get them at 0900-1030 on 15.115 although this broadcast is not directed to North America.

What can you hear on Radio Australia? First of all they have a brand new DX program called "Talkback." Host Barry Seeber brings you information on how to improve your reception and gives you news of communications developments in that part of the world.

Listen to it on Sundays at 0210, 0730 and 2110 GMT. Again, while not directed to North America, try for this program on Fridays at 0300 on 11.885 MHz, 0400 on 15.240 MHz and at 0915 on 6.045 MHz.

News is excellent from Radio Australia and no one does as good a job of keeping you informed about developments in the Pacific and Far East. They broadcast World News every hour on the

Cont'd p.32

The Radio Spectrum: A Gift to the Weatherwise

Part III HF RADIO

by Bert Huneault

VOLMET BROADCASTS (SSB)

A very interesting and readily accessible source of weather information for major airports are the VOLMET broadcasts intended primarily for over-water flights that venture out beyond the line-of-sight range of VHF radio.

VOLMET is an acronym for the French phrase VOL METEO which means "flight weather." These single side-band broadcasts (USB) include aviation terminal forecasts, hourly weather reports and SIGMETs (advisories concerning SIGNificant METeorological conditions such as icing in clouds, heavy thunderstorms and turbulence).

VOLMETs are broadcast at specific times each hour, day and night by several AERADIO stations the world over to serve airliners flying over the oceans and remote areas of the world.

Shannon (Ireland), Hong Kong, Auckland (New Zealand), Honolulu, Tokyo and Dakar (Senegal) are examples of AERADIO stations which broadcast VOLMET reports.

Although some of these distant stations can at times be heard quite well on this continent (when the ionosphere is in a cooperative mood!), North American listeners will be mainly interested in VOLMET broadcasts from New York, Oakland and Gander. Signals from these relatively close stations can be received very well in many areas of Canada and the U.S.A.

Several frequencies are used so that chances are good that, depending on your location and the time of day, one of the frequencies should be right for you; don't be surprised if at times you pick up these VOLMET broadcasts with signal strengths well-over S9!

VOLMET frequencies were revised February 1, 1983. New York Radio and Gander Radio share the same frequencies: 3485, 6604, 10051 and 13270 kHz. New York is on the air from 00 to 20 minutes past each hour, and again from 30 to 50 minutes past the hour. Gander transmits between 20 and 30 minutes past each hour, and again from 50 to 60 minutes past the hour.

Oakland Radio transmits on the following frequencies: 2863, 6679, 8828 and 13282 kHz. Its VOLMET broadcasts are scheduled at 05

minutes and 35 minutes past each hour, and are generally of about 5 minutes duration.

Broadcasts from New York include weather information for selected airports in the eastern half of the continental U.S.A., as well as for a few offshore airports. They include the following, in the order listed (the three-letter groups are the official airport identifiers):

DTW	Detroit Metropolitan, MI
ORD	Chicago O'Hare, IL
CLE	Cleveland, OH
IAG	Niagara Falls, NY
MKE	Milwaukee, WI
IND	Indianapolis, IN
BGR	Bangor, ME
PIT	Pittsburgh, PA
BDL	Windsor Locks, CT
STL	St. Louis, MO
MSP	Minneapolis, MN
MSY	New Orleans, LA
JFK	New York Kennedy, NY
EWR	Newark, NJ
BOS	Boston, MA
BAL	Baltimore, MD
PHL	Philadelphia, PA
IAD	Washington Dulles, DC
BDA	Bermuda
MIA	Miami, FL
NAS	Nassau, Bahamas
FPO	Freeport, Bahamas
TPA	Tampa, FL
PBI	West Palm Beach, FL
ATL	Atlanta, GA

Gander Radio, Newfoundland, broadcasts VOLMET reports for the following Canadian airports as well as for Sondrestrom, Greenland:

YUL	Montreal Dorval, Quebec
YMX	Montreal Mirabel, Quebec
YYZ	Toronto Int'l, Ontario
YOW	Ottawa, Ontario
YQX	Gander, Newfoundland
YYR	Goose Bay, Labrador
YHZ	Halifax, Nova Scotia
YQY	Sydney, Nova Scotia
YFB	Frobisher Bay, NW Terr.
YWG	Winnipeg, Manitoba
YEG	Edmonton, Alberta
YCA	Calgary, Alberta

Oakland Radio, California, broadcasts VOLMET reports for airports near the west coast of the U.S.A. These include:

SFO	San Francisco, CA
LAX	Los Angeles, CA
SEA	Seattle/Tacoma, WA
PDX	Portland, OR
SMF	Sacramento Metro, CA
ONT	Ontario, CA
LAS	Las Vegas, NV

The TERMINAL FORECASTS section of VOLMET broadcasts gives the weather conditions expected at selected airports during the next twelve hours or so. These generally include ceiling, sky condition, visibility, precipitation and wind direction and velocity.

The AVIATION WEATHER (also called ACTUAL WEATHER) section of VOLMET broadcasts is particularly interesting to weather enthusiasts because it gives current weather information for each airport. This information is updated every hour and, where necessary, more frequently by means of "special" observations.

These weather reports include meteorological data in the following order: ceiling and sky condition, visibility, obstructions to vision (such as fog, haze, precipitation), temperature, dew point, wind direction and velocity, altimeter setting (barometric pressure), remarks regarding clouds or other significant factors. Some VOLMET stations do not broadcast the altimeter setting.

Shortwave listeners attempting to write down these aviation weather reports as they are broadcast may at first feel that the radio operators read too fast...giving the listener insufficient time to write down all the information. Well, hang-in there, 'ye multi-talented SWLs!...We'll make it easy for you.

If you use a little meteorological short-hand just like pilots do while copying VOLMET reports, you'll find that it's not difficult at all keeping up with those radio operators. If you like dealing with codes, symbols, abbreviations and all that jazz, you'll certainly have fun with the following information.

Ready for take-off?

Cloud heights (including ceilings) are always coded in hundreds of feet. For example, 8 = 800 feet; 25 = 2500 feet; 180 = 18000 feet, and so on. In other words, leave out the last two zeros when you copy down cloud heights.

"Ceiling" is defined as the height (above ground) of the lowest cloud layer reported as broken, overcast or obscured.

A "ceiling classification" generally precedes the figures for the height of the ceiling: E means estimated; M means measure; P means precipitation ceiling (rather than cloud ceiling); W means indefinite ceiling.

For example, W6 = indefinite ceiling, 600 feet; E30 = estimated ceiling, 3000 feet; M16 = measured ceiling, 1600 feet.

Visibility is reported in statute miles; for example, 8 = 8 miles; 15+ means

more than 15 miles. When the visibility is 6 miles or less, the figure is followed by one or more letters indicating the type of obstruction to vision, such as drizzle (L), rain (R), snow (S), blowing snow (BS), fog (F), haze (H), smoke (K), ice crystals (IC), rain showers (RW), snow showers (SW), hail (A), thunderstorm (T), freezing drizzle (ZR), freezing drizzle (ZL), sleet or ice pellets (E).

The intensity of precipitation is indicated with a double minus sign (--) for "very light," a minus sign (-) for "light," and a plus sign (+) for "heavy." The absence of a sign indicates "moderate" precipitation.

For example, 2R- means visibility 2 miles in light rain; 1/4F = 1/4 miles in fog; 3/4TRW+ = 3/4 mile in thunderstorm with heavy rain shower; 1ZR-F = 1 mile in light freezing rain and fog; 3/8SBS = 3/8 mile in moderate snow and blowing snow.

Temperature and Dew Point are given in degrees Fahrenheit in the U.S.A. and in degrees Celsius (Centigrade) in Canada and most other countries.

Wind Direction is written down as a two-digit number, in tens of degrees. For example, a direction of 320 degrees is written down as 32; 090 degrees is written down as 09; 220 degrees is written down as 22, and so on.

The wind direction is immediately followed by another two-digit number, indicating Wind Velocity in knots (nautical miles per hour). Together, the wind direction and velocity form a four-figure group.

For example, 1613 means that the wind is blowing from a direction of 160 degrees (south-southeast) at 13 knots: 0421 = 04 degrees (northeast) at 21 knots; 3605 = 360 degrees (north) at 05 knots.

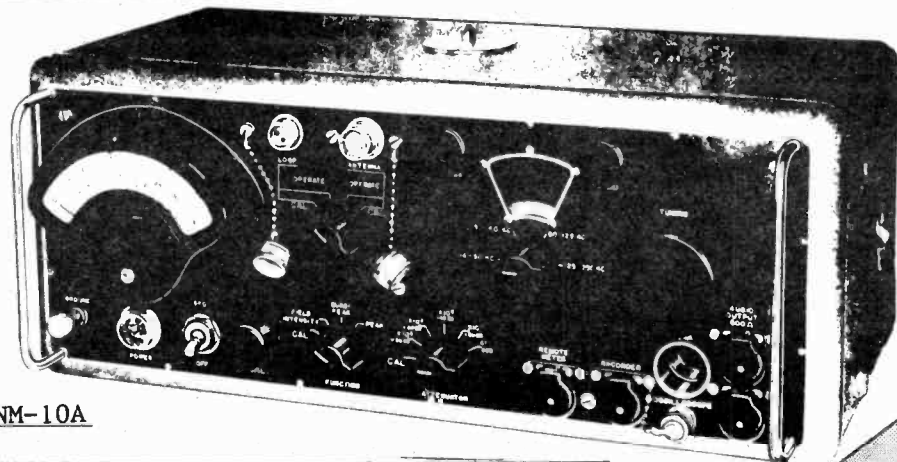
If the wind is gusting, letter G followed by the peak velocity of the wind gusts immediately follows the four-figure wind group, such as 2718G28 which means 270 degrees (west) at 18 knots with gusts; peak gusts reaching 28 knots.

Calm winds are coded 0000, but may simply be written down as C when copying down the reports.

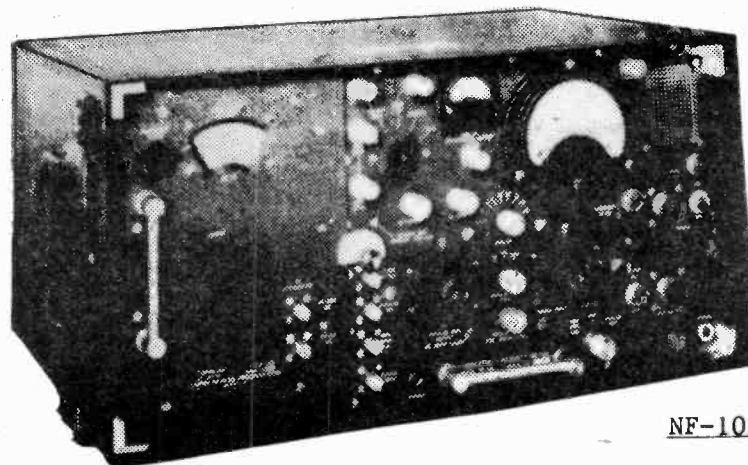
Altimeter setting indicates the barometric pressure, in inches of mercury. This sea-level pressure is coded by using only the last three digits, and no decimal point. For example, 29.92

Cont'd p.29

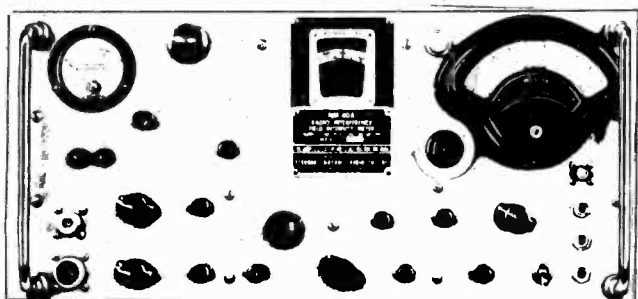
VINTAGE RECEIVERS from p.13



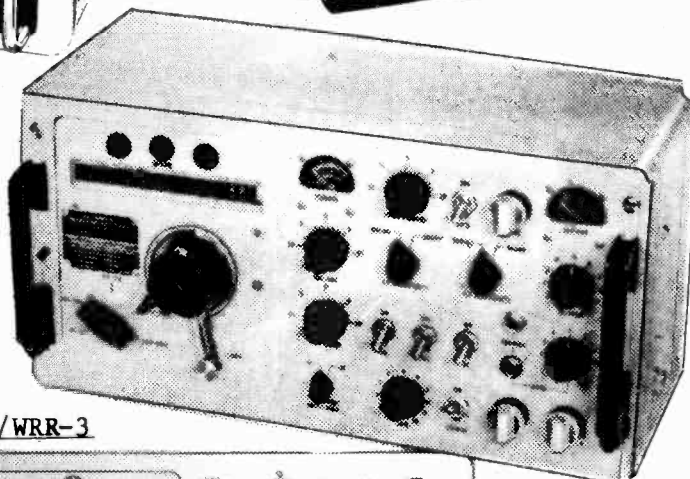
NM-10A



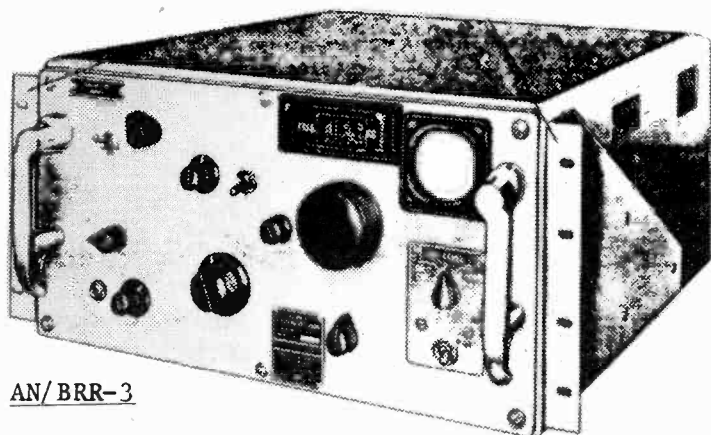
NF-105



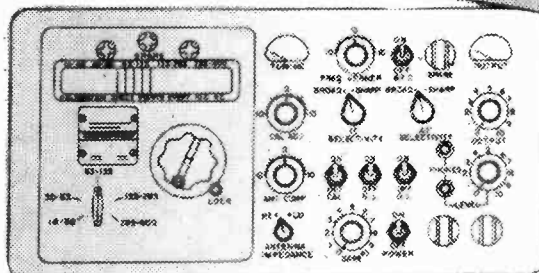
NM-40A FIRST ELF SUPERHET



AN/WRR-3



AN/BRR-3

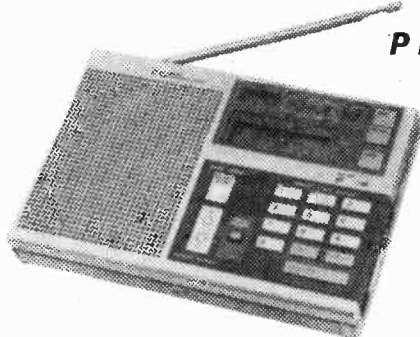


AN/SRR-11

SUPER PORTABLES AT SUPER PRICES

SPECIAL FACTORY PURCHASE FOR MONITORING TIMES SUBSCRIBERS!

Prices Valid Through March 31, 1984 Only!



SONY ICF-2002

~~\$249.95~~

ONLY \$219 including shipping!

ADDITIONAL FEATURES:

- SONY ICF-2002
- Shortwave broadcast band quick-select
- 12/24 hour quartz clock
- 10 channel memory
- Coat-pocket size (5/8" x 7" x 1")
- 76-108 MHz extended coverage
- 3 kHz (MW)/ 5 kHz (SW) tuning steps

BOTH RECEIVERS HAVE:

- 150-30,000 kHz AM/CW/SSB
- 88-108 MHz FM
- Keyboard frequency entry
- Built-in and external antenna
- Memory channels
- Sleep timer
- LED tuning strength indicator
- LCD frequency display
- Step/scan tuning
- Wide/narrow selectivity
- Tone control
- Sensitivity switch
- Earphone included
- BFO/fine tuning control



UNIDEN CR-2021

~~\$299.95~~

ONLY \$189 including shipping!

ADDITIONAL FEATURES:

- UNIDEN CR-2021
- Built-in AC/battery power
- Triple conversion superheterodyne
- Antenna peaking control
- 12 channel memory
- 1 kHz tuning steps
- High-stability SSB/CW reception
- Excellent audio fidelity

ORDER NOW!

SONY ICF-2002 \$219.00 including UPS
 UNIDEN CRF-2021 \$189.00 including UPS

CALL TOLL-FREE
 1-800-438-8155

GROVE ENTERPRISES

140 Dog Branch Road, Brasstown, NC 28902
 704-837-9200




LISTENER'S LOG from p.7

+53.475 Batavia
 +52.325 Rochester
 +52.375
 +52.625
 +52.725
 460.700 US Air
 44.08 Theco Transport
 461.025 Geneseo Collision
ERIE/NIAGARA COUNTIES
 460.450 Erie Co Sheriff N
 460.075 " " " S
 460.400 " " "
 155.580 Erie Co CW
 155.730 " " "
Buffalo Police:
 460.475 N. Dispatch
 460.425 S. Dispatch
 460.025 c/c
 460.325 Traffic
 460.350 Special
Niagara Falls Police:
 460.125 Ch 1
 460.375 Ch 2
Erie Co Police:
 154.740 Amherst Dispatch
 154.890 " Mobile
 460.500 Kenmore
 460.100 Tonawanda Town
 460.225 Tonawanda City
 460.175 N. Tonawanda
 156.210 Blasdell
 155.610 Cheektowaga
 159.090 "
 155.640 E Aurora
 155.625 "
 155.250 W Seneca
 155.655 Depew
 155.250 Lewiston
 154.145 Orchard Park
 155.655 Lancaster
 155.430 Lackawana
 460.150 "
 155.790 Hamburg
 159.030 "
 155.190 Orchard Park
 155.040 " "
ERIE CO. FIRE
 46.26 North
 46.28 North/Central
 46.24 South/Central
 46.20 South
 46.38 Secondary
 155.760 Fire Safety
City Fire Depts:
 154.190 Buffalo Disp
 153.890 " f/g
 46.46 Tonawanda Town
 46.42 Tonawanda City
 154.130 N. Tonawanda
 155.940 Blasdell
 46.50 Bowmansville
 46.40 E Aurora/W Sen
 155.100 Depew
 154.430 Lackawana
 460.525 Niagara Falls
 460.575 " "
 46.44 Lockport
COMMUNITY REPEATERS
 462.450 Avon (River Rd)
 461.350 Canadice
 462.025 "
 463.875 "
PETROLEUM
 43.12 Buell Oil
 464.125 " "
 47.64 JO Cook
 47.48 WW Griffith
 48.14 Nat'l Fuel Gas
 151.865 Agway Batavia
 151.595 " Rochester
 48.86 Arco Pipeline
 49.56 Burnwell Gas
 35.70 Pratt Pl & Htg
 154.490 Townsend Oil

TAXI
 452.100 Associate
 152.360 Greece
 152.330 Greene
 152.390 Hamilton
 152.300 Henrietta
 152.270 Monroe/Town
ONTARIO PROVINCE
 42.06 OFF b/c
 42.22 c/b
 159.270 Niagara Parks
 153.800 Niagara Falls Fire
 154.400 Ft Erie Fire
 153.770 St Catherines FD
 154.010 Ont Fireground
FEDERAL
 171.525 USDA
 171.575 "
 163.4125 Mt Morris Dam
 165.0875 " " "
 417.200 Fed Bldg Sec;Buffalo
 417.200 " " ;Rochester
 30.10 Rochester NG
 34.50 " "
 49.70 Seneca Army Dp
 49.80 " " "
 142.900 " " "
 143.375 " " "
 150.025 Niagara Falls AF
 150.150 " " "
 413.150 " " "
 413.200 " " "
 413.300 " " "
 413.450 " " "
 148.450 Lockport AFB
 40.17 Air Crash Inv
 40.19 " " "
 171.525 Alleghaney Nat'l For
AGRICULTURE
 35.70 Barber Ag -
 152.885 Gerald Pease
 35.96 Avon Farm
 151.580 Hartford Farms
 451.900 Hainworth Farms
 35.96 Avon Farm Equip
 43.02 Cole & Kime
 30.58 Batavia Turf Farm
 35.10 Monroe Tractor
 35.90 Batavia Farm Eqp
 157.620 Stein Farm
 151.685 Crockers Farm Sr
 461.050 Upstate Milk
 35.06 Agri Systems
 151.550 Noble Hurst Farm
 153.020 Donnan Farm
MARINE
 156.800 Emergency
 157.100 Coast Guard
 156.300 Ship to ship
 156.650 Barge canal
 156.575 Yacht Club
 151.685 Canan Marine
 156.425 Stevens Marine
 156.450 Sea Land
 Telephone:
 161.850 Rochester
 161.900 "
 162.000 Newark
 161.650 Toronto Cont
MANUFACTURING
 153.110 Foster Wheeler
 47.70 General Foods
 153.170 Xerox Henrietta
 47.68 Pro Fac Mt Morris
 30.64 Eastman Kodak
 153.865 " "
 160.305 " "
 462.275 " "
 462.325 " "
 462.350 " "
 462.375 " "
 462.425 " "
 462.775 " "
 158.385 Gleasons
 462.200 "
 462.300 General Motors
 462.475 Xerox

BUSINESS
 43.00 Pagano Refuse
 35.90 Margaret Mack
 49.56 Vitale Bros
 35.06 Young & Linfoot
 154.515 Bernice Pease
 31.20 Honeoye Storage
 35.08 Huff Equipment
 35.12 Wingate Sand
 35.14 Lathan Appliance
 43.14 Livingston Const.
 151.805 C&K Construction
 35.92 Coke
 35.96 Demerly Comm
 49.54 DeWitt
 463.200 PJ Auto Parts
 157.680 Finger Lk Race
 461.975 Geneseo SUNY
 451.175 BR DeWitt
 43.44 Robert Austin
 461.050 JB Morgan
 43.00 LP Brady
 35.18 MG Radiator
 462.550 Argie TV
 463.775 Parnell Sales
 151.520 Abbey of Genesee
 30.80 Pepsi
 31.16 & UP
 31.36 Monroe Tree
AIRPORT
 121.5 Emergency
 243.0 Military Emergency
 122.8 UNICOM
 122.9 MULTICOM
 121.7 Ground control
 123.7 Approach
 118.3 Tower
 119.55 Departure
 128.25 Cleveland tower
 133.75 En route
 155.715 Airport Authority
 169.325 FAA
LEGEND
 b/c base to car
 c/b car to base
 c/c car to car
 RI repeater input
 m mobile
 mr mobile repeater
 f/g fireground, unit at
 fire scene
 159.030/first is mr
 156.030 second is m/RI
 UHF mobile are always 5 MHz
 higher than base frequency
 (453.975/458.975)
**"10" CODE USED BY LAW
 ENFORCEMENT AGENCIES**
 10-0 CAUTION
 10-1 UNABLE COPY-CHANGE
 LOCATION
 10-2 SIGNAL GOOD
 10-3 STOP TRANSMITTING
 10-4 ACKNOWLEDGEMENT(OK)
 10-5 RELAY
 10-6 BUSY-STAND BY UNLESS
 URGENT
 10-7 OUT OF SERVICE
 10-8 IN SERVICE
 10-9 REPEAT
 10-10 FIGHT IN PROGRESS
 10-11 DOG CASE
 10-12 STAND BY(STOP)
 10-13 WEATHER-ROAD REPORT
 10-14 PROWLER REPORT
 10-15 CIVIL DISTURBANCE
 10-16 DOMESTIC PROBLEM
 10-17 MEET COMPLAINANT
 10-18 COMPLETE ASSIGNMENT
 QUICKLY
 10-19 RETURN TO ...
 10-20 LOCATION
 10-21 CALL ... BY TELEPHONE
 10-22 DISREGARD
 10-23 ARRIVED ON SCENE

10-24 ASSIGNMENT COMPLETED
 10-25 REPORT IN PERSON
 (MEET) ...
 10-26 DETAINING SUBJECT/
 EXPEDITE
 10-27 (DRIVERS)LICENSE INFO
 10-28 VEHICLE REGISTRATION "
 10-29 CHECK RECORDFOR WANTED
 10-30 ILLEGAL USE OF RADIO
 10-31 CRIME IN PROGRESS
 10-32 MAN WITH GUN
 10-33 EMERGENCY
 10-34 RIOT
 10-35 MAJOR CRIME ALERT
 10-36 CORRECT TIME
 10-37 (INVESTIGATE) SUSPI-
 CIOUS VEHICLE
 10-38 STOPPING SUSPICIOUS
 VEHICLE
 10-39 URGENT:USE LIGHT,SIREN
 10-40 SILENT RUN:NO " "
 10-41 BEGINNING TOUR OF DUTY
 10-42 ENDING TOUR OF DUTY
 10-43 INFORMATION
 10-44 REQUEST PERMISSION TO
 LEAVE PATROL..FOR..
 10-45 ANIMAL CARCASS IN ..
 LANE OR ...
 10-46 ASSIST MOTORIST
 10-47 EMERGENCY ROAD REPAIRS
 NEEDED
 10-48 TRAFFIC STANDARD NEEDS
 REPAIRS
 10-49 TRAFFIC LIGHT OUT AT..
 10-50 ACCIDENT (F,PI,PD)
 10-51 WRECKER NEEDED
 10-52 AMBULANCE NEEDED
 10-53 ROAD BLOCKED OR...
 10-54 LIVESTOCK ON HIGHWAY
 10-55 INTOXICATED DRIVER
 10-56 INTOXICATED PEDESTRIAN
 10-57 HIT AND RUN(F,PI,PD)
 10-58 DIRECT TRAFFIC
 10-59 CONVOY OR ESCORT
 10-60 SQUAD IN VICINITY
 10-61 PERSONNEL IN AREA
 10-62 REPLY TO MESSAGE
 10-63 PREPARE MAKE WRITTEN
 COPY
 10-64 MESSAGE FOR LOCAL DE-
 LIVERY
 10-65 NET MESSAGE ASSIGNMEN
 10-66 MESSAGE CANCELLATION
 10-67 CLEAR FOR NET MESSAGE
 10-68 DISPATCH INFORMATION
 10-69 MESSAGE RECEIVED
 10-70 FIRE ALARM
 10-71 ADVISE NATURE OF FIRE
 10-72 REPORT PROGRESS ONFIRE
 10-73 SMOKE REPORT
 10-74 NEGATIVE
 10-75 IN CONTACT WITH
 10-76 EN ROUTE
 10-77 ETA(ESTIMATED TIME OF
 ARRIVAL)
 10-78 NEED ASSISTANCE
 10-79 NOTIFY CORONER
 10-80 CHASE IN RPOGRESS
 10-81 BREATHERLIZER REPORT
 10-82 RESERVE LODGING
 10-83 WORK SCHOOL KING OR...
 10-84 IF MEETING..ADVISE T
 10-85 DELAYED DUE TO...
 10-86 OFFICER/OPERATOR ON
 DUTY
 10-87 PICKUP/DISMBURE CHECKS
 10-88 ADVISE PRESENT TELE-
 PHONE # OF...
 10-89 BOMB THREAT
 10-90 BANK ALARM OR...
 10-91 PICK UP PRISONER/SBJCT
 10-92 IMPROPERLY PARKED
 VEHICLE
 10-93 BLOCKADE
 10-94 DRAG RACING

 **Cont'd next page**

STATION ID'S from p.16

Full national anthems often follow sign offs. These can be easily identified even though the matching process may at first seem tedious.

Next, analyze the verbal portion of the identification following or contained in the interval signal. If it is not in English, don't panic; libraries contain dozens of language comparison guides. Kenneth Katzner's "Languages of the World" provides a written phonetic sample of dozens of foreign tongues. It can help you determine which language you have recorded.

Then, a guide such as Bergman's "Concise Dictionary of 26 Languages" can help you with simple translation; it contains key words which are found in many identifications. Lyall's "Guide to the Languages of Europe" is also

quite helpful. From such guides come for example, phrases such as "Aqui" and "hier ist" and "houna," three foreign language words indicating "This is..." Words preceding cities should be familiarized so that when you hear "Houna Lundon" you have no question that the BBC is broadcasting in Arabic.

It is advisable to make a list of key identifying words such as broadcast, radio, transmission, etc. in the various languages. Libraries also contain foreign language atlases which can help you in the translation of city names and geographical places.

Next analyze program detail. That English language newscast which fades just before the identification holds the key to the origin of the broadcaster. Ask yourself a few questions about the programming. Did

the news refer frequently to any particular head of state? Was a state visit mentioned? Did the program deal with a specific country or region? Were any political groups mentioned or emphasized?

Note any details or unusual trends in the program and then consult "Readers Guide to Periodical Literature" or "Current Biography." Several references to Jerry Rawlings probably means Radio Ghana is on the air. A commentary about Kim Il Sung surely indicates North Korean broadcasting. Is there a reference to President Shagari? The "Reader's Guide" will reveal personalities which can be matched with originating nations.

What about geographical references? Rand McNally's "New International Atlas" is a must. I recently came upon an announcement of a sports carnival in "Northeast Coiseul in the Western Province." An atlas in the local library confirmed that the carnival was to be held in the Solomon Islands, the origin of the broadcast. Sometimes an up-to-date almanac can be of help when stations announce national holiday celebrations. Almanacs list independence days of nations worldwide.

Abbreviated identifica-

tions can be searched out through "Dictionary of Initials" which even contains several abbreviations for major world broadcasters!

Use your imagination. Take a trip to your local library and watch your list of positive log entries grow as you take a bit of the mystery out of solving station identifications!

¹World Radio TV Handbook, 1977 edition, pg. 206.

Library Guide to Station Identification Resources

1. "World Radio Television Handbook" - J.M. Frost, Editor
2. "The New Grove Dictionary of Music" - Stanley Sadie, Editor
3. "Languages of the World" - Kenneth Katzner
4. "Concise Dictionary of 26 Languages" - Peter M. Bergman
5. "Guide to the Languages of Europe" - Archibald Lyall
6. "Readers Guide to Periodical Literature"
7. "Current Biography"
8. "Rand McNally's New International Atlas" by Rand McNally Company
9. "Dictionary of Initials" - Betsy M. Parks
10. "National Anthems of the World" - Martin Shaw, Henry Coleman and T.M. Cartledge

PORTABLE COMPUTERS PROHIBITED BY AIRLINES

Anyone who has ever tried listening to the aircraft band while a nearby business computer is running will sympathize with the decision by Eastern Airlines banning the use of personal computers on board their aircraft.

In an article which appeared recently in Computer World, submitted to us by MT reader George Primavera, it was stated that a joint testing procedure is being undertaken by Boeing, McDonnell Douglas, Lockheed and the Federal Aviation Administration.

The first meeting of the Radio Technical Commission for Aeronautics was attended by computer industry representatives which included Tandy Corporation, Apple Computer and Hewlett-Packard.

It was noted that FM radios are also prohibited aboard aircraft due to the oscillator frequency coverage of 98.7-118.7 which overlaps the 108-136 MHz navigational and communications band used by aircraft.

LISTENER'S LOG from p.20

- 10-95 PRISONER/SUBJECT IN CUSTODY
- 10-96 MENTAL SUBJECT
- 10-97 CHECK(TESt) SIGNAL
- 10-98 PRISON/JAIL BREAK
- 10-99 RECORDS INDICATE WANTED OR STOLEN

Thanks, Jim, for sharing that comprehensive collection with us!

RUSSIANS DOM SPACE from p.1

As one can see 1983 offered the satellite listeners many new opportunities for intercepts. But what does 1984, the year of George Orwell, hold?

First, shuttle activity will be on the rise. One can expect at least 9 STS launches during the next year if things run smoothly. Soviet manned space activity will be on the increase. Watch for the possibility that Salyut 7 will be manned throughout the year starting with a three-man crew launched early this year. Also expect an ISKRA amateur radio satellite from Salyut 7 sometime after the manned crew gets onboard. New space tugs will be launched to Salyut 7 so watch 19.954 MHz for activity throughout the year. Soviet military photo recon missions will continue especially during times of international crisis; watch 19.994 and 19.989 MHz for activity.

Sometime during the year, I expect the Soviets to launch a series of amateur radio satellites in a high Molniya orbit, similar to OSCAR 10. This would probably either be a two to ten transponder or 70 cm-to-two-meter transponder.

We could see a scaled-down version of our shuttle become operational by the Soviets this year, but this will probably not happen till the first of 1985.

All in all 1984 will prove to be an exciting year for those who monitor space communications. Monitoring Times' Signals from Space column will keep you on top of the space activities and keep you flying high with world satellites activity. ●

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



A Glossary of Computer Terms for the Uninitiated

With thanks to Merchandising Magazine

BASIC: Beginners All-purpose Symbolic Instruction Code. This is a language for communicating with the computer and is one of the most widely used computer languages around.

BIT: An individual link. Can be a binary digit - either 1 or 0 - or can be on or off, true or false, dot or dash.

BUNDLED SOFTWARE: Software that comes as part of a package with a computer. Bundled software takes the decision of what software to buy out of the hands of the un-tutored computer consumer. This is a trend computer manufacturers see in the future that will aid the novice and reduce the time-consuming task of getting to know the computer.

BYTE: A group of eight bits. Can be thought of as one character since eight bits often is enough to code the alphabet, upper and lower case, numbers, symbols and some graphics. About 2000 bytes (2K) to a page.

BUG: A problem, hitch or error in a program is called a bug. Usually bugs are caused by poor planning or a typographical error when entering a program into the memory. The program won't run properly with a bug. **Debugging** a program is the art of finding and fixing the bugs.

CHARACTER: Any information that can be stored in one byte. Examples are letters of the alphabet.

COMPUTER LITERACY: Understanding the language and functions of computers.

DATA: Word used to describe alphabetical, and numerical information.

DISK CONTROLLER: A dedicated microprocessor that handles the data going to and from the disk.

DISK DRIVES: Storage devices for computer software. Disk drives come in various sizes and capacities.

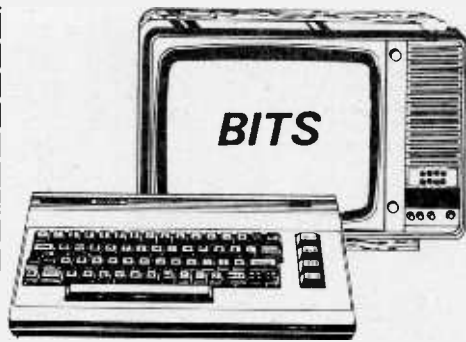
EDIT: To change a section of program code.

ENTER: A command that tells the computer that you're finished putting info into it via the keyboard. A key on the keyboard usually will say "Enter."

FIRMWARE: A word used to describe operating instructions for the computer that generally are found in the ROM.

FLOWCHART: Method of outlining the logic of a program using diagrams.

HARDWARE: Computer equipment; not the programs.



by Mike Edelson

COMPUSERVE

I just had the pleasure of using the COMPUSERVE HAMNET. HAMNET is the name given to the Special Interest Group (SIG) for amateur radio hobbyists.

HAMNET is accessed by requesting "GO HOM-11" or "GO HOM-50" and then requesting selection 2. Once you are in HAMNET you get a brief introduction, a short bulletin, and a directory. All activity is controlled at decision points by directories and menus. The available sections range from the message reading area, message depository, databases, a conference area and bulletin board.

The bulletin board and message depository work together. If you want to leave a message you would be able to leave it by selecting the proper facility. Everything is menu-controlled. To read the messages on the bulletin board, you select facility "1" on the main bulletin board. There are some interesting comments on the BBS (Bulletin Board System) about programs, hamfests, thoughts on the state of Ham radio, etc.

One of the most interesting facilities is the conference facility, allowing you to have a QSO with

INTEGRATED CIRCUIT: Small circuit also known as "chip" or IC. Used to replace larger and more expensive circuit components.

KEYBOARD: The typewriter-like mechanism on which computer commands are entered. Some computers come with keyboards, others must be purchased separately. Keys can be raised, like those on a typewriter, or flat, printed on a plastic "membrane."

KILOBYTE: Also known as byte or K. A unit of computer memory which represents 1,024 bytes.

LANGUAGE: Commands and statements which when put together allow communication with computers. Examples are BASIC, FORTRAN, COBOL.

MASS STORAGE DEVICE: Any number of pieces of machinery used by the computer to store large quantities of information. Can be either

hams on the net who seek a conference with others. I spent an enjoyable half hour on this facility and met some very friendly and knowledgeable hams--without QRM!

The area of greatest interest to me is the X and XA databases. These are electronic file cabinets containing information of various interests: ARRL bulletins, programs, the Electronic Version of the W5YI Report, etc. I will be examining the programs and, if it is feasible, will prepare some for publication. These programs are classified as PUBLIC DOMAIN (free use by anyone but remain the property of the programmer).

To satisfy you RTTY buffs, I count no less than 8 programs of interest to you. I will examine these as soon as time allows and report further once the programs are ready for publication.

For those of you who can't access COMPUSERVE, feel free to ask if I can get a particular program or file for you. Bear in mind that a network like COMPUSERVE charges so I will have to ask for a handling and shipping charge of \$3.00 plus postage. It would, of course, be better for you to access it yourself.

GLITCHES

I recently detected a fault in the software for the TRS-80 MODEL 4 computer, one that could potentially cause a program to give totally incorrect output. It involved the INT intrinsic.

The INT intrinsic takes a real number (like -12.111 or 19.5) and returns the integer part of the number (-12 and 19). But on the TRS-80 it returns the nearest integer. So for -12.111 it returns -13 and for 19.5 it will return 20. As you can see this could cause a problem.

If you suspect this bug is occurring and have printed the data to prove it, you can remove the INT function by using the following:

(1) Enter your data as an integer part and a real part separated by a comma; thus, -12.111 becomes -12,-

(2) Reconfigure your calculations to function in this new method, where necessary.

The data functions as two separate numbers; then adds them together. For example, if you are putting latitude and a longitude in as degrees, decimal point, minutes, then use the following to get degrees, decimal point and decimal part of degrees:

```
10 PRINT "INPUT DEGREE,
MINUTES IN DDD.MM FOR-
MAT"
20 INPUT DEG,MIN
30 FDEG=min/60 *100 (THIS
CONVERTS THE MINUTES TO
A FRACTION OF A DEGREE)
40 NDEG=FDEG+DEG (THIS RE-
COMBINES THE TWO PARTS
OF THE NUMBER).
50 END
```

This may never be necessary but it proves again that you must watch your system, know what it does and how it does it; and if it isn't doing it right, what you can do to get it to work properly. Welcome to the world of the programmer!

Another aid to solving the bugs you may find is the use of PRINT statements. Well-placed and well-written print statements can make debugging a breeze. If they are written well they can allow you to know what lines your program is executing and the data it is using.

For instance, in the little program block above, if you were not sure what was occurring and you suspected a bug here, you could add something like the following print statements:

```
35 PRINT "I AM AT STATE-
MENT 30, MIN=";MIN;
"FDEG=";FDEG
45 PRINT "I AM AT STATE-
MENT 40, FDEG=";FDEG;
"DEG=";DEG;"AND NDEG=";
NDEG
```

As you can see this has the potential to save hours--and sanity. While it is not too useful in a program like this, it can help when you have a 1000-line program with GOTOS and GOSUBS. Try it; you'll like it.

● As always, I am at your service; feel free to write me at P.O. Box 203, Roselle Park, NJ 07204. Please include an SASE for a reply.

I have also had to update my operating schedule on the NOVICE bands (40 and 80 meter due to an increase in QRM on the NOVICE 40). This change goes into effect immediately.

I will be available to MT readers on Monday, Tuesday and Wednesday as follows:

1700-2000Z on or near 7125 or 7110kHz
0100-0600Z on or near 3725kHz

My call is KA2SPH. I do QSL 100%, so let's hear from you!

SWLs: I will QSL your reports; just provide the basic information of time, date, frequency or meterband, and a signal report (however you feel most comfortable giving it).

PROFILES

BE A SHORTWAVE BROADCAST MONITOR

by Donald McCants
Trussville, AL

One of the most important facets of the SWL/DX hobby is one of the least understood: the monitoring work by dedicated volunteer shortwave radio listeners on behalf of major international shortwave radio stations. I happen to be one of them.

WYFR is an independent, listener-supported Evangelical Christian radio station based in Oakland, California. I was interested in the well-produced, biblically-based programs broadcast by WYFR, and I wanted to take a more active role in their broadcast activities.

I also wanted to increase my knowledge and expertise in the area of shortwave radio listening. What better way is there to really understand how atmospheric conditions and other factors can influence the reception of a shortwave station than by regularly monitoring the broadcasts of a shortwave station on a day-to-day basis?

Becoming involved in monitor activities is an

excellent way to provide an indispensable service for the engineering staff of the station, as the monitor is the only individual who is able to provide them with day-to-day data on reception conditions at a certain location.

This information is most important to the engineering staff in determining how sunspot cycles, solar storms, and other ionospheric conditions affect shortwave broadcasting, and also how these phenomena are affecting reception of shortwave broadcasts.

The shortwave monitor is the only individual who has the receiving equipment, the time and the desire to perform this valuable service. The data base that shortwave station broadcast engineers need to plan the frequencies that will be used by the station in that station's upcoming broadcast season would be much harder to obtain without the help and co-operation of the station's official monitors.

I would like to share with the readers a little bit of information about the general procedure that I follow when I monitor WYFR broadcasts. I try to monitor one broadcast for each day of the month for at least fifteen minutes of broadcast time, so that my reception report will be a fair repre-

sentative sample of the reception conditions for WYFR's broadcasts at my location. Occasionally I may extend my listening time to a period of up to 45 minutes or an hour.

I listen to the program for the period I have designated for myself, taking careful note of the broadcast time in UTC, the date of the broadcast in UTC time, the broadcast frequency in kilohertz, and the SINPO code for the overall reception quality of the broadcast.

I write down the information on a monitor's reception report form provided for me by WYFR's shortwave department. When I have made enough entries to fill the form up, I mail it to Family Radio headquarters.

Getting involved in monitoring activities for an international shortwave station is a very good way to become actively involved in the broadcast activities of that station; you don't have to move away from your home or lay out a great deal of capital.

The only requirements are the desire to participate as a monitor, the time needed to do the monitoring, and sending in the reception report data to the station on a regular basis. Why don't you get involved in the monitoring program of your favorite broadcaster?

GLOSSARY from p.22

magnetic tape or floppy or hard disks.

MICROPROCESSOR: The "miracle chip" which is the actual brain of the computer. Examples are Z80, 6502, 8088, 6800. Z80 currently is the most popular.

MODEM: A device which, via a telephone, hooks the computer with various telecommunications services.

MONITOR/VIDEO SCREEN: The TV-like device which displays the computer commands, programs, games, etc. With less-expensive computers a traditional TV is often hooked to the computer; others use dedicated monitors.

OPERATING SYSTEM: A program that controls the workings of the machine. Examples are CPM, CPM-86, etc. The operating system is what determines which software will run on the computer.

PERIPHERAL: Any number of add-on devices to a computer including modems, monitors, tape recorders, disk drives, controllers and printers.

PROM: Programmable Read Only Memory. (EPROM is Erasable Programmable Read Only Memory - a type of memory that doesn't require electrical power.)

PROGRAM: Set of instructions written by a programmer to teach the computer what to do.

RAM: Random Access Memory. The part of the computer memory that is used to write programs and to store data in the form of variables. RAM is gone when the machine is turned off. It is necessary to operate a CPM program.

ROM: Read Only Memory. This part of the computer memory contains the BASIC interpreter language instructions. ROM is locked into the computer. It can't be erased, changed or used by the programmer.

STATEMENT: A computer program instruction.

SOFTWARE: Computer programs.

SYNTAX: Properly structured instructions that tell the computer what to do. Improper syntax won't make sense to the computer and the instruction won't be interpreted and carried out.



ENG. BROADCASTING from p.17

ers! Some of them speak good English, others are very hard to understand. Two programs are heard in N. America; firstly, at 2130-2300 on 9805 kHz; then 0200-0330 on 9475 (this latter being the best reception if the band is open).

Programs include news and political commentaries, as well as interesting geographical and historical talks. "Down Memory Lane" may be heard at 2215. If you are interested in typical Oriental Middle-Eastern music, this is the station for you!

LIBERIA Two stations are operating here in the English language from time to time. The first is the religious missionary station ELWA. This one can sometimes be heard on the 60 meter band at 4765 kHz around 2200-2300 including an occasional news bulletin.

ELBC, operated by the Liberian Broadcasting System and calling itself "The Voice of Progress," is another "in-and-outer" which can truly amaze you by booming in on the (unlikely) time and band of 2130-2300 at 3255 kHz (90 meters). They are all-English at this time and have some excellent musical and news programs.

LIBYA The high power station Radio Jamahiriyah can be heard on 11816 kHz when propagation is suitable, with English programs of "news" and pro-Khadaffi propaganda around 2230-2330, including readings from the "Green Book." Very interesting political style! However, there is also the problem of modulation (sometimes poor) and interference.

NIGERIA The Federal Radio Corporation of Nigeria produces two services which can be heard in the English language.

The most consistent is the International Service, announcing as the "Voice of Nigeria" which is heard often on 15120 kHz (19 meters) between 1800-1900 with quite good signals, also at 2100 and 0700-0900 on the same frequency, and at 0500 on 7255 kHz (41 meter band).

The Home Service may be audible via Kaduna 4770 kHz at 2100; and Ibadan on 6050 at 0530. A new station on 4932 has been heard with good signals at 2100 announced as the "Educational Service of Radio Nigeria (Lagos)", but whether this has returned to the air

Monthly summary of main international broadcasters:

COUNTRY	U.T.C.	FREQUENCY
BRITAIN: BBC	1100-1330	21710 21660 15215 15070 11775 6195
	2000-0000	15260 11750 6175
	0000-0330	11750 9515 6175 6120 6005 5975
	0500-0630	9510 6175 5975
ECUADOR HCJB ()=part of time	0030-0700	26020(15250)15155/11910 9745(6095)
	1200-1430	26020 17890 15115 11740
USA: VOA	1700-2300	15600 15580 15445
	0000-0600	15205 11740 9650 6130 5995
AUSTRALIA:	1100/0200	9580
	0200/0300	17795/15320
ISRAEL: KOL	2000/2230	11960 11655 9815 7410
	0000/0100/ 0200	11655 9815 7410

since the military coup is not known.

* * * * *

This ends our first survey of Africa, but I would invite all readers to send in their experience on what is being heard in their area. Please write c/o Monitoring Times.

NEW ARRIVALS



NEW RECEIVER FROM ICOM

A surprise introduction from ICOM has observers speculating about prices and delivery.

Announced as the IC-R71A, the general coverage receiver sports keypad entry, 32 programmable memory channels, scanning and even an optional wireless (infrared) remote control (IC-RC11).

An additional option will be of significant interest to sightless listeners: A synthesized voice frequency readout!

Other features are virtually identical with the present model IC-R70. Retail price is expected to be \$799.

MT readers may be assured that further information will be published as soon as it becomes available.

THOSE NEW SCANNERS... WHEN and IF

About a year ago Fanon-Courier announced two versions--hand held and base/mobile--of a wide-frequency-range programmable scanner.

The claimed bandwidth was astounding: virtually the entire land mobile spectrum above 25 MHz, inclusive--no gaps.

But problems with circuitry, costs and deliveries engendered disillusionment and Fanon-Courier abandoned the project. Soon after, Regency Electronics announced the imminent MX-5000 and MX-7000 base/mobile units as well as an HX-3000 hand-held.

In the meantime, a Japanese manufacturer, AOR, has been delivering their wide-coverage AR-2001 programmable scanner throughout Europe; it is not available in the U.S. And here is where the pieces of the puzzle fall together.

The Regency MX-5000 is the AOR 2001! Specifications look quite good; time will tell whether it keeps its promise. Even more interesting is the MX-7000, a wider-frequency-range scanner (up to 1.2 GHz...that's 1200MHz)

with entirely new RF and oscillator circuitry.

When will the consumer see these products? The MX-5000 is being delivered now. The MX-7000 and HX-3000 have been pushed up again, this time to at least April or May.

Another interesting release...when and if...will be the SX-400 from J.I.L. It appears to blend a number of advances now seen in more widely-publicized entrees--the wider frequency coverage of the new Regencys and the computer control of the Bearcat CompuScan.

Preliminary specifications are spectacular: a standard scanner stand-alone mainframe with plug-in modular options to extend the frequency range from 150 kHz to 3.2 GHz, along with logic ports for external computer control!

This new product from J.I.L. (now reorganized as J.I.C.L.) is scheduled for a March release for the basic scanner and power supply, and a June follow-up for the RF converter and data interface.

Hints from Electra indicate some very hot news about Bearcat as well.

Finally, Fox Marketing, whose only scanner entry to date (we aren't including their radar detectors) have been the BMP 10/60 and the Fox Pac series, will be releasing their new Maxi-Scan.

Little is known about this product other than it, too, will be designed to cover up through 1.2 GHz with plug-in modular converters.

The June Consumer Electronics Show in Chicago should unveil a radical departure from previous scanners.

VIEWPOINT from p.10

of the local crew around and the AMSAT Nets are re-transmitted on a regular basis.

Again, thank you for your support!


Vy 73,

John J. Champa, K8OCL
Senior Vice President, AMSAT
Radio Amateur Satellite Corp
P.O. Box 27
Washington, DC 20044
(301)589-6062

> > > < < <

Eob, this is potentially a very serious matter for scanner enthusiasts, so I hope you give it due thought and publicity. I own one of the proliferating brands of cordless telephones. In my evaluation of my own telephone, I equipped my auto with a scanner and programmed in the common spots that are in use in the 49 MHz area. I was to learn that some handsets radiate more than TWO MILES with excellent clarity!

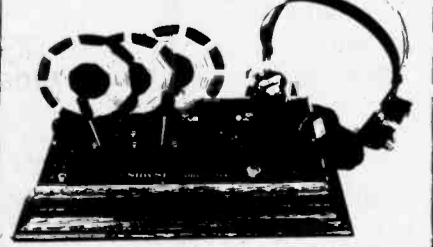
During these investigations I was astonished to learn of an illegal - criminal - activity nearby! A local person (later identified by the police as a known bookie) was calling two separate higher level bookies. (Incidentally, it is possible also to recover the telephone numbers dialed by the lower bookie to the other higher-up parties by decoding the tones/counting the pulses.)

I quickly procured a minicassette tape recorder and recorded a sufficient portion of the proceedings to establish the nature of the transactions. I contacted the Organized Crime Department of our Police Department. The Lieutenant who met me was intrigued by the substance of the recording and the manner of its acquisition. I readily described to him the way I had accomplished the intercept. He requested, and received, my recording. (He was also the person who told me he recognized the voice and M.O. of the local level bookie.)  Cont'd p.32

with an unused--and a spare--50-year-old Marconi triode, earphones, A and B batteries, indoor aerial wire and full instructions.

For more information, write Technicraft, 338 Katoomba Street, Datoomba, New South Wales, Australia 2780.

Vintage Single Valve Wireless Set



A BIT OF NOSTALGIA

Old time radio buffs will respect the efforts of an Australian company to market a detailed reproduction of a 1920's Unidyne Model 1A. The single-valve wireless set comes complete



AOR AR-2001:
alias Regency MX-5000

? ? ? ?

Did you hear what people are saying about TUNE IN THE WORLD?

"I strongly recommend this book to all listeners"
L. Brookwell, Int'l DXers Club of San Diego

"Thanks for a truly great publication" C. Melcher,
Thorndale, Pennsylvania

"A great book. I put it on my shelf next to the
World Radio TV Handbook!" J. Small, FPO San Diego

The listener's guide to int'l SW radio. Profiles of over 70 stations. By K. MacHarg. 110 pages.

...and NETHERLANDS WORLD BROADCASTING?

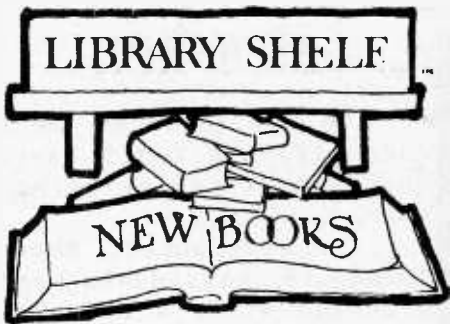
"a thoroughly researched work...an excellent job" Professor John Santosuosso, Florida Southern College

"really enjoyed it...very good indeed" Jeff White,
Radio Earth International

The history of Radio Netherlands by former RN announcer and producer Robert Haslach. Lots of rare, old photos of this super station. 105 pages.

Each (paperback) book \$9.99 plus \$1.50 postage (postage outside of the U.S. \$2.50). Send checks or money orders in U.S. dollars drawn on U.S. banks to Miller Publishing, 424 West Jefferson Street, Media, Pennsylvania 19063. Send SASE (.37 postage) for more info. Dealer inquiries invited.

We've got the winners!



ELECTRONIC DATABOOK, 3rd Edition by Rudolf F. Graf (TAB 1538, 407 pages, 7-3/4" x 9-1/4", paperback; \$16.95 from TAB Books, Dept MT, Blue Ridge Summit, PA 17214).

Author Graf has done a commendable job of compiling hundreds of pages of useful data tables, monographs, glossaries, formulas, charts and symbols dealing with virtually every phase of electronics.

While some oversights were apparent (WARC '79 frequency band changes are not reflected in allocation tables; there is no table of international call sign prefixes; attenuation of mini RF-174/U coax is shown as only 2 dB at 400 MHz--it's actually 20), the overall content more than justifies the occasional exception.

DATABOOK is eminently useful for the home experimenter or ham who needs such references in winding coils, selecting filter components, planning two-way communications systems, and designing electrical or electronic circuitry.

Writers will find an endless source of useful data as well in this exhaustive collection.

In all, six major divisions of the book are organized as to frequency data, communication, passive components and circuits, active components and circuits, mathematical data/formulas/symbols and physical data.

CLANDESTINE CONFIDENTIAL NEWSLETTER published by Gerry Dexter, Dept MT, R.R.4 Box 110, Lake Geneva, WI 53147.

Author Dexter is well known to shortwave listeners as one of the contributors to Popular Communications magazine. His new newsletter will be published six times a year and contain frequency, schedule and background information on clandestine broadcasters.

North American cost is \$10 per year; \$13 overseas.

COMSEC NEWSLETTER published by Ross Engineering Associates, Dept MT, 7906 Hope Valley Ct., Adamstown, MD 21710.

Communications security is the topic for this newsletter; a free six month trial subscription for which

is available to any organization requesting one on letterhead.

Primary emphasis is on commercial (non-government) interest and will cite publications, information on new equipment and techniques as well as a Q and A format for reader-contributed questions.

The publisher is a technical surveillance countermeasures (TSCM) consultant in the Washington, DC area and is highly qualified to provide answers to many questions dealing with security science.

HOW TO GET ANYTHING ON ANYBODY by Lee Lapin (263 pages, 8-1/2" x 11", soft-bound; \$34 postpaid from Auburn-Wolfe Publishing, Inc., Dept MT, 584 Castor No. 351, San Francisco, CA 94114).

Most of us have a flair for voyeurism, whether we admit it openly or not. We listen in on cordless phones and private radio correspondence with impunity. But there is another step, not always as overt.

Technical surveillance (a euphemism for "wiretapping") is a covert art; quite a few short-run private manuals have been published about the techniques. Lapin's latest "HOW TO..." is a tutorial piece designed to acquaint the uninitiated with a wide variety of sometimes seamy investigative tactics.

"HOW TO" is liberally illustrated, unpretentious, somewhat conversational in style. While dyed-in-the-wool professional investigators, especially trained agents, might find the book rather fundamental, the majority of readers will discover quite a few eye opening chapters, such as: listening through walls, procuring confidential telephone company information, beating lie detectors, night vision optics, miracle lock picking and many, many more.

"HOW TO..." is a natural follow-up for the notorious "The Big Brother Game" by Scott French, published several years ago and still a classic insight into bug-ging technology. While French's work was hardware/technology oriented, Lapin's emphasis is on procedure and technique.

THE LIGHT SPECTRUM: The newsletter of Energy, Communications and Survival (six issues per year, \$18 from Rick Glaese N7ANL, Kootenai Survival Products, Dept MT, P.O. Box 215, Kootenai, ID 83840; sample issue \$3).

While many articles

have appeared in MT and elsewhere regarding Solar and other alternate energy sources, often they are quite academic, not based on experience.

LIGHT SPECTRUM editor Glaese lives in a cabin utilizing photovoltaic solar cells as his primary energy source; he is also a dealer for photovoltaic equipment. A catalog section is included with the newsletters, of which there are now two.

The first two newsletters are an interesting mix of home-spun philosophy, technical how-to articles and product recommendations.

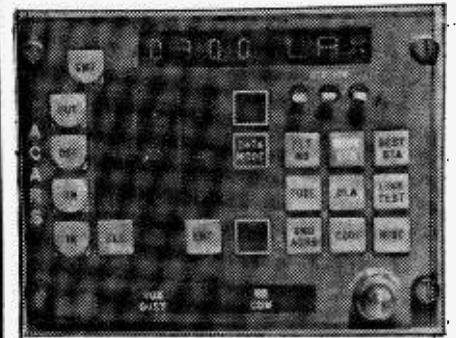
MILITARY TECHNICAL MANUAL SERVICE (distributed by Sam E. Stokes, Dept MT, 2266 Senasac Avenue, Long Beach, CA 90815.)

Frequently, new owners of old military surplus gear are stymied by the lack of manuals and schematics to get their trophies operational.

Sam Stokes has spent some two years organizing an enormous storehouse filled with original equipment manuals from the military along with some reproductions.

A full 58-page catalog

ACARS: from p.6



mode will operate only during idle periods of voice operation. The special ARINC HF data-link control equipment will be capable of sensing on which HF channel an aircraft is transmitting data-link signals and will automatically select the proper transmitter channel to reply to the aircraft.

We would like to thank Richard Covell of Aeronautical Radio Incorporated for his help in preparing this article.

is expertly cross-referenced by equipment classification and by manual number making it easy to use. It is available for \$3, refundable with the purchase of one of the manuals contained therein.

☆☆☆

GALAXY ELECTRONICS

BOX 1202-67 EBER AVE., AKRON, OHIO 44309
(216) 376-2402



KENWOOD R-2000
R-2000...
10 memories, scanning...state of the art features! Maximum flexibility and ease of operation.
499.50



YAESU FRG-7700 429.50
High-Performance All-Mode Communications Receiver 150 KHz 29.999 MHz. SSB/CW/AM/FM Digital readout. LSI clock timer optional 12 channel memory with back-up. Selectable AGC memory fine tuning, noise blanker, variable RF attenuator, built-in speaker 120/240vac 13 1/2" w x 4 1/2" h x 9" d. 13 lbs



Regency
MODEL MX5000
Introducing the all new Regency MX5000, a 20 channel, no-crystal scanner that receives continuously from 25 MHz to 550 MHz. That's right! Continuous coverage that includes CB, VHF and UHF television audio, FM Broadcast, and civil and military aircraft bands. Plus a host of other features like keyboard entry, a multifunction liquid crystal display that's side lit for night use, selectable search frequency increments, and a digital clock.



BC 100
8 band, 16 channel, programmable pocket scanner, ac adapter/battery charger, case, rubber antenna earplug and (6) AA nicad batteries included, jacks for earphone, ac adapter/battery charger
288.50

SHORTWAVE RADIO

KENWOOD
R-2000 150 khz-30 mhz, Digital, 10 Memories. **499.50**
R-1000 200 khz-30 mhz, Digital Receiver. **409.50**
R-600 150 khz-30 mhz, Digital Receiver. **339.50**

YAESU
FRG-7700 150 khz-30 mhz, Digital Receiver. **429.50**
SPECIAL Purchase a FRG-7700 with memory unit & get FREE installation—Memory unit. **137.50**

ICOM
IC-R70 100 khz-30 mhz, Digital Receiver **639.50**
NRD-515 .1 khz-30 mhz, Digital Receiver. **949.50**
NVA-515 Speaker for the NRD-515. **48.50**

PANASONIC
RF-2200 8 Band Portable AM/FM/SW Receiver. **179.50**
RF-3100 31 Band, Digital, *SPECIAL* **266.50**
RF-8300 1.6 khz-30 mhz, Digital Receiver. ***CALL***
RF-8600 1.6 khz-30 mhz, Digital, Mem/Digital. ***CALL***
BEARCAT DX-1000 10 khz-30 mhz, Mem/Digital. **505.50**
UNIDEN-CR-2021 AM/FM/SW, Digital/Memories. **224.50**
SONY-2002, Digital, 10 Memories, Scans. **225.50**
SONY-7600-A Portable Shortwave Receiver. **144.50**
NEW SONY AN-1 Active Shortwave Antenna. **79.50**
*FREE UPS SHIPPING & INSURANCE TO 48 STATES***

SCANNERS

REGENCY
NEW MX-5000, 25-550 mhz, 20 ch, *IN STOCK*—CALL!
NEW HX-1000, 20 ch, Handheld. —*IN STOCK*—CALL!
NEW MX-3000, (REPLACES M-400) 30 ch, Prog. **229.50**
NEW HX-3000, 20 ch, Handheld, 25-550 mhz. **CALL!**
NEW Z-10, *IN STOCK*, 10 ch, AC/DC, more. **179.50**
NEW Z-30, *IN STOCK*, 30 ch, AC/DC, more. **199.50**
D-810 50 ch 30-50, 144-174, 420-512 + FM + AIR249.50
M-100 10 ch prog. AC/DC, Night Lighted Keys. **199.50**
RADIO TAP CW/RTTY DECODER FOR VIC-20. **189.50**
INFO-TECH M/600A CW/RTTY DECODER **719.50**
ELECTRA FF-4000 Cordless Phone, coded, etc. **224.50**
VALOR MOBILE SCANNER ANTENNA, TRNK/MGMT MT. **29.50**

BEARCAT
BC-100 16 ch, Prog, Handheld, AC/DC, Much More. **288.50**
BC-151 10 ch, Prog. 30-50, 138-174, 406-512. **179.50**
BC-200 16 ch, Prog. 30-50, 138-174, 406-512. **188.50**
BC-210XL 18 ch, Prog. 30-50, 144-174, 421-512. **229.50**
BC-250 **SPECIAL** 50 ch, Prog. AC/DC, more. **249.50**
BC-300 50 ch, Prog. AC/DC, Service Search + Air. **359.50**
BC-20/20 40 ch, Prog. AC/DC, More + Aircraft. **289.50**
NEW BC-260 16 ch, Mobile, AC/DC Much More. **279.50**
FREE SHIPPING & INS. TO 48 STATES ON ALL ITEMS

Cordless Phones • CB Radios • Radar Detectors • Frequency Directories
• True Discount Prices & Free UPS Shipping To 48 States Picture Catalog \$1.00 Refundable.

GETTING STARTED

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

HOW TO SET UP A RADIO LISTENING POST

CONCLUSION

by Richard H. Arland
WPE7BYR/K7YHA

Antennas and Feedlines

Coaxial feedlines, like grounds, should be kept short as possible. Never, NEVER skimp on feedline. Always buy the best quality, NEW coax that you can afford. This will preclude problems like excessive loss, contamination and deterioration associated with "bargain" or used coax.

Be prepared to replace ALL exterior feedline runs at least every three to five years, depending on your local climate.

General rules for antennas are: Random wire antennas work, dipoles (cut for frequency) work better, wire beams/rotatable beams or wire arrays work best. Vertical antennas are a compromise where space is a premium. Indoor antennas are fiendish devices developed by Edsel Murphy. Active antennas (short element, pre-amplified antennas) are the absolute "last resort."

All feedlines should have some form of static discharge/lightning protection installed at a point OUTSIDE the shack. Remember, there is NO protection against a direct lightning strike. However, a near miss will generate tremendous amounts of static electricity which can be dissipated by a protection device, if properly installed. This will be vital to the long life of your expensive equipment.

One final word on antennas: "Be careful." Always follow published safety precautions and use plenty of common sense. The objective of this exercise is to add to your enjoyment of the hobby, not to leave your widow a load of expensive radio gear and a large hunk of life insurance money.

How Much to Spend?

Well, we have planned our little hearts out on the shack location, station ground and antenna farm. Now it's time to grab the American Express card and charge off to the local radio store, right? WRONG!! Now, it's time to really do some planning.

Unless you are related to J.R.Ewing or King Hussein, you cannot afford to make a mistake at this point. Equipment purchases can eat up money, cause headaches and heartaches

and, in general, become the obsession of the hobby. It need not be this way.

Equipment manufacturers go to great extents to tempt, convince, coerce and persuade all of us to buy, BUY, B-U-Y!! It matters little that we don't need, can't afford, or won't use the newer equipment to the fullest. WE MUST HAVE IT! To all this I say, "Poppycock!"

The sole reason big electronic companies employ psychologists on their advertising staffs is to separate you from your money. You can either enjoy the hobby with a modest outlay of cash or become a slave to the hobby and spend like crazy. The choice is yours.

Buying equipment is very simple and straightforward. Based upon your initial requirements, you should have a pretty good idea of what kind of gear you are going to need to buy. Check product reviews in the electronics/communications magazines and let the Pros tell you what they think of the various pieces of gear.

Armed with this information, make a priority "hit list" of the rigs and prices (both new and used). Shop around for the best deal and THEN flash the charge card.

All equipment manufacturers want to sell their products. Writers who review these rigs may or may not have your best interests at heart. It is not uncommon for a manufacturer to "optimize" a rig prior to shipping it to a writer for a review appearing in a national publication.

Another point to ponder is the ability of the reviewer to accurately measure the manufacturer's claimed specifications. On the other side of the same coin, there is the reviewer who uses equipment specs as the sole basis for the performance of the gear.

While the test bench will tell the tale as to the rig's expected performance, nothing beats testing the rig on the air in actual use. More often than would be admitted, a rig which looks great on the bench is a real bomb to use.

The bottom line is don't be fooled by a lot of "spec-talk"; if possible, get your hands on the rig you want to purchase and give it a try first hand. THAT is the real proof. Does it satisfy YOUR requirements? If so, pay the man. If not, keep looking.

Some sources of gear, both new and used are: retail distributors, radio clubs, garage sales, estate sales (good possibilities here, as few people trying to liquidate radio equipment in an estate know the actual value of what they have), classified ads in Monitoring Times, QST, CQ, Pop Com, newsletters (Ham Radio Yellow Sheets) and used equipment dealers.

The basic problem is to get max value for money without getting ripped off. Used equipment usually offers a much better value for money than buying new gear. The biggest drawbacks to buying used equipment are lack of warranty and getting the proverbial lemon. If you know specifically what you are looking for, the current used price and can communicate intelligently with the seller, your chances of getting stung are greatly reduced.

The best advice is to thoroughly know the type and model of gear you're looking to purchase (stay with name brands like Drake, Sony, Icom, etc.), know the current market value and DO NOT COMPROMISE. Don't let yourself be talked into buying something you don't want, can't use or afford. Remember, it's your money and you can demand the best for the price that you are willing to pay.

It's soap box time again. A few words are in order on new vs. old equipment. With very few exceptions, tube receivers (and I mean good, name brand tube receivers like Drake's R4 series, R390, the Hammarlund HQ series) outperform many of the solid state rigs which replaced them.

When you compare the cost of a used tube receiver against the "new-breed" of solid state receivers, you may be ahead economically to buy the older gear, especially if it is in good condition (custom parts for older receivers are hard to find).

My sincere advice to all SWLs/DXers, monitors, and hams who are on a tight budget, is to shop for a good, name brand, older, tube rig. Learn to use it well, and you will dramatically increase your enjoyment of the hobby and realize a fantastic cost savings.

Station accessories follow buying a good rig. Plan what you NEED, research the market, make a "hit list," shop for the best buy and pay your money. Do not fall into the trap of getting accessories just for the sake of purchasing something that matches the rig

BANDITS NAILED BY RADIO

In two isolated cases recently, the radio waves sank a boatload of criminals.

In Woonsocket, Rhode Island 19 individuals were arrested after a neighbor accidentally intercepted a call made on a cordless telephone, heard by her AM radio just above the broadcast band.

Detectives, notified of the incident by the woman, staked out the neighborhood, recording some 100 hours of choice programming.

While the raid on the home was underway, the telephone rang. "What am I going to do with the nine pounds of grass that I've got?" asked the caller.

"I'll send a van over there and I'll have the guy blow the horn once and you bring it out to them," replied the quick-thinking officer.

They did just that. Out came a woman with the marijuana. She's now awaiting sentencing!

In another incident a San Antonio youth burglarized Sam Houston High School. Among other articles, a handie-talkie and charger were taken. The radio was on a local police channel and the culprit led the local officials on a merry chase identifying himself as "The Bandit."

Detectives utilized directional tracking devices, finally pin-pointing Bandit's location. The dispatcher called repeatedly, "Bandit, are you awake?" His mistake was answering. Arresting officers recovered all of the stolen articles.

We would like to thank MT reader James A. Boehm, Jr. for sending in these interesting clippings from the San Antonio Express-News.

you own. Make sure that you really need it, then buy.

Some essential accessories include: 24 hour format clock, antenna tuner or RF pre-selector, active audio filter, Q-Multiplier (for older tube rigs), cassette recorder and antenna switch.

Many of these can be built from kits. By doing this you can learn about electronic construction and save money, too. Check the latest Heathkit, JameCo, and RadioKit catalogs.

By careful planning, you can assemble a very useful shack that is not only FUN to operate but which will provide countless hours of enjoyment.

EXPERIMENTER'S



WORKSHOP

Mount Your Preamp

Up On The Antenna For Better UHF Reception

by Jon E. Zalac

As we all know, an RF amplifier or preamp should be mounted at the antenna. Putting the preamp in our ham shack near the radio will help, but the proper place is at the antenna.

The antenna captures the signal which is fed or delivered to the radio via coax cable. Coax cable has losses associated with it which increase with the length of the coax. Signal losses are even greater at the UHF frequencies.

Why put the preamp at the end of the coax? How can we amplify something that we lost in the coax? While we will amplify some of the signal, we will also amplify noise, something we don't want. With the preamp at the antenna and good quality coax (95% or better shielding and a low loss dB figure) the signal will be much stronger when it connects to the radio.

With accompanying circuit you will be able to send the required supply voltage to your preamp through the coax. The circuit requires 6 parts: four small ceramic capacitors (.001 mfd at 50 or 100 volts) and 2 RF chokes with a value of approximately 1.0 uh. Figure 1 shows the preamp with the parts required.

The first step is to look at your preamp or schematic and determine if the preamp has a .001 mfd capacitor at the output that connects to the output connector. If your preamp has one, omit C1 and connect the output to the output connector. If one is not included, install C1 and continue.

L1 and C2 are used to prevent RF from getting into the power supply. L1 will pass the supply voltage, but will block the RF. Any RF that does get through L1 will be grounded by C2; we don't want the RF to go anywhere that it's not supposed to.

After the parts are added to the preamp, seal the entire unit and make sure it's waterproof.

You can use a metal box with 2 connectors mounted on it and assemble the parts inside on a terminal strip or use coax straight through with strain reliefs at the hole openings in the metal box. Keep capacitor leads short and use good soldering techniques.

C3 passes the signal to the radio while it blocks the DC from your power supply from getting into your radio.

Mount your preamp to the antenna and connect the preamp's output to good quality coax like Grove CBL.

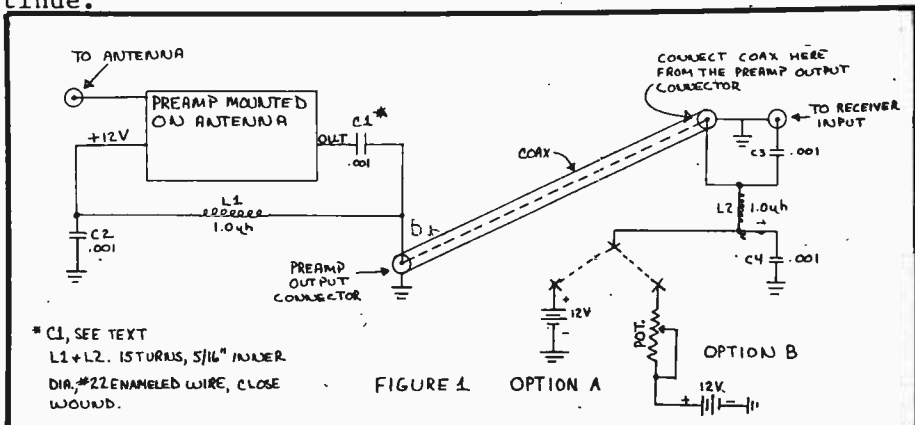
With the preamp mounted at the antenna and the unit assembled in your radio shack, check all wiring before applying power. Apply power and try to receive a formerly-weak station.

You say that the preamp is too strong and your radio is overloaded with too much signal? This can happen with modern scanners with high sensitivity. Nothing to worry about. It's easy to put an RF gain control on your preamp.

Normal operating voltages for most preamps vary from 9-16 volts. Current drain is usually around 20-30 mA. Most preamps will operate on a supply voltage as low as 6V. All we're going to do is vary the supply voltage to the preamp with a pot and this is our gain control.

Figure 1 shows two options. Option A is for a straight 12V battery operation and Option B is the "RF gain control" method. Use a 10K (10,000) ohm pot and we now have a gain control.

Happy monitoring!



Build an Audio Switchbox for Your Monitoring Post

MT reader Tom Lewandowski of Staten Island shares with fellow readers this month an excellent system of controlling audio between numerous receivers, records, processors and other devices in his shack.

Tom calls out a number of convenient Radio Shack off-the-shelf items to help us find parts.

The heart of the system is a single pole, 12 position rotary switch (#275-1385). Tom suggests that some tinkerers may wish to

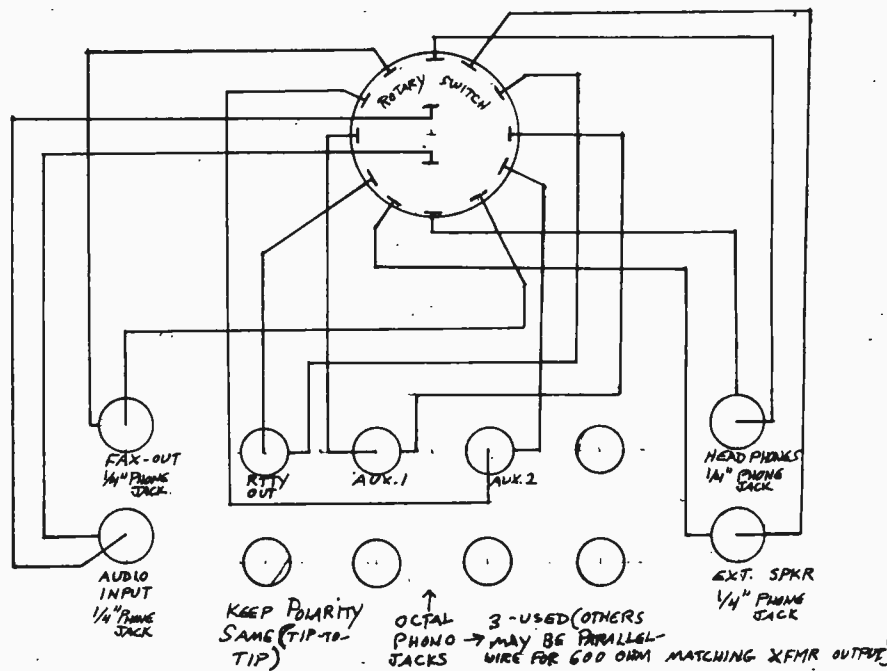
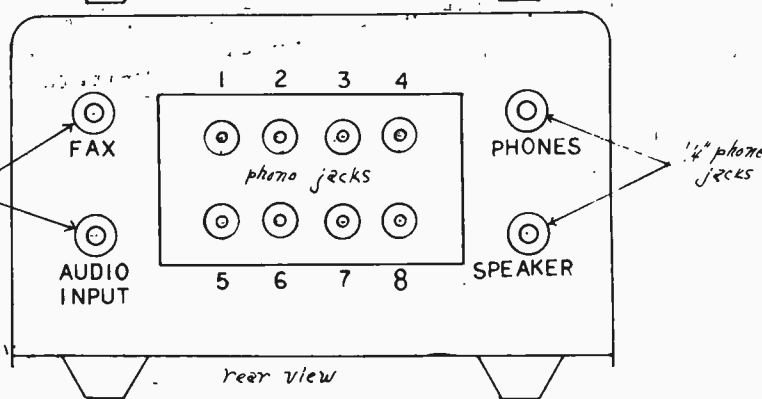
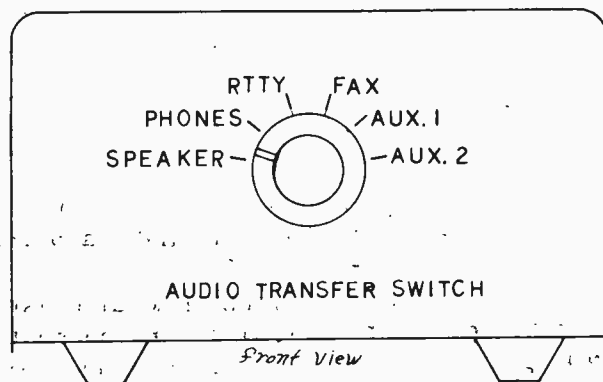
install an 8 ohm: 600 ohm matching transformer as well (#273-1380). This will allow interfacing with commercial and surplus gear with the higher output impedance.

Any cabinet can serve for cosmetics, including the Radio Shack #270-251 through 274 series of aluminum enclosures.

Tom's accompanying sketches are not intended to show complete wiring details, rather the basic approach with suggested uses.

AUDIO TRANSFER SWITCH PARTS LIST: (RADIO SHACK PART Nos.)

QUANTITY	PART No.	DESCRIPTION	PRICE
1	270-253	METAL CABINET (5-1/4X3X5-7/8")	\$ 4.79
1	270-201	DRY TRANSFERS (FOR LETTERING)	2.59
1	274-416	KNOB FOR 1/4" SHAFT (1X9/16")	(4) 1.79
1	274-370	OCTAL PHONO JACK	1.29
2	274-252	1/4" PHONE JACK (2 in a pack-total 4)	1.29
			1.29
1	275-1386	ROTARY SWITCH (2-POLE, 6-POSITION)	1.19
36"		SHIELDED AUDIO CABLE (2- CONDUCTOR)	



???

THOSE UNIDENTIFIED SPANISH NETWORKS

Not all countries observe the strict frequency allocations procedures enforced in the United States. Particularly notorious are the countless Spanish language transmissions coming from Central and South America, spotted all through the shortwave spectrum.

Steve Handler contributed a list of unknowns he recently heard and wonders whether other MT readers can shed any light on their source and use.

All frequencies are in kilohertz and mode is shown next to each.

Steve would appreciate information being shared directly with him and it will be passed on to MT readers after it is collected. Please write him at: 666 Dundee Rd., Suite 502, Northbrook, IL 60062.

- 5705 USB
- 5710.4 USB Passing aviation information. Maybe Columbian military
- 5726 USB "Uno uno uno"
- 5786.1 USB
- 6704.5 USB Passing weather info. Possible Brazil civ-milit.
- 6730 USB "Maria esta Maria"
- 7570 USB
- 7600 USB
- 7622 USB
- 7627.5 USB
- 7737 LSB
- 7790.1 USB
- 7926.2 LSB
- 7990 USB
- 6740.0 USB.
- 6818 USB Possible Cuban
- 8938.5 USB Calling Bogota
- 9275 USB Mentioned Washington & Nicaragua
- 9310.5 USB
- 10270 USB "Carlos"
- 10390 USB
- 10465 USB
- 10443.4 USB
- 10524.3 LSB
- 10545 USB
- 10610 LSB "0511"
- 11155 USB Aviation Info
- 11169.9 LSB French
- 11195 USB Portuguese & Spanish. Mentioned "Canal Radio & Tazamaoney". Maybe Brazil
- 11236 USB Aviation. Mentioned "Condor" "Cuba" "Miami" "Quito" "Habana"
- 11469.5 USB "Montia"
- 13569.8 USB Possible radio telephone
- 14653.1 USB
- 14418.5 USB "503" "504"
- 14550.0 USB
- 14550.9 LSB
- 20600. LSB "YK"

FCC CRACKS DOWN ON ILLEGAL HAMS

In an unusually strict enforcement procedure, several licensed amateur radio operators have paid expensive fines and one amateur has been jailed in an unprecedented FCC crackdown on illegal activities.

Ronald Arsenault KA2QMX of Clifton, NY was fined \$1100 and Dave Goodfellow KA2GWV of Hampton VA was fined \$600 for their regular participation in a network above the 40 meter ham band.

Paul Overlock N6BHC of Sepulveda, CA had his CB license revoked in 1980 for his CB operation five years ago on 27.63 and 27.66 MHz; he was additionally charged with using non-type-accepted equipment, communication over a distance of 250 kilometers and failing to identify.

Despite his good conduct in operating his ham radio station, his amateur license has now been revoked following a clarification as to whether a violation under one license can justify license revocation under another service. Apparently, it can.

The judge hearing the case did, however, grant Overlock the privilege of filing a new license application within 90 days.

Richard A. Burton ex-WB6JAC is the first amateur ever to be sent to prison for an on-the-air infraction. After successive citations for obscene language his license was revoked in 1981.

Still operating on the air, further citations were issued for broadcasting without a license.

Originally sentenced to five years in jail, an appeal resulted in a reversal of the felony conviction (obscenity); most recently, the district judge for the Central District of California sentenced Burton to a federal prison on four counts of operating an amateur radio station without a license.

Since Burton violated a bail order his final sentence was stricter than anticipated: three years in federal prison! Some of the time will be served concurrently, resulting in an actual imprisonment of 18 months.

Burton may be eligible for parole in approximately one year.

NEW EMERGENCY NETWORK ANNOUNCED BY AIR FORCE

The Air Force is planning an unmanned radio network designed to transmit emergency and wartime messages throughout the country.

The Ground Wave Emergency Network (GWEN) will rely on a mix of shared commercial radio and television towers as well as its own 300-foot-tall antennas.

The towers are to transmit low-frequency signals (150 to 175 kHz) that tend to hug the earth's surface and that are less susceptible to disruption than radio signals reflected off the atmosphere.

Another security factor will be the relay stations' shielded and secure enclosures, official noted. They will house radios, air conditioners, heaters, and power equipment for use should commercial electricity be interrupted. Each station will be designed to resist the heavy power surges produced from nuclear detonations that would short-circuit most systems.

If any single relay or group of stations were to fail or be destroyed, messages in the system would automatically be routed along alternate paths.

Airborne crews in Air Force E-4Bs and EC-135s (flying command posts) and land-based forces throughout the country will receive messages via GWEN. The full system, with hundreds of unmanned stations, is expected to be operational by the late 1980s.

AFSC's Electronic Systems Division has awarded \$97.6 million to RCA Corp.'s Government Communications Systems Division, Camden, N.J., as prime contractor. About sixty stations are to be built and tested during the initial phase of the program to provide a "thin-line" communications network throughout the US by 1985, officials noted.

(Reprinted from AIR FORCE MAGAZINE, January 1984.)

SWL AND HAM: ONE READER'S FOND RECOLLECTIONS

Sherman A. Harrison, KV4F Kingsport, TN

That Christmas 18 years ago is one that I will never forget. I asked for and received from my wife the very present that I had dreamed of, namely, a Halli-crafters S-120 Short Wave Receiver. I had read for years about the Short Wave World that lay out there, and now I was about to taste it.

Excitedly, I unwrapped that \$39.00 Sears special, hooked a wire to the antenna terminal, plugged it into the wall receptacle, turned the volume/on-off switch on, flipped the dial, and lo and behold, out came a very strong signal to be later identified as HCJB - Quito, Ecuador's Voice of the Andes. What a thrill.

As time went on with much late night listening, I heard many broadcasts from every corner of the earth. Music, sports, news, propaganda, and other facets of human endeavor came my way. I loved every minute of it.

Late one night I was tuning the 40 meter ham band when I stumbled upon an A.M. signal that turned out to be the voice of a lonely missionary in the jungles of Peru, talking to his family back home in Indiana. What a feeling.

I began to explore the possibilities of becoming a ham radio operator. A visit to a ham friend's house only whetted my appetite. I began studying the code and theory, and 5 months later, I passed my Novice exam. Now, 16 years later I have advanced to the top of the ladder with the attainment of the Extra Class License.

What a real experience it is to sit in my mountain-top, snow-covered home in East Tennessee and talk to a friend who is reclining under the palms in balmy, tropical, Papeete, Tahiti.

The thrill of listening will always be with me. SWLing is an art, a hobby, an experience, that led me on the path to Amateur Radio. I am eternally grateful. I love both entwined hobbies.

TINY TRANSMITTER FOILS THIEVES

Lo-Jack Corporation, a Boston firm, has announced the development of a clever credit-card-size transmitter/receiver to foil thieves, hijackers and drug smugglers.

Conceived by William Regan, a former Massachusetts police commissioner, Micromaster remains passive until activated by a remote transmitter. It will then broadcast its location for direction-finding equipment.

TECHNICAL TOPICS *by Bob Grove*

Q What is the best outside antenna for scanner reception?

J.E., Grand Ledge, MI

A Most scanner manufacturers recommend that you stay with their built-on whips if at all possible. This reduces the chance of interference from strong local signals. If you need an outside antenna for distant or weak signals, two questions must be answered: Are those signals primarily in one compass direction? If so, a directional antenna like the Grove Scanner Beam will help. Do you need omnidirectional (all compass directions at once) reception on all three bands (VHF high, low, and UHF)? In that case, most multiband scanner antennas, including the new Grove Omni II, will work well.

Q Where can I get a preamplifier to boost my scanner reception?

C.E., Detroit, MI

A Are you sure you really want one? A preamplifier will aggravate interference problems unless most of your receivable signals are weak. Several manufacturers presently offer scanner preamplifiers, and one even has an active (amplified) indoor antenna reputed to work as well as many outside antennas!

Check advertisers in MT and the Grove Catalog.

Q I would like to connect two antennas together on the same mast. What are the precautions?

K.J., Coulterville, CA

A Your best bet would be to separate them by at least 1/4 wavelength at the lowest frequency to be monitored, especially if the antennas are side-by-side. Use the formula:

$$\text{Distance ft} = \frac{234}{\text{MHz}}$$

On low band, this would be about 8 feet. They can be closer to the main mast if they are one above the other, and this is a more practical way to erect them.

But a metal mast also distorts the signal pattern, and it is wise to test the antennas in several positions before locking them down. Use rigid PVC plastic mastpipe adjacent to the antenna if possible.

If you intend to couple both antennas into the same coaxial cable, you will need a coaxial VHF/UHF signal combiner such as those used in the cable TV industry (commonly called a "splitter", but you will use it in reverse as a combiner). The

Grove CPL-1 Multicoupler is one example.

But keep in mind that your improvement in signal strength will be minimal. A basic law of electronics states that when you double your signal strength, this amounts to only 3 dB power gain. Assuming you use two identical gain antennas, this law will predominate, and it makes no difference what the gain of the antenna is.

The most common reason to combine separate antennas is to increase frequency coverage or directivity offered by the different antennas, not for system gain.

Q My programmable scanner does not seem to work properly when using it mobile. Is this a common complaint?

H.K., Fresno, CA

A Unfortunately, yes. There are many variables which can affect mobile installations.

Is there correct voltage present at the scanner's DC power terminal (12-16 volts)? Is the scanner adequately grounded to the vehicle body? Are there any loose connections? Is the antenna designed for scanner reception? Are you using a good grade of coaxial cable, properly connected at both ends to the antenna and to the scanner? Is the memory battery firmly attached to its terminals? Does the problem occur both while the vehicle is in motion and when it is at rest, engine turned off? Does the problem occur when the vehicle strikes a bump? Does the problem ever occur during AC operation?

If you are convinced that the problem is with the scanner and not its hookup, it should be returned to the factory in its original packaging, well-protected, along with a description of the problems you are experiencing.

Modern programmable scanning receivers are complex and sophisticated. Their microprocessor "computer on a chip" circuitry is kept very busy! Virtually any problem you may experience has been reported and studied by the manufacturers. They are as eager to remedy the problem as you are!

Q Is there any way to modify my scanner to receive the 800 MHz band?

K.H., Portland, CT

A In a word, no. Circuit design at 800 Hz is much different from that at VHF and even at 450MHz.

MONITORING POST



↑ Bedside convenience: Ron Tull's monitoring post in the Yukon.



Living room elegance: The listening position of professional photographer Art Lewis Kimball in Tuscola, Illinois.



A sturdy work table with shelves, along with a durable "European barrier" strip (Radio Shack 274-678) ground strap connected to a cold water pipe in Bob Skwirsk's listening post, Wayne, MI.

WEATHERWISE from p.18

inches is coded 992; 30.15 inches is written down as 015, and so on.

Remarks concern clouds or other data of interest to pilots.

Slant bars are used to separate temperature, dew point, wind, altimeter setting and remarks.

The times stated in aviation weather reports are always Greenwich Mean Time (Universal Time).

When we put the whole thing together, we end up with weather reports in a very concise, interesting coded format, such as in the following example:

BOX WOXOF 45/45/0000/005

Boston: Indefinite ceiling zero, sky obscured, visibility zero in fog, temperature 45 and dew point 45 (degrees Fahrenheit), wind calm, altimeter setting 30.05 inches.

Simple, isn't it? With a little practice copying these VOLMET reports, readers will soon get the hang of it and find it quite interesting, I'm sure. At times, it actually is fascinating when copying these reports, to note the contrast in weather conditions reported in Gander, New York and Oakland broadcasts.

NEXT MONTH: Canadian SSB/FAX/RTTY broadcasts

You may wish to use one of the frequency converters now on the market designed for that purpose, or you may wait and purchase a scanner available soon for that frequency range.

Q Can I receive satellite TV from the U.S. here in Germany?

A Probably not. That is the reason that satellites are lined up in a circle around the earth's equator.

Generally speaking, a satellite can service an area directly below it; once it nears the horizon, it is considered out of range for most earthly viewers.

HELPFUL HINTS

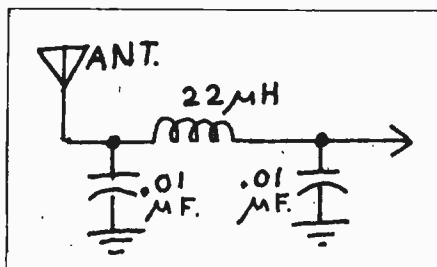
RF INTERFERENCE FILTERS

A common question received here at MT is, "How can I reduce interference from local AM broadcast stations?"

There are actually four basic filters, depending upon the nature of the interference and the frequency bands suffering the indignity of interference.

LOW PASS FILTERS: As the name suggests, a low pass filter is designed to pass low frequencies while attenuating higher frequencies. They are designed around a cutoff frequency, above which the attenuation gets greater as the frequency is increased.

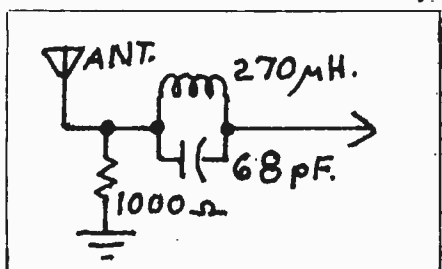
The 500 kHz low pass filter described here works well with VLF receivers (below 500 kHz), rapidly attenuating frequencies higher than that.



WAVETRAPS: A wavetraps is a tuned circuit designed to reduce the transmission of a narrow swath of frequencies. If it is designed to reduce a wide band of frequencies (while permitting frequencies above and below to pass without attenuation), it is called a stopband filter.

The circuit shown here combines both properties in order to attenuate signals throughout the AM broadcast band (540-1600 kHz); it has a nominal midband attenuation of about 40 dB, decreasing to near 16 dB at 160 kHz.

Stopband filters are useful in applications where a particular portion of spectrum, seldom of interest to the listener, is constituting a problem due to strong signals. FM and TV filters are of this variety.

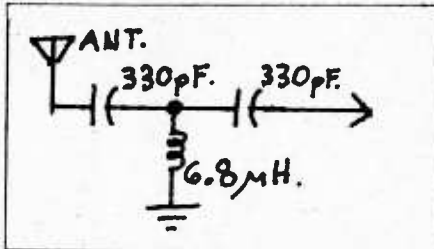


HIGH PASS FILTERS: For shortwave listeners unconcerned with broadcast band or VLF monitoring, the high pass filter is the most commonly used.

Usually designed with a cutoff frequency around 2 MHz, this filter substan-

tially reduces signal levels below that frequency while permitting higher frequencies to pass unobstructed.

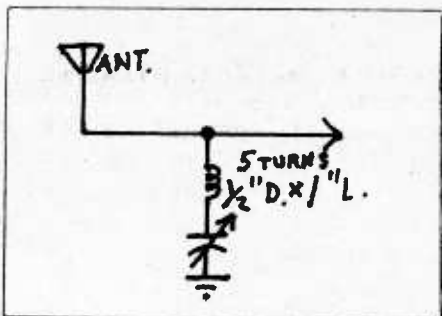
The attenuation of the circuit below is about 16 dB at 1600 kHz and 60 dB at 540 kHz.



TUNABLE NOTCH FILTERS: For custom installations where an individual may have a particular frequency bothering him, the tunable notch filter allows him to tweak a trimmer capacitor while listening to the interference, thus reducing or eliminating it as he passes the correctly-tuned frequency.

The Grove FTR-3 dual-band Scanner Filter is of this variety, designed to improve scanner reception in metropolitan areas where images and intermodulation from strong VHF and UHF signals are rampant.

Shown below is a typical notch filter designed for high band use.



MYSTERY SIGNALS FOIL SECURITY SYSTEMS

Strange goings-on in San Diego recently according to a San Diego Tribune article forwarded to MT by reader J. Borglum.

It seems that electronic security gates in apartment complexes have been jammed by unknown radio signals operating in the 280-340 MHz range, affecting private garage door openers which share that band as well.

Tentative explanations have been suggested: Soviet Navy trawler Gravill Sarychev, circling 15 miles off the coast in international waters; electronic "hackers" attempting to determine the codes used to open the locks; US Navy signals from an air warfare exercise off Miramar Naval Air station.

Sill under investigation by the FCC and other intelligence agencies, the mystery remains unsolved at this writing.

SIGNALS FROM SPACE from p.11

and a full gallon (1000 watts) in the shack on 2 meters.

The first international contact came on Sunday, 4 December, when W5LFL QSO'ed with King Hussein, JY1. His majesty was most cordial and seemed as pleased with the QSO as was W5LFL.

W5LFL tape recorded all of the QSOs as a log. Owen has reviewed the tapes and has identified about 300 callsigns. He believes there may be another 10 or 15% to be culled by someone with "contest ears." During the flight he was bothered by background noise in the Shuttle.

The mission is being viewed quite positively by NASA's senior managers as well. Many of the fence-sitters and nay-sayers are reportedly impressed enough with the present effort to nod affirmatively towards the next opportunity. That could come next year with the flight of Dr. Tony England, W00RE, scheduled on Spacelab 2, March of 1985.

The radio on board worked quite well and the batteries lasted for slightly more than 4 hours on-the-air-time expended. The antenna worked remarkably well according to Garriott; even when the spacecraft was oriented so that the antenna pointed skyward, ground stations could be copied! Apparently the entire spacecraft acted as an antenna since the F/B ratio of the DDR ring is about 10 db. The antenna was designed by NASA's W5AVI of the Johnson Space Center.

And so W5LFL goes into the history books. And we have seen one of the all-time high-water marks for amateur radio. I hope many of our MT readers had a chance to hear and/or work Dr. Garriott. (Report courtesy of Amateur Satellite Report #68)

The ARRL has released its newest major publication, "Satellite Experimenter Handbook" by Dr. Martin Davidoff, K2UBC. The book is designed to teach the intelligent beginner a great deal about orbits, satellites and the like.

The format of the new book is similar to the ARRL Radio Amateur Handbook. Besides Amateur Radio satellites, the book also addresses weather and TV broadcast satellites. Check your local amateur radio store or write the ARRL, 225 Main Street, Newington, CT 06111 USA for more details. MT Signals from Space will take a good

CALIFORNIA HAMS

GET OLYMPIC

CALLSIGNS

Largely through the spearheading of one ham, Richard Jay Ward NG60, California amateur radio operators will be permitted to use a commemorative callsign designator during the 1984 Olympics, July 1-August 31.

The special waiver allows the substitution of "23" (for 23rd Olympiad) or "84" (for 1984 Olympics) in place of the normal "6" assigned to California amateurs.

Congratulations, Richard, for demonstrating that it can be done!

look at this publication soon.

* * * * *

Looking for orbital tracking information for amateur radio satellites? Look no further. Project OSCAR has arrived. The 1984 version will feature accurate predictions for the time and longitude of equatorial crossing (EQX) for the Russian satellites RS-5, 6, 7, 8. For AO-10 the time and position (latitude/longitude) of the satellite sub-point for every apogee during 1984 will be documented.

A minimum donation of \$10 is requested for the calendar mailed first class to U.S., Canada, and Mexico. A donation of \$12 elsewhere is requested. Mail your order to: Project OSCAR, P.O. Box 1136, Los Altos, CA 94022.

* * * * *

K2ZRO, of OSCARLOCATOR fame, now has a new Satellite kit available. This device is great for tracking amateur satellites for those who do not have a computer. The price is \$10 postpaid. (N.Y. orders, add \$0.40). Mail to ZRO Technical Devices, P.O. Box 11, Endicott, NY 13760. The manual tracker works great with the OSCAR calendars just mentioned.

* * * * *

This month's frequency tip is for the Navy's Ocean Surveillance satellite system. These satellites split into 3 objects in orbit and carry interferometers for ocean surveillance. Designations and frequencies are as follows:

SSU-1 1427.230MHz, 1430.2MHz
SSU-2 1427.430MHz, 1432.2MHz
SSU-3 1427.630MHz, 1434.2MHz

MT will present more on these satellites as they become available. If you would like to contribute a frequency tip, please send it to Signals from Space, 1111 N. Carrier Pkwy, B-107, Grand Prairie, Texas 75050.

CLUB CORNER

HANDICAPPED AID PROGRAM FOR LISTENERS

For our handicapped readers unaware of the Handicapped Aid Program (HAP-USA), a word of encouragement.

HAP is an active social and informational group formulated to assist hobbyists in the pursuit of their listening interests.

Recently, a total reorganization effort has been mounted, ably spearheaded by dynamic John A. McCann, vice president of HAP.

Unfortunately, clouds of doubt surrounded early attempts of HAP to properly collect and disburse their funds; this has been corrected and it appears that HAP will now make excellent headway with their brand new slate of officers.

Benefits of joining HAP

include a receiver loan program as well as access to materials for the handicapped, especially the visually impaired.

Recently, Monitoring Times was selected to be magazine of the month for the Library of Congress. We were delighted to cooperate in this venture to provide information to our handicapped friends.

If readers would like this service to continue, please write to Ms. Mona Werner, Library of Congress, National Library Service for the Blind and Physically Handicapped, Collection Department, 1291 Taylor St., NW, Washington, DC 20542.

For more information about HAP, write HAP-USA, 2105 N. Illinois, Arlington, VA 22205.

CANADIAN

HANDICAPPED AID PROGRAM

The Handicapped Aid Program (HAP) was formed in 1972 as an activity of a large California radio hobby club. Two of the club's members realized the importance which a hobby like shortwave radio listening could play in the lives of disabled persons who were often housebound and isolated from others. It was realized that HAP could involve the disabled in an activity that would allow them to hear from, and about, different places throughout the world.

The Canadian Handicapped Aid Program (CHAP) was formed in 1973 "to give assistance to those persons, who, by reason of physical, visual or mental impairment, or due to adverse effects of advancing age, prolonged ill health, or impending death, are handicapped...to enter, and remain interested and actively participate in the activity of listening to radio..."

Reading, reference and hobby materials are available on loan and no charge of any kind is made. CHAP can also facilitate membership in one of several Canadian shortwave listener's clubs at reduced membership fees. Members are encouraged to take an active part in any SWL club which they join through CHAP. CHAP can also assist disabled persons who are already involved in the shortwave hobby but who re-

quire assistance to carry on.

Groups such as hospitals and organizations for the handicapped are also eligible for assistance from, and membership in CHAP. Further information on this aspect of the CHAP operation can be obtained from CHAP headquarters.

CHAP is a non-profit organization run on a completely volunteer basis. The main fund-raising activity carried on by CHAP is the sale of hobby related tapes such as the Foreign Language Recognition Course, and the six tape series on Unofficial Radio Stations, such as: shortwave pirates, clandestines, Underground Radio in London and some famous radio hoaxes. A set of these tapes is also available on loan to all members of CHAP. Information about HAP tapes is available from CHAP headquarters.

If you feel that CHAP can be of assistance to you or to someone you know, or if you would like to become a CHAP volunteer, we would be very pleased to hear from you, and we'd be more than happy to send you an application form for membership in the Canadian Handicapped Aid Program. Our address is: Canadian Handicapped Aid Program, P.O. Box 1143, Pointe Claire, P.Q., Canada H9S 4Z2.

Thanks to MT author Jim Hay for this timely information for our readers.

HANK BENNETT from p.16

midnight, for a long time, they upped their power to 500,000 watts and the call-sign became experimental W8X0. This was operated by Crosley Radio and this is the most distant station that I ever received on my old crystal set.

5) Who was Dr. John R. Brinkley? What did he advertise? Name at least one station that carried his advertising.

Dr. John R. Brinkley was a doctor that had a sure-fire cure for cancer, or so he claimed. He also advertised "monkey glands" as part of the pitch. At one time he reportedly had a large hospital in Brinkley, Arkansas. XEPN and XERA both carried his advertising and at a later date all of his claims were said to have been found useless. Alexander MacDonald of Kingsley, that XEPN's mailing address for Dr. Brinkley was Eagle Pass, Texas.

6) W5XAU - what frequency was it on? What was the purpose of the station? Location? Power? Back in pre-World War II days, several American broadcast stations showed up in the area of 11 meters. W5XAU in Oklahoma City was one of them and it operated with only 100 watts on 26,125 kHz. It was more of a relay station for a local broadcast station as opposed to an actual shortwave broadcast station. None of these stations lasted very long but it did give you a good idea of what low power and a good antenna could do when the band was open.

7) WCAB, WDJM, WGEO, WRUS, WIXAL - what were these stations and where were they located? These were actual shortwave broadcast stations. WCAB was in Philadelphia and operated by broadcast station WCAU. WDJM was in Miami; WGEO was in Schenectady, New York (General Electric Company), WRUS was in Boston, and WIXAL was an even earlier forerunner of WRUA/WRUL/WRUS.

8) Does anyone remember WPGC, WPEE, or VYR? How about the "sister stations" WMWV, WPWV, and WSWV? The New York State Police operated WPGC from South Schenectady, New York in the days when most state police stations were in the 1600-1700 kHz band and municipal police stations in the 2350-2500 kHz band. WPGC used to give a resume of all "radio items" at 6:30 PM each evening. They were on 1658 kHz.

WPEE was the municipal police station in Brooklyn (WPEF was Bronx and WPEG was Manhattan).

VYR was, of course, the Montreal city station and we often heard them on 1706 kHz with their messages in French. The "sister stations" were West Virginia state police outlets; WMWV was Moundsville, WSWV was in Shinnston and WPWV may have been in South Charleston.

9) Where were WANH, WANI, WANJ, WANK, and WANL and what was the distinctive feature of these stations? They were all North Carolina state police outlets but time has erased their actual locations (WANJ was Swannanoa; WANH may have been Raleigh).

In those days a police transmission, at least on the state units, was usually preceded by a single long tone of perhaps five to ten seconds duration or by a series of three dashes of the same tone, each one to two seconds in length.

The North Carolina attention-getter was a Morse identification based on the last letter in their call-sign. Thus, WANH would come on with four dots; WANI with two dots; WANJ with a dot and three dashes; WANK with a dah-di-dah combination; and WANL with a di-dah-didit signal. And all five stations carried operators with a true-blue North Carolina accent. If you didn't know which station you had, you could be certain that it was coming from the Tarheel State.

10) Does anyone remember WANC or WWTA? WANC was listed as a "Special Emergency Station" in Jamestown, New York and it operated somewhere in the 2700-2800 kHz range. I never did find out precisely what it was used for; even a QSL from WANC failed to shed any light on it.

WWTA was a U.S. Customs border patrol station in St. Albans, Vermont and operated in the state police band. There were a number of these "WWT" stations scattered along our northern border, especially in New York and Vermont.

We'll continue these answers next month. Again, I'd like to invite you to send in your brain-teasers (with correct answers, of course) to Hank Bennett, MONITORING TIMES, P.O. Box 3333, Cherry Hill, New Jersey 08034. We'd also like to receive short items of your early days in radio!

LISTEN TO WORLD from p.17

hour every day for 10 minutes. You can hear news about Australia on the half hour.

Another program about Australia is "Profile," where Australians speak about their lives and work. Hear this on Saturday morning at 1210 GMT or at 0610 GMT.

"This Australia" is a documentary series about life, culture and industry on Saturdays at 0330 and Sundays at 2112. Also on Mondays at 0730 (on 15.160 which lasts until 0800 every day for North America).

Another interesting program about Australia is called "Kaleidoscope" which gives you insights into various unusual aspects of life in Australia.

"Australian Editorial Opinion" can be heard on Saturdays at 0210, 0410 and 1310 GMT.

There are many music programs and several good ones on Sports. Incidentally, you can get on the mailing list for regular program mailings without the expense of a 40¢ overseas stamp.

Simply write their New York City office: Australian Broadcasting Commission, 1 Rockefeller Plaza, New York, N.Y. 10020.

Radio Australia recently moved into a new building a few miles outside of Melbourne which it shares with domestic radio and television staffs.

The staff at Radio Australia numbers 170, including some 70 foreign-born who do the foreign language programs and broadcasts.

The transmitters for Radio Australia are located in various parts of the Continent - nearest to target audiences.

There are nine transmitters located in Shepparton, Victoria where North American-directed broadcasts come from; two more at Lyndhurst, east of Melbourne, broadcast to the Pacific. Another two are located in Western Australia.

While listeners in Europe and North America tune in regularly, people in China, Japan and Indonesia are very loyal listeners. It has been estimated that listeners to Radio Australia's Indonesian programs number at least 30 million!

VIEWPOINT from p.24

I heard nothing for about two weeks. So, I called the P.D. so I could get back my little Sony mini-cassette (they cost about \$3 each). At that time this officer told me he had

checked into this matter and it had been determined that such intercepts are themselves illegal and to even listen to telephone conversations is a felony, and I had best quit doing it!

Needless to say, I was chagrined and disappointed. Why, if criminals can use the instrument in an illegal manner, for illicit purposes, why cannot a law enforcement agency use the same instrument (or its emissions into free space) to encounter them? And as to my own possibly felonious involvement, I am, being a commercial radio telegrapher for over 39 years, aware of the Secrecy of Communications Act...but even that does not prohibit me from listening--only from divulging the content of intercepted messages, or taking action based upon them. But I feel this is an area that fairly cries out for a clear legal definition, if, as I suspect, the one I got is incorrect, inapplicable or inadequate. (The Lt. mentioned "Title 18," etc.)

Further to anger me was that, so help me, not two hours after the bookie intercept, I came on to a drug deal. I again contacted the police, this time the Narcotics Division. Again, initial reaction was a pleased one, with thanks, and that THIS WAS GOOD STUFF. Both of us realized that these intercepts could not be used as evidence in a courtroom; but they could be powerful anti-crime tools.

At the time of these intercepts, and when I involved the police, my only reservation concerned the possibility that I might get hold of a "bad cop," one who would betray me to the criminal side...Never in my thinking was the idea that I would be greeted with a warning about performing what I considered a civic duty, to cease and desist, on penalty of being charged with a felony crime, myself!!!

(Name and location withheld by request.)

>>><<<<

The Jan. issue of MT on page 30 had an article on a possible source of crystals. Enclosed please see my letter to M-tron and their reply thereon.

"M-Tron Industries
P.O. Box 630
Yankton, SD

Please send me information on your crystals.

C.B. Stahlberg
Lakeview, Arkansas
(Reply: As of Feb. 1, 1984, M-tron will not manufacture scanner crystals. Thank you for your consideration. M-tron Industries.)"

STOCK EXCHANGE

INFORMATION PLEASE

NOTE: Monitoring Times assumes no responsibility for misrepresented merchandise.

SUBSCRIBER RATES: \$.10 per word, paid in advance. All merchandise must be non-commercial and radio-related. Ads for Stock Exchange must be received 30 days prior to publication date.

COMPUTERIZED DESKTOP MAILING MACHINE. Ideal for clubs, churches, offices. Automatically imprints envelopes, newsletters, magazines from convenient mailing list file cards. Cost \$6000, new condition, Only \$2500 shipped anywhere in US. Includes many accessories, spare cards, filing trays. For more information or to order this one-only item, call Bob Grove 1-800-438-8155.

ALDEN WEATHERFAX As reviewed in November/December 1983 MT (p.21). Factory wired version, fully tested with spare paper, pens, belts and in new condition. Cost nearly \$2000; sell only \$900 postpaid in US. Bob Grove (1-800-438-8155).

LABORATORY SIGNAL GENERATOR Hewlett-Packard 608C, 10-480 MHz, nearly new condition. Present used cost about \$500; I'll ship postpaid with schematic for only \$395. Bob Grove 1-800-438-8155.

JOIN a radio listening club. Complete information on major North American clubs for 25¢ and SASE. Association of North American Radio Clubs, 1500 Bunbury Drive, Whittier, CA 90601.

SPACESHUTTLE STS-9 to ground communications with Space-lab. Audio cassette \$10. Lawrence I. Cotariu, 8041 N. Hamlin Skokie, IL 60076 USA.

FOR SALE: BEARCAT 4-6 Thin scan. Perfect condition--includes carrycase, rubber and metal antennas. Hardly used. \$90 money order only. Write to Jim Stroika, 4817 N. Elkhart Ave., Whitefish Bay, WI 53217.

FOR SALE: KENWOOD R-2000. Excellent \$400. Call (515) 232-7173 evenings.

WANTED: OLD RADIO CLUB MAGAZINES or bulletins - write: Bill Smith, Brown Terrace, Uxbridge, MA 01569.

MONITORING TIMES WILL PRINT AT NO CHARGE (AS SPACE PERMITS) ANNOUNCEMENTS AND QUESTIONS OF A NON-COMMERCIAL SERVICE NATURE.

Interface information to operate RACAL RA-6230 receiver from Commodore 64 computer; also information, service manual on COMMUNISTRONICS MR-17 surveillance receiver (30-225 MHz). (Has built-in spectrum analyzer.) M. Stutterheim, P.O. Box 2576, Montaur, NY 11954.

HOUSTON TEXAS-HARRIS COUNTY area frequencies wanted. Call & we'll exchange. Chas. Crook, 5401 Chimney Rock #125, Houston, TX 77081; (713) 668-0472.

WANTED: Manuals and/or informational sheets (copies OK) on the following Antenna Tuners: (1) MFJ-901 (2) DENTRON JR. MONITOR. Reasonable fees or copying cost paid. Please write: John F. Henault, 55 Lincoln St., Abington, MA 02351.

WANTED: Addresses and QSL policies on weather stations WXX-76 Flagstaff, AZ; KBA-99 Honolulu, HI; KOW-37 L.A., CA. Also B/cast stations KRDS-1190 Tolleson, AR; KTTI Yuma, AR; KAMP-1430, El Centro, CA; KXO-1230, El Centro, CA; KKIQ-101.7, Livermore, CA; KEAP-980, Fresno, CA; KWTC-1230 Barstow, CA; KLVC-98.5 Las Vegas, NV; KPFC-90.7 L.A., CA; KMEO-740 Phoenix, AZ. These are outstanding QSL's from my 1980 USA vacation. All replies appreciated. Jeff Silvester, 9 Goodwood Drive, Springvale 3171 Victoria, Australia.

WANTED: Repeater frequencies for State Troopers working out of NEWTON Headquarters or Salisbury. Will exchange other frequencies I have. Joseph D. Williams, Jr., P.O. Box 315, Marion, NC 28752.

NEEDED: Information on out-of-band programming for Bearcats, Regency scanners. Information on military aircraft frequencies and monitoring equipment. John Hines, 6465 N 58, Milwaukee, WI 53223.



GROVE ENTERPRISES 140 Dog Branch Rd. Brasstown, NC 28904	RUSH!	BULK RATE POSTAGE PAID Grove Enterprises PERMIT No. 4 Brasstown, NC 28902
	NEWS VALUE	
MILLER, H. E. * 11205 1st St. N. E. SEATTLE WA 98125	5/ 1/87	