

**NASA**

The  
Journal  
of the  
North  
American  
Shortwave  
Association

Volume XXXI, Number 5  
May, 1991

# Japan Radio NRD-535D Communications Receiver



Japan Radio Co., Ltd.



## SPECIFICATIONS

Dimensions	13" x 5 2" x 11 25"
Weight	20 Lbs (24 Lbs ship)
Frequency Range	90 - 30000 kHz
Power	100 120/220/240 VAC 50/60 Hz 35VA max 12 VDC 25W max
Antenna Impedance	50 or 600 ohm
Selectivity (6dB)	AUX (12 kHz) WIDE 6 kHz INTER 2 kHz NARR 1 kHz [FM] >12 kHz
Sensitivity	5 µV 1.6 30 MHz SSB/CW S+N/N=10dB
Image Ratio	>70 dB (1.6 30 MHz)
Dynamic Range	106 dB (@300Hz BW)
IF Rejection	>70 dB (1.6 30 MHz)
Frequency Accuracy	± 10 x 10's or better
Frequency Stability	± 2 PPM per hour after 1 hour
Intermediate Freqs	1st IF = 70 45399 MHz 2nd IF = 455 kHz 3rd IF = 97 kHz
BFO Variation Range	455 KHz ± 2 kHz
PBS Variation Range	± 1 kHz or more
Notch Attenuation	40 dB or more
Audio Output	1 W at 4 Ohms
Digital Interface	4800 baud (8, N, 1)

With the introduction of the NRD-535D, Japan Radio Company once again "re-writes" the standard by which other advanced receivers are measured. The NRD-535D has all the features shortwave listeners have been waiting for. General coverage reception from 90 to 30000 KHz in AM, USB, LSB, CW, RTTY, FAX and narrow FM modes. A new triple conversion superheterodyne circuit is employed to provide superb sensitivity and image rejection. Japan Radio has designed a special high speed 1 Hz step PLL synthesizer to provide you with 1 Hz tuning resolution never before available (display resolution is 10 Hz).

Japan Radio's reputation for extreme stability continues with only ±2 PPM drift (after 1 hour) making the NRD-535D the inevitable choice for the demanding non-voice modes such as Morse code, RTTY and FAX. Four independent filter positions are available. The WIDE position features a 6 KHz (@ -6dB) filter. The INTERmediate position features a 2 KHz (@ -6dB) filter. The NARROW position features the CFL-233 1 KHz filter. The AUXiliary position is not filled, a -12 kHz bandwidth results. The AUXiliary positions can be used to mount the CFL-218A, CFL-231, CFL-232 or CFL-251. Any filter may be used with any mode (except FM). This is an exceptional feature that offers maximum flexibility to the listener.

The ergonomic keypad features both MHz and KHz input. The dual-width noise blanker can be used to reduce or eliminate impulse noise (like auto ignition or the "woodpecker"). Other front panel controls include SQUELCH, AF and RF GAIN and TONE. An AGC button permits the selection of AGC FAST, SLOW or OFF. The DIMMER button offers four brightness levels. A built-in 24 hour clock timer is provided. The TIMER permits unattended listening/recording. The receiver can be programmed to be turned on at a particular time (on a set frequency, mode, bandwidth, etc.) and then turn off at a programmed time. A timer-out terminal connection is provided on the back of the set to activate a tape recorder. The NRD-535D contains a built-in RS-232 computer interface (4800 baud, 8, N, 1). Cable and software are not supplied.

The NRD-535D offers Pass Band Shift (PBS). This effective control varies the apparent intermediate frequency for the IF filter by ±1 KHz without changing the receiving frequency. This function provides a powerful means of eliminating or reducing troublesome adjacent channel interference. Because of the overcrowded nature of today's HF spectrum, annoying heterodynes can be found with increasing regularity. The Notch Control permits the listener to go into the signal and sharply "slice out" the offending tone with little loss in fidelity to the desired station. Notch attenuation is > 40 dB.

The NRD-535D includes the CFL-243 Bandwidth Control Option. You can adjust this control to narrow the IF filter in 10 Hz steps without varying its center frequency, ensuring effective interference rejection. This control functions in the SSB and CW modes. It is a powerful tool to extract a desired signal from the crowded passband. Perhaps the most exciting feature in the NRD-535D is the CMF-78 Exalted Carrier Selectable Sideband (ECSS) circuit. Often when receiving an AM signal you will encounter interference from an adjacent station. The interference will manifest itself on either the upper or lower sideband of the signal you are trying to hear. The ECSS feature will select the sideband that is not affected and deliver the signal to you with high tonal quality.

The Japan Radio NRD-535D is designed to meet the exact needs of the most demanding broadcast or utility DXer. One year limited warranty. Universal is a factory authorized dealer for Japan Radio Co.

## OTHER OPTIONS

Order#	Price	Item
♦ 0063	\$109.95	Japan Radio CMH-530 RTTY Demodulator
♦ 2308	59.95	Japan Radio 6ZCJD00139 Serial Cable
♦ 0851		Japan Radio 6ZCJD00150 Serial Cable
♦ 0852	179.95	Japan Radio NVA-313 Speaker/Audio Filter
♦ 1225	139.95	Japan Radio CFL-218A Filter 1800 Hz -6dB
♦ 0193	139.95	Japan Radio CFL-231 Filter 300 Hz -6dB
♦ 0290	139.95	Japan Radio CFL-232 Filter 500 Hz -6dB
♦ 1225	139.95	Japan Radio CFL-251 Filter 2400 Hz -6dB
♦ 1223	79.95	Japan Radio CGD-135 High Stability Crystal Oscillator

## SUPPLIED OPTIONS

- Japan Radio CFL-243 Bandwidth Control
- Japan Radio CMF-78 ECSS Unit
- Japan Radio CFL-233 1000 Hz Filter

## PRICING

NRD-535D List Price \$1995.00

NRD-535D Discount Price

Order #1535 ..... \$1689.00

Shipping/Handling/Insurance \$13.00

► The NRD-535D is expected 04/19/91. We are accepting orders now. Specifications subject to change.

**Universal Radio**  
1280 Aida Drive DEPT. NASW  
Reynoldsburg, OH 43068  
Toll Free: 800 431-3939  
In Ohio: 614 866-4267

**FLASH! -- The price on the NRD535D from Universal Radio as seen on the [redacted] page has been reduced \$100 to \$1589!**

# NASWA Notes

**Bob Brown**  
238 Cricklewood Circle  
Lansdale, PA 19446  
CompuServe 74756,1557



Look forward to Spring for many reasons, and a radio related activity that starts in the Spring are hamfests. A hamfest, is simply, a radio flea market. They come in all sizes and can be a great source for some real bargains in radio gear and peripherals. If you have never attended a hamfest you're missing out on some great fun. Hamfests are typically run by local amateur radio clubs on Saturday or Sunday mornings. Contact your local amateur radio club to find out the schedule of hamfests in your area. If you get stuck and don't know where to look, drop me a note and I'll check the Hamfest calendar in the ham publications I receive.

## What happened to Australia?

If you have received a copy of the new NASWA Radio Country List and have found your country count off by 1, don't despair. The Land Down Under was inadvertently omitted from the list. Please add Australia under Oceania. Also, the Antarctic Award was missed. The requirement for this award is one verification from Antarctica. All other awards rules apply. The new NASWA Radio Country List and Awards Program booklet is available from headquarters for \$2.00 post-paid.

## Writers Wanted

Radio hobbyists who like to write and writers who are radio hobbyists are being sought by Tiare Publications, Lake Geneva, Wisconsin. Tiare publishes books for the radio communications hobbyist and is interested in developing new titles in all areas of amateur radio, shortwave listening, communications and scanner monitoring, frequency lists, secret transmissions, antennas, military, CB, TV and so on.

Readers who have ideas for books in any of the above categories are encouraged to contact Tiare with their proposals, outlines or manuscripts (partial or completed). Writers looking for suggestions are invited to obtain a copy of the Tiare "want list" which is available for a self addressed, stamped envelope from Tiare Publications, O.O. Box 493,

Lake Geneva, Wisconsin 53147.

## New Reprint Catalog

Reprint Catalog #2 is now available for only \$1 from The Company Store (check back cover for address). Don Moore has done a great job coordinating this effort. Sixty-nine reprint packets have been added, for a total of 169 reprints. The total number of pages has more than doubled, from 364 to 793. Yes, there's enough good reading material here to keep any SW hobbyist busy reading for a long time!

## Calendar Of Events

- May 17** - Meeting of the Boston Area NASWA Chapter, GTE Labs, Waltham, Mass. Please contact Paul Graveline (508) 470-1971 for additional information.
- May 17** - Phila. Area NASWA Chapter. Montgomery Elementary School cafeteria, Montgomeryville, PA 7:30 PM. Dan Cashin (215)446-7831.
- May 17, 18** - "Conrad Family Re-union". A weekend for SWs and DXers to get together to meet and have some fun. To be held at the Days Inn, two blocks from downtown Wisconsin Dells, WI. (608)254-6444. Mention "Conrad Family Re-union" for special rates. Contact Jim Conrad, 545 Kirkwood Ave. Waterloo, IA 50701
- May 21** - N.E. Ohio SWs. Cuyahoga County Library, 9089 Brecksville Rd., Brecksville, OH (Rt. 21, just South of Rt. 82). 7:00 PM. Mike Fanderys (216)661-2443

Members are invited to submit items to be included in this calendar to Bob Brown.

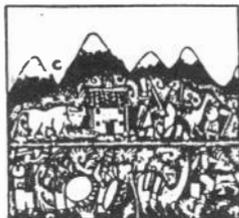
The reprints are generally not of individual articles, but rather of collections of articles around a common theme. Short articles have been cut up and taped together to give the reprints user the best value for their money. Generally each reprint page represents two pages from the bulletin (similar to taking it and photocopying the two adjoining pages). Exceptions are articles from the non-reduced mimeo days before 1972 and a few items from outside The Journal/FRENDX.

This second edition of the catalog includes articles from FRENDX (the old Journal) dating back to 1967. For the convenience of past reprints users, the new additions are asteriked. We wish to extend our special thanks this time to Kevin Atkins, Jerry Berg, John Fisher, & Don Weber for copying articles for us from the old bulletins in their archives. We still have not gotten access to a number of bulletins from the early 1970s (including all of 1973), and many from 1969 and pre-July, 1967. Plans are underway already for the third edition of the

### ANARC SWL Ham Net

Tune in Sunday mornings at 10 A. M. Eastern Time on 7240 LSB for the latest in shortwave listening, DX tips, and up to the minute hobby news. Contributors share their DX tips via their own amateur radio stations or by telephoning a "gateway" station who then broadcasts the relayed tips. Net Controls Bob Brown KW3F and Dave Kirby N8JQX host an always lively gang of DX monitors. (Best heard in the eastern half of NAM)

reprints catalog, to be published about a year from now. There is still a lot of interesting material from the bulletins we have on hand that needs to be cataloged. However, we also need access to the missing earlier editions of FRENDX. If you have some and are willing to help, please contact Don Moore at his address listed on the back cover under Destinations.



## Numero Uno

SWBC weekly since 1969

### 1990 North American DX Championship Winners Announced

Log scoring of entries in the 1991 North American DX Championships has been completed. The contest *this* year had a one weekend listening period and covered the full spectrum of shortwave broadcast coverage (2.000 - 30.000 MHz). We are pleased to announce that the winner of the 1991 North American DX Championships is Don Moore of Big Rapids, MI. Don's winning entry totaled 1004 points, computed from reception of 333 stations in 119 countries (using the country list of *North American Shortwave Association*).

Second place, with 699 points, went to Alex Graham of Bartlett, TN. The third place finisher (579 points) was Roger Morby of Londonderry, NH. The three top winners will receive trophies provided by *Numero Uno* and *Fine Tuning* and Don will receive a gift certificate for \$20 from Fred Osterman of Universal Shortwave. All the finishers will receive certificates recognizing their participation in this year's contest.

The Top 10, in order of finish:

1. Don Moore, Big Rapids, MI
2. Alex Graham, Bartlett, TN
3. Roger Morby, Londonderry, NH
4. Bill Breeden, Omaha, NE
5. Bill Kurrasch, Ontario, NY
6. Greg Hart, Live Oak, FL
7. Ron Stout, Oak Ridge, TN
8. Dino Bloisse, Jersey City, NJ
9. Fraser Bonnett, Fairborn, OH
10. Bud Powell, Kitimat, BC

## Welcome to the following new NASWA members -

Ronald A. Alm, Iron Mountain, MI  
Robert L. Atkinson, Wilmington, DE  
Victor Badre, Holland, MANITOBA  
James Earl Barker III, Washington, DC  
Jerry W. Barnett, Roanoke, VA  
Arthur Berla, White Plains, NY  
Dale Biermann, Ankeny, IA  
Mr. Milton P. Bond, Lewisville, TX  
Bruce A. Boyd, West Caldwell, NJ  
Jack K. Browder, Luftin, TX  
James B. Buchler, Flagstaff, AZ  
Rodney Burden, Texarkana, TX  
Robert Carberry, San Anselmo, CA  
Timothy A. Carroll, Springfield, IL  
Brian P. Case, McKeesport, PA  
Mr. Paul H. Casebolt, Findlay, OH  
Bernard Chenal, Mulhouse, FRANCE  
Okezie Chukwumerije, North York, ONTARIO  
Ann Cioffi, Etna, NH  
Bill Clermont, St. Louis, MO  
Stanford Cohn, Stamford, CT  
W. Norman Cooper, Los Angeles, CA  
R. W. Craven, Paulsboro, NJ  
Virgil N. Crosby, Dallas, OR  
Mark Darter, Hampton, VA  
Joel A. Datz, Highland Park, IL  
Ivan F. Delbyck, New York, NY  
James T. Dolan, Seattle, WA  
William M. Douley, Escondido, CA  
Richard Ettinger, Queensland, AUSTRALIA  
Steve Evanchuck, Poland, OH  
William Falck, Jacksonville, FL  
Gaylon J. Faulk, St. Louis, MO  
Bruce A. Finstead MD, Glendale, CA  
Mike Foley, Avoca, NY  
Dr. Jerry Fons, Greenfield, WI  
Joe Freeborn, Petaluma, CA  
Oscar F. Frenzel III, Newport Beach, CA  
R. C. Gardenhire, Merritt Island, FL  
MSG James F. Gay, Louisville, KY  
Bob Geer, Indianapolis, IN  
Chris Gibbs, Camberley, ENGLAND  
Harvey Graves, Akron, OH  
Oakley B. Gwilliam, Sun Valley, CA  
W. D. Haentjens, Sugarloaf, PA  
Mike Hamilton, San Juan Capistrano, CA  
Andrew J. Hamilton, Louisville, KY  
Stewart H. Hartman Jr., Mechanicsburg, PA  
E. Cannon Hassell, Birmingham, AL  
Thomas B. Hileman, Westwood, MA  
Gary Hitchcock, Hollywood, FL  
Mark Hollock, Mountain Top, PA  
Gail P. Hudson, Yardley, PA  
Jim Hydzik, Hudson, NH  
James A. Inners Jr., York, PA  
Carolyn J. Jensen, Ankeny, IA  
Gene Kaplan, Atlanta, GA  
Sidney Kelly, Bloomfield Hills, MI  
James B. Kenny, Montague, MI  
Joe Kerr, Rantoul, IL  
Raymond Kleinot, West Chester, PA  
Richard B. Kneeland, St. Paul, MN  
Dr. Donald Lee, Republic, MI  
Howell V. Livingston, Anaheim, CA  
James M. Loughlin, Pittsburgh, PA  
Warren Lucas, Tacoma, WA  
Robert E. Lucore, Danville, KY  
Dr. Douglas C. MacDonald, Sheffield, MANITOBA  
Thomas G. Mannix Jr., Dayton, OH  
Greg Martin, Fruitport, MI  
Ed Mayberry, Cedar Park, TX  
Harry L. McDonald, Edwardsville, IL  
Mark Meece, West Chester, OH  
Stephen R. Melvin, Montville, NJ  
J. D. Merchant, Hawthorne, NY  
Thomas Millard, New Caney, TX  
Dr. Edward M. Miller, Greensboro, NC  
Joseph Mizik, Satrongsville, OH  
Braxton T. Nelson, Costa Mesa, CA  
John M. Nolan, Locust Grove, VA  
C. E. Norcross, Pennington, NJ  
Steve Nullmeyer, Yorba Linda, CA  
Normand P. Owings, South Vienna, OH  
Bob Patrick, Dayton, OH  
Dewaine Peebles, Grants Pass, OR  
Gary K. Proos, Ada, MI  
C. M. Pun, Sunnysvale, CA  
Al Quaglieri, Albany, NY  
Munir A. Razzag, Wichita, KS  
Jeff Ricker, Hanover, MN  
Douglas G. Robertson, Oxnard, CA  
Ron Roeser, Newfoundland, NJ  
Oscar Rosado, Long Island City, NY  
Chuq Von Ruspach, Newark, CA  
Bernie Rupp, Waukesha, WI  
Y. H. Sayed, Hemet, CA  
Eric Schatz, Sparkill, NY  
Stan Schenfeld, Valley Stream, NY  
Mike Schlueter, Champaign, IL  
David Schoenecker, Valparaiso, IN  
George M. Shimoyama, Moreno Valley, CA  
Steven Siegel, Scarsdale, NY  
Greg Smith, Watertown, NY  
H. D. Smith, Virginia Beach, VA  
Michael E. Smith, Philadelphia, PA  
Don Smith, Orland, CA  
W. Decker Smith Jr., Houston, TX  
William Starr, Columbia, SC  
Donald L. Stevenson, West Chester, PA  
Tom Tabatowski, Indianapolis, IN  
Miklos Talyak, Fair Oaks, CA  
Mrs. Ronne J. Tener, Laverock, PA  
Steve Terry, New York, NY  
Leslie Thomas, Oakville, ONTARIO  
Robert Thompson, Pittsburgh, PA  
James R. Threatt, Belle Rive, IL  
Gene A. Tracy, Amery, WI  
Angelo Vangel, St. Louis, MO  
George Vieto, Metairie, LA  
Philip J. Wanat, Northfield Falls, VT  
Phillip G. Watkins Jr., Wichita, KS  
Dan Wenz, Joppa, MO  
Bruce N. White, North Waterboro, ME  
William J. Wigton, Saginaw, TX  
Jerry Wolkoff, Wantagh, NY  
Thomas Wrona, Yonkers, NY  
Arthur Wronowski, Roscommon, MI  
Chester R. Young, St. John, NEW BRUNSWICK  
Arthur Ziering, Iselin, NJ  
Daniel M. Ziolkowski, Buffalo, NY

# DXer's Forum

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Pinson, AL 35126  
Compuserve 71021,3212



Before getting on with the business at hand, a brief update of the March column is in order. Shortwave is a volatile medium, but I wonder if the inhabitants of New Guinea waited until *after* my PNG update to spring all these changes *on purpose*? First of all, about a week after my *Journal* arrived, the anemic signal from RRI Wamena seemed to double in strength; perhaps a much-needed transmitter tuneup was performed. Then, reports began to circulate of a *new* station, believed to be in Irian Jaya, on 4881.3. Information from Geoff Cosier via David Clark suggests that this is an RPD station, possibly in Senok. I'm hearing it every day except Sunday at sunrise, but the modulation is very poor and, alas, no ID to report. Next, John Bryant heard RRI Jayapura on 5044.3v, apparently signing on that frequency for their 'all night' program as they've done in the past, but too late for those of us east of the Mississippi to hear it. I presume 6069.8 remains in use, though I haven't been up that early lately. Finally, information from Gordon Darling via David Clark indicates that as of about mid-April, Radio Northern is on the air again, using their old 2kW transmitter.

This month's column features the fourth and final installment of our propagation series:

## Tropical Band Enhancements Associated With The Sunset Terminator (continued)

by David M. Clark with John H. Bryant

### SO WHAT ENHANCEMENTS DO WE OBSERVE DURING SUNSET-DUSK AT THE RECEIVER?

Let's tackle this geographically based on origin of the signals. We'll begin with the east>west path from Africa. Then we'll turn our attention to the south>north path from Latin America. Finally, we'll focus in some detail on the path from Southeast Asia which we think will be of particular interest, especially for the Easterners in the crowd!

**AFRICA:** The characteristic pattern by which signal levels on the tropical bands reach peak amplitude during the sunrise and sunset intervals at the receiver was illustrated in last month's article by Figure 1. That makes it easy to understand why African signals will begin propagating into Eastern North America long before our sunset, especially near mid-winter when the northern hemispheric days are so short. Signal levels gradually build (quite unlike the sudden and short duration characteristic of max-dawn enhancement) until best levels are heard during the sunset period at the receiver.

While the sunset peak may not be obvious

to the casual listener, the best evidence I can cite is from the experience of monitoring those Africans which remain on later into the night (for example, Congo-4760, Guinea-4899.9 or Senegal-4890, all of which sign off about 2400). Invariably, their signals will be *much* stronger at 2200 in mid-winter (or near 2300 at the equinox) than at 2400, so it seems their peak does follow the pattern of Figure 1. The experience of medium wave DXers in the East reinforces this conclusion. Many trans-Atlantic signals from Europe and Africa fade up and are heard best with the approach of sunset at the receiver.

In central and western parts of North America, the pattern is somewhat modified. At mid-winter, those Africans which remain on past 2230 or 2300 may be heard well at sunset and through the subsequent dusk period, although on occasion they may put in an appearance before sunset. Later on in the evening (even on days when sunset reception has been good), Central and West Africans are generally much weaker at their morning sign-on. In our *Proceedings 1990* article, John and I speculated that the stronger sunset enhancement at the receiver may be associated with the formation of the equatorial spread F zone

which, at this time, happens to "straddle" the path.

**LATIN AMERICA:** The absence of a noticeable dawn enhancement of signals from South America when either the transmitter or the receiver (or both) is experiencing sunrise has been noted earlier. Contrasting this with the sunset-dusk period at the receiver, we can say that there is a discernable, generalized South American peak provided the transmitter is already in darkness. We revert to the experience of your Forum editor who states: "Numerous low-powered Peruvians and Bolivians have been heard here with threshold audio at sunset  $\pm 15$  minutes, thereafter fading down to hets only".

Kevin goes on to tell us that the most pronounced receiver-sunset peak at his location occurs in late spring when the terminator is inclined in a NE-SW direction. As such, this enhancement co-incides with the one-three hour post-sunset period in the Andean Region. He says "I have logged a number of rare Bolivians during this timeframe and at no other...I've also heard stations such as Radio Padilla-3473v at pretty amazing levels during this period". Do we detect another visit from the spread F "sweet spot" which we discussed in the first two articles of this series?

**SOUTHEAST ASIA:** Beginning near the autumnal equinox in mid-September and continuing throughout the winter season, it is possible to log numerous Asian tropical band stations during the sunset-dusk period in Eastern North America. Reception is primarily focussed on stations from Western Indonesia and the countries of the Indo-China region. As a general rule, this unusual reception is possible *only if certain prerequisite solar events occur*. Given the right conditions, some "regular" stations can be heard for brief periods at signal levels which far exceed their typical strength during dawn enhancement.

As we have noted previously, a short period (often only a day) of solar-induced enhancement of signals originating within or traversing the equatorial zone frequently occurs within hours of some form of significant solar-terrestrial activity (flares, etc.). These sometimes-dramatic enhancements are typically then followed by the development of a more intense ionospheric or geomagnetic storm and a general deterioration in propagation conditions. This pattern of "positive" and "negative" phases is most noticeable for signals passing through or near the polar caps and the surrounding auroral zones.

Let's relate this to our enhanced reception in these circumstances from Southeast Asia. Conventional thinking has it that those Asian

signals reaching us at sunset-dusk are enhanced because they originate in the equatorial zone and successfully navigate across the Arctic region by propagating through the polar "donut-hole" (probably in some form of "ducted" mode). Alternatively, they may be "bent", adopting a skewed (non-Great Circle) path around the outer limits of the auroral zone. This would be the expected *short path* circuit.

There are probably some "ideal" occasions when this short path reception circuit does occur. In fact, I devoted an entire article, 'DXing Asians on the Tropical Bands: The Auroral Factor' in *Proceedings 1989*, to striving to substantiate that this was the case. [6] Since publishing that article I have come to recognize that it was fundamentally flawed in at least one respect: I dismissed the possibility that this Asian reception might be other than a Short Path phenomenon.

My thinking on these winter sunset openings has changed radically: I now believe that the Asian enhancement (usually coincident with the onset of a solar disturbance) is based on a *long path* circuit, with the signals crossing the southern hemisphere and traversing the equatorial zone before arriving at our receivers in the northern hemisphere.

In terms of practical "evidence" to confirm the existence of long path propagation into Southeast Asia at East Coast sunset, I can only relate what my antennas are telling me. Since I have the good fortune of living on a large property in the country, I have erected a number of antennas. Most of these are intended to favour reception of Asians, whether short path at dawn (as is almost always the case in the East) or long path at sunset, as we will now contend.

Before the 1990-91 DX season, my "best" antenna for Southeast Asians at sunset was a high longwire, oriented NW-SE and some 600 feet in length—sufficient to result in fairly noticeable bi-directional sensitivity off the ends. I had simply assumed that the Asians were being received short path on the NW lobe.

The basis for the long path revelation came last fall when my DXing buddy, Cedric Marshall, and I put up several "two-wire switchable-direction" Beverage antenna combinations, one of which was oriented essentially straight N-S. The great advantage of these antennas is that they are uni-directional off either end, controllable by a switch near your receiver. This allows for immediate comparisons of signal strengths and fairly reliable direction-finding.

The properties of these antennas were first

tested on the Latins and they proved to be incredibly successful, vastly outperforming any of the other available antennas. In other words, they work *uni-directionally*, exactly as advertised!

The "clincher" was the comparative results with these antennas when monitoring sunset openings to Southeast Asia during this past season. Invariably, I found that superior signal/noise ratios were obtained on the Beverage configuration which is uni-directional to the South; under less than ideal conditions it was often the only antenna rendering readable audio. That former favourite, the NW-SE skywire, was usually a distant second although it now seems clear that the Asians were being received on the SE lobe, right along the inclination of the grayline, as shown in the illustrations which follow.

*For emphasis:* the uni-directional antennas demonstrate clearly that those Southeast Asian DX signals sometimes heard at East Coast sunset are arriving via *long path* from the S-SE, rather than the previously-believed N-NW short path over the Arctic and through the auroral donut! We think this is the most important finding of this discussion.

In SWBC DXing circles most of us have tended to overlook the potential long path DX from Southeast Asia to Eastern North America at sunset. In retrospect, one can postulate at least three "justifiable" reasons for this:

- Traditionally we have been conditioned to "think" short path over the Arctic. How many hobby books have you read that dare to talk long path, especially at tropical band frequencies?

- Second, in terms of an ECNA path to Sumatera and the Malay Peninsula, the *reciprocal* Great Circle path (180 degrees removed from the True Great Circle heading) is pointed directly over the Antarctic which is experiencing 24-hour daylight during our winter DX season. This would imply total absorption of Asian signals propagating in a southerly direction from the transmitter. Refer to Figure 2.

- Finally, using conventional tools such as the DX Edge, it is not easy to visualize either a viable grayline or partial darkness long path circuit between these two points during the southern hemispheric summer on a Mercator-type projection. DXAID or GEOCLOCK (HamPackage) software which are now available solve that problem.

During our winter DX season, Asian long path reception on the tropical band can only be possible given one of two criteria: either

the Asian signals are propagating along the grayline (the reciprocal Great Circle path); or, they must propagate in a partial darkness, skewed or "crooked" path which deviates from the Great Circle bearing across the Antarctic daylight. John's study of 'Terminator Mechanics and Trans-Polar Solar Blanking' in *Proceedings 1988* addressed the importance of the seasonal polar daylight zones and what they meant in terms of usable Great Circle paths. But the illustrations in that article clearly showed that there is a sunset grayline zone tangent to the eastern extremity of Antarctica in mid-winter. [7] The significance of this only becomes apparent when one begins to think in terms of either a (Great Circle) long path grayline or a skewed (non-Great Circle) long path circuit.

Devoldere [5] deals at some length with a variety of reasons why low-band signals will sometimes adopt skewed paths. This is because the signals tend to adopt a path where ionization is optimal along the entire length of the circuit. In addition, he notes that deviated paths may also result from the tendency of the signals to circumvent the auroral zones. In this regard I would point out that reception of "afternoon Asians" in Eastern North America is distinguished by the *total absence* of characteristic polar or auroral "flutter" fading!

I was also intrigued by an item of correspondence between John and another eminently qualified amateur radio low-band DXer. Bill Tippett, W0ZV, wrote as follows: "Long path on 1.8 MHz [120 meter amateur band] is very rare, but it is very common on 3.5 MHz [80 meter amateur band]... Incidentally, while long path propagation to Asia/Europe is very common on 3.5 MHz in the midwest and western states at our sunrise, it is very rare in the East. However, *long path to Southeast Asia is quite common at east coast sunset* [authors' emphasis]. The path is over the South Atlantic while our path [in western states] is over New Zealand." It seems the amateurs had this long path business figured out long before we SWBC-types.

Time to activate the DXAID mapping software! I concluded that it was desirable to view a contiguous long path grayline between Newmarket (at sunset) and Southeast Asia in order to clearly see the "South Atlantic" route. Figure 1 replicates the situation, being an azimuthal projection centred on The Falklands. Notice that the mid-winter grayline skirts the eastern edge of Antarctica and that all paths to the right of the terminator are in darkness. This includes most of Indonesia (except Irian Jaya and the Molucca Island group) and the rest of Southeast Asia. Of course the precise

position of this long path grayline will vary with the shifting of the seasons from fall through spring. For what it's worth, any long path circuit from Southeast is virtually an all-water route.

In Figure 1 we see the classic long path grayline circuit between Sulawesi and Ontario. RRI Ujung Pandang-4719/4753 is an

winter reception peaks (Newmarket sunset being 2151) compared with January 1st sunrise times for representative Southeast Asian stations (other than Ujung Pandang) which can be expected to render the more reliable signals. The pattern is quite consistent:

Figures 2 and 3 serve to illustrate this situation as at 2230 UTC on January 1st. It can be

**TABLE 1.** Times for typical mid-winter reception peaks in Newmarket, ONT compared with January 1st sunrise times for representative stations in Southeast Asia.

FREQ	STATION, LOCATION	PEAK SIGNAL	LOCAL SUNRISE
4774.7	RRI Jakarta, Jawa (//3276.8)	2210	2237
4950	RTM Kuching, Sarawak (also 5030)	2215	2241
3394.8	RRI Tanjungkarang, Sumatera	2220	2249
4926.9	RRI Jambi, Sumatera	2225	2304
5010	Radio 1, Singapore (//5051.9)	2230	2306
4894.6	V. of Vietnam	2235	2334
3264.8	RRI Bengkulu, Sumatera	2240	2304
3231.8	RRI Bukittinggl, Sumatera (//4911)	2250	2318
4002.7	RRI Padang, Sumatera	2300	2317
4910v	V. of People of Cambodia	2300	2326

afternoon "beacon" that is readily heard at strong levels under ideal conditions, peaking about 2145 in mid-winter. Sunrise on January 1st in Sulawesi is at 2153, just minutes after Newmarket...a true grayline path!

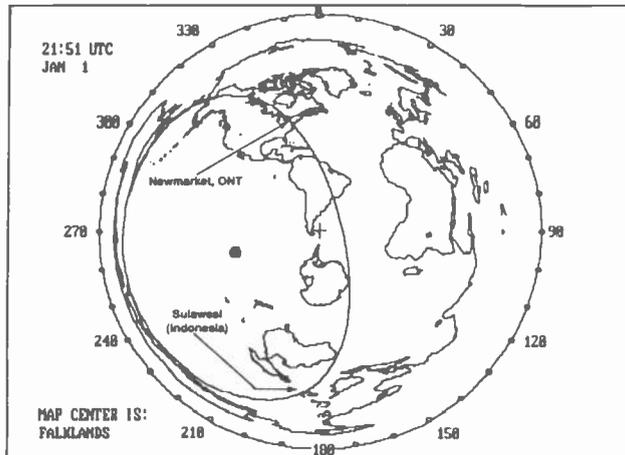
Except in the case of a true grayline path, I have noticed that the mid-winter afternoon signals from Southeast Asia tend to peak a half-hour or more *after* sunset at the receiver when that timeframe *corresponds with* about one-half hour *before* sunrise at the transmitter. These are very typical circumstances for long path propagation peaks...not quite a true grayline but closely associated with sunrise and sunset at opposite ends of the path.

Table 1 shows the times for typical mid-

seen that the North American grayline is now positioned to the west of Ontario (post-sunset dusk at Newmarket); at the Southeast Asian end of the path the terminator bisects Kalimantan and Jawa. Note that the inclination of the long path terminator is about 20 degrees to the right of True South.

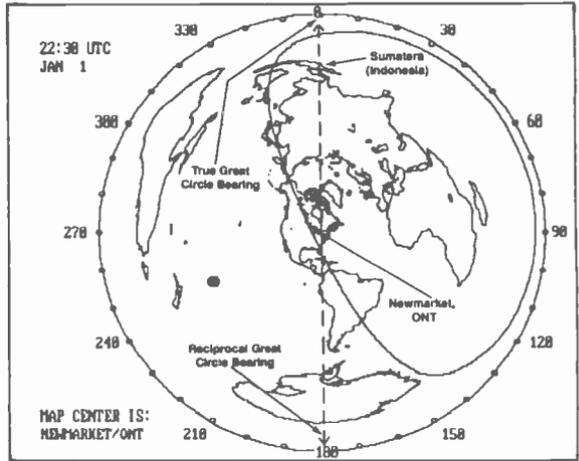
We recall that the reciprocal Great Circle path from Newmarket to Sumatera, Singapore and the Malay Peninsula lays directly across Antarctica (see Figure 2); and yet it can be seen that at the time of peak signals, these regions are still in pre-sunrise darkness because of the narrow grayline "width" at equatorial latitudes (see Figure 3). It appears that a Beverage antenna pointed S-SE at about 150 degrees ought to provide optimal reception. This is consistent with my practical experience described earlier. The long path circuit is clearly skewed about 30 degrees from the reciprocal Great Circle path.

If this long path model is true, I believe that the enhancement may be associated with a so-called "super-mode" of propagation known as "Afternoon-type TEP [transequatorial propagation] Mode". A detailed discussion of this mode is beyond the scope and space available for this



**FIGURE 1.** Illustration of the Position of the Terminator at 2151 UTC (Sunset: Newmarket, Ontario) on January 1st, created with registered DXAID (version 2.0) software. The map centre of this azimuthal-equidistant projection is The Falkland Islands, in order to clearly show the long path circuit from Southeast Asia.

**FIGURE 2.** Illustration of the Position of the Terminator at 2230 UTC on January 1st, created with registered DXAID (version 2.0) software. The map centre is Newmarket, Ontario. The Great Circle paths to Sumatera and Singapore are 0 degrees N / 180 degrees S. Notice the position of the terminator and that Antarctica is fully in daylight.



series. Suffice it to say, the super-mode is characterized by multiple F-layer refractions along the signal path without intervening ground reflection losses and ray "scattering". This results in high signal strength with low fading rates. Afternoon-type TEP mode is prevalent in the late afternoon and early evening during periods of high solar activity. [8]

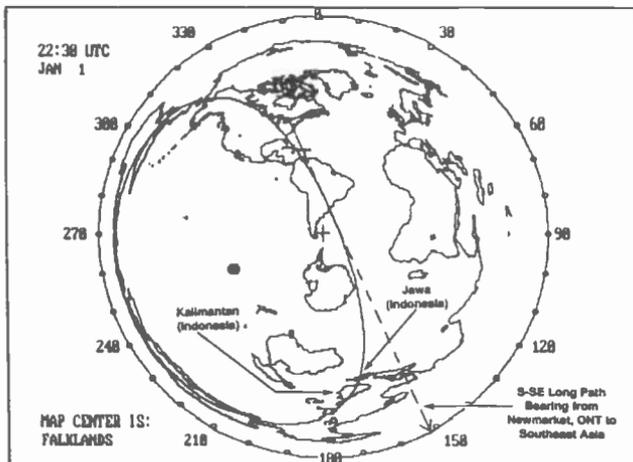
In our *Proceedings 1990* article, John and I outline the principle of "spherical convergence" which basically means that the field strength of a signal will INCREASE (if other types of losses are ignored) as the receiver is moved further than 6,250 miles from the transmitter. [9] This scarcely-publicized factor, taken together with a super-mode of propagation, could account for the "local level" signals heard under ideal conditions from Southeast Asia. These signal levels truly have to be experienced to be believed!

The Southeast Asians will usually build in strength surprisingly quickly, maintain a steady level (devoid of flutter or other forms of fading) for a short time, and then fade

down almost as quickly...not unlike dawn enhancement. But in the case of the afternoon Asians, all of this depends on the pre-requisite solar conditions we discussed earlier—either they're "in" or they're not.

**OTHER ASIANS:** While we have focused our attention on Southeast Asia, we would briefly note that a number of other Asians to the north of the equatorial zone (mainly Chinese) can also be logged in the ECNA afternoons. Two characteristics of the reception pattern distinguish them to some extent from the signals originating in equatorial latitudes. First, reception is limited to a period of less than two months, centred on the winter solstice (this reminds us of the sub-continentals in the morning). Second, peak reception seems to occur a full hour or so prior to sunrise at the transmitter. Typical examples on January 1st are Pyongyang, North Korea-2850, peaking at 2200 (sunrise at 2259) and Nanning, China-4915, sometimes overriding Ghana at 2230 (sunrise at 2329).

One thing remains constant—look for the Asians during the early stages of a



**FIGURE 3.** Illustration of the Position of the Terminator at 2230 UTC on January 1st, created with registered DXAID (version 2.0) software. The map centre is the Falkland Islands. Notice that most of Southeast Asia is in pre-sunrise darkness.

solar disturbance. You may be surprised to hear them at armchair copy levels and their long path arrival will be reflected by a startling absence of auroral flutter. Good listening!

## SUMMARY AND CONCLUSIONS

It's been a long haul since we began this series for DXER'S FORUM back in January, but if you've managed to stick with us this far, let's highlight the major points that have emerged:

- The traditional multi-hop model of long distance propagation is not a satisfactory answer to the signal levels and absence of fading that can be experienced on the tropical bands during optimum periods of dawn and dusk enhancement. We are suggesting the smart money is on a model in which signals traverse planetary distances by travelling parallel to the earth, only coming down when there is good reason to do so—as in a dawn or dusk ionosphere at the terminal point of the circuit.

- Much more practical research is required to better understand the variability of dawn and dusk enhancement, not only during anomalous day-to-day conditions associated with solar disturbances but also throughout the solar cycle.

- Despite some basic similarities, the relationship between differing magnetic conditions and dawn/dusk enhancements suggests that the sunrise and sunset periods are not symmetrical from a propagation standpoint at tropical band frequencies.

- Tropical band reception of DX signals has very distinct seasonal characteristics at both dawn and dusk. The more we know about these seasonal patterns, the more efficient DXers we become.

- The reasons for the very distinctive pat-

terns of seasonal enhancement, especially into Asia at dawn in North America, remain something of a mystery. The spread F "sweet spot" may be a partial answer, although we have found no explanation of how this may improve the "conduction" of radio waves at the transmitter.

- One of most useful strategies in thinking and talking about twilight enhancements has been to split the phenomena usually lumped under the term "grayline" into the five distinct phenomena which actually exist and which may be used individually as DXing tools. These are: Sunrise- or Sunset-at-the-Transmitter, Sunrise- or Sunset-at-the-Receiver, and True Grayline propagation.

- True Grayline enhancement is not all that it's cracked up to be, especially at receiver sunrise when it doesn't correlate well with recognized seasonal enhancement patterns.

- Long path (grayline and non-Great Circle) propagation on the tropical bands seems to be much more prevalent, at least at receiver sunset, than heretofore recognized in the SWBC hobby community. Our contacts in amateur radio circles suggest to us there may also be "unconventional" paths at receiver sunrise just waiting to be discovered.

We sincerely thank Forum's editor, Kevin Atkins, for his invitation to share our enthusiasm for tropical band DXing, especially those dawn and dusk enhancements, with the NASWA readership.

Undoubtedly we have put forward some non traditional, perhaps controversial, ideas. Be that as it may, we are all still challenged by a number of unresolved mysteries. We hope that we have succeeded in highlighting some of the issues that are important to every tropical band DXer and we hope that this series will generate discussion and input from other interested hobbyists. □

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# Easy Listening

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## London Calling

Several years back, I heard many Soviet emigres to the United States had extreme difficulty shopping in American supermarkets. The breadth and depth of offerings overwhelmed them, as they weren't used to the diversity of product offerings. Some might argue the BBC World Service is similar - there's so much out there, it's difficult to know where to start.

The BBC World Service publishes a monthly program guide, *London Calling*, which provides detailed program information on regular BBC programs and Special Features. "Special Features" are what I call limited-run programs of a topic nature or are otherwise not part of the regular BBC schedule. While *London Calling* carries a normal USA subscription price of \$20, I have arranged to receive a complimentary journalist's subscription on NASWA's behalf. Ken Zichi of the Michigan Area Radio Enthusiasts, and a fellow GENie member, alerted me to the BBC's policy regarding journalist subscriptions.

Starting this month, I'll alert you to a few program highlights for the coming month, include a brief sketch on one or two regular programs, and relate other items of possible interest.

Before I do that, here's a portion of an April 1991 *London Calling* article entitled "The Right to Know," interviewing John Tusa, Managing Director of the World Service. Among other topics, Tusa spoke of the BBC World Service's upcoming program plans.

*"In the next 12 months, there will be a shift towards more news and current affairs which," explains Tusa, "not everyone will like. But it will be noticeable."*

The move towards a live Newshour every eight hours is one of the most significant changes in the new scheduling.

Some of the resources will go into improving the back-up in the Newsroom. There will be facilities so that the foreign correspondents can file material around the clock. There will be money made available to employ more "stringers" or freelance correspondents in different countries so that the production team

is kept up to date on the changing situation around the world with a network of reliable and trusted sources.

The African Service will also benefit from an injection of cash, enabling its team to transmit more live programmes to a wider area.

Not a man prone to hyperbole, Tusa says that when the changes are in place, *"they will be the biggest editorial enhancement of the news and current affairs there has ever been on World Service."*

*"The service will sound more authoritative and we will be able to respond to major crises even better than during the Gulf."*

## BBC World Service - May Highlights

*Moving the Masses* investigates public policy and economics surrounding the use of automobiles in the 1990s. Oil supplies, the "greenhouse effect," traffic problems in cities, and public transportation alternatives are discussed. Sundays, May 19th and 26th, 0230 and 1615 UTC. Repeated Monday at 0730.

*Mid Life - A Time of Crisis?* is a three-part series on middle age and its attendant external, physical, and psychological changes. Sundays beginning May 19th, 1401 and 2330 UTC; repeated Mondays, 0630 and 1001 UTC.

*The Thin Blue Line* investigates the conflict between the police in Britain and the society they are meant to protect and asks whether such conflict is inevitable? What are its root causes and which is the way forward? Saturday, May 25th, 1901 UTC; repeated Monday, May 27th, 0101, 1515 UTC.

*Dealing With Clair* is the *Play of the Week* on Sunday, May 26th. Author Martin Crimp adapts his stage play for radio. "His work is as funny as it is unsettling," says the *Daily Telegraph*. 0101, 1201, and 1901 UTC.

*It's Not Just Cricket* is a six-part series of readings about this "...ever-popular game." The series reflects on the different countries where cricket is played, and how cricket can affect a nation's politics, its self-esteem, and the way it is seen abroad. Mondays beginning

May 20th, 2315 UTC; repeated Wednesdays at 1515 UTC.

**Omnibus** is a weekly program on almost any topic under the sun. One recent edition profiled an English surgical team repairing facial deformities in Sri Lanka. Wednesdays 0030, 1001, 1930 UTC; Thursdays 0630.

**Megamix** is a weekly compendium of music, sport, fashion, health, travel, news, and views for young people. Tuesdays at 1130, 1615, and 2220 UTC for 30 minutes.

15070 kHz is now listed as an Eastern North American frequency for the World Service. While it's shown as a recommended frequency from 2100 to 0030, I've caught it as early as 1400 and as late as 0500.

## Red Cross Broadcasting Service

This Easy Listening target normally broadcasts only two days per month. I know of no other easy-to-hear service with that distinction.

The Red Cross Broadcasting Service (RCBS) is a service of The International Committee of the Red Cross (ICRC), the founding movement of the various national Red Cross and Red Crescent disaster relief organizations. The ICRC is headquartered in Geneva, Switzerland.

The RCBS beams a program to North America monthly on the Tuesday following the last Sunday of each month at 0310 UTC. The RCBS uses the facilities of Swiss Radio International, and the frequencies are the same as those of SRI: 12035, 9885, 9650, and 6135. The program is repeated at the same times on the same frequencies the following Thursday.

The March program focused extensively on the Persian gulf, with three of its four program segments concerning the Persian Gulf war and its aftermath.

The program's first segment dwelt with food shortages in Iraq - weeks before the plight of the Kurds showed up on TV Network News. ICRC members directly associated with relief efforts provided their perspectives on the need for food and medicine.

The second segment provided an update on ICRC efforts in the repatriation of prisoners connected with the Persian Gulf war. The ICRC was also involved with the repatriation of Kuwaiti civilian prisoners and detained

journalists.

The third segment dealt with the ICRC's efforts to protect the Palestinian minority and other minorities in Kuwait after Kuwait's liberation.

The commentators managed to steer clear of any opinionated statements on the underlying conflict or the behavior of government leaders. The program dealt exclusively with the impact of the war on civilians and prisoners.

Reception reports and listener comments were solicited; schedules and QSLs are available. IRCs are appreciated. The Red Cross Broadcasting Services's address: 19 Avenue de la Paix, CH-1202 Geneva, Switzerland.

## Programs for Children

Joe Norcott of Attleboro, MA wrote last month requesting information on programs for children. So far, the best I've come up with is the BBC World Service program **Megamix** listed above. I also recall someone mentioning **Echoes**, on Radio New Zealand International; please drop me a line if you have a day and time for that, and I'll pass it on.

## Radio Prague

Alex Batman of Boone, NC casts his vote for **Scrapbook** as one of the best new programs on shortwave. Alex says there's a certain zaniness to this potpourri of Czech rock music, Czechoslovakia trivia, tourist tips, and a "recipe of the week" that adds to the program's appeal. Check out Mondays 0100 and 0300 UTC on 7345 (better) and 5930.

The new Radio Prague is certainly much more lighthearted than its predecessor, to the credit of Bill Bathers, Peter Casper, and the other announcers. There's a regular, ongoing banter between these foreigners and the Czech nationals they work with.

## Feedback

Thanks to Don Roth, of Shelton, CT, and Russel DeRose, a new NASWAN, for your recent letters. Keep those cards and letters coming in!

Until next month,

73 DE Richard

# Latin Destinations

**Don Moore**  
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**H**ola amigos! Welcome again to Latin Destinations! To start with this month, we have the result of our February contest. Mark Spat of West Swanzey, NH supplied a correct answer and won the drawing for a 60 minute cassette of Latin American station IDs. Mark, your tape will be in the mail shortly. Room permitting, another contest will be held in the August column.

## Focus On Colombia

The main focus this month will be one of South America's more easily heard DX countries - Colombia. A number of factors make Colombia distinct from the other Latin American countries. First, it is the only country in South America to have extensive seacoasts on the both the Atlantic and Pacific. Secondly, Colombia has a strong democratic tradition. Except for a four year period of Cold War inspired military dictatorship in the 1950s, Colombia has had elected democratic governments for over 100 years. This is despite three major periods of civil disturbances, including the current one. Finally, Colombia has a strong economy.

For years, Colombia had a typical one crop Third World economy, based on coffee. Years ago however, Colombia learned the folly of depending on one crop. Today, other major exports include seafood, bananas, leather products, cut flowers, emeralds, and gold. Oil and coal are also becoming increasingly important. Economic diversification has been the key to what is truly an economic miracle, compared to the rest of Latin America. Colombia was the only Latin American country without at least one year of negative growth in the 1980s, and is the only major Latin American country without a debt crisis. Economic growth for 1991 is predicted to be a healthy 3.5%.

For the uninformed, a likely initial reaction to Colombia's economic boom is something like "They should be doing well, selling all those drugs." Clearly, in looking at Colombia, we have to examine the drug problem. In reality, illegal drugs have very little impact on Colombia's economy. Most estimates place the worth of Colombia's illegal drug exports at

about five percent of the value of Colombia's legal exports. Most of that money gets channeled into the overseas bank accounts of a few major drug kingpins. Furthermore, any benefits to the country from the drug trade are far outweighed by drug terrorism.

I have not yet had the opportunity to travel to Colombia, but through my job at Ferris State University, I have gotten to know several dozen Colombians. Because we have a connection with a college recruiter in Colombia, our English as a Second Language program gets a lot of Colombian students. These young people come from hard-working middle class families. They are very proud of their country, and very concerned about its future. Many of them know people that have been murdered or kidnapped by the drug lords. Sometimes a family business or a parent's place of work has been bombed. The students I've known are representative of the vast majority of law-abiding Colombians, but sadly, they frequently run into prejudice from people that assume all Colombians must be drug dealers.

## DXing Colombia

Because of Colombia's position at the northern end of South America, and because its radio stations are generally well equipped and well maintained, Colombia is one of the easiest Latin American countries to hear in North America. Colombian stations are common in the 60 and, to a lesser extent, 49 meter bands nightly from about 0000-0500 and every morning from around 0900-1100. In radio, too, Colombia is distinct from the other Latin American countries. Here, more than any where else, the broadcasting scene is dominated by large networks. To DX Colombia, you must know who these networks are. Sometimes, the only IDs heard will be a network ID, such as TODELAR or Super Radio. See the WRTH for a precise breakdown of who belongs to which network.

The largest network is the Cadena Radial Colombiana, better known as CARACOL (which, oddly enough, means snail). CARACOL controls a huge network of AM and FM stations throughout the country,

including some of the most powerful transmitters in South America. Several of their stations broadcast over shortwave. Years ago, each station had its own distinctive programming and only joined the network for news and special events. Gradually, however, there has been a move towards the main stations relaying CARACOL Bogota all day long. The SW frequencies for CARACOL are 5075, 6075, and 6150. The first two are

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*The CARACOL network includes some of the most powerful transmitters in South America*

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from Bogota, while the last one, which used to be from Neiva, has reportedly been moved to Bandela, Cundinamarca. Two additional frequencies, 4755 from Bogota and 4945 from Neiva, are inactive.

Just east of Bogota, where the Andes Mountains and the Amazon lowlands meet, is the provincial capital of Villavicencio, which must be considered the SW capital of Colombia. Villavicencio is home to five shortwave stations, one of the heaviest concentrations in the world. The easiest one to hear is La Voz del Llano, affiliated with the Super Radio network, on 6117. It's best heard in the morning, but is sometimes on all night. The next easiest station, Ondas del Meta, is on 4885 and can often be heard mornings and evenings, although usually not so well. Farther up the band is La Voz de los Centauros on 5954v. This is a CARACOL station, and may have switched over to relaying CARACOL Bogota, so there may no longer be local IDs. Nearby is a Roman Catholic station, Radio Macarena, on 5975. Both stations are frequently heard in the morning. Finally, there's sporadically-active and hard-to-hear Radio Cinco on 5040. An ID is a must here, as Ecuador's La Voz del Upano usually dominates the frequency.

Two other Colombian radio towns of importance are Florencia and Arauca. Like Villavicencio, these cities lie on the edge of the Amazon region. Florencia is home to Ondas del Orteguaiza, 4975, and La Voz de la Selva, 6170v, each often heard in the morning. A third Florencia station, Armonias del Caqueta on 4915, has been inactive recently. Arauca is home to CARACOL station La Voz del Cinaruco. On 4865, it is the strongest Colombian signal on 60 meters. The Arauca radio scene is completed by La Voz del Rio

Arauca on 4895 and sporadically active Meridiano 70 on 4925.

Colombia's remaining SW outlets are, for the most part, irregular and difficult to hear. Two, however, should be mentioned. From Cucuta, Radio Nueva Vida on 5567v is an unlicensed Evangelical station. Apparently, they believe God pardons them for breaking rules on licensing and out-of-band broadcasting! Finally, Colombia does have a bonafide international broadcasting station, although few gringos know about it because it's just as irregular as some of the country's commercial SW outlets and frequently changes frequency. If you hear a Spanish speaking station with classical music on 16 meters, stick around for an ID - it might be them!

### **Please..Spell It Right!**

For QSL hounds, Colombian stations are average verifiers for Latin America. CARACOL, La Voz del Cinaruco, and Radio Nueva Vida are probably the best verifiers. In writing, just be sure to spell Colombia with an "o", not a "u", as in British Columbia or District of Columbia. The Colombianos I've known get riled at dumb gringos that can't learn to spell their country's name right!

What about the future for SW in Colombia? As in most of the rest of Latin America, the past twenty years have seen a marked decrease in the number of SW stations in Colombia. Colombia has such a highly developed system of AM/FM broadcasting, that there is little need for SW in most of the country. However, there is apparently a law that requires all networks maintain a SW frequency for Colombians overseas. All the networks do, in fact, have several SW frequencies; they're just usually inactive! In the Amazon region, shortwave should continue to play an important role in broadcasting, as it does now. In fact, if some sort of peace accord is reached with Colombia's drug lords and leftwing guerrillas, the eastern Amazon region will be opened up for settlement. Quick growth could lead to jungle boom towns, which invariably have SW broadcasting.

Looks like this is it for another column. Don't let the summer static stop you - go hunting the bands for emisoras Colombianas!

Hasta luego! Don

# Listener's Classroom

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**J**ohnathan Cadwallader wrote asking about the type of shortwave receivers one should use. Well, John, I have personal preferences as well as other members of NASWA. I won't recommend a specific receiver, but give some general thoughts on the matter.

Usually beginners don't start right off with top-of-the-line, state-of-the-art receivers. My first receiver doesn't compare with the one I use now. And that's OK. In fact, I'd suggest strongly to anyone just coming into the hobby to start with simple equipment. It is important, though, to know something about the difference in quality between simple and sophisticated receivers. There is also some quality difference between the various brands on the market. Apart from that, there are different kinds of receivers for different purposes.

Many advertisements will show you small shortwave receivers. These receivers are basically just for the fun of listening to the various stations. There is nothing sophisticated to "get in the way" of just the thrill of listening to someone oceans and continents away.

The real "window on the world" is opened by what is termed the "communications receiver." This type of receiver is specifically designed for reception of shortwave and several other modes.

Both types of receivers can be compared to my electronic typewriter and my computer: I know I can do a lot on both, but the latter takes quite some time to handle well to get the best results. Normal receivers can be measured by three important qualities: sensitivity, selectivity, and stability.

The sensitivity of a receiver is its ability to make intelligible sounds out of the wanted signal. If your receiver works well on weak signals, then it is said to have good sensitivity. If you can't make out a signal from the surrounding noise, then the sensitivity is said to be lousy.

Most receivers on the market today have pretty good sensitivity. Some early tube and transistor receivers I used had what I identified as "variable sensitivity." The source of the noise sometimes was a problem, and some-

times it wasn't.

The sensitivity of a receiver is usually expressed as the voltage that produces an audio signal that is at least three times as strong as the noise. If the receiver produces this result with a signal voltage of about 5 to 10 microvolts ( $\mu\text{V}$ ) at the antenna, the sensitivity is just great. With the coming of the 500kW transmitter, sensitivity became less a problem for the average SWL. So, selectivity came into its own.

Selectivity is the ability of the receiver to separate stations on frequencies that are close to each other. With the large number of stations now on the air, this presents a challenge for modern receivers. Selectivity is expressed on many receivers as "bandwidth." Bandwidth is that portion of the frequency spectrum that is processed in the receiver when selecting a station. This bandwidth is actually twice the width of the audible spectrum.

With a bandwidth of 6 kHz, the audio frequencies (what you can hear) between 30 and 3,000 Hertz are audible. One of the early model shortwave radios that I used to own had a bandwidth up to 16 kHz. I could not only hear the intended station but also the ones on the other two co-channels!

Modern receivers, though, cut down the bandwidth with such grace and finesse you kinda wonder why this technology wasn't made available sooner. On some receivers, though, cutting the bandwidth also will allow the sacrifice of audio quality as the higher tones are no longer reproduced. For stations that are only 5 kHz apart, this is no longer a luxury. It's a necessity.

Some of the more expensive receivers have a variable bandwidth that you can control. Ted Benson's "Technical Topics" can address that if you want more information and ask nicely.

Then we come to stability. With today's modern electronics stability isn't that much of a question anymore. With the earlier models the time it took for the receiver to settle down (stability) before you could listen to your favorite station was anywhere up to fifteen minutes! That's it. 73's!

# Listener's Library

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Howdy! As you will notice immediately, the Library is only one-third its normal size this month. May is one of the two months per year that we publish the full SWBC schedule developed and maintained by Tom Sundstrom. We are helping the page count by down-sizing Listener's Library to one page this month. Having too much material and a flood of new members are the kinds of problems that every radio hobby club would really like to have. It's wonderful to see that people do recognize the quality and effort that a whole host of present and former staff have invested in the FRENEX/Journal rebirth. Folks are voting "with their feet." Terrific.

## LIKE A PHOENIX!

Speaking of rebirth, the *Hollow State News* was reborn in February. Until fairly recently, *HSN* had been published as a quarterly by Chris Hansen and edited by Dallas Lankford. However, due to changing personal circumstances, both Chris and Dallas decided they could no longer continue with it. For almost a year, no one stepped forward and we all thought that *HSN* was lost to us as a hobby resource. Recently however, Ralph Sanserino of loop design/construction fame agreed to publish *HSN* if Dallas Lankford would continue as editor. Dallas agreed.

Why is this important? *Hollow State News* is about the only on-going resource available on restoring, maintaining, and upgrading major World War II and post-war hollow state communications receivers! If you now have or think that you will ever have a HQ-180A or Super-Pro SP-600, a Hallicrafters SX-28A, any Collins receiver, an R-390A or any other top-of-the-line hollow state gear, a complete set of *HSN* is an absolute must! Ralph and Dallas are currently offering all back issues at \$1.25/issue. They have not yet developed a good index, but that's in the works. If you even think you would/will ever have any interest in tube gear, I recommend that you send in the \$5.00 annual subscription NOW. That entitles you to four quarterly issues.

If you sign up quickly, I'd further suggest that you ask that your subscription start with the Feb. 91 (most recent) double issue, No.'s 24 and 25. That double issue contains several short but important articles on the R-390A, a report on extending tube life, an excellent two

page discussion of soldering by Lankford that should be required reading for everyone who owns a soldering iron and a three page review of the Rohde and Swarz EK-07-D/2, a German professional receiver from the 1960's, which is certainly the Rolls Royce of tube receivers. The double issue also contains a brief Collins 51J-4 mod article and two pages of general restoration/cleaning tips from Lankford and Joe Bunyard. If you are interested, the place to write is Hollow State News c/o Ralph Sanserino, Publisher, 11300 Magnolia #43, Riverside, CA 92505. (\$5.00/year, 4 issues, back issues are \$1.25.)

## POTPOURRI

David Clark of Toronto dropped by the Library with another super tip from *New Yorker* magazine. The April 8, 1991, issue has an excellent nine-page article on Hong Kong. "Letter from Hong Kong" details the current international furor over HK's plans to replace Kai Tak airport as well as an insider's look at the behind the scenes corporate and personal maneuvering as HK prepares for the 1997 return to the PR of China. Super article. Drop by your public library and read it.

Harold Sellers sent us a review from the Toronto newspaper, *The Globe and Mail*, of a book called *Inca-Cola, A Travelers Tale of Peru* by Matthew Parris (McClelland and Stewart, 225 pp. \$36.95 Canadian). The title alone ought to send all of our Latin freqs running to the local bookstore, credit card in hand. The author is a former British diplomat and politician who details his adventures during his fourth trip to Peru and Bolivia. The trip takes Parris from the rather squalid environs of urban Peru and Bolivia to the beautiful Andean highlands and finally to the jungle gold mining village of Maldonado. A great "tell it like it is" travel book.

The same *Globe and Mail* article notes the publication of two more of the super Lonely Planet paperback guide books: *Viet Nam, Laos and Cambodia* and *Nepal*. Reviews anyone?

I'm afraid that there is not enough space to start another item so I'll just let you know that the June Library will FINALLY feature our Moonies... Moonbeam Press from New York and Moon Publication from CA (natch)! 73s til the moon in June! Rain in Spain?



## Don't Touch That Dial!

Once an admonishment from radio show sponsors, this advice can serve SWLs who listen to CW and SSB signals.

### JUST WHEN YOU THOUGHT IT WAS SAFE...

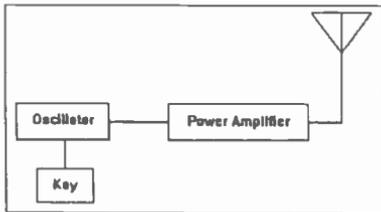
I think all of us breathed a sigh of relief when affordable digital-display shortwave receivers became available. No longer did we have to put up with "bandsread tuning," "calibration markers," and 1 khz dial resolution. At last we had the ability to tune a signal with certainty down to 100 or even 10 hz accuracy. If we read that Radio Backwater was operating on 9,855.22 khz, we simply dialed-up 9,855.22 and viola! There was our station centered in the receiver passband and ready to go.

But a strange thing happened when we tried to tune the Strategic Air Command (SAC) on SSB (single sideband). The book said that SAC could be heard on 10,210.00 khz, but when we tuned 10,210.00 and switched the radio to USB (upper sideband) the signal we heard was very garbled. We might have to tune to one side or the other to make the signal clear. Why couldn't the book list the right frequency to begin with? They did! It was your receiver that was to blame. What? A \$1,000 receiver with a defective frequency display? No, it wasn't defective. It has to do with how the receiver displays frequencies in the CW and SSB modes. This, in turn, has to do with how CW and SSB signals are transmitted.

### CW

CW, or continuous wave, was the earliest form of signal transmission on radio. It consists of a single frequency

carrier, switched on and off to convey intelligence (well, sometimes...). The following figure shows how the CW signal is generated.



Basic CW Transmitter

Note that there is no "modulation" in a CW signal, as there would be in an AM signal - there is not microphone connected to input sound to the transmitter. This is the very reason that CW is so efficient when it comes to bandwidth. It is a very narrow signal, meaning that many CW signals can fit into the same space occupied by one AM signal.

Receiving CW signals requires more, on the other hand, than receiving AM signals. Because the CW signal has no sound of its own (remember, no modulation), tuning the signal without additional circuitry would yield a "thumping" sound and nothing else. Although you could copy such a sound if conditions were very good, adding the usual noise to it makes this impossible. Instead, receivers utilize a BFO, or Beat Frequency Oscillator circuit, to make the signal more audible. The BFO mixes a steady frequency signal with the received signal. Generally the BFO signal is slightly higher than the receiver's IF frequency, with the result that when the combined signal is detected in the receiver a heterodyne, or tone, is output. This tone is the familiar sound that everyone associates with "Morse Code" reception.

## SO WHAT?

How does all this affect how we tune CW signals? First, we must know how much offset our BFO has from the indicated frequency. Early receivers had variable VFOs, meaning that you could continuously vary the pitch of the tone you heard from a CW signal. With this control you were actually varying how much above the receiver's IF frequency your BFO was injecting its signal.

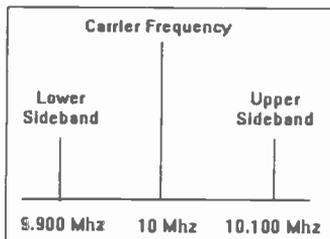
Modern receivers have a fixed BFO, with its frequency of operation dependant upon the mode you have selected. For CW mode, most receivers operate their BFOs at 800 hz above the IF. This means that they are designed to yield an audio tone of about 800 hz when the signal is properly tuned. And herein lies the problem! The only way you can be guaranteed that the frequency on your display is the actual carrier frequency of the station you are trying to receive is if you tune for exactly an 800 hz tone! This can pose a real problem if you are tone deaf. What can you do to be sure that you have tuned correctly? Simple: tune the CW signal for maximum strength in *AM mode*, then, without changing your tuning, switch to CW mode. Why does this work? Because in AM mode you are tuning to center the signal in your receiver's IF passband. Doing this with a CW signal means that there is no tone to distract you.

The actual offset your receiver uses may not be 800 hz, or it may be 800 hz *below* the carrier frequency, so check your owner's manual if you are in doubt. And when checking a CW frequency against a frequency book be sure that the book lists the *carrier* frequency of each station.

## SSB

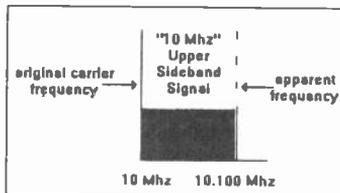
As you might have guessed, SSB or Single Sideband is a little more complicated than CW. When generating an AM signal, an audio signal is used to modulate, or change, a carrier. The result is a signal containing all the frequencies present in the original audio signal fed to the transmitter.

This signal can be shown in a different way. Let's assume that we have a carrier transmitted on 10 Mhz, and that we are modulating the carrier with a 100 khz audio signal (just a single tone for simplicity). Our transmitted signal will actually consist of three frequencies: the carrier (10 Mhz), the lower sideband (10 Mhz - 100 khz), and the upper sideband (10 Mhz + 100 khz), as shown in the following figure:

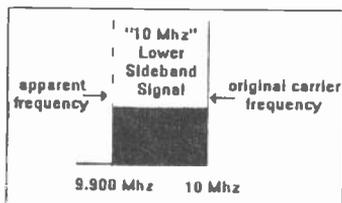


AM Signal With A Single Tone

To receive the signal in AM mode, we need the carrier, and we need the audio contained in the sidebands. But the sidebands are *exact* duplicates of each other! This means that we are wasting half our power (and bandwidth) by broadcasting both sidebands. If we remove the carrier and one of the sidebands we are left with just one sideband, which is obviously more narrow than the AM signal was:



10 Mhz USB Signal With A Single Tone



10 Mhz LSB Signal With A Single Tone

This is great, because more energy is packed into a smaller band. This means that more signals can be fit into a band than in AM, and the signals will punch through the noise level more efficiently. But like CW, special circuitry is needed to receive this signal.

Note that earlier I said that the carrier is removed before transmitting an SSB signal. The carrier itself carries no intelligence, and was essentially wasted energy. We must replace this carrier in order to receive the signal. In SSB, this is actually done in the receiver itself!

When an SSB signal is tuned, the BFO (remember the BFO?) mixes a steady signal with the SSB signal, serving as its new "carrier." The signal is now detected as would be an AM signal, and the result in a well-designed receiver sounds as normal as any medium-fidelity AM signal. But unlike CW reception, the BFO must be able to operate on two different frequencies. Why? Well, to receive Lower Sideband (LSB) signals, the BFO must inject a signal above the apparent frequency of the LSB signal where the original carrier used to be (see the above figure for LSB signals). For most receivers this offset BFO frequency is about 1.5 khz. And for receiving upper sideband signals (USB) the BFO must inject a steady signal below the apparent frequency where the original carrier used to be.

Just what is the apparent frequency? That is the frequency at which you would hear a sideband signal while listening in the AM mode. This is actually the *center* of the *sideband* itself. But in AM you can't hope to understand anything being sent. It all sounds like Donald Duck. So you switch to USB or LSB depending on the signal, and tune until you hear something understandable. In doing so you have tuned to where the original carrier used to be, and you have the *actual frequency* of the sideband signal.

## SO WHY DOES SAC SOUND SO SAD?

Let's assume you have looked in a frequency listing book and found a listing for SAC. You notice that it is commonly in the USB mode, so you

tune and set your receiver accordingly. But something is wrong. You can barely hear the signal, and it is distorted. Why? Most likely because the frequency book is gave the *apparent* frequency of the signal, not the actual frequency. But why would they do this? Because in the old days, BFOs were often variable, and most people calibrated them by "zero beating" a known signal like WWV. In this procedure, they tuned to WWV in AM mode, then switched the BFO on and adjusted it until the BFO tone disappeared. This meant, though, that the frequency displayed on the receiver was now 800 hz off for CW, or 1.5 khz off for sideband. So the authors were doing you a favor by giving you the apparent frequency instead of the actual frequency.

So as for CW you must determine if the book you are using is giving the actual frequency of the SSB signal, or the apparent frequency.

## SOME LINGERING DOUBTS...

In a previous column we examined the various types of noise encountered while shortwave listening, and as a result I received several inquiries about specific types of interference. Since some were rather common, I thought we could take a second look at them here.

## RECEIVER OVERLOAD

We discussed previously interference that occurred at periodic intervals across the shortwave bands. But one type of interference we didn't discuss was a type that doesn't always look like interference.

When a receiver suddenly appears dead regardless of the frequency or band being received, try disconnecting the antenna (or collapsing it if it is a portable) and tuning WWV at 5 or 10 Mhz. If you suddenly hear a signal, you are suffering from receiver overload. In this type of interference, the signal from the offending source (often a commercial broadcast station) so overwhelms the front end of the receiver that no other signal can get through.

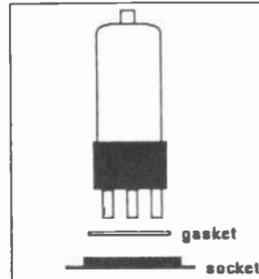
The receiver essentially swamps itself, and the result is unsettling quiet! In some cases using an antenna preselector will help the problem, as will grounding the receiver to a *good* ground.

## SCANNER NOISE

A fairly common problem these days is the noise produced by scanning receivers. For those of you who are shortwave purists, scanners are receivers that rapidly sample numerous VHF and UHF channels programmed by the user. The circuitry that causes the receiver to scan also generates unbelievable levels of noise, usually appearing as quickly pulsating, repetitive noise occurring at regular intervals across the shortwave spectrum. Again, grounding (*both* receivers) is the very best method of lessening this noise. If this is not sufficient, you may have to move one receiver or the other apart - perhaps across the room.

## THE HIDDEN MICROPHONE

Several readers using older, tube-type receivers asked about a problem very common for these receivers - microphonics. A vacuum tube can make an excellent microphone, picking up any vibration or jarring of the receiver and amplifying it through the audio section. In extreme cases the normal audio from the receiver's speaker can be picked up, re-amplified, and spit out as very objectionable noise. Unfortunately, most vacuum tubes are capable of microphonics, though older tubes or tubes in poorly designed circuits seem more prone to the problem. Early manufacturers tried several schemes to lessen the problem, including mounting the tubes sockets to the receiver chassis with rubber grommets. Often the problem can be alleviated by changing tubes, but considering how expensive and difficult to find many tubes are now, this isn't always an option. It is often better to fix what you have. Try taking a clue from the manufacturers - cut a rubber gasket to fit between the tube and the socket, with the tube pins passing through small holes in the gasket, as the next figure shows.



Using a Tube Gasket

## RADAR NOISE

People spend hundreds of thousand of dollars each year on radar detectors in the United States each year. This is wasted money. All you need is a public address amplifier with long speaker leads, or a shortwave receiver without a metal case and you will be able to tell if the U.S. military is "interrogating" you with its radar.

We have all heard radar noise at one time or another, whether we realized it or not. Listen to a public address amplifier turned up moderately high. Every once in a while you will hear a brief, high pitched buzz, as though a mosquito had just flown by the microphone. This, believe it or not, is radar! The enormous energy of a radar signal can enter the amplifier circuitry either through the case or the speaker leads, where it is converted into a high-pitched buzz by the diodes in the circuitry. In effect, the amplifier acts as an elaborate "crystal set" and tries to receive the radar signal. Fortunately, unless you are in a path of constant scanning - like an airport approach - the signals won't last long. If they do, try grounding the receiver and the problem should go away.

## NEXT MONTH

Next month we will examine more of the interesting questions that have been posed by readers, but that don't necessarily lend themselves to a single subject-specific column. And don't forget, this column thrives on your input. It is only as good as you help make it!

# Guest Article

To submit feature articles, contact  
**Dr. Harold Cones**, Editor-In-Chief  
2 Whits Court, Newport News, VA 23606

## An In-Dash Receiver - The Phillips DC-777

by *Ralph Brandl*

I purchased my DC-777 from Universal Shortwave in Reynoldsburg, Ohio, back in January. At the time, they said that they didn't have any in stock, but that the radios were at least in the country, and being modified so that MW channel spacing would be 10 kHz instead of the European 9 kHz. Since they said they wouldn't charge my credit card until they shipped the radio (and even knew that this fairly common practice is illegal), I went ahead with the order. The total cost was \$399. Toward the end of January, I got a call from Universal saying that the radio was finally in, but that Philips had discontinued the quick-release bracket. They said they would take \$20 off the price of the radio if I was still interested. Sounded good to me. Kudos to Universal for their openness, their honesty, and their commitment to customer satisfaction.

When I received the radio the following week, I was faced with the problem of how to install it. My car, a 1990 Geo Prizm, does not have a standard DIN E sized radio. The other consideration was that I wanted to be able to reinstall my old radio when the time comes to sell the car many years hence and so take the radio from car to car. So I needed a wiring harness to avoid having to cut the wires to the original plug, so that I can just unplug the harness and replug the original wiring into the original radio. I had a lot of trouble finding a wiring harness and installation kit for my car locally. I wound up ordering the items I needed from the mail-order stereo house Crutchfield, in Charlottesville, Virginia, who have a large selection of items to help install car stereos. Again, courteous service, etc. More kudos.

### Installation

Thus suitably prepared, the installation turned out to be a comparative breeze. I think the whole thing took me about two hours—one to wire the harness, and one to physically install the radio. The plugs included with the radio were missing a couple of necessary wires, but that was remedied simply enough. The front of the radio is wide enough that it prevents it from slipping entirely into the harness without shaving some of the plastic in the hole for the radio. Minor enough problem, though.

I've had this radio installed for a month, lived

with it, used it on my brief three-mile commute to work and a couple of 200-mile long trips. The verdict? Mostly positive, but with a few reservations and a few suggestions.

### Performance

Medium Wave and FM performance is okay, but not outstanding. You can't manually change between stereo and mono on FM; the circuitry that handles the switch is pretty good, and seems to try to minimize thrashing back and forth. The station I use to test sensitivity is WHYY-FM, 90.9, the NPR station in Philadelphia, about 90 miles away. At home, I cannot receive it with my stereo; my Sony 2010 can get it quite well in one part of the house, but not in the other. The factory car radio can give a listenable signal up to about five miles away from my house on a regular basis. The DC-777 doesn't perform quite as well. I can receive the station up to about 15 miles away from my house in the direction of Philadelphia. Not bad, but I was hoping for better. The capability to temporarily load the strongest five stations in the area on MW and FM into memory is nice when you're away from home, but not essential to my mind.

The cassette deck's performance is pedestrian. No Dolby. Acceptable, but not outstanding. There are no provisions for bringing external signals into the radio, but you can work

### *Performance on SW is impressive*

around this with one of the cassette adapters designed to work with portable CD players. I haven't tried this; I decided that I already have enough toys to play with in the car, and that bringing a Discman along would be overkill.

Performance on shortwave is impressive. You're not going to be doing any DXing on this by any stretch of the imagination, but for the major stations it does quite nicely. It helps to be listening to stations directed at North America or broadcasting from here. For instance, at lunchtime here in New Jersey, I get excellent reception on the BBC on 9515 and 15260, VOA on 15580 and 17800, Radio Moscow on 17810, and Radio Canada International on 17820 and 15325. I enjoy being able to listen to "Just A Minute" at

1715 while eating my lunch in a nearby park. The radio seems to be optimized for this kind of reception. Frequency response is wide enough to allow for pleasant listening, but narrow enough to minimize adjacent-channel interference. In sound quality, I have trouble telling the difference between the BBC and RCI and local MW stations WNYC and WCBS. The shape factor of the filter used seems to be fairly steep, as well. Receiving other stations can be a bit more problematic; the BBC, for example, is much more difficult after 1745 when 15260 and 9515 go off the air. Deutsche Welle in French to Africa on 21660 is marginal at lunch. Evening reception of stations like BBC on 7325, RCI on 5960 and 9755, Kol Israel on 7435 and (in Hebrew) 9388, Radio Nederland on 6020, et. al., is just as pleasant as the stations I listen to at lunch. The radio doesn't seem to be able to do much with weak stations, but this is an acceptable tradeoff, and one I suspect was made to make for better reception of the strong stations. So for the SWL (as opposed to the DXer), so far, so good.

## Ergonomics

The ergonomics of the radio, however, leave something to be desired. Granted, the radio has a lot to do, but some of the controls are less than apparent. Most buttons have multiple functions. The volume control also controls, in conjunction with one other button, balance, fading, treble, and bass. Manual tuning is accomplished by pressing both slewing buttons together until a beep is heard, and then pressing the desired buttons. Pressing the slewing buttons will otherwise engage the search function. The search function works very nicely, better than any shortwave scanning function I've seen elsewhere (certainly better than the one on my Sony 2010, which is near useless.) It comes in handy for bandscanning while driving down the road. To directly enter the frequency, a capability I welcome, you have to open a small panel with a number pad on it, along with an enter key and a key to switch to a time display. The keys have a spongy feel, and I have yet to get to a point where I feel comfortable tuning this way any other than at a traffic light. I also worry about the durability of the panel and what happens if or when it breaks and will no longer open. It does seem reasonably strong, however, so I think that day is a long time coming.

## Thanks For The Memories

There are 20 memories available for SW; the way this is implemented actually makes sense to me, and I like it. There are five buttons. Each of

the first four can store five frequencies. The fifth button cycles among the five frequencies stored on a given button. For example, on button one, I have loaded 5975, 7325, 9915, 12095 and 15070, all BBC frequencies receivable here in North America. To find which frequency works best, I hit button one, and then use button five to cycle through the frequencies, going to the next frequency each time I press the button. The radio beeps each time it cycles. I find the beep annoyingly loud, and wish there were a way to reduce the volume. But overall, the memory functions very well.

To choose bands, there are two buttons. The one labeled "Band" selects between MW, LW, and FM. The one labeled "SW" selects meter bands. Nice. The scanning function searches through the chosen meter band and then starts back at the other end of that band. Nice. Unfortunately, the limits of each meter band is hard-wired into the radio. Not nice. For instance, 31 meters is programmed from 9500 to 9900 kHz. This means I can't use the scanning feature to find the BBC at 9915 or the Christian Science Monitor on 9455. I would like it much better if the ends of each meter band were programmable by the user. But then, they'd probably have to come up with some other less than intuitive button-pressing combination. Minor nit on an otherwise good scheme.

Overall verdict? I like the radio. I wouldn't want to be without it or something like it now. Since I want to be able to listen without having to concentrate too terribly hard while I'm driving, I think that the compromises built in to the radio are appropriate. I don't think that DXing Radio Nibi-Nibi in rush-hour traffic would be quite appropriate. Besides, I can't take notes for that all important QSL while I'm driving... This radio has obviously had a lot of thought put into it, and it shows. Using it has been a very pleasurable experience. But make sure you read the manual thoroughly, and more than once, because otherwise you won't be able to take advantage of some of the features. I still find myself going back to the manual periodically after having the radio installed for five weeks. My 2010 is easier to operate in many ways. But Philips has done an admirable job of building so much functionality into such a small package. And for mobile shortwave listening, there really isn't any other alternative right now. But anyone else aiming at this market has a pretty difficult target to hit. The Philips DC-777 does the job it was designed for and does it well. If you understand its limitations, it's just what the doctor ordered. Four stars.

# Equipment Review

Rich Arland  
25 Amherst Avenue  
Wilkes-Barre, PA 18702  
Compuserve 71271,1651

Do you want to improve your shortwave reception?? I mean REALLY improve your shortwave receiver performance?? If the answer is to this question is "yes" then read on. Grove Enterprises, PO Box 98, Brasstown, NC, offers several SW receiver accessories. Among them is the upgraded antenna tuner, the TUN-4, specifically designed to enhance the performance of your SW receiver.

How many of us have an antenna tuner, coaxial switch and pre-amp all wired into the main HF receiver? Bob Grove of Grove Enterprises has taken the tuner, antenna switch and pre-amp and rolled them all into one fine looking box, that makes an outstanding accessory for the HF listener. The TUN-4 is the second generation of antenna tuners offered by Grove Enterprises. I have used the previous model, the TUN-3, for several years with excellent results. I am happy to say that the TUN-4 not only performs as well as it's predecessor but offers antenna switching, receiver switching and pre-amplification (for older tube-type receivers), as well.

Why an antenna tuner at all?? True, today's modern HF receivers have plenty of gain and bandwidth to cover the entire HF spectrum. However, the new technology used in the current crop of receivers, does away with tuned circuits in the RF front end. This can cause degraded receiver performance in the presence of large signals. The TUN-4 can add these tuned circuits ahead of the receiver RF stage, providing additional selectivity and immunity to reception of unwanted signals. This spells improved receiver performance. Since the TUN-4, when used as an antenna tuner, is a passive device, no additional noise is added to the receiver prior to detection and amplification of the signal. This added selectivity with no additional noise injection is a BIG plus to the HF listener.

The TUN-4 also offers two antenna selections, via a front panel switch. This means that you can hook up two (2) HF antennas to the input ports of the TUN-4 and select between them for best results. This affords the antenna experimenter the option of hooking up a new antenna to one port and a reference antenna to the second port and compare the on-the-air results instantaneously on the same signal. The ability to change antennas quickly, also affords the dedicated DXer the opportunity to reduce fading on DX signals and get that rare one into the logbook.

How many times have you wanted to compare receiver performance on a single antenna? With the TUN-4 switching between two receivers can be done instantaneously. This is accomplished by the dual receiver ports on the back of the TUN-4. Simply hook up two of your favorite receivers to the TUN-4 receiver ports and listen to your little hearts content.

Front Panel controls consist of SIGNAL LEVEL, ANTENNA SELECT, FUNCTION, BANDSELECT, & TUNING. The SIGNAL LEVEL control is actually an RF attenuator that controls the amount of signal going through to the receiver. This control is extremely useful in precisely controlling large signal inputs to the receiver, especially when the receiver has only a 10dB or 20dB attenuator switch. ANTENNA SELECT control selects one of two antennas or grounds out both antennas during non-listening periods. The FUNCTION control selects one of three modes: bypass, pre-select & amplify.

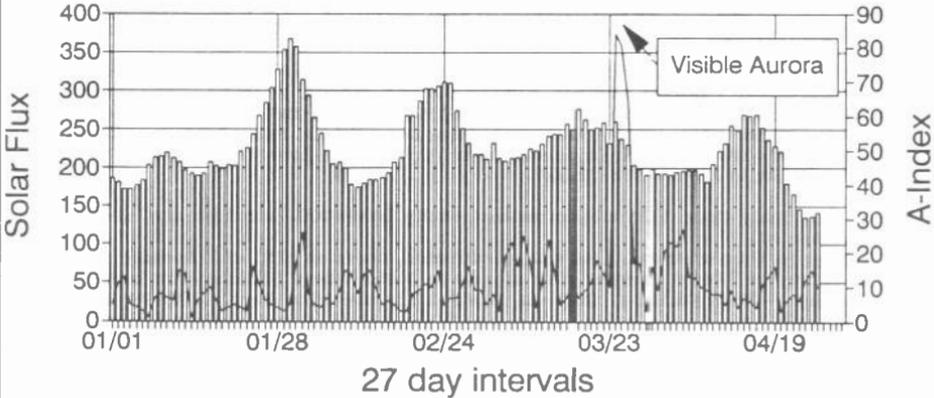
In the bypass mode, selected antenna is connected directly through to the receiver. The pre-select mode is the most common, offering tuned circuits ahead of the receiver RF amplifier. The pre-amp circuit uses 12DC and must be powered from a 12 V source (wall-block AC adaptor supplied with TUN-4) in order to operate. The amplify mode is used to amplify the incoming signal ahead of the receiver. Consequently, this also increases band noise and adds to the overall noise figure of the receiver. This mode is rarely used. It's primary function is adding gain to signals above 15 MHz for older tube-type receivers who's sensitivity suffers at frequencies above 15 MHz. The BANDSELECT control selects various tuned circuit combinations for a specific band coverage, ie. 100 KHz to 400 KHz, 400 KHz to 1.6 MHz, 1.6 MHz to 6 MHz, & 6 MHz to 30 MHz. This control is used in combination with the TUNING control to peak the incoming signals on the receiver S-Meter. This shows that the proper L-C circuits are in place to offer the best possible reception.

How does it work?? Well, the proof is in the pudding. My TUN-4 works very well, peaking the incoming signals to the receiver. I have used it exclusively for over 2 months, replacing my faithful FRT-7700 Yaesu antenna tuner. The TUN-4 is much easier to use and adjust than the FRT-7700, therefore, it has a permanent place in my shack. Since I do some serious antenna experimenting, the dual-antenna switch is a god-send, offering me the ability to quickly check one antenna against another on a single signal. The variable attenuator also offers additional flexibility enabling me to control the amount of signal reaching the receiver. This is especially useful on the 49 meter band during winter months. One thing that I did notice with the pre-amp in use, was the tendency to pick up local AM broadcast signals. Nothing like hearing WBAX (1240 KHz) right in the middle of BBC on 5975 KHz!! Careful tuning of the L-C network is the key here. Large local AM BC signals cause the pre-amp to act in a non-linear way and, if not tuned properly, these AM BC signals can invade the SW spectrum.

The TUN-4 cabinet is black with white silk-screened front panel and is a handsome addition to the shack. Priced at \$139.95 (including the AC wall adaptor & coax interconnecting cable) plus UPS from Grove Enterprises this optional accessory should find a place in almost every shack.

## Solar Flux & A-Index: Jan-Apr 91

Recorded from WWV



by Sundstrom



# Listener's Notebook

Dan Ferguson  
P.O. Box 2604  
Dale City, VA 22193  
CompuServe 76702,771

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All times, dates, and days of the week are UTC (GMT), dates are MM/DD or MM/DD/YY.

**AFGHANISTAN** - R.Afghanistan, via USSR, on 15440, 1900 EG, 1930 FF; good 3/17. (Ernie Behr)

**ALASKA** - KNL5 now on 9870 for CC 1100-1200, ex 7365. (Craig Seager in ADXN's "DX-Press")

**ALBANIA** - Monitoring reveals R.Tirana to NA is at 0230-0300 & 0330-0400 on 9585 & 11825; 2330-2400 on 9760 & 11825. (John Norfolk, Oklahoma City, OK)

**ALGERIA** - RTA Alger on 17745v from 1900 PF pgm & pop mx to 2305\*v, //15160, both strong 3/17. 3/20 on 17745.5 w/AA pgm to 2003\*, some days to 2103\*v. RTA also hrd on 9535v & 15205v, 15215v, from 2000 in AA past 2400, since 3/18. "La Vox del Sahara Libre" on 15215v only from 2200 in SS & AA, 3/17, but not daily. (Ernie Behr, Kenora, Ont.)

**ANGUILLA** - Gene Scott announced on KVOH (9785 0500-0548 t/o, 4/5) that the gov't of Anguilla has approved the sale of the Caribbean Beacon to Westcott [sic] Christian Center, the trustee for his University Network, for \$782,187.04 in cash for 99,999 shares of the Beacon - leaving one share remaining in Anguilla. Said also he will add at least one SW transmitter (no power mentioned), a satellite up/down link, & will upgrade existing facilities (MW 690 & 1610 & an FM outlet). Says upgrade to cost \$1 million & \$300-400 K for SW. Will not affect current releases of Univ. Network on KVOH & WWCR. (Travis D. McLemore, Jr., Clearwater, FL)

**ARGENTINA** - LOL, Buenos Aires, 15000 Khz, heard 0024 & 0029 4/19, the first with fair signals, the second much weaker. Call sign in Morse, keying an audio tone. Strong interference from WWV, weak interference from WWVH. (Mike Fern--CA)

**BANGLADESH** - Dacca's English transmission at 1230-1300 is on 17750 & 15647, though 15200 is announced. (Tetsuya Kondo, Japan)

**BHUTAN** - Indian newspapers rptd this week that India gave Bhutan a 50 kw sw xmtr. It's been heard w/good sigs in Australia. Stronger sig on 5025 NF ex 5023. Reception is very good in Sri Lanka even on a small analog rx. Sked 1100-1500, EG 1415-1500; reception best in the early evening in Sri Lanka. (Peter Baum and Victor Goonetilleke, RNMN 3/29 via Mike Fern) Thimphu now quite easy w/new xmtr on air, noted 1413 local mx, into EG world nx 1416. (Mike Ogrizek, Australia, in ADXN's "DX-Press")

**BOLIVIA** - R. Santa Cruz, 6135 kHz, broadcasts daily 1000-0200. (Ltr from stn, via Marlin Field, Hillsdale, MI)

R. Mamore, Guayaramerin, 4740 kHz, reactivated, heard at 2230 with Spanish popular music; ID simply as "Radio Mamore", fair signals in Quito, where Bolivians are best in the early evening. (Ken MacHarg, QLB via DXPL 4/13, via Mike Fern) [WRTH 91 says 2200-2400\*--mf]

R. Perla del Acre, Cobiya, 4600 kHz, heard about 0000 UTC with pop music, but strong heterodyne from a second station. (Rich McVicar, QLB via DXPL 4/13 via Mike Fern)

R. Aboroa, Riberalta, 4720 kHz, heard at 2356 with Andean folk music. (Ken MacHarg, QLB via DXPL 4/13 via Mike Fern)

R. Santa Ana, Santa Ana de Yacuma, 4649 kHz, heard at 2357 with 'comunicados' (personal messages); ID and time check (Rich McVicar, QLB via DXPL 4/13 via Mike Fern) [WRTH 91 says 1100-1800, 2100-0230\*--mf]

Santa Ana de Yacuma, 4473 kHz, presumed R. Movima with pop music and love ballads; no IDs between songs; signal varied from poor to good. (Ken MacHarg, QLB via DXPL 4/13 via Mike Fern) [WRTH 91 says 1030-1900, 2200-0230v--mf]

R. Difusora Alfonso Padilla, Padilla city, 3474 kHz ex 3471.5, at 0137 with slow instrumental music, ID mentioning frequency, announcements mentioning the city. (Rich

*A NASWA Exclusive!*

# ENGLISH LANGUAGE SHORTWAVE BROADCAST SCHEDULES

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*Compiled by*

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The *Journal* of the  
**North American Shortwave Association**

**May 1991**

Contributions from NASWA members and broadcasters are welcome. Schedules may be mailed or telefaxed or delivered by electronic mail. The telefax line is dedicated. The information is posted on the Pinelands RBBS when received. The deadline for the *Journal* is the Friday before the last Saturday of the month. Broadcasters, please place me on your mailing list for schedules. Thank you.

# English Schedules

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Prepared 04/26/91 at 9:19 PM.

Thanks to **John Carson (OK)**, **Kris Field (PA)**, **Gordon Darling (Papua New Guinea)**, **Tetsuya Kondo (Japan)**, **Brian Goslow (MA)**, **Andy Sennitt (WRTH)**, **Jonathan Marks (R Nederland)**, **Joe Hanlon (NJ)**, **David Alpert (NY)**, **Allen Courtney (KY)** and **Richard Cuff (PA)** for material received.

## Notes

**R Tirana** noted at 0230 and 0330 on new 9580 (ex-9760), parallel to 11825 kHz. However 11825 is bothered by **RHC-11820** and at 0330 the **VOA African Service** on 9575 clobbers 9580. At 2130 7245 replaces 7215. **RNZI** offers a good signal on 15120 18-21 UT when the **VOA** starts up in French, and again after 02 on 17770 when the open carrier from someone unknown gets pulled. **RNZI** plays some marvelous music from the neighboring islands. **RNZI**, according to **HCJB's DXPL**, is moving to 13785 at 18-22 UT in May. **R Polonia** doesn't announce its frequencies, but new 9675 is now used at 2230 and 2305. Only 7270 in parallel is heard here. **Radio For Peace International** was heard with regular programming the day and evening after the April 22 7.4 Richter scale earthquake hit Costa Rica. **RAI** has dropped its 0350 UT release to South Asia.

**R Tashkent** at 0100-0130 is very difficult to hear due to adjacent channel interference. It's hard to believe, as some suggest, that this is targeted to NA. 11975 is the best, but **R Moscow** on 11980 with Spanish to LA really tears this up. The frequencies are different

than announced on some of the weekly **DX** shows.

I received a fax from **Tetsuya Kondo** of the *Asian Broadcasting Institute*. Tetsuya is a regular contributor to **Radio Japan's DX Corner**. I appreciate your words of support and I'm glad you find the column useful to you. Among the **DX** news you sent I see that **R New Zealand Int'l** is expected to start a weekly broadcast targeted to Japan. This probably will start in May or June, airing for one hour at 1100 UT on either Friday, Saturday or Sunday. The language will probably be in English. A second item reports **R Japan** is planning to install three additional 300 kw transmitters at its Yamata site. Four 300 kw and four 100 kw units and 17 antenna units are now in place. Three new curtain antennas are planned to target the Asian continent and SE Asia. The new facilities are expected to be operational around January 1993.

## In Closing

Software for the new **Japan Radio Company NRD-535** receiver is ready for shipment. For more information, send a business-size SASE or download **TRS\_SOFT.ZIP** off the **Pinelands RBBS**.

**Richard Cuff** and **Bob Brown** talked me into getting an account on the information service **GENIE**. The mail address is **T.SUNDSTROM**. Contributions to the column via **GENIE** are welcome.

The modem chip set (c.f. April) was received and installed. The modem connect problems are resolved. You should have no difficulty connecting to the **Pinelands RBBS** now.

All Records Included

ENGLISH LANGUAGE SW BROADCAST SCHEDULES: By Start Time

Compiled by Thomas R. Sundstrom, W2XG

Start End	Time Time	(UTC) (UTC)	Country	Station	Freq #1	Freq #2	Freq #3	Freq #4	Freq #5	Freq #6	Freq #7	Freq #8	Target Area	Notes	Record Last Updated
0000	0030		Australia	R Australia	17795	17750	17630	17715	15320	15240	15160	13605	As/Pac/Papig	#10 -0800	03/09/91
0000	2400		Canada	CFMX	6005								Canada	relay CFCF-600	01/28/91
0000	2400		Canada	CFRX	6070								Canada	relay CFRB-1010	01/28/91
0000	0100		Canada	R Canada Int'l	9755	5960							USA	SubHo	04/16/91
0000	0100		China	R Beijing	11715	9770							EMA/WNA	#1&2 v Mali	10/26/90
0000	0200		Cuba	R Havana	11820								Americas		03/26/89
0000	0015		Czechoslovakia	R Prague Int'l	11990	9540	7345						NA	Su -0027	11/07/90
0000	0030		England	BBC	15070	12095	9915	9590	7325	6175	5975		WS: MA/CA/Carib		03/30/91
0000	0030		Israel	Kol Israel	15640	11605	9435						NA		03/03/91
0000	2400		Luxembourg	R Luxembourg	15350								Eu		04/08/91
0000	0200		Mariana Is	KHBI	17865	17555							Phil/Indon/Papig		12/02/90
0000	0050		North Korea	R Pyongyang	15115	13760	1335						Am	340/270 deg #1 Sa-Su	12/22/90
0000	0100		South Korea	R Korea	15575								Am		03/15/90
0000	0100		Spain	Spanish Foreign Radio	11880	9630							NA		11/05/89
0000	0100		USA	VOM/Am	15205	11695	11580	9815	9775	9455	6130	5995	Caribbean/Americas	alt psm #1,3,4,5,8	09/29/90
0000	0100		USA	VOM/E As	17820	17735	15290	15185	11760	9770	7120		E As/SE As/Pac		09/29/90
0000	0200		USA	WCSN	9850								W Afr	90 deg	08/13/88
0000	0200		USA	WHR1	9495	7315							Eu/CA/SA	157/42 deg	03/19/90
0000	0300		USA	WRHO	7355								NA/CA	20 deg	03/17/91
0000	0200		USA	WSHB	13760	7395							SA/ENA/Carib	167/25/173 deg	09/19/90
0000	1100		USA	WACR	7320								NA		04/26/91
0000	0100		USA	WYFR	5985								Network M-Sa		03/26/91
0000	0100		USSR	R Kiev	17720	17690	15180	11860	11770				NA		03/08/91
0000	0100		USSR	R Moscow	21690	17890	17700	17665	17570	15140	12055	11950	World Service		03/05/91
0000	0045		Yugoslavia	R Yugoslavia	11735	9620							WNA/ENA		04/05/91
0030	0100		Australia	R Australia	21740	17795	17750	17630	17715	15320	15240	15160	As/Pac/Papig		03/09/91
0030	0430		Ecuador	HCJB	21455	15155	9745						NA	#1 USB	12/02/90
0030	0230		England	BBC	12095	9915	9590	7325	6175	5975			WS: MA/CA/Carib		03/30/91

0030	0050	Finland	R Finland	11755	6120				EU/NE/AF	SU -0045	04/26/91	
0030	0100	Hungary	R Budapest	15160	11910	9835	9585	9520	MA		03/16/91	
0030	0125	Netherlands	R Netherlands	15560	6165	6020			EMA	#182 v Bonaire	09/26/90	
0100	0400	Australia	R Australia	21775	21740	21525	17750	17715	AS/Pac/PapMG	#10 - 0800	03/09/91	
0100	0200	Canada	R Canada Int'l	13720	11940	11845	9755	9535	LA	SU-No	04/16/91	
0100	0127	Czechoslovakia	R Prague Int'l	9540	7345	5930			MA		11/07/90	
0100	0150	Fed Rep Germany	R Deutsche Welle	15425	15105	13770	13610	11890	11845	9565	6155	03/22/91
0100	0130	Israel	Kol Israel	15640	11605	9435			MA		03/03/91	
0100	0120	Italy	RAI	11800	9375				MA		03/19/88	
0100	0200	Japan	R Japan	17845	17835	17810	15210	15195	11840	5960	#446 Sri Lanka #7 Ca	04/07/91
0100	0130	Norway	R Norway Int'l	15360	11925				NA/CA	SU & No only	03/16/91	
0100	0200	Spain	Spanish Foreign Radio	11880	9430				AS/Pac		11/05/89	
0100	0130	Sweden	R Sweden	9765					EMA		03/17/91	
0100	1500	USA	KTBN	7510					Caribbean/Americas		09/29/90	
0100	0200	USA	VOM/Am	15205	11580	9815	9775	9455	6130	5995	03/29/91	
0100	0200	USA	VOM/E As	21550	17740	15250	15160	11705	7205	7115	03/29/91	
0100	0300	USA	VOM/S As	21550	17740	15250	15160	11705	7205	7115	03/29/91	
0100	0200	USA	WYFR	15440	11855	6065			MA	#283 Network N-Sa	03/26/91	
0100	0200	USSR	R Moscow	17890	17665	17655	17570	15425	12055	12045	11950	03/05/91
0100	0130	USSR	R Tashkent	11975	7265	7190	5955		unknown		04/23/91	
0130	0200	Austria	ORF	13730	9875	9870			MA/SA		10/13/89	
0130	0138	Greece	V of Greece	11645	9420	9395			MA/Sweden	News/Eng ex Su	04/05/90	
0130	0145	Hungary	R Budapest	15160	11910	9835	9585	9520	6110	TU/NI/F/Se	03/16/91	
0130	0200	USSR	R Alma Ata	5915					MA	MIF	03/18/91	
0130	0200	USSR	R Stn Peace & Progress	17720	17690	15180	11860	11770	MA		03/08/91	
0145	0200	Vatican State	Vatican Radio	15090	11890				As/Aus/NZ		03/30/91	
0200	0300	Argentina	RAE	11710					Americas	Tu-Sa	04/07/91	
0200	0300	Canada	R Canada Int'l	13720	11940	11845	9755	9535	LA	Tu-Sa	04/16/91	
0200	0400	Cuba	R Havana	11820	9505				Americas		09/09/90	
0200	0330	Egypt	R Cairo	9475	9475				MA		07/20/86	
0200	0250	Fed Rep Germany	R Deutsche Welle	15235	11965	11945	9690	9615	7285	S As/NE	04/25/91	
0200	0300	Guam	KSDA	13720					As	Sa-Su   300 deg	03/19/90	
0200	0400	N Mariana Is	KHBI	17865	17555				Phil/Indon/PapMG	340/270 deg   Sa-Su	12/22/90	
0200	0230	Norway	R Norway Int'l	15360					MA	SU & No only	03/16/91	
0200	0255	Romania	R Romania Int'l	11940	11830	9570	9510	6155	5990		11/08/90	
0200	0230	Sweden	R Sweden	11705	9695				MA		09/18/90	
0200	0230	Switzerland	Swiss R Int'l	17730	12035	9885	9650	6135	6125	#1 v Brazil	11/30/90	
0200	0300	Taiwan	V of Free China	15345	11860	11740	9765	9680	5950	MA/Jap/As/CA/AushZ	07/07/90	
0200	0230	USA	VOM/Am	15205	11580	9815	9775	5995	Caribbean/Americas	Tu-Sa	09/29/90	

0200	0400	USA	WCSN	9850		E Afr	75 deg	09/19/90					
0200	0400	USA	WHR1	9495	7315	EU/CA/SA	157/42 deg	03/19/90					
0200	0400	USA	WHB	13760	9455	SA/WNA/Mexico	167/245/315 deg	03/19/90					
0200	0300	USA	WFR	15440	9505	MA	#283 Network N-Sa	11/22/90					
0200	0300	USSR	R Moscow	21690	17890	17775	17665	17590	15425	11950	11750	World Service	04/05/91
0230	0300	Albania	R Tirana	11825	9580	MA							03/30/91
0230	0330	England	BBC	12095	9915	7325	6175	5975				US: MA/CA/Carib	04/07/91
0230	0245	Pakistan	R Pakistan	21730	17725	17640	15115	9545				SESE As	03/20/91
0230	0300	Portugal	R Portugal	11840	9705	9600	9555					SA/WNA	03/29/91
0250	1400	USA	KCBI	9815								Canada	03/05/91
0250	0300	USSR	R Yerevan	17720	17690	15180						MA	03/30/91
0250	0315	Vatican State	Vatican Radio	9615	7305							MA	11/30/89
0255	0430	Netherlands Antilles	Trans World Radio	11930	9535							MA/Carib	03/19/91
0300	0400	Bulgaria	R Sofia	15310	15160	11765	11735	9700				AF/WNA	03/30/91
0300	0400	China	R Beijing	11715	9770	9690						WNA/ENA	03/30/91
0300	0327	Czechoslovakia	R Prague Int'l	9540	7345	5930						MA	11/07/90
0300	0350	Fed Rep Germany	R Deutsche Welle	15245	15205	13770	13610	11890	11810	9545	6145	MA	03/22/91
0300	0425	Guatemala	TGBC	3300									12/23/87
0300	0330	Japan	R Japan	21610	17825	17810	15325	15195				GOS/WNA/CA/LA/Asia	04/13/91
0300	0505	South Africa	Radio Oranje	3215									08/23/90
0300	0400	Taiwan	V of Free China	15345	11745	9765	9680	5950				MA/Jap/As/Aus/Nz	07/07/90
0300	0350	Turkey	V of Turkey	17880	9445							Aus/WNA	03/16/91
0300	0400	USA	WMA/JF	21600	17715	15115	11835	9575	6035			Africa	03/29/91
0300	0600	USA	WRMO	6185								MA/CA	03/17/91
0300	0500	USA	WFR	9505	6065							MA	20 deg
0300	0400	USSR	R Moscow	17605	17590	15425	15420	15280	15140	15130	12055	World Service	11/22/90
0310	0327	Switzerland	Int'l Red Cross	12038	9885	6135						MA/CA	03/05/91
0330	0400	Albania	R Tirana	11825	9580							MA	04/14/91
0330	0430	England	BBC	12095	9915	5975						US: MA/CA/Carib	03/20/91
0330	0400	Japan	R Japan	17810	15195							GOS/Asia	04/13/91
0330	0425	Netherlands	R Netherlands	9590	6165							WNA	03/16/91
0330	0400	Sweden	R Sweden	11705	9695							MA	09/18/90
0330	0400	United Arab Emirates	R Dubai	15435	15400	13675	11945					MA	07/04/90
0340	0348	Greece	V of Greece	11645	9420	9395						MA/Sweden	04/05/90
0400	0500	Australia	R Australia	21775	21525	21740	17795	17715	17630	15530	15320	As/Pac/Papig	03/09/91
0400	0430	Canada	R Canada Int'l	15275								ME	04/16/91
0400	0500	China	R Beijing	11685								WNA/ENA	03/18/91
0400	0600	Cuba	R Havana	11820	11760	11725	9505	5965				Americas	04/16/91
0400	0415	Czechoslovakia	R Prague Int'l	9540	7345	5930						MA	11/07/90

0400	0450	Fed Rep Germany	R Deutsche Welle	15425	13770	13610	11765	11705	9765	9565	7225	SAC/E Afr/NE	04/25/91
0400	0415	Israel	Kol Israel	17575	15640	11655	11605	9435				Aus/As/WE/NA/WNA	03/03/91
0400	0600	Mariana Is	KHBI	17780	17555							China/Phil	34/0/270 deg   #2 Sa-Su 12/22/90
0400	0600	Namibia	R Namibia	3270								SE As	Sa   per MH 2-14-91 03/14/91
0400	0450	North Korea	R Pyongyang	17765	15230	15180						MA	Su & Mo only 03/16/91
0400	0430	Norway	R Norway Int'l	11865								NA	11/08/90 03/16/91
0400	0425	Romania	R Romania Int'l	11940	11830	9570	9510	6155	5990			NA	03/16/91
0400	0500	South Africa	Radio RSA	11920	7270							EA/CS Afr	01/25/91
0400	0430	Switzerland	Swiss R Int'l	12035	9885	9650	6135					NA/NE	03/29/91
0400	0430	USA	VOA/AF	21600	17715	15115	11835	9575	6035			Africa	03/29/91
0400	0430	USA	VOA/NE	15205	11825	7200	7170	6140	6040	5995		ME/N Af/EU	03/29/91
0400	0600	USA	UCSR	9840								S Afr	01/20/90
0400	0600	USA	WRI	9495	7315							EU/CA/SA	03/19/90
0400	0700	USA	WHLK	9465								EU/CA/SA	08/30/89
0400	0600	USA	WSHB	13760	9455							Mexico/WNA	03/19/90
0400	0500	USSR	R Moscow	21690	21635	17890	17775	17655	17590	15280	15140	World Service	03/05/91
0400	0800	USSR	R Moscow/WNA	17720	17700	17690	17665	17605	15425	15240	15180	WNA	03/05/91
0425	0440	Italy	RAI	9575	7275							Mediterranean	04/24/91
0430	0500	Albania	R Tirana	11835	9480							Af	08/16/90
0430	0500	England	BBC	12095	5975							US: NA/CA/Carib	03/30/91
0430	0500	Swaziland	Trans World Radio	9760	9610	9550	7285	7255	7200	5055	4760	S Af	only 1 freq/bnd used 06/05/89
0430	0500	USA	VOA/AF	21600	17755	17715	15115	9575	6035			Africa	03/29/91
0430	0530	USA	VOA/NE	15205	11825	7200	7170	6140	6040	5995	3980	ME/N Af/EU	03/29/91
0500	0600	Australia	R Australia	21775	21525	21740	17795	17630	17715	15530	15320	As/Pac/PapNG	#6 -0530
0500	0600	China	R Beijing	11840								WNA	v Canada 10/26/90
0500	0700	Ecuador	HCJB	15155	9745							NA	11/03/90
0500	0530	England	BBC	12095	9640	5975						US: NA/CA/Carib	03/30/91
0500	0530	Fed Rep Germany	R Deutsche Welle	13790	13610	11925	11705	9700	9670	6120	5960	NA	04/25/91
0500	0600	Japan	R Japan	21610	17890	17825	17810	17765	15195			GO5/As/NE/NA/Oceania	03/16/91
0500	0600	Namibia	R Namibia	3270								NA	Su   per MH 2-14-91 07/09/89
0500	0600	Spain	Spanish Foreign Radio	11835	11760	11740	7285	7255	7200	5055	4760	S Af	only 1 freq/bnd used 06/05/89
0500	0700	Swaziland	Trans World Radio	17715	15115	9575	6035					Africa	03/29/91
0500	0600	USA	VOA/AF	15566	13760	11580	5985					EU/AF/NA	03/26/91
0500	0600	USA	WYFR	21665	17620	17615	15560	15480	15470	15465	11950	World Service	03/05/91
0500	0600	USSR	R Moscow	21650	17730	17710	6248	6185				EA5 Afr/EU	03/19/91
0510	1640	South Africa	Radio Oranje	7285									#344 -0520 08/23/90
0515	0600	Canada	R Canada Int'l	17840	11775	9750	7295	6150	6050			EU/Afr	M-F   #1,2,4,6 v UK 04/16/91
0530	0600	Albania	R Tirana	9500	7205							EU	03/19/91



0730	1130	Ecuador	HCJB	11925	9745	S Pac	04/25/90
0730	0815	England	BBC	9640		WS: NA/CA/Carib	04/06/89
0730	0800	Italy	AWR Europe	7230		EU	03/19/91
0730	0825	Netherlands	R Netherlands	9715	9630	NZ/Aus	03/16/91
0730	1206	New Zealand	R New Zealand Int'l	9700		Pacific	03/27/91
0740	0925	Monaco	Trans World Radio	9485		UK	12/08/89
0740	0757	Switzerland	Int'l Red Cross	21695	17670 13685 9560	Austronesia	03/18/89
0800	0830	Albania	R Tirana	11835	9500	S As/Aus	08/16/90
0800	0830	Bangladesh	R Bangladesh	17850	15195	EU	07/03/90
0800	0927	Guam	KTWR	15200		Far East	03/30/91
0800	1100	Italy	Italian Radio Relay Serv	9815		EU	12/21/90
0800	1000	W Mariana Is	KHBI	17555	15610	Japan/Aus/NZ	03/17/91
0800	0850	North Korea	R Pyongyang	15230	15180	SE As	07/28/90
0800	0845	Pakistan	R Pakistan	21520	17595	V EU	03/16/91
0800	0900	Portugal	AWR Europe	9670		EU	03/19/91
0800	0900	South Korea	R Korea	13670	7550	EU	10/03/87
0800	0900	USA	KHLS	11715		As	02/21/91
0800	1000	USA	VOA Europe	21700	21570 15195 15160 11735	EU/NE	01/16/91
0800	1000	USA	WCSH	11705		EU	03/29/91
0800	1100	USA	WHRI	7355	7315	EU/CA/SA	09/19/90
0800	1000	USA	WSHB	13760	9455	Aus/CA	03/19/90
0827	0957	Guam	KTWR	11805		Aus	04/05/90
0830	0900	Australia	R Australia	25750	21775 17630 15320 15240 15160 9710 9580	As/Pac/PapMG	04/09/91
0830	0925	Netherlands	R Netherlands	21485	17575 9630	Asia/Aus	03/04/91
0830	0900	Switzerland	Swiss R Int'l	21695	17670 13685 9560 9535 6165 3985	Aus/NZ/EU	04/24/91
0840	0848	Greece	V of Greece	17535	15625	Aus	04/07/90
0900	0930	Australia	R Australia	25750	21775 17630 15320 15240 15170 15160 9710	As/Pac/PapMG	03/09/91
0900	0925	Belgium	BRT	21815	13675 9925	Afr/EU	04/24/91
0900	1000	China	R Beijing	17710	15440 11755	S Pacific	05/28/90
0900	0950	Fed Rep Germany	R Deutsche Welle	21680	21650 21645 21600 17820 17780 15410 11910	Aus/As/S&C&E Afr	04/25/91
0900	0915	Hungary	R Budapest	15220	15160 11925 9835 9585 6110	Far East	03/16/91
0900	1000	Japan	R Japan	21610	17890 15270 11840	GOS/As/Oc/EU	11/01/90
0910	0940	Mongolia	R Ulan Bator	12015	11850	Aus	03/19/91
0930	1030	Afghanistan	R Afghanistan	17720	15350 9635 4940	SESE As/NE	12/08/90
0930	1000	Australia	R Australia	25750	21775 17630 15320 15170 15160 9580	As/Pac/PapMG	03/09/91
0930	0945	Finland	R Finland	11755	9560 6120	EU/NE/AF	04/26/91
0930	0945	Hungary	R Budapest	15220	15160 11925 11910 9835 9585	Far East	03/16/91
0930	1025	Netherlands	R Netherlands	11895	6020	Far East	04/09/91
0945	1000	Hungary	R Budapest	15220	15160 11910 9835 9585 7220	Aus/Carib	03/16/91
						EU	

1000	1100	Australia	R Australia	25750	15320	15160	11800	9580	As/Pac/Papig	03/09/91
1000	1100	China	R Beijing	17710	15440	11755			S Pacific	05/28/90
1000	1200	Guam	KHBN	9820					China	03/17/91
1000	1100	Guam	KSDA	13720					As	03/19/90
1000	1100	India	AIR	21755	17865	17387	15335	15050	GOS/NE As/Aus/NZ	04/28/90
1000	1030	Israel	Kol Israel	21790	21710	17590	17575	15650	W Eu/E Eu/Aus/As	03/03/91
1000	1200	N Mariana Is	KHBI	17555	13625				China/Phil/Indon	03/17/91
1000	1030	Switzerland	Swiss R Int'l	21695	17670	13685	9560		Aus/NZ	04/17/89
1000	1200	USA	VOA/Am	15120	11915	9590			Caribbean/Americas	03/29/91
1000	1100	USA	VOA/E As	15625	11720	5985			E As/SE As/Pac	03/29/91
1000	1100	USA	VOA/NE	21615	21570	15195	15160	11740	NE/W Af/Eu	03/29/91
1000	1200	USA	WCSH	15610					Eu	03/29/91
1000	1200	USA	WSHB	9495	9455				60 deg Sa-Su	03/29/91
1000	1100	USA	WYFR	5950					25/152 deg	03/19/90
1000	1100	USSR	R Moscow	17890	17810	17660	15475	15150	Network N-Sa	03/26/91
1000	1030	Vietnam	V of Vietnam	15010	12020	9840			89 v Cuba	03/10/91
1030	1100	Albania	R Tirana	11855	9480					11/07/89
1030	1100	Austria	ORF	21690	15650				S As/Aus	06/16/90
1030	1045	Hungary	R Budapest	15220	15160	11910	9835	9585	As	04/04/91
1030	1100	Italy	AKR Europe	7230					Eu	03/16/91
1030	1059	South Korea	R Korea	11715					Eu	03/19/91
1030	1055	United Arab Emirates	R Dubai	21675	21605	15435	15320		ENA	03/24/91
1040	1048	Greece	V of Greece	17535	15625				EU/N Af	02/10/91
1055	1057	Switzerland	Int'l Red Cross	21770	17830	15570	13635		Japan	06/26/90
1055	1257	Netherlands	Trans World Radio	15345	11815				Far East	03/09/90
1100	1200	Australia	R Australia	21525	15320	13605	11930	11880	EMA/Carib	05/31/89
1100	1200	England	BBC	15220	9515	6195	5985		US: MA/CA/Carib	03/09/91
1100	1150	Fed Rep Germany	R Deutsche Welle	21600	17860	17800	17765	15410	W Afr	04/26/91
1100	1155	Finland	R Finland	21550	17800				Aus/E As	04/25/91
1100	1200	Japan	R Japan	11840	11815	6120			GOS/Asia/NA	09/08/89
1100	1315	Jordan	R Jordan	13655					W Eu/NA	06/26/91
1100	1150	North Korea	R Pyongyang	11335	9977	6576			As	05/05/90
1100	1120	Pakistan	R Pakistan	21520	17595				W Eu	12/02/90
1100	1200	South Africa	Radio RSA	17835	11900	11805	9535		Afr	03/16/91
1100	1200	South Korea	R Korea	15575					NE/Afr	06/23/90
1100	1130	Switzerland	Int'l Red Cross	7210					Eu	10/03/87
1100	1130	Switzerland	Swiss R Int'l	21770	17830	15570	13635		2nd & last Su/mo	01/25/91
1100	1200	Taiwan	V of Asia	7445					SE As/Aus/NZ	07/29/89
1100	1200	USA	VOA/E As	15425	15155	11720	9760	6110	E As/SE As/Pac	03/09/91
										09/29/90

1100	1400	USA	MHRI	11790	9465		EU/CA/SA	09/19/90
1100	2400	USA	WCR	15690				04/26/91
1100	1200	USA	WFR	11580	5950		MA	Network M-Sa
1100	1200	USSR	R Moscow	21800	17880	17810	World Service	#10 v Cuba
1130	1200	Austria	ORF	21490	15430	13730	EMA/As/EU	
1130	1155	Belgium	BRT	21810	9925		MA/SE As/EU	Su
1130	1200	Ecuador	HCBJ	11740			MA	
1130	1200	Finland	R Finland	21550	15400		MA	M-F   M -1145
1130	1225	Iran	R Tehran	11790	11715	9705	SSE As/NE/India	06/26/91
1130	1225	Netherlands	R Netherlands	21520	21480	17575	SE As/EU	06/30/90
1130	1200	Sweden	R Sweden	21570	17740	11960	As/Pac	#283 v Madagascar
1130	1230	Thailand	R Thailand	11905	9655		SE As	03/19/91
1200	1230	Australia	R Australia	21525	15320	11930	As/Pac/Pap/PG	07/29/89
1200	1250	Brazil	R Bras	11745			MA/CA	03/09/91
1200	1300	Canada	R Canada Int'l	17820	11855	9635	Carib/USA	12/23/90
1200	1300	China	R Beijing	15450	11660	11600	S Pac/SE As/ENA	04/16/91
1200	1400	Costa Rica	AMR Costa Rica	11870	9725		M-F	10/26/90
1200	1630	Ecuador	HCBJ	25950	21455	17890	MA	12/14/89
1200	1300	England	BBC	15220	9740	9515	US: MA/CA/Carib	01/25/91
1200	1230	Italy	Italian Radio Relay Serv	9815			Eu	06/05/90
1200	1300	Ivory Coast	AMR Africa	17890			Af	02/28/88
1200	1230	Mongolia	R Ulan Bator	12025	11850		Japan	Su only
1200	1400	Mariana Is	KHBI	13625	9475		SE As/Aus/Pap/PG	exc Tu&F
1200	1230	Norway	R Norway Int'l	21700	17820		S As/Far East/Alus	285/195 deg
1200	1225	Poland	R Poland	11815	6095		Eu	Sa & Su only
1200	1225	Romania	R Romania Int'l	17720	15365	15340	As	08/15/89
1200	1330	USA	VOA/E As	15425	15155	11715	E As/SE As/Pac	11/23/90
1200	1400	USA	WCSN	15610			Eu	01/14/91
1200	1400	USA	WRNO	9715			20 deg (Su only)	03/29/91
1200	1400	USA	WSHB	13760	9495		MA/CA	45 deg   Sa-Su
1200	1400	USA	WFR	17750	11580	6015	CA/EMA	10/21/89
1200	1300	USSR	R Moscow	21800	17880	17840	World Service	182/25 deg
1200	1225	USSR	R Tashkent	15470	11860	9540	As	#16284 Network M-Sa
1200	1230	Vietnam	V of Vietnam	15010	12020	9840		#10 v Cuba
1200	1230	Yugoslavia	R Yugoslavia	21600	17740	17725		03/05/91
1215	1330	Egypt	R Cairo	17595			Alus/NA/SE As	12/15/90
1215	1315	South Korea	R Korea	9750			S As	02/23/90
1230	1300	Australia	R Australia	21525	15320	11930	As/Pac/Pap/PG	04/05/91
1230	1300	Bangladesh	R Bangladesh	17750	15607		Eu	08/16/90
								ann 15200
								04/07/91

1230	1255	Finland	R Finland	21550	15400		NA		04/26/91		
1230	1255	France	R France Int'l	21645	21635	17650	15195	11670	9805	Am/Eu	11/12/90
1230	1300	Poland	R Polonia	15120	11840	9525				Af	08/15/89
1230	1300	Turkey	V of Turkey	17785						SU As	03/16/91
1230	1235	USSR	R Riga	5935						Eu	01/25/91
1235	1248	Greece	V of Greece	17525	15650	15625				NA/Sweden	12/22/90
1300	1330	Australia	R Australia	17630	9860	9770	9580	7240	5995	As/Pac/Papig	03/22/91
1300	1325	Belgium	BRT	21810						NA/SE As	03/19/91
1300	1600	Canada	R Canada Int'l	17820	11955					Carib/NA	04/16/91
1300	1400	China	R Beijing	11660	11600	9670				S Pac/SE As	10/26/90
1300	1330	China	R Canada Int'l	15385	11955					India	until May 4
1300	1400	England	BBC	15220	9740	9515	6195	5965		MS: NA/CA/Carib	04/16/91
1300	1330	Finland	R Finland	21550	15400					NA	11/22/90
1300	1350	North Korea	R Pyongyang	15230	13650	9640	9345	9325		SE As/Am/EU	04/26/91
1300	1330	Norway	R Norway Int'l	11860	9590					Eu	07/15/90
1300	1355	Romania	R Romania Int'l	21665	17720	15365	11940			Eu	12/15/90
1300	1330	Sweden	R Sweden	17740	11960					As/Pac	11/15/90
1300	1400	USSR	R Moscow	25780	21785	21690	17800	17840	17810	World Service	03/19/91
1300	1400	USSR	R Stn Peace & Progress	17840	17655	15535	15520	11775	9675	7330	05/05/91
1302	1502	USA	WFFR	11550						India	03/26/91
1310	1327	China	Int'l Red Cross	11695	7480					S&SE As/Far East	04/05/91
1320	1630	Jordan	R Jordan	9560						W Eu/NA	05/05/90
1330	1400	Australia	R Australia	17535	9860	9580	7240	5995		As/Pac/Papig	03/09/91
1330	1400	Austria	ORF	15430						As	03/18/90
1330	1400	China	R Canada Int'l	11795	9700	9535	6150	6095		E As	04/16/91
1330	1345	Finland	R Finland	21550	15400					NA	04/26/91
1330	1500	India	AIR	11760	9565					GOS/SE As	04/28/90
1330	1400	Switzerland	Swiss R Int'l	21695	17830	15570	13635	11695	7480	E Afr/India/Aus/NZ	10/12/90
1330	1400	United Arab Emirates	R Dubai	21675	21605	15435	13320			Eu/N Af	11/25/90
1330	1400	USA	VOA/E As	15425	15155	9760	6110			E As/SE As/Pac	09/29/90
1330	1355	USSR	R Tashkent	15470	11860	9540	9600	7325		As	12/15/90
1330	1400	Vietnam	V of Vietnam	15010	12020	9840					11/07/89
1345	1400	Vietnam State	Vietnam Radio	17880	15090	11830	11740	9645	6248	As/Aus/NZ/EU	03/30/91
1400	1430	Albania	R Tirana	11855	9500					S As/Aus	08/16/90
1400	1430	Australia	R Australia	17535	11910	7240	9580	6080	5995	As/Pac/Papig	03/09/91
1400	1430	Canada	R Canada Int'l	21545	17820	17795	15325	15315	11935	C&E EU	04/16/91
1400	1500	China	R Beijing	15165	11815	7405				S As/WNA	10/26/90
1400	1425	France	R France Int'l	21770	17650	11910	7125			SE As	02/10/91
1400	1500	Japan	R Japan	11865	11815	9535				GOS/As/Am	03/16/91

1400	1600	M Mariana Is	KHBI	13625	9530	SE As/India/China	07/03/90
1400	1500	South Korea	R Korea	9570		SE As	03/15/90
1400	1430	Switzerland	Swiss R Int'l	12030	9535	Eu	04/24/91
1400	0230	USA	KCB1	15375		Canada	03/29/91
1400	1500	USA	VOA/E As	15425	15395	E As/SE As/Pac	03/29/91
1400	1500	USA	VOA/NE	15395	15205	NE/N Af/Eu	03/29/91
1400	1500	USA	VOA/S As	15395	15160	South Asia	03/29/91
1400	1600	USA	WCSN	21670		Eu	03/29/91
1400	1500	USA	WHRI	15105	9465	Eu/CA/SA	09/19/90
1400	1500	USA	WRMO	15420		MA/CA	03/17/91
1400	1500	USA	WSHB	15610	13760	ENA/Carib/Mx/NA	03/17/91
1400	1600	USA	WYFR	17750	11580	MA	03/26/91
1400	1500	USA	R Moscow	17840	17810	World Service	03/05/91
1400	1500	USSR	National Unity Radio	9435			rx/EE some days
1420	1630	Sudan	R Australia	17630	15320	As/Pac/Pap/IG	03/09/91
1430	1500	Australia	ORF	21490	13730	W Af/SE As/Eu	04/01/89
1430	1500	Austria	R Sofia	17825	15310	Afr	03/19/91
1430	1530	Bulgaria	V of Hope	6280	6215	NE/India	01/25/90
1430	1600	Lebanon	R Netherlands	17605	17575	SW As/Eu	01/21/91
1430	1525	Nether-Lands	R Poland	11815	9540	Eu	06/15/89
1430	1455	Poland	R Ulan Bator	13780	9795	India	03/19/91
1445	1515	Hongolia	AIR	9950	7412	Home Svc	01/12/91
1450	1515	India	KTMR	11650		S As	03/30/91
1458	1636	Guam	FEBA	15330	9590	SE As	12/16/89
1458	1600	Seychelles	R Australia	17630	15320	As/Pac/Pap/IG	03/09/91
1500	1530	Australia	R Canada Int'l	21545	17820	CBE Eu	06/16/91
1500	1530	Canada	R Beijing	15165	11815	S As/WMA	10/26/90
1500	1600	China	R Deutsche Welle	21600	17765	SACAE Afr/NE	03/22/91
1500	1550	Fed Rep Germany	R Japan	21700	11865	GOS/EU/AF/NE/As	03/16/91
1500	1600	Japan	R Pyongyang	11760	9977	Eu/NE/AF	07/15/90
1500	1550	North Korea	R Norway Int'l	17790	15355	NA	04/20/91
1500	1530	Norway	R Romania Int'l	17745	15250	As	11/22/90
1500	1525	Romania	FEBA	11865		SE As	12/16/89
1500	1555	Seychelles	Radio RSA	15210	7230	ERCAS Afr	03/16/91
1500	1800	South Africa	WYFR	11550		India	03/26/89
1500	1515	Taiwan	KMLS	9615		As	02/21/91
1500	1600	USA	KTBI	15590		EMA	03/17/91
1500	0100	USA	VOA/E As	15425	15395	E As/SE As/Pac	03/29/91
1500	1700	USA	VOA/NE	15395	15205	NE/N Af/Eu	01/29/91
1500	1630	USA		9700	9645		
1500	1630	USA		9700	9645		
285/310	deg						
07/03/90							
03/15/90							
04/24/91							
03/29/91						authorized	
03/29/91							
03/29/91							
03/29/91							
03/29/91							
09/19/90						45 deg	
03/17/91						157/42 deg	
03/17/91						20 deg (Su only)	
03/17/91						#1 Sa-Su	
03/26/91						#182 Network M-Sa	
03/05/91						#10 v Cuba	
12/19/88						rx/EE some days	
03/09/91							
04/01/89							
03/19/91							
01/25/90						# 2 alt	
01/21/91						#283 v Madagascar	
06/15/89							
03/19/91						news/features	
01/12/91						Su -1701	
03/30/91							
12/16/89							
03/09/91							
06/16/91						#2-5 v Eu #284 M-Sa	
10/26/90							
03/22/91							
03/16/91						#1 v Gabon	
07/15/90							
04/20/91						Sa & Su only	
11/22/90							
12/16/89						Sa&Su -1540	
03/16/91							
03/26/89						Via VOFC	
02/21/91						exc Mon	
03/17/91							
03/29/91							
01/29/91							

1500	1800	USA	VOA/S As	15395 9645 7125	South Asia	03/29/91
1500	1600	USA	WHRI	21840 15105 9465	Eu/CA/SA	03/17/91
1500	2100	USA	WRNO	15420	NA/CA/EU	03/17/91
1500	0100	USA	WACR	15690		11/17/90
1500	1600	USA	WYFR	17750 11590 6015	NA	03/26/91
1500	1600	USSR	R Moscow	21450 17810 17660 17600 15515 15480 15475 15465	World Service	03/05/91
1500	1530	Vietnam	V of Vietnam	15010 12020 9840		02/23/90
1515	1530	Hungary	R Budapest	15220 15160 11910 9835 9585 7220	Eu	03/16/91
1530	1600	Albania	R Tirana	11835 9500	Af	10/14/90
1530	1600	Australia	R Australia	17630 15320 13745 12000 11910 9580 7240 6080	As/Pac/PapMG	03/09/91
1530	1538	Greece	V of Greece	17335 15650 11645	NA/Sweden	12/07/90
1530	1600	India	AIR	9950 7612	Home Svc	01/12/91
1530	1600	Sweden	R Sweden	21500 17875	NA	12/21/90
1530	1600	Switzerland	Swiss R Int'l	21630 17830 15430 13685	ME/E Afr	04/25/88
1545	1600	Vatican State	Vatican Radio	17880 15090	As/Aus/NZ	03/30/91
1600	1630	Australia	R Australia	15320 13745 12000 11910 11880 9580 7240 6080	As/Pac/PapMG	03/09/91
1600	1630	Canada	R Canada Int'l	21545 17820 15325 15305 11935	CAE EU	04/16/91
1600	1700	China	R Beijing	15130 15110 9570	EES Afr	09/08/90
1600	1745	England	BBC	15260 11775	US: NA/CA/Carib	03/30/91
1600	1650	Fed Rep Germany	R Deutsche Welle	21680 17810 15595 15415 15105 7225 6170	S As/ME	03/22/91
1600	1655	France	R France Int'l	17850 17795 17620 15360 12015 11705 6175	Afr/ME/As/AM EU	11/13/89
1600	1700	Guam	KSDA	11980	India	03/19/90
1600	1800	Mariana Is	KHBI	13625 11580	SE As/India	03/14/91
1600	1900	Namibia	R Namibia	3270	ME/Af	03/16/91
1600	1630	Norway	R Norway Int'l	21705	ME/EES Afr	03/16/91
1600	1630	Pakistan	R Pakistan	21480 17725 17555 15515 13665 11570	Eu	08/15/89
1600	1630	Poland	R Polonia	9540 6135	ME	03/15/91
1600	1630	Portugal	R Portugal	15425	ME/Afr/GDS	07/01/90
1600	2100	Saudi Arabia	BC Serv of Kingdom of SA	9720 9705	EES Af	11/05/88
1600	1700	South Korea	R Korea	9870 5975	Eu/NA Af	06/05/89
1600	1630	Swaziland	Trana World Radio	11835 11760 11740 5055 4760	Africa	11/06/90
1600	1640	United Arab Emirates	R Dubai	21675 21605 15400 15320 13675 11795	E Afr	09/29/90
1600	1800	USA	VOA/AF	21625 17800 15580 15410 11920 9575	Eu/CA/SA	08/28/89
1600	1800	USA	WCSN	21640	ME/NA/ENA/Carib	03/17/91
1600	1700	USA	WHRI	21840 15105 13760 9465	Eu/Af/NA	03/17/91
1600	1800	USA	USHB	17555 15610	World Service	03/26/91
1600	1700	USA	WYFR	21615 21525 17750 15355 11830 11580	As/Pac/PapMG	03/05/91
1600	1700	USSR	R Moscow	21740 17810 17670 15475 15375 11840		
1630	1700	Australia	R Australia	13745 12000 11910 11880 9580 7240 6080		

1630	1700	Austria	ORF	21490	13730	11780	6155	AF/EU/As	04/26/91
1630	1700	China	R Canada Int'l	9555	7150			India	starts May 5
1630	1730	Ecuador	HCJB	25950	21480			ME	#1 USB
1630	1830	Egypt	R Cairo	15255				C&S Afr	08/16/90
1630	1725	Netherlands	R Netherlands	15570	6020			E&S Afr	01/21/91
1630	1700	Poland	R Poland	15120	11840	9525		Af	v Madagascar
1630	1700	USA	VOM/ME	15395	15245	15205	11855	6040 ME/N Af/Eu	08/15/89
1630	1700	USSR	R Str Peace & Progress	15480	12030	11850	11745	9490 SW As/Af	04/18/91
1645	1930	South Africa	Radio Oranje	3215				6080 As/Pac/Papig	SM As #1,7,9,10
1700	1800	Australia	R Australia	17630	13745	13605	12000	6080 As/Pac/Papig	03/09/91
1700	1730	Canada	R Canada Int'l	21945	17820	15325	9555	C&E Eu	04/16/91
1700	1800	China	R Beijing	11575	9570	7405		E&S Afr	10/26/90
1700	1727	Czechoslovakia	R Prague Int'l	9605	7345	6055	5930	Eu	04/20/91
1700	1800	Guam	KSDA	13720				As	Sa-Su   300 deg
1700	1715	Israel	Kol Israel	11655	11588			E EU/M EU	03/03/91
1700	1800	Japan	R Japan	15345	11865	11815	7140	GDS/ME/Af/As/Am	03/16/91
1700	1750	North Korea	R Pyongyang	11760	9977	9640	9325	EU/ME/Af	07/15/90
1700	1730	Norway	R Norway Int'l	9655				Eu	03/16/91
1700	1800	Pakistan	R Pakistan	11570	7305			W EU	03/16/91
1700	1800	South Africa	Radio RSA	17835				W Afr	03/16/91
1700	1730	Sweden	R Sweden	9615	6065			EU/Af/ME	03/19/91
1700	1730	Switzerland	Int'l Red Cross	7210				Eu	Mo after 2nd last Su
1700	1800	USA	VOM/ME	15395	15205	11760	9700	9645	01/25/91
1700	1800	USA	WRLK	15105	13760			6040	03/29/91
1700	2000	USA	WRLK	9465				EU/CA/SA	03/19/90
1700	1900	USA	WFR	21500				EU/Af/NA	08/30/89
1700	1800	USSR	R Moscow	21740	17810	17670	15475	15460	03/26/91
1705	1730	Finland	R Finland	21950	15185	11820	11755	6120	#7 v Cuba
1710	1727	Switzerland	Int'l Red Cross	21770	17830	15525	11955	9885	Sa -1725
1715	1800	Switzerland	Swiss R Int'l	11955				Africa	MoTh after last Su
1730	1800	Albania	R Tirana	9480	7120			E EU	04/24/91
1730	1735	Belgium	BRT	21815	13675	9925		Afr/Eu	03/19/91
1730	1830	Bulgaria	R Sofia	17825	15310	11735		Afr	03/30/91
1730	1800	Ecuador	HCJB	25950	21480	21455	15270	EU/ME	03/19/91
1730	1800	Romania	R Romania Int'l	17720	15365	15340	11940	Afr	#183 USB
1730	1800	Vatican State	Vatican Radio	21650	17730	17710		E&S Afr	03/29/91
1800	1930	Australia	R Australia	13745	13605	12000	11910	6080 As/Pac/Papig	11/12/90
1800	1850	Brazil	R Bras	15265				Eu	03/22/90
1800	1830	Canada	R Canada Int'l	17820	15260	13670		Afr	03/09/91
									07/17/90
									04/16/91
									SaSu -1900

1800	0030	Costa Rica	R for Peace Int'l	21565	13630	LA/NA	Sa-Su	01/12/91
1800	2000	India	AIR	15360	11935	GOS/E Afr		05/26/89
1800	2000	Mariana Is	KHBI	13625		ME/NZ	285/165 deg	10/12/90
1800	2200	New Zealand	R New Zealand Int'l	15120		Pacific		03/27/91
1800	1830	Norway	R Norway Int'l	17755		NA	Sa & Su only	03/16/91
1800	1900	South Korea	R Korea	15575		Eu		11/05/88
1800	1900	USA	KWLS	11945		As		02/21/91
1800	2000	USA	VOM/Af	21625	17800	Africa		09/29/90
1800	1900	USA	VOM/E As	15395	9645	E As/SE As/Pac		03/29/91
1800	2100	USA	VOM/ME	15205	11760	ME/N Af/Eu		03/29/91
1800	2000	USA	WCSN	21640		S Afr	105 deg	08/28/89
1800	2300	USA	WHRI	17830	13760	Eu/CA/SA	157/42 deg	09/19/90
1800	2000	USA	WSHB	21780	17555	EMA/Eu/WNA/Mex		04/26/91
1800	1900	USSR	R Moscow	17840	17810	World Service	#6 v Cuba	03/06/91
1800	1830	Vietnam	V of Vietnam	15010	12020			11/07/89
1805	1845	Swaziland	Trans World Radio	11835	11760	E Afr	only 1 freq/bnd used	06/05/89
1815	1900	Bangladesh	R Bangladesh	12030	9575	Eu/ME		12/22/90
1830	1930	Afghanistan	R Afghanistan	15440	11830	Eu	#182 v USSR	04/12/91
1830	1845	Bulgaria	R Sofia	15330	11660	W Eu		03/19/91
1830	1900	Czechoslovakia	R Prague Int'l	9605	7345	W Eu	#183 Su -1857 w/#1-4	04/20/91
1830	1900	Hungary	R Budapest	11910	9835	Eu		03/16/91
1830	1925	Netherlands	R Netherlands	21685	17605	Afr	#182 Bon   #3&4 Mad	11/15/90
1830	1855	Poland	R Poland	11840	9525	Af/Eu		08/15/89
1830	1900	Sweden	R Sweden	15270	6065	Eu/Af/ME		03/19/91
1830	1900	Switzerland	Swiss R Int'l	11955	9885	Afr		10/12/90
1830	1900	Yugoslavia	R Yugoslavia	15165	5940	S Af/Eu		04/05/91
1835	2000	Sri Lanka	SLBC	15120	9720	Eu		07/27/90
1840	1848	Greece	V of Greece	15625	12105	C&S Afr	Newa/Eng ex Su	12/08/90
1845	1945	India	AIR	11860	11620	GOS/WNA Af/W Eu		11/25/90
1900	2000	Algeria	R Algiers	15215		SA		03/14/90
1900	2000	Argentina	RAE	15345		Eu/Afr	M-F	04/07/91
1900	1930	Canada	R Canada Int'l	21675	17875	C&E Eu	#6&7 v UK	04/16/91
1900	2000	China	R Beijing	9440	0955	WNA Afr		10/26/90
1900	2100	Cuba	R Havana	17705		Eu/Af/ME		03/31/91
1900	2000	Ecuador	KCJB	25950	21480	Eu	#183 USB	12/15/90
1900	1950	Fed Rep Germany	R Deutsche Welle	17810	15390	W Afr/ME		03/22/91
1900	1930	Israel	Kol Israel	17630	15640	Af/W Eu/NA		03/03/91
1900	1930	Japan	R Japan	15270	11850	GOS/Oc/Am	#3 v Gabon	03/16/91
1900	1930	Norway	R Norway Int'l	17730	15175	As/Aus/NZ/Eu/Af	Sa & Su only	03/16/91

1900	1930	Portugal	R Portugal	11740			EU		N-F	03/29/91
1900	2000	Spain	Spanish Foreign Radio	15395	15375	9875	EU/AF/NE			11/09/90
1900	2015	Swaziland	Trena World Radio	5055	4760		S AF		only 1 freq/bnd used	06/05/89
1900	2000	USA	VOM/E AS	15180	11870	9525	E AS/SE As/Pac			09/29/90
1900	2200	USA	VOM/NE	15205	11710	9760	ME/N AF/EU			03/29/91
1900	2000	USA	WFR	21515	15355		EU/AF			03/26/91
1900	2000	USSR	R Moscow	15475	11840	9740	World Service		#2 v Cuba	03/06/91
1900	1930	Vietnam	V of Vietnam	15010	12020	9840	Afr			11/07/89
1901	1930	Canada	R Canada Int'l	17820	15260	13670	EU			04/16/91
1920	1930	Greece	V of Greece	9395	7430				News/Eng ex Su	11/21/90
1930	2000	Australia	R Australia	13745	13655	12000	As/Pac/PapMG			03/09/91
1930	2000	Austria	ORF	13730	12010	6155	AF/NE/EU			03/09/91
1930	2000	Canada	R Canada Int'l	21675	17875	15325	CJEE EU		#9546 v UK	04/16/91
1930	2030	Iran	R Tehran	9022	6030		ME/W AF/EU/EMA			11/18/90
1930	2000	Japan	R Canada Int'l	9650			As			04/16/91
1930	2025	Romania	R Romania Int'l	11810	9750	9690	EU			06/27/90
1930	0300	South Africa	Radio Orion	3320						05/15/90
1930	2000	Sweden	R Sweden	9655	6065		EU/AF/NE			03/19/91
1935	1955	Italy	RAI	11800	9710	7275	Great Britain			04/08/89
1940	2010	Mongolia	R Ulan Bator	12050	11850		M EU			03/19/91
1948	1955	Sudan	Sudan Broadcasting Serv	11635					news/Eng	01/25/90
1950	2010	Vatican State	Vatican Radio	7250	6248		EU			03/19/91
2000	2100	Angola	R Mac de Angola	9535	7245	3375	Afr		(RNWA)	03/15/90
2000	2030	Australia	R Australia	17795	13745	13655	As/Pac/PapMG			03/09/91
2000	2100	China	R Beijing	15110	11715	11500	ESS AF/EU/NE/AF		#182 v Mali	06/27/90
2000	0930	Costa Rica	R for Peace Int'l	21565	15030	13630	LA/NA		M-F]46 USB  chk all	04/04/91
2000	2100	Cuba	R Havana	17835			ME/E AF		v USSR	04/23/91
2000	2027	Czechoslovakia	R Prague Int'l	9605	7345	6055	EU			04/20/91
2000	2100	England	BBC	5975			US: MA/CA/Carib			09/23/89
2000	2030	Hungary	R Budapest	11910	9835	9585	EU		ex Sa	03/16/91
2000	2300	Lebanon	V of Hope	6280	6215		EU/NE		180/340 deg	01/25/90
2000	2200	N Mariana Is	KHBI	13625	9455		Aus/Japan			07/03/90
2000	2050	North Korea	R Pyongyang	9977	9640	9345	ME/AF/EU			01/01/90
2000	2030	Norway	R Norway Int'l	15165			Greenland/NA		Sa & Su only	03/16/91
2000	2025	Poland	R Polonia	11840	9525	7125	AF			08/15/89
2000	2030	Portugal	R Portugal	15250			Afr			03/29/91
2000	2050	Turkey	V of Turkey	9795			EU			03/16/91
2000	2100	USA	KHLS	11910			As			02/21/91
2000	2100	USA	VOM/AF	21625	21485	17800	Africa			09/29/90

2000	2200	USA	WCSN	15610					Eu	60 deg	03/17/91
2000	2200	USA	WHSB	17555	13770				CA/SA/ENA/Carib	137/25 deg	03/17/91
2000	2200	USA	WYFR	21615	21525	17612	15566		Eu/Af		03/26/91
2000	2100	USSR	R Moscow	15475	12070	11840	9740	9720	World Service	#3 v Cuba	03/06/91
2005	2105	Syria	R Damascus	15095	12085				Eu/NA		02/03/91
2025	2045	Italy	RAI	11800	9575	7235			Near East		04/24/91
2030	2100	Australia	R Australia	17795	15320	13745	13605	12000	As/Pac/PapMG		03/09/91
2030	2100	Bulgaria	R Sofia	15330	11660	9700			Eu		03/19/91
2030	2200	Egypt	R Cairo	15375					M Afr		08/16/90
2030	2125	NetherLands	R NetherLands	13700	11660	9895			M Afr		12/06/90
2030	2130	South Korea	R Korea	15575	7530	6480			Eu/NE/Afr		11/05/88
2030	2100	Sweden	R Sweden	6065					Eu/Af/NE		03/19/91
2030	2100	Vietnam	V of Vietnam	15010	12020	9840					11/07/89
2045	2230	India	AIR	15265	11715	11620	9910	9665	GOS/AusKZ/M Eu		11/05/90
2100	2130	Australia	R Australia	21740	17795	15320	15160	13705	As/Pac/PapMG		03/09/91
2100	2125	Belgium	BRT	17530	9925	5910			Afr/Eu		03/30/91
2100	2115	Cameroon	R Cameroon	5010							12/04/88
2100	2200	Canada	R Canada Int'l	17875	15325	13650	7235	5995	Eu	news in English	04/16/91
2100	2200	China	R Beijing	15110	11715	11500	9920	3985	ES As/Eu	#3-5 -2130	03/30/91
2100	2125	Czechoslovakia	R Prague Int'l	9605	7345	6055	5930		Eu	#1&2&5(Saitz) -2130	03/30/91
2100	2200	England	BBC	15070	9590	5975			US: NA/CA/Carib		04/20/91
2100	2150	Fed Rep Germany	R Deutsche Welle	15360	15350	13780	11785	9765	Aus/As/NE		03/22/91
2100	2110	Ghana	Ghana BC Corp	3366							03/30/91
2100	2400	Guam	KHNB	9820					China	News in English	09/19/90
2100	2200	Japan	R Japan	17890	17810	15270	15230	11815	GOS/As/Oc/Eu/NE	#4 v Sri Lanka	03/16/91
2100	2125	Romania	R Romania Int'l	11940	11010	9750	9690		Eu		06/27/90
2100	2200	Spain	Spanish Foreign Radio	9875					Eu		11/09/90
2100	2130	Switzerland	Swiss R Int'l	15525	13635	12035	9885	9535	Afr/Eu	#3 v Gabon	04/24/91
2100	0100	USA	KYOH	17775					CA/Carib	100 deg	07/25/90
2100	2200	USA	VOA/Af	21625	21485	17800	15580	15410	Africa		09/29/90
2100	2200	USA	VOA/E As	17735	15185	11870			E As/SE As/Pac		09/29/90
2100	2400	USA	WPMO	15420					NA/CA/Eu		03/17/91
2100	2200	USSR	R Kiev	6185					Eu	20 deg alt freq	11/10/90
2100	2200	USSR	R Moscow	21740	17720	17655	11950	11870	World Service	#6 v Cuba	03/05/91
2100	2115	Vatican State	Vatican Radio	17730	17710	11620			CES&M Af		03/30/91
2100	2145	Yugoslavia	R Yugoslavia	11735	5960				M Eu		04/05/91
2110	2210	Syria	R Damascus	12085	9950				NA/Aus/NZ		02/03/91
2115	2245	Egypt	R Cairo	9900					Eu		08/16/90
2130	2200	Albania	R Tirana	9480	7245				Eu		04/15/91

2130	2200	Australia	R Australia	21740 17795 15320 15160 13705 15160 11950 11880	As/Pac/Pap/IG	03/09/91
2130	2230	Bulgaria	R Sofia	15330 11680	W Eu	03/19/91
2130	2200	Canada	R Canada Int'l	17020 15150 11880	AF	04/16/91
2130	2200	Ecuador	HCJB	25950 21480 21455 17790	Eu	03/29/91
2130	2155	Finland	R Finland	15185 11755 9550 6120	Eu/NE/AF	#183 USB
2130	2200	Israel	Kol Israel	17575 15640 11655 11605 11588 9435	AF/LA/AMA/W Eu	SU - 2150
2130	2135	USSR	R Riga	5935	Eu	03/03/91
2130	2200	USSR	R Vilnius	9710 9675	Eu	01/25/91
2200	2300	Australia	R Australia	21740 17795 17715 15320 15240 15160 13705 11950	As/Pac/Pap/IG	04/16/91
2200	2230	Canada	R Canada Int'l	13670 11905 9755 5960	MA	03/09/91
2200	2300	China	R Beijing	9740	Eu	04/16/91
2200	2300	Cuba	R Havana	11950	Eu	v USSR
2200	2300	England	BBC	15070 12095 9915 9590 5975	US: MA/CA/Carib	v USSR
2200	2225	Italy	RAI	15330 11800 9710	Japan	
2200	2400	N Mariana Is	R Canada Int'l	11705	SE As	03/30/91
2200	0730	New Zealand	KHBI	15405 13625	China/Jap/Phil/Indon 310/240 deg	04/16/91
2200	2205	Nigeria	R New Zealand Int'l	17770	Pacific	03/17/91
2200	2230	Norway	R Nigeria	4990	News in Eng	03/15/91
2200	2230	Sweden	R Norway Int'l	21705	Sa & Su only	10/11/89
2200	2300	Taiwan	R Sweden	6065	SA/Aus/NZ	03/16/91
2200	2250	Turkey	V of Free China	21720 17750	Eu/AF/NE	09/18/90
2200	2400	USA	V of Turkey	17080 9685 9665 9445	Eu	04/06/91
2200	2400	USA	VDA/E As	17020 17755 15305 15290 15185 11760 9770 7120 E As/SE As/Pac	Aus/Eu/NE/MA	03/16/91
2200	2400	USA	WCSN	15300	Y Afr	01/29/91
2200	2400	USA	USHB	17555 9465	SA/NE Canada	03/08/89
2200	2300	USA	WFR	21525 17612	Eu/AF	03/26/91
2200	2300	USSR	R Moscow	17665 12070 11950 11655 9820 9720 9685 7280	World Service	03/05/91
2230	2300	Poland	R Str Peace & Progress	9610 7360 6145	Eu	03/05/91
2240	2248	Greece	R Polonia	9675 7270	Eu	04/15/91
2245	2300	Ghana	V of Greece	11645	Aus	06/24/90
2245	2305	Vatican State	Chana BC Corp	4915 3366	As/Aus/NZ	09/09/90
2300	2400	Australia	Vatican Radio	15105 11830	MA	03/30/91
2300	2400	Bulgaria	R Australia	21740 17795 17715 15320 15240 15160 11950 11880	As/Pac/Pap/IG	03/09/91
2300	0100	Costa Rica	R Sofia	15330 11680	Carib	03/19/91
2300	2400	England	R Canada Int'l	13670 11730 9755	US: MA/CA/Carib	04/16/91
2300	2320	Finland	AMR Costa Rica	11870 9725	MAVE As	12/14/89
2300	0100	Guam	BBC	15070 12095 9915 9590 6175 5975	SE As	03/30/91
			R Finland	15430 15185		04/26/91
			KSDA	15610		09/11/90

2300	2330	Israel	Kol Israel	15640	11605	9435	MA	GOS/As/EU/NE/AY	#3 v Sri L #6 v Gab	03/03/91
2300	2400	Japan	R Japan	17810	15230	15210	15195	11815	11735	01/26/91
2300	2350	North Korea	R Pyongyang	13650	11700		Am			02/24/91
2300	2310	Sierra Leone	SLBS	3316					rx/Eng	09/09/90
2300	2400	USA	WHRI	13760	9495		EU/CA/SA	42/157 deg		09/19/90
2300	2400	USA	WRHO	7355			MA/CA/Eu	20 deg alt freq		03/17/91
2300	2400	USSR	R Moscow	21690	17700	12045	11950	11750	9720	03/05/91
2300	2330	USSR	R Vilnius	17720	17690	15180	11860	11770		03/08/91
2301	2330	Canada	R Canada Int'l	15235	11940		MA		SadSu -2400	04/16/91
2305	2355	Poland	R Polonia	9675	7270		LA			04/15/91
2315	0115	India	AIR	15110	11745	11715	9910	9535		11/05/90
2330	2400	Albania	R Tirana	11825	9760	6120	GOS/As			10/14/90
2330	2355	Belgium	BRT	13720	13675		MA/SA			03/30/91
2330	0030	Canada	R Canada Int'l	13670	9755	5960	MA		#1 M-F SadSu -2400	04/16/91
2330	2400	Hungary	R Budapest	15160	11910	9835	9585	9520	6110	03/16/91
2330	2400	Sweden	R Sweden	11705	9695		LA		M-Sa	09/18/90
2330	2400	Switzerland	Swiss R Int'l	9680	6190	6035	EU			04/24/91
2330	2400	Vietnam	V of Vietnam	15010	12020	9840				11/07/89
2335	2345	Greece	V of Greece	12105	11645	9425	SA/CA		News/Eng	12/08/90

ALL RECORDS INCLUDED

ENGLISH LANGUAGE DX SHOWS: By Day of week  
Compiled by Thomas R. Sundstrom, W2XQ

Shortwave DX Program	Show Xmas Start Time	Country	Station	Freq #1	Freq #2	Freq #3	Freq #4	Freq #5	Freq #6	Freq #7	Target Area	Notes re DX Show	Record Last Updated
DX Party Line	0025	Spain	Spanish Foreign Radio	11880	9630						MA		03/30/91
Communications World	0110	USA	HCJB	21455	15155	9745					MA		03/29/91
DX Spot	0125	Spain	VOA/Am	15205	11580	9815	9775	9455	6130	5995	Caribbean/Americas		09/29/90
Diers Unlimited	0140	Cuba	Spanish Foreign Radio	11880	9630						MA		03/30/91
SM Merry-Go-Round	0220	Switzerland	R Havana	11820							Americas		12/15/90
DX Asifaves	0230	Gum	Swiss R Int'l	17730	12035	9885	9650	6135	6125		MA		05/16/86
DX Party Line	0240	Ecuador	KSDA	13720							As		01/16/90
DX Heilberg	0245	Romania	HCJB	21455	15155	9745					MA		03/29/91
			R Romania Int'l	11940	11830	9570	9510	6155	5990		MA		06/27/90

DX Corner	0330	0330	Japan	R Japan	17810	15195	GOS/Asia	04/13/91					
Bonaire Wavelength	0330	0255	Netherlands Antilles	Trans World Radio	11930	9535	NA/Carib	05/31/89					
Dixers Unlimited	0340	0200	Cuba	R Havana	11820	9505	Americas	12/15/90					
SJ Merry-Go-Round	0420	0400	Switzerland	Swiss R Int'l	12035	9885	NA/ME	05/16/86					
DX Party Line	0510	0500	Ecuador	HCJB	15155	9745	NA	11/04/90					
DX Spot	0535	0500	Spain	Spanish Foreign Radio	9630		NA	03/30/91					
Dixers Unlimited	0540	0400	Cuba	R Havana	11820	11760	Americas	12/15/90					
DX Party Line	0735	0030	Ecuador	HCJB	21655	15155	NA	11/04/90					
Dixers Unlimited	0740	0600	Cuba	R Havana	11835		Americas	12/15/90					
ARR DX Program	0815	0800	Portugal	ARR Europe	9670		EU	03/19/91					
SJ Feedback	0835	0800	South Korea	R Korea	13670	7550	EU	02/26/89					
DX Corner	0930	0900	Japan	R Japan	21610	17890	GOS/As/Oc/Eu	04/05/90					
SJ Club	0945	0945	Hungary	R Budapest	15220	15160	EU	03/16/91					
DX Corner	1020	1000	Israel	Kol Israel	21790	21710	W E/W E Eu/Aus/As	03/03/91					
Shortwave Panorama	1030	1030	Austria	ORF	21490	15450	As	04/04/91					
SJ Feedback	1035	1030	South Korea	R Korea	11715		EMA	03/24/91					
Shortwave Panorama	1130	1130	Austria	ORF	21490	15430	EMA/As/EU	04/01/89					
SJ Feedback	1135	1100	South Korea	R Korea	15575		ME/AFr	02/26/89					
DX Programme	1200	1200	USSR	R Tashkent	15470	11860	As	11/05/88					
SJ Feedback	1250	1215	South Korea	R Korea	9750		Am	10/28/90					
Communicator	1430	1430	Australia	R Australia	17630	15320	As/Pac/Pap/PG	03/09/91					
Shortwave Panorama	1430	1430	South Korea	ORF	21490	13750	W AF/SE As/EU	04/01/89					
SJ Feedback	1435	1400	South Korea	R Korea	9570		SE As	11/05/88					
DX Corner	1530	1500	Japan	R Japan	21700	11865	GOS/EU/AF/ME/NA	04/05/90					
SJ Feedback	1635	1600	South Korea	R Korea	9870	5975	ME/AFr/GOS	11/05/88					
SJ Feedback	1835	1800	South Korea	R Korea	15575		EU	11/05/88					
DX Corner	1920	1900	Israel	Kol Israel	17630	15640	AF/M Eu/NA	03/03/91					
World of Radio	2030	1500	USA	WRNO	15420		NA/CA/EU	03/17/91					
SJ Feedback	2105	2030	South Korea	R Korea	15575	7550	EU/ME/AFr	11/05/88					
DX Show & Mailbag	2115	2100	USSR	R Kiev	6185		EU	09/30/90					
DX Corner	2130	2100	Japan	R Japan	17890	17810	GOS/As/Oc/EU/ME	04/05/90					
DX Corner	2150	2130	Israel	Kol Israel	17575	15640	AF/LA/NA/AF Eu	03/03/91					
World of Radio	2230	1800	Costa Rica	R for Peace Int'l	21565	13630	LA/NA	01/12/91					
DX Corner	2320	2300	Israel	Kol Israel	15640	11605	NA	03/03/91					
DX Corner	0020	0000	Israel	R Korea	15640	11605	Am	04/16/90					
SJ Feedback	0035	0000	South Korea	R Korea	15575		NA	03/03/91					
DX Corner	0120	0100	Israel	Kol Israel	15640	11605	GOS/As/ME/NA	04/05/90					
DX Corner	0130	0100	Japan	R Japan	17845	17035	17810	15210	15195	11840	5960	GOS/As/ME/NA	03/15/91
Mailbag	0430	2200	New Zealand	R New Zealand Int'l	17770		Pacific	1st & 3rd Mon/Mo					

Waveguide	0530	0500	England	BBC	12095	9640	5975	WS: NA/CA/Carib	11/18/89
Radio World	0635	0630	Belgium	BRT	13675	11695	6035	Eu/Aus	03/19/91
SW Feedback	0635	0600	South Korea	R Korea	15170	11810	7275	WNA/GDS	09/30/90
Communicator	0730	0600	Australia	R Australia	21775	21740	21525	As/Pac/PapMG	03/09/91
Radio World	0905	0900	Belgium	BRT	21815	13675	9925	Afr/Eu	03/19/91
Dixers Calling	1040	1000	India	AIR	21735	17865	17387	GOS/NE As/AusNZ	06/28/90
Radio World	1305	1300	Belgium	BRT	21810			MA/SE As	03/19/91
Dixers Calling	1435	1330	India	AIR	11760	9565		GOS/SE As	06/28/90
R Sofia Calling	1515	1430	Bulgaria	R Sofia	17825	15310	11735	Afr	03/19/91
SW Club	1515	1515	Hungary	R Budapest	15220	15160	11910	Eu	03/16/91
Waveguide	1630	1600	England	BBC	15260	11775		WS: NA/CA/Carib	02/17/91
World of Radio	1800	1100	USA	WCR	15690				06/26/91
R Sofia Calling	1815	1730	Bulgaria	R Sofia	17825	15310	11735	Afr	03/19/91
Dixers Calling	1925	1800	India	AIR	15360	11935		GOS/E Afr	11/05/90
Dixers Calling	2130	2045	India	AIR	15285	11715	11620	GOS/AusNZ/W Eu	11/05/90
** DAY OF THE WEEK: Tuesday									
Dixers Calling	0040	2315	India	AIR	15110	11745	11715	GOS/As	11/05/90
SW Club	0130	0130	Hungary	R Budapest	15160	11910	9835	NA	03/16/91
Waveguide	1115	1100	England	BBC	15220	9515	6195	WS: NA/CA/Carib	12/19/88
Sweden Calling Dixers	1140	1130	Sweden	R Sweden	21570	17740	11960	As/Pac	03/19/91
Sweden Calling Dixers	1310	1300	Sweden	R Sweden	17740	11960		As/Pac	03/19/91
World of Shortwave	1515	1458	Seychelles	FEBE	15330	9590		SE As	12/16/89
Sweden Calling Dixers	1540	1530	Sweden	R Sweden	21500	17875		MA	11/13/90
DX Program	1605	1600	Poland	R Poland	9540	8135		Eu	08/19/89
Sweden Calling Dixers	1710	1700	Sweden	R Sweden	9615	6065		Eu/AI/NE	03/19/91
Sweden Calling Dixers	1840	1830	Sweden	R Sweden	15270	6065		Eu/AI/NE	03/19/91
Dixers Unlimited	1915	1900	Cuba	R Havana	17705			Eu/AI/NE	11/03/90
Sweden Calling Dixers	1940	1930	Sweden	R Sweden	9655	6065		Eu/AI/NE	11/13/90
For Radio Amateurs	2015	1930	Romania	R Romania Int'l	11810	9750	9690	Eu	06/03/90
Sweden Calling Dixers	2040	2030	Sweden	R Sweden	6065			Eu/AI/NE	03/19/91
Sweden Calling Dixers	2210	2200	Sweden	R Sweden	6065			Eu/AI/NE	11/13/90
DX Program	2235	2230	Poland	R Poland	9675	7270		Eu	08/19/89
World of Radio	2330	2000	Costa Rica	R for Peace Int'l	21565	15030	13630	LA/NA	12/30/90
DX Program	2330	2305	Poland	R Poland	9675	7270		Eu	08/22/89
Sweden Calling Dixers	2340	2330	Sweden	R Sweden	11705	9695		LA	11/13/90
** DAY OF THE WEEK: Wednesday									
Sweden Calling Dixers	0110	0100	Sweden	R Sweden	9765			As/Pac	11/13/90

SM Club	0130	0130	Hungary	R Budapest	15160	11910	9835	9585	9520	6110	NA	03/16/91
Dixers Unlimited	0140	0000	Cuba	R Havana	11820						Americas	12/18/90
Sweden Calling Dixers	0210	0200	Sweden	R Sweden	11705	9695					NA	11/13/90
For Radio Amateurs	0245	0200	Romania	R Romania Int'l	11940	11830	9570	9510	6155	5990	NA	We after 183 Tu/mo
Dixers Unlimited	0340	0200	Cuba	R Havana	11820	9505					NA	12/18/90
Sweden Calling Dixers	0340	0330	Sweden	R Sweden	11705	9695					NA	11/13/90
World of Radio	0400	0000	Costa Rica	R For Peace Int'l	21565	15030	13630	7375			LA/NA	12/30/90
Dixers Unlimited	0540	0400	Cuba	R Havana	11820	11760	11725	9505	5965		Americas	12/18/90
DX Program	0635	0630	Poland	R Polonia	9675	7270					EU	08/19/89
Dixers Unlimited	0740	0730	Czechoslovakia	R Prague Int'l	11835						Americas	12/18/90
Ham Radio Today	0750	0700	Ecuador	R Prague Int'l	11835	9610	6205				As/Pac	09/19/90
Ham Radio Today	0751	0730	Ecuador	HCJB	11925	9745					S Pac	11/04/90
World of Radio	0830	2000	Costa Rica	R For Peace Int'l	21565	15030	13630	7375			LA/NA	04/25/90
Ham Radio Today	1020	0730	Ecuador	HCJB	11925	9745					S Pac	12/30/90
DX Program	1435	1430	Poland	R Polonia	11815	9540	6135				EU	08/19/89
DX Special	1710	1700	Czechoslovakia	R Prague Int'l	9605	7345	6055	5930			EU	04/20/91
DX Program	1835	1830	Poland	R Polonia	11840	9525	7285	7125	6135	5995	Af/EU	08/19/89
DX Special	1840	1830	Czechoslovakia	R Prague Int'l	9605	7345	6055	5930			EU	04/20/91
Dixers Special	1920	1900	Argentina	BAE	15345						EU/Afr	04/07/91
Ham Radio Today	1920	1900	Ecuador	HCJB	25950	21480	21455	17790	15270		EU	04/25/90
DX Special	2010	2000	Czechoslovakia	R Prague Int'l	9605	7345	6055	5930			EU	04/20/91
DX Special	2110	2100	Czechoslovakia	R Prague Int'l	9605	7345	6055	5930			EU	04/20/91
R Sofia Calling	2215	2130	Bulgaria	R Sofia	15330	11680					W EU	03/19/91
R Sofia Calling	2345	2300	Bulgaria	R Sofia	15330	11680					NA	03/19/91
** DAY OF THE WEEK: Thursday												
World of Radio	0030	0000	USA	WRNO	7355						NA/CA	03/17/91
Ham Radio Today	0050	0030	Ecuador	HCJB	21455	15155	9745				NA	04/25/90
DX Special	0110	0100	Czechoslovakia	R Prague Int'l	9540	7345	5930				NA	05/23/90
Waveguide	0130	0030	England	BBC	12095	9915	9590	7325	6175	5975	US: MA/CA/Carib	12/19/88
Ham Radio Today	0250	0030	Ecuador	HCJB	21455	15155	9745				NA	04/25/90
DX Special	0310	0300	Czechoslovakia	R Prague Int'l	9540	7345	5930				NA	05/23/90
R Sofia Calling	0345	0300	Bulgaria	R Sofia	15310	15160	11765	11735	9700		Af/NA	03/19/91
DX Special	0410	0400	Czechoslovakia	R Prague Int'l	9540	7345	5930				NA	05/23/90
Ham Radio Today	0520	0500	Ecuador	HCJB	15155	9745					NA	04/25/90
Media Network	0750	0730	Netherlands	R Netherlands	9715	9630					NZ/Aus	11/29/89
Mailbag	0830	0730	New Zealand	R New Zealand Int'l	9700						Pacific	03/15/91
Media Network	0850	0830	Netherlands	R Netherlands	21485	17575	9630				Asia/Aus	11/29/89

Media Network	0950	0930	Netherlands	R Netherlands	11895	6020		Aus/Carib	04/04/91
Media Network	1150	1130	Netherlands	R Netherlands	21520	21480	17575	SE As/EU	08/22/86
Media Network	1450	1430	Netherlands	R Netherlands	17605	17575	15150	SW As/EU	09/04/86
SW Club	1515	1515	Hungary	R Budapest	15220	15160	11910	EU	03/16/91
World of Radio	1530	1500	USA	WRMO	15420			NA/CA/EU	03/17/91
Media Network	1650	1630	Netherlands	R Netherlands	15570	6020		ECS Afr	09/04/86
Media Network	1850	1830	Netherlands	R Netherlands	21685	17605	15570	Afr	08/22/86
Media Network	2050	2030	Netherlands	R Netherlands	13700	11660	9895	W Afr	08/22/86
World of Radio	2300	2100	USA	WRMO	15420			NA/CA/EU	03/29/91
** DAY OF THE WEEK: Friday									
World of Radio	0030	2100	USA	WRMO	15420			NA/CA/EU	03/17/91
Media Network	0050	0030	Netherlands	R Netherlands	15560	6165	6020	ENA	03/17/89
SW Club	0130	0130	Hungary	R Budapest	15160	11910	9835	NA	03/16/91
Media Network	0350	0330	Netherlands	R Netherlands	9590	6165		WA	03/17/89
Communicator	0430	0400	Australia	R Australia	21775	21525	21740	As/Pac/PapMG	03/09/91
Communicator	0430	1000	Australia	R Australia	23750	15320	15160	As/Pac/PapMG	03/09/91
Radio Ham Corner	1220	1200	Yugoslavia	R Yugoslavia	21600	17740	17725	Aus/NA/SE As	03/19/91
DX Show	1615	1600	Portugal	R Portugal	15425			ME	05/08/89
R Sofia Calling	1815	1730	Bulgaria	R Sofia	17825	15310	11735	Afr	04/17/91
Radio Ham Corner	1850	1830	Yugoslavia	R Yugoslavia	15165	5960		S Af/EU	03/19/91
DX Show	1915	1900	Portugal	R Portugal	11740			EU	03/29/91
Mailbox	2005	1800	New Zealand	R New Zealand Int'l	15120			Pacific	03/14/91
DX Show	2015	2000	Portugal	R Portugal	18250			Afr	03/29/91
R Sofia Calling	2045	2030	Bulgaria	R Sofia	15330	11660	9700	EU	03/19/91
World of Radio	2100	2000	Costa Rica	R for Peace Int'l	21565	15030	13630	LA/NA	12/30/90
World of Radio	2115	1100	USA	WCR	15690			any/all freqs used	04/26/91
Radio Ham Corner	2135	2100	Yugoslavia	R Yugoslavia	11735	5960		W EU	04/05/91
R Sofia Calling	2345	2300	Bulgaria	R Sofia	15330	11680		NA	03/19/91
** DAY OF THE WEEK: Saturday									
Radio Ham Corner	0035	0000	Yugoslavia	R Yugoslavia	11735	9620		WA/ENA	04/05/91
World of Radio	0130	2000	Costa Rica	R for Peace Int'l	21565	15030	13630	LA/NA	12/30/90
SW Club	0130	0130	Hungary	R Budapest	15160	11910	9835	NA	03/16/91
Dier's Special	0235	0200	Argentina	RAE	11710			Americas	04/07/91
DX Show	0245	0230	Portugal	R Portugal	11840	9705	9600	SA/NA	01/16/88
World of Radio	0300	0300	USA	WRMO	6185			NA/CA	03/17/91
World of Radio	0600	2000	Costa Rica	R for Peace Int'l	21565	15030	13630	LA/NA	12/30/90
Radio World	0635	0630	Belgium	BRT	13675	11695	6035	EU/Aus	03/19/91

R Sofia Calling	0645	0630	Bulgaria	R Sofia	17825	15160	11765	W EU	03/19/91
DX Party Line	0735	0700	Ecuador	HCJB	11835	9610	6205	EU	11/04/90
DX Party Line	0736	0730	Ecuador	HCJB	11925	9745		S Pac	11/04/90
Radio World	0905	0900	Belgium	BRT	21815	13675	9925	Afr/EU	03/19/91
DX Party Line	1005	0730	Ecuador	HCJB	11925	9745		S Pac	11/04/90
SU Club	1030	1030	Hungary	R Budapest	15220	15160	11910	EU	03/16/91
SU Merry-Go-Round	1115	1100	Switzerland	Swiss R Int'l	21770	17830	15570	SE As/Aus/NZ	09/06/86
Bonaire Havelength	1130	1055	Netherlands	Trams World Radio	15345	11815		EIA/Carib	05/10/89
Radio World	1305	1300	Belgium	BRT	21810			NA/SE As	03/19/91
DX Programme	1330	1330	USSR	R Tashkent	15470	11860	9540	As	11/05/88
SU Merry-Go-Round	1345	1330	Switzerland	Swiss R Int'l	21695	17830	15570	E Afr/India/Aus/NZ	09/04/86
SU Merry-Go-Round	1545	1530	Switzerland	Swiss R Int'l	21630	17830	15430	ME/E Afr	05/24/86
DX Asiaaves	1630	1600	Guam	KSDA	11980			India	01/16/90
Radio World	1735	1730	Belgium	BRT	21815	13675	9925	Afr/EU	03/19/91
DX Party Line	1905	1900	Ecuador	HCJB	25950	21480	21455	EU	11/04/90
Dixers Unlimited	1915	1900	Cuba	R Havana	17705			EW/Af/NE	04/16/90
World of Radio	1930	1800	Costa Rica	R for Peace Int'l	21565	13630		LA/NA	01/12/91
DX Spot	1935	1900	Spain	Spanish Foreign Radio	15395	15375	9875	EW/Af/NE	03/30/91
DX Mailbag	2015	1930	Romania	R Romania Int'l	11810	9750	9690	EU	06/27/90
DX Radio Tips	2020	2000	Turkey	V of Turkey	9795			EU	03/16/91
Radio World	2105	2100	Belgium	BRT	17550	9925	5910	Afr/EU	03/19/91
Communications World	2110	2100	USA	VOX/AF	21625	21485	17800	Africa	09/29/90
SU Merry-Go-Round	2115	2100	Switzerland	Swiss R Int'l	15525	13635	12035	Afr/EU	05/24/86
DX Spot	2135	2100	Spain	Spanish Foreign Radio	9875			EU	03/30/91
Dixers Unlimited	2215	2200	Cuba	R Havana	11930			EU	03/16/91
DX Radio Tips	2220	2200	Turkey	V of Turkey	17880	9685	9645	Aus/EU/NE/NA	12/01/90
DX Asiaaves	2330	2300	Guam	KSDA	15610			SE As	01/16/90
World of Radio	2330	2100	USA	WRHO	15420			NA/CA/EU	03/17/91
World of Radio	2330	1100	USA	WOCR	15690				04/26/91
Radio World	2335	2330	Belgium	BRT	13720	13675		NA/SA	03/19/91

2nd Sat of month

Biweekly

Biweekly

McVicar, QLB via DXPL 4/13 via Mike Fern) [WRTH 91 says 2300-0200. The items in QLB are credited to the announcer, not the actual DXer, because of the way QLB is produced. [mf]

**BULGARIA** - R.Sofia's M91 sked's marked by a reduction in the number of freqs used. The [partial] schedule which is effective until the end of May is as follows: English: 0630-0700 on 11765, 15160, and 17825; 1830-1900 and 2030-2100 on 9700, 11660, and 15330; 2130-2230 on 11860 and (15330?). To North America: 2300-0000 on 11680 and 15330; 0300-0400 on 9700 and 11735. To Africa: 0300-0400 on 11765, 15160 and 15310; 1430-1530 and 1730-1830 on 11735, 15310 and 17825. Bulgarian: 1900-1930 on 9595 and 15385. (REE DX Spot 4/15 via Mike Fern)

**CHINA** - Radio Beijing (overseas) and the Central People's Broadcasting Station (domestic) have begun naming the transmitter sites reported by a given listener in their QSLs. This may enable DXers to confirm radio countries in NASWA and other lists. (Bob Padula, Australian DX News, on DXPL 3/23 via Mike Fern)

In its Messenger Magazine, R.Beijing rptd it had agreements w/5 countries (Switzerland, Spain, France, Canada & USSR) to exchange relays of overseas pgms. The agreement w/SSR began in late 1990 (Sked in English on 7170 to Europe 2200-2300). RB also purchases time from Brazil & Mali. According to the Messenger, "radio stations from both the east and west coast of the United States" have approached RB about similar ventures. A team may be sent to the US this year "to negotiate with stations to solve technical problems in expanding cooperative ventures." (Karl Forth, Chicago, IL)

Voice of the Strait (Haixia zhi Sheng), Fuzhou, heard with fair signals on 9505 kHz in California at 1500 3/24 and 3/25.. The ID does not follow the time ticks at once, but comes after a musical introduction to the next program. PWBR 91 says the summer schedule is 1300-1645 or 1650. (Mike Fern, CA)

R.Beijing, via USSR, on 9740, in EG 2200-2256; same xmtr had R.Moscow in EG 2100 & R.St.Rodina in RR from 2300; good 3/11 (Behr)

A report from a member in the far east concerns a transmission on 15388.1 kHz. Exactly one minute after the hour/half-hour a female voice announces in Standard Chinese "This is New Star Station Number Two, repeated twice. Then possible a different female voice. "Now I will read to you in Cantonese", or "Now I will read to you in Mandarin." Numbers in groups of five are then read; each group repeated twice. One woman will read for (very) roughly half the transmission; then a second, with a distinctly deeper voice, will take over. Transmissions last from 15 to 25 minutes. This heard at various times during the day: 0103, 0908, 1011, 1207, 1315, 1334, 1402, 1434, 1507. On 3/26 ran 1400-1419, then stopped abruptly.

**COSTA RICA** - AWR - Latin America will move to the site of the former R.Impacto, near Cahuita. New location will allow room for growth required by plans for additional broadcasts to cover the entire Caribbean and South America. Two new log periodic antennas have been ordered from TCI. AWR purchased 4 transmitters from R. Impacto, 2x20 kw SW, and 2x50 kw MW. Once the new site is operational, the existing 2 xmtrs will be moved to the new site. The station manager, David Gregory, hope the first broadcasts from the new site will begin this summer, with full operations sometime in 1992. AWR currently authorized 5030 (20 kw), 5970 (50 kw), 6150 (50 kw), 9725 (50 kw), 11870 (50 kw), 13750 (20 kw), 15460 (20).

Current sked for AWR-Latin America: 0100-0500 Spanish, 1100-1300 English, 1300-1500 Spanish, 2300-0100 English, all on 9725 & 11870 kHz. 0100-0500 in Spanish on 5030 (and 6150 as soon as tests are completed). (WBI 3/29, excerpting 'AWR Current', Forli)

**CUBA** - The (apparent D91) Esperanto schedule for Radio Habana Cuba is as follows:

All transmissions are Sundays only:

0800-0820 on 11835 to Western North America and Asia.

1700-1730 on 11705, 11760, 11820, 11850, 11970, 15340 to North and South America.

1830-1900 on 11950, 15220 and 15435 to Western Europe and the Mediterranean.

2200-2220 on 11950 and 15220 to Western Europe and the Mediterranean.

2230-2300 on 9535, 11910, 11950 and 11970 to the Americas.

(Orlando Raiola, producer, RHC Esperanto program, on DXPL 3/23 via Mike Fern)

RHC has begun of tests of compatible SSB on 5965 kHz. Reports should be sent to Arnie Coro, DXers Unlimited Single Sideband Test, Radio Habana Cuba, P.O. Box 6240, Habana, Cuba. RHC celebrates its 30th anniv 5/1. 5965 is on the air from 0400-0600, in AM until about 4/25, when lower SB will be suppressed and the carrier will be reduced by 6 db (from 50 to 12.5 kw). Peak envelope power will reach 100 kw. The tests will run for one or two months to determine whether listeners can hear the difference. The tests are also in preparation for the ITU World Administrative Radio Conference in 1992. (Arnie Coro and Ignacio Canales of RHC on RNMN 4/18 via Mike Fern)

RHC - Tuned during 0400 English Broadcast on 4/19 & didn't hear RHC on 9505 as listed. They were not on 11725. They were heard on 11820, 11760 and 5965 NF. (Bruce MacGibbon)

RHC began use of 5965 kHz 0400-0600, //11725, 11780, 11825 in English. Special QSLs & souvenirs for the test transmission on 5965. Also, the 1992 contest was announced 4/17.

Five winners of a 2 week free trip to Cuba. Question is: How has RHC contributed to the unity of Latin America & the Caribbean, and to their identity? Deadline 4/30/92; winners announced 5/1/92. (Scott Edwards, Los Alamitos, CA) Guess they don't expect a lot of last minute entries. Think I'll skip this one - I'm not that imaginative a writer. [df]

CYPRUS - BFBS via Cyprus still on 15670 USB, from 2300 BBC news & pop music past 0500; fair 4/13. (Ernie Behr)

DOMINICAN REPUBLIC - "N-103", Santiago, on 4799.85, hrd from 0330 w/merengue mx to 0600\*v, since 3/17; also ments "La N", but no proper ID; best after R.Buenos Nuevas on 4799.76 goes off at 0332. (Ernie Behr)

R. Norte, in Santiago, is being heard in Europe on 4800 kHz around 0500-0600. The medium-wave license of Radio Norte was recently sold to one party but the short-wave license is being used by a second operator, the licensee of an FM station on 103 MHz. whose slogan is N-103 (ene ciento y tres -or- ene uno cero tres) (Jeff White and Wim Steemstra on RNMN 3/28 via Mike Fern)

A license has been granted for a new shortwave station in La Vega which may begin regular operations around May 1 on 4860 or 6205 kHz with the slogan "Radio Unifica Internacional." (Jeff White on RNMN 3/30 via Mike Fern) [WRTH 91 lists nothing with this slogan--mf]

ECUADOR - In the World by 2000 Project, HCJB last year added three new languages. Each cost c. \$25000 to get on the air & another \$25K in yearly program costs. (Marlin Field)

HCJB's Engineering Dept in Elkhart, Indiana, is designing & building new transmitters for future use. Station had money for one of three for 1991 & pledges to take care of a second. Total cost of a xmt'r built at Elkhart is \$350K, 1/2 market price. 60 years ago, when they started, Clarence Jones, one of the founders of the stn, didn't have \$6.15 to pay the station's electric bill. (from a letter of Ronald Cline, President of HCJB, via Marlin Field)

HCJB will observe the 30th anniversary of "DX Party Line" with a phone-in on Saturday, May 25. The January phone-ins were scheduled at 0730 Saturday and 0030 Sunday. No times or phone numbers given in DXPL 4/13 (mf)

R. Centinela del Sur, Loja, back on its proper frequency of 4890; heard at 1220 with news, time check and ID. (Ken MacHarg, QLB on DXPL 4/13, via Mike Fern)

R. Bahai, Otavalo, on 1420 and 4950 kHz; modulation on 60m is almost non-existent, and transmissions are irregular; heard at 1200 with Ecuadorian folk music. (Rich McVicar, QLB on DXPL 4/13, via Mike Fern)

EL SALVADOR - According to unofficial sources, the government of El Salvador will soon begin operating a 50-kw. shortwave station to broadcast news, music and messages from El Salvador to the US. The station will have directional antennas aimed at the US and other parts of the world. Areas with large numbers of Salvadoran emigrants will be the primary targets. Programs will be in Spanish and English. No frequency or time has been mentioned so far. (WBI on DX Party Line 3/23 via Mike Fern)

ETHIOPIA Sked for the National Service of the Voice of Ethiopia, Addis Ababa: on 5990, 7110, 9706.4 at 0330-0400 (Mo-Sa), 0400-0600, 0600-0900 (su), 0900-1000 (Mo-Fr), 1000-1400 (Sa/Su), 1500-1715 daily. Most programming in Amharic, some in Oromo & Tigrigna. (WBI 3/15)

GUAM - The Australian Radio DX Club has a special QSL card available for its DX programs over KSDA on Guam. The program, "DX Asia Waves" is broadcast 1630 Saturday on 11980; 2330 Saturday on 15610; 0230 Sunday on 13720; 1030 Monday on 13720. Correct reception reports for reception of not less than ten minutes will be verified with a full data QSL card. Reports should be sent with three IRCs to: ARDXC QSL Service, P.O. Box 227, Box Hill, Victoria 3128, Australia. (DXPL 3/23 via Mike Fern) The 2330 Sat xmsn on 15610 hrd fair to good in Quito. (Ken MacHarg, QLB on DXPL 4/13, via Mike Fern)

From 3/31 AWR-Asia was to broadcast in Russian daily at 1000 & weekends at 1900, both on 13720. Additional hours will be added when a third transmitter is installed later this year. Another new language for the station will be Swahili, at 1800 weekends only, also on 13720 kHz. (WBI 3/15, excerpting 'AWR-Asiawaves')

GUATEMALA - Letters from listeners to R. Buenos Nuevas, 4800 kHz, jumped from 255 in January to 408 in February. (from monthly rpts of Israel Rodas, stn director, via Marlin Field)

INDIA - All India Radio External Services sked: In English at 2315-0115 to EAs/SEA on 9535, 11745, 15110 & to NEAs on 9910 & 11715. At 1000-1100 to NEAs on 15050, 17865, 21735; to ANZ on 15335, 17387. At 1330-1500 to SEA on 9565, 11760, 15335. English to EAF at 1800-2000 on 11935, 15360; to Eur 1845-1945 on 7412; at 2045-2230 on 7412, 9665, 11620; to WAF/NAF 1845-1945 on 9950, 11860; to ANZ 2045-2230 on 9910, 11715, 15265.

Indian language services: Hindi at 2300-2400 to SEA on 7265, 9705, 11880, 15165; 0315-0415 to EAF on 15165, 17805; 1615-1700 EAF on 11830, 15220. Urdu at 0015-0430 on 6155; 0130-0430 on 9610; 0830-1130 on 9675; 1430-1930 on 4860, 6045.

Other languages: Arabic 0430-0530 on 15365, 17785; 1730-1945 on 9910, 15185; Baluchi 0045-0115 on 9705, 11880; 1215-1315 on 11715, 15420. Chinese 2145-2245 on 7265, 9905, 11745; 1145-1315 on 11705, 15120. Dari 0300-0345 on 7225, 9630, 11910; 1330-1430 on 7140, 11960. French 2000-2045 on 9950, 11850. Indonesian 0845-0945 on 15175, 17875. Nepali 0130-0228 on 4860, 6045, 7210, 9550; 0700-0800 on 7110, 9610, 11735; 1345-1445 on 6140, 7412. Persian 0400-0430 on 15365, 17785; 1615-1730 on 7265, 9910, 11620. Pushtu 0215-0300 on 7225, 9630, 11910. Russian 1615-1715 on 9620, 11935. Sinhala 1300-1500 on 9700, 15120. Swahili 1515-1615 on 11830, 15210; 0430-0530 on 15165, 17805. Thai 1115-1200 on 15365, 17830, 21735. Tibetan 0215-0230 on 11870, 15185; 1215-1345 on 7412, 9575. (India Calling, via Scott Edwards, CA)

**INDONESIA** - Very little in the way of special programming for Ramadan has been heard this year on shortwave. Victor Goonetilleke thinks the Ramadan programming has moved to medium wave. (RNMN 3/28 via Mike Fern)

**INTERNATIONAL WATERS** - Disk jockeys and engineers aboard the M/V Ross Revenge are still working although the transmitter has been dismantled. One DJ, Nigel Harris, recorded a three-hour broadcast on the ship, which was to be broadcast Sunday, 3/31, from 0900-1200 on 7558 kHz. [The Voice of Europe in Pordenone, Italy?--mf]. The operators of Radio Caroline have also hired air time on one of the sound subcarriers on the Astra 1-A satellite. It's transponder 5, which carries the Lifestyle Network, aimed at clubs and pubs in the U.K. From 0900-1700 this will now carry Radio Caroline, starting 3/31, through at least 5/31. Programs will be recorded on the ship and brought ashore for broadcast elsewhere. Under new British radio regulations, one transmission from a transmitter on the Ross Revenge and the ship will be in the harbor, impounded, on the same day. (Herbert Visser and Jonathan Marks, RNMN 3/28, via Mike Fern)

**IRAQ** - Radio of the Iraqi Rep. sked compiled from monitoring 3/10-3/15: on 3980, 4600, 8350.3, at 0225-2300. (WBI 3/15)

Since 3/21, R. Baghdad has moved from 6540 to 15600 kHz // 3980 kHz. All broadcasts from Baghdad are still being jammed despite the cease-fire. Baghdad is jamming broadcasts in Arabic from neighboring Iran on 1332, 1467, and 1224 kHz. Shortwave transmissions are not being jammed because the Iraqis have so few transmitters left. Baghdad radio is still heard on 1224 and 1431 kHz but the transmitter at Basra on 692 kHz seems to be silent. (Sarat Virakoon, Sri Lanka, on RNMN 3/28 via Mike Fern)

Iraqi Radio has resumed Kurdish language broadcasts. Kurdish news noted in progress 4/2 at 0510 on 7350 kHz. The bulletin ended 0515 w/usual theme tune & ID as "Kurdish Radio of the Republic of Iraq from Baghdad". (WBI 4/5)

R. Baghdad/R. of Iraqi Republic on 15605.3, from 2100 w/AA talk, Quran & NA till 2157\*; then test tone. Fair 4/14, but much weaker than in January & not heard daily. (Ernie Behr)

**ITALY** - Radio Europe, Piottello, Italy, broadcasts Sat/Sun 0700-1300. Sked extended [WRTH says 7294 kHz] because Tirana is now off 7300. (Dario Monferini, Play-DX, on DXPL 3/23 via Mike Fern) European Christian Radio, Ravenna, on 6210 kHz at 0807. (F. Clemente, Udine, Italy via Play-DX on DXPL 3/23 via Mike Fern)

**JAPAN** - Ms. Sumi Togasaki has replaced Ms. Rika Kobayashi as the presenter for Radio Japan's DX Corner, effective Mar. 31. She was introduced to the listeners on Mar. 23. No reason for the change in presenters was given. (RJDXC 3/24 via Mike Fern, CA)

Radio Japan ended the temporary extra broadcasts for the ME 3/17. (Kunitoshi Hishikawa, Japan) Frequency changes for Radio Japan from 0100 5/5 (to 8/31): In the General Svc (in JJ & EE): 0400-0430 to S.Af. on 7125 (ex 9645); 1800-1930 to Oceania on 9640 (ex 15270); 2000-2100 to Oceania on 15280 (ex 15270); 2100-0030 to SEA on 15340 (ex 15230). In the Regional Svc to Eur, ME, N.Afr.: 1800-1830 in French, 1900-1930 in Persian, 1930-2000 in Arabic, all on 9610 (ex 9555). (Kunitoshi Hishikawa, Japan)

For the first time in 25 yrs R. Japan has added a new language service, Persian, relayed from Ekala, Sri Lanka, on 15210, as well as 9555 from Yamata, Japan. (Tetsuya Kondo)

**KOREA (North)** - Radio Pyongyang now heard on new 9835 in Arabic 2030-2100+. (Bob Padula, 3/23)

Radio Pyongyang sked:

0000-0050	EE	Am	13760	15115	0500-0550	KK	As	15180	15230	17765	
0000-0050	FF	As	11845	15230	0600-0650	CC	As	15340	17765		
0000-0050	SS	LA	11700	13650	0600-0650	EE	As	15180	15230		
0400-0450	EE	As	15180	15230	17765	0600-0650	FF	ME/Af/As	15340	17765	
0400-0550	JJ	As	9505	9650	11780	0600-0750	JJ	As	9505	9650	11780
0400-0550	KK	As	7200	9345	11735	0700-0750	CC	As	13650	15230	

0700-0750	KE	ME/Af	15340	17765	1600-1650	FF	Eu/ME/Af	6576	9345	9640
0800-0850	KE	As	15180	15230				9977		
0800-0850	KK	ME/Af/As	7250	9505	1600-1650	KK	ME/Af	6540	9385	11845
0900-0950	SS	LA	6576	9977	1600-1650	RR	Eu	9325	11760	
0900-0950	RR	Eu/As	7200	9325	9345	1700-1750	AA	ME/Af	6540	9835
			11335			1700-1750	KE	Eu/ME/Af	9325	9640
0900-1050	JJ	As	3250	6540	6560			11760		
			7580			1700-1750	KK	Eu	6576	9345
1000-1050	KK	Am	6576	9977		1800-1850	AA	ME/Af	6540	9835
1000-1050	RR	Eu/As	7200	9325	9345	1800-1850	KK	Eu/ME/Af	9325	9640
			11335					11760		
1100-1150	CC	As	6125	7200	7230	1800-1850	SS	Eu	6576	9345
1100-1150	KE	Am	6576	9977	11335	1900-1950	FF	Eu/ME/Af	9325	9640
1100-1250	JJ	As	3250	6540	6560			11760		
			7580			1900-1950	GG	Eu	6576	9345
1200-1250	KK	As	6125	7200	9345	1900-1950	KK	ME/Af	6540	9835
1200-1250	SS	LA	6576	9977	11735	2000-2050	AA	ME/Af	6540	9835
1300-1350	CC	As	9977	11375		2000-2050	KE	Eu/ME/Af	6576	9345
1300-1350	KE	Eu/As	9325	9345	9640			9977		
			13650	15230		2000-2050	SS	Eu/Am	9325	11760
1300-1450	JJ	As	3250	6540	6560	2100-2150	FF	Eu/ME/Af	6576	9345
			7580					9977		
1400-1450	FF	Eu	9325	9345	11735	2100-2150	GG	Eu	9325	11760
			13650			2100-2250	JJ	As	3250	9505
1400-1450	KK	As	9640	9977	15230			11780		
1500-1550	AA	ME/Af	6540	9835	11845	2200-2250	KK	As/Am	11700	11975
1500-1550	KE	Eu/ME/Af	9325	9640	9977			15230		
			11760			2300-2350	KE	Am	11700	13650
1500-1550	RR	Eu	6576	9345		2300-2350	SS	Am	13760	15115
								(WBI)		

**KOREA (South) - Radio Korea** will make several changes in its English service on 3/31. The North American Service will be heard from 0600-0700 on 11810 NF and 15170 NF. The relay via Sackville, New Brunswick for eastern North America will move to 11715 kHz. (Tooru Yamashita, ABI, on Japan DX Corner 3/23 via Mike Fern)

The domestic KBS Radio 2 will be replaced by EBS (Educational Broadcasting Service) on Sept. 1. (Tooru Yamashita, ABI, on Japan DX Corner 3/23 via Mike Fern) [EBS currently broadcasts on FM in 20 major cities. Radio 2 uses two AM frequencies full time, but regional stations may take its programs. Radio 2 shares its AM frequencies with the Social Education Network, which is directed to North Korea.--mf]

**KUWAIT** - Transmitters inside Kuwait have returned to the air on 540 and 1341 kHz in Arabic with "Radio Kuwait Second Program." The first listener who hears a Radio Kuwait shortwave transmitter and reports it to Media Network's answer line will receive a Radio Nederland T-shirt. (Richard Measham and Jonathan Marks, RNMN 3/28, via Mike Fern)

**LATVIA** - R.Riga Int'l, gives sked as: Latvian 1800-1830 daily on 1215 MW, repeated at 2030-2100, 0530-0600 on 5935. In English Sat 1830-1900, repeated Sun 0700-0730 on 5935. In Swedish Sat 1930-2000 on 1350 & 5935, repeated 2230-2300 on 576, 1350, 5935 & Sun 0800-0830 on 1350 & 5935. Address is Latvijas Radio, P.O. Box 266, Riga, Latvia. States also that at 2300 UTC is on 11770, 11860, 15180, 17690, 17720. [these presumably the relay thru RM facilities - df] (Letter from Edvinas Butkus, editor in chief, in response to fax from Brian Goslow)

**LIBERIA** - ELBC finally hrd on 7275 after many tries since start of civil war there. 4/6 0706-0741 f/o; weak w/ deep fades; when up from the mud modulation was clean & understandable. Nx at t/1, 0710 ID "This is ELBC...", mx bridge, then same M reading "citizen council" decrees, localized curfews, restricted areas & emergency regs. ID 0725 as "... and that's it for now. This is ELBC transmitting from Monrovia ..." Believe they gave sked as Mon-Wed & Fri, but couldn't hear time. Presumably #0700-7777. ID 0729 "This is ELBC... Monrovia ... meter band ...". Lost audio 0741 & carrier 0553. Tnx to all the AROs who were no where to be found this early AM. (Frank Orcutt, Buffalo, NY)

Liberia

Omega Station B reported back on the air with test transmissions as of April 18. (U.S. Coast Guard via WWV 4/18 via Mike Fern)

**LIBYA** - "Saut ul-Vatan al-Arabi" on new 17725 since 3/17, 1700-0340\*v AA, vy strong, //15435; from 2035 or 2040 carries Palestine pgm "Saut ul-Thowrah ti-Shaabiya fi Filistin" to 2105v. (Ernie Behr) Tripoli now observed on new 17725, in the 2200-2300+ period w/Arabic

political talks. // 15435. Not audible on usual 15415 & this new outlet may be its replacement. Good in Melbourne 3/23. (Bob Padula)

**LITHUANIA** - Radio Vilnius changed some of its frequencies at the beginning of March. The new schedule for English programs follows:

2230-2300 on 666 mw, 9675 and 9710 kHz shortwave;

2300-2330 on 666 mw, 9710, 11770, 11860, 15180, 17690 and 17720 kHz shortwave. This schedule is good only until 3/30 because the Soviet Union will change to summer time on 3/31. [K and Y again didn't listen to Media Network. The Soviet Union has used the summer-time dates to drop an hour of "statutory time" which, starting about 1938, put Moscow (for example) on UTC+3 in winter when normal standard time would have been UTC+2. This means that most of the western USSR including the Baltic did not change its clocks at all on Mar. 31, but will set them back an hour at the end of September.] Tetsuya Kondo, Asian Broadcasting Institute, on Japan DX Corner 3/23, via Mike Fern)

**LUXEMBOURG** - R.Luxembourg, 4/9 on 15350, fair at 0300 w/ID, rock. Some QRM, increasing at 0315 with DW IS audible. (John Norfolk, OKC, OK)

**MALI** - In the wake of the late March coup, Bamako is being heard in Sri Lanka on 11960 kHz with fair signals from \*1600-1800\* in French, and, possibly, vernaculars. Radio Beijing's relays continue without interruption on 15110 and 11790 kHz, with English from 1600-1700, and Swahili from 1700-1730. (Victor Goonetilleke on RNMN 3/28 via Mike Fern)

**MEXICO** - XEOI R.Mil on 6009.9v, from 1130 w/LA pop mx & ads past 1200, good 4/8. XEUW La U de Veracruz on 6013.2v, from 1130 w/Mex mx & ads to 1200 f/o, 4/8. (Ernie Behr)

**MONACO** - R.Monte Carlo, 11685, 0500 FF nx & pop mx to 0731\*, vy strong 3/12, best on LSB, but unhrd since April. (Ernie Behr)

**NETHERLANDS** - Radio Nederland sked, Z-91:

0030-0125	daily	EE	EMA	6020	6165	15560	(RC88B)
0030-0125	daily	PP	Brx	9895	11660		
0130-0225	daily	DD	EMA	6020	6165	9895	15315
0230-0325	daily	SS	Am	6020	6165	9895	15315
0330-0425	daily	DD	ME/E.Af	9855	13700		
0330-0425	daily	EE	WMA	6165	9590		
0430-0525	daily	SS	CA/Mex	6165	9590		
0530-0625	daily	Dutch	WMA	6165	9715		
0530-0625	daily	Dutch	Eur/ME	7130	9895	11710	13770
0630-0725	daily	Dutch	ANZ	9630	9715	(both Bonaire)	
0630-0725	daily	Dutch	Eur	5955	9895	11935	13700
0730-0825	daily	Dutch	Eur	5955	9895	11935	13700
0730-0825	daily	Dutch	As/ME/NAf	21485	21745		
0730-0825	daily	EE	ANZ	9630	9715		
0830-0925	daily	EE	ANZ	9630	17575	21485	
0900-1025	daily	Car	Car/Surinam	6020			
0930-1025	daily	EE	ANZ	11895			
0930-1025	daily	INDO	Indo	17575	21485		
1030-1125	sun	DD(R)	Europe	9715			
1030-1125	sun	DD(R)	SAs	21530			
1030-1125	sun	DD(R)	Afr	21530			
1030-1125	sun	DD(R)	As	25970			
1030-1125	daily	DD	SEA	17575			
1030-1125	daily	DD	EAs	21480			
1030-1125	daily	DD	Car	6020			
1030-1125	daily	DD	ANZ	11890			
1130-1155	daily	SS	Am	6020	11660		
1130-1225	daily	EE	Eur	5955	9715		
1130-1225	daily	EE	As	17575	21480	21520	
1200-1225	daily	SS	CA	9775	15330		
1200-1325	daily	SS	Eur	11865			
1230-1325	daily	FF	Afr	21520			
1230-1325	daily	INDO	Indo	13700	17575	17605	21480
1330-1425	daily	DD		11955	17575	17605	21480
1430-1525	daily	EE	Eur	5955			
1430-1525	daily	EE	As	13770	15150	17575	17605
1430-1525	daily	FF	NAf	15280			
1530-1625	daily	AA	NAf	9860			

1530-1625	daily AA	ME	13770	15560	17605			
1530-1625	daily DD		17575	21480				
1630-1725	sun DD(R)	Surinam	15120					
1630-1725	sun DD(R)	KNA	17605					
1630-1725	daily DD	Eur	5955	9860	13700			
1630-1725	wkdys EE	SAf	6020	15570				
1630-1725	sun DD(R)	Saf	6020	15570				
1730-1825	daily AA	ME/MAf	9860	17605	21590			
1730-1825	daily DD	Atr/ME	6020	13700	15560	15570	21515	
1830-1925	daily EE	Afr	6020	15570	17605	21685		
1830-1925	daily FF	Afr	9895	13700	17775			
1830-1925	daily SS	Eur	9855					
1930-2025	daily AA	MAf	6020	9895	13700			
1930-2025	daily FF	Afr	9860	15570	17605	17775	21685	
2030-2125	daily DD	Afr	17605	21685				
2030-2125	daily EE	Afr	7285	9860	9895	11660	13700	
2030-2125	daily SS	Eur	6020					
2130-2225	daily DD	Am	6020	11950	13700	15365	17605	17760
2130-2225	daily INDO	Indo	7285	9590				
2230-2325	daily INDO	Indo	7285	9590				
2230-2325	daily PP	Brx	15315	15560				
2230-2325	daily SS	SA	15155	17895				
2230-2325	daily Car	Sur/Car	9895	11715				
2330-0025	daily DD	SEA	7285	9590				
2330-0025	daily SS	Am	6020	9895	11715	15315		

Notes: d = daily, w = weekdays, s = sundays  
 Car: Dutch, Papiamento and Surinam languages  
 DD(R) : Religious Dutch (sunday's only)  
 (direct)

PERU - A new station has been reported: R. Santa Monica on 6669v kHz; first heard 4 April. It appears to sign off at 0220 on weekends and 2300 on weekdays. Its location is Santa Monica, Santiago de Chuco province, La Libertad department. (Rafael Rojas, Peru, via Dario Monferini, on WoR, via William Dvorak on Prodigy)

R. Madre de Dios, Puerto Maldonado, 4950 kHz strong enough to be mistaken for R. Bahai, at 0105. (Rich McVicar, QLB via DXPL 4/13 via Mike Fern)

R. Atalaya, \*new\*, Atalaya, heard in Quito at 0140 on 5313+ kHz with pop music, a woman announcer, time checks, echo IDs on tape by a man; signals poor to very good. (Ken MacHarg, QLB via DXPL 4/13 via Mike Fern) [That 'y' in Atalaya is a soft j-z as in "treasure"; it's not on my (1960 encyclopedia) map of Peru. MacHarg pronounces Peruvian 'll' with almost the same sound.--mf]

R. Merced, Tongol, 6755 kHz, heard with strong signals from 0207 to s/off at 0219, with love ballads and pop music. Sign-off tune before national anthem is the Beatles "Oobladee-ooblada". (Rich McVicar, QLB via DXPL 4/13 via Mike Fern)

R. Quillabamba, Quillabamba, 5025 kHz, heard at 0107 with full ID and news; good to very good in Quito. (Ken MacHarg, QLB via DXPL 4/13 via Mike Fern)

PHILIPPINES - VOA has made a rare frequency change for its morning English service to Oceania & East Asia at 2200-0100. Now on new 15445, ex 15305, apparently to avoid WCSN 15300. Noted 3/23. (Bob Padula)

Radio Veritas, Manila, heard with what seemed to be an external service in Tagalog on 15140 kHz at 1515 UTC, followed by five minutes of news in English at 1525; closing announcement in Tagalog at 1530. Starts at 1500. (WBI on DX Party Line 3/23 via Mike Fern)

R. Veritas Asia sked: 0000-0030 Karen on 11795; Sinhalese on 15305; 0030-0055 Kachin on 11795; 0030-0100 Tamil on 15305; 0100-0125 Bengali on 15350, Telugu on 15305; 0130-0155 Hindi on 15350; 0130-0230 Viet on 15245; 0200-0230 Urdu on 21650; 1000-1025 Viet on 9555; 1000-1055 Chinese on 9520; 1030-1100 Russian on 15110; 1100-1125 Viet on 11790; 1130-1155 Chinese on 9520; 1130-1200 Burmese on 9555; 1200-1225 Indo on 9520; 1200-1230 Karen on 9555; 1230-1255 Japanese on 9520; 1230-1255 Kachin on 9555; 1300-1325 Korean on 9555; 1300-1330 Telugu on 9520; 1330-1400 Hindi on 9555; 1330-1400 Sinhalese on 9520; 1400-1425 Tamil on 9520; 1400-1430 Bengali on 9555; 1430-1455 Urdu on 9555; 1430-1500 Viet on 9520; 1500-1525 Tagalog on 15140; 1500-1600 Chinese on 9615; 1525-1530 English on 15140; 2100-2125 Korean on 9710; 2100-2230 Chinese on 11790; 2230-2255 Chinese on 9560, 11790; 2300-2325 Indo on 11710; 2300-2325 Japanese on 15215; 2330-2355 Burmese on 11795; 2330-2355 Viet on 11710. (WBI 3/15)

PORTUGAL - Radio Portugal is noted on new 9555 for the weekend Portuguese to the Americas, 2200-2300, usually carrying European soccer! This apparently replaces 9765, where unheard.

Is parallel 9635, 9740, 11740, 15250, 15425, 21495, all heard. Same sporting event also on 9680, apparently from Radio Renaissance, 2200-2300, but different network. (Bob Padula, Australia)  
R. Portugal Int'l annncs Mo-Fr at 1600-1630 to ME on 15425; 2000-2030 to Eur on 11740; 2100-2130 to Afr on 15250; Tue-Sat at 0230-0300 to ENA on 9765, to WNA on 9705, to Brazil on 11840, 9600. As of 4/17 is using 9555, although ancq 9765. On 3/29 said they would move one hour earlier on 4/1 due to DST, but did not do so. (John Norfolk, OKC, OK)

**QATAR** - QBS Doha, on 17825.4, hrd all day in AA, 1600 to 0348\*, fair since 4/8. Some days from 1400. Also on 9750 since 3/12, from 2200 past 0030 in AA, but not since April. (Ernie Behr)

**SOMALIA** - R. Hargeisa on 6320 kHz, formerly the clandestine voice of the successful rebel movement, heard from 1600-1700. (WBI on DXPL 3/23 via Mike Fern)

**SOUTH AFRICA** - Radio RSA sked to 5/4: English 0400-0500 on 7270, 11920; 1100-1200 on 9555, 11805, 11900, 17835; 1500-1800 on 7230, 15210, 11835. French at 0400-0700 on 15120, 15365, 17815, 1800-2000 on 15365, 17765. Portuguese at 0500-0600 on 7230, 11920, 1800-1900 on 7230; 1900-2100 on 11950. Tsonga at 0900-1000 (Sa/Su) on 9585. Swahili at 1400-1700 on 15365. Lozi at 1500-1800 on 7270. ChiChewa at 1600-1800 on 5960. (WBI 3/15) But noted 4/21 on new 11860 at 0400, also announcing 11920 & 7270. (Bruce MacGibbon)

**TANZANIA** - Radio Tanzania, Dar es Salaam, noted on 7280 with the National Service, 2030-2102\*. This outlet normally in use for local daytime service, rarely heard here. (Bob Padula)

**USA** - A new balloon to carry the transmitting antenna of TV Marti was raised successfully in the Florida keys the week of Mar. 21-27. (Jonathan Marks on RNMM 3/28 via Mike Fern)  
A program schedule for Family Radio WYFR, may be obtained by calling 1-800-534-1495. (Marlin Field)

**USSR** - Radio Beijing in English to Europe, via USSR, now observed on new 9740, \*2200-2300\*, replacing 7170, 3/22. Beijing French to Europe/Africa, also via USSR relay, now heard on new 15540, opening at 2030, to s/off 2127, 3/23. (Bob Padula)

New outlets for Radio Moscow, observed since 3/3, include: 15585 English at 2040, 15475 English to UK 2045, 17625 Russian at 2030, 17780 Portuguese to Africa 2030, 15580 Russian 2000-2100, QRMing VOA co-channel, and 13625 Russian, 2100-2200, severely QRMing KHBI co-channel. (Bob Padula)

- Russia (RFSFR) (Soviet Far East) According to a Radio Moscow broadcast, "Radio Novaya Volna" in Novosibirsk has stopped using 6115 kHz and a long wave frequency. It is still on the air on FM stereo. (BBCM on DXPL 3/23 via Mike Fern)

Japan DX Corner's continuing survey of domestic broadcasting covered the time zones UTC+8 and UTC+9 on 3/23. All stations mentioned relay Radio Orbita 2 which is the first network of All-Union Radio.

Primo Radio is the name used by R. Vladivostok. It has three local channels. The first program broadcasts on 234 mw. The second program is on 810 mw and 5015 sw at 0700-1400. A cultural and music station is on FM, which can be heard in Japan at times via sporadic-E propagation in the 60-75 MHz range.

R. Vladivostok is the source of "Radiostantsi Tikhy Okean" (Radio Pacific Ocean), a program for merchant seamen. The svc area of "Tikhy Okean" extends from the North Pacific to the Indian Ocean. It is carried by RM xmtrs and by regional stations in the Soviet Far East. Sked is 0815-0900, 1315-1400, and 1930-2015. However, the 1315-1400 transmission can only be heard on 810 and 5015. On Saturdays "Tikhy Okean" carries an English newscast which is meant to help students of the English language at sea.

Khabarovsk Radio, like Vladivostok, has three local channels: The first program is on 153 long wave, and on 7210 sw. The ID, taken from the song "Waves of the Amur (River)", is usually played before the local news. The 2nd pgm is on 1152 mw. It's mainly a music channel and a local service for Khabarovsk city. The third program, which sometimes uses the ID "Radiostantsi Amur" is a cultural and classical-music service on FM.

Israel Radio is the name of a one-hour program in Yiddish originating in the Birobidjan autonomous region near Khabarovsk. The Jews living in Birobidjan were forced to move there in the days of Stalin. The program is carried by Birobidjan radio on 216 kHz m.w. The reception in Japan is very bad.

Amur Radio broadcasts from Blagoveschensk, the state capital of Amur, which stretches along the Amur river. Amur is a small state, so the station has no shortwave service. It broadcasts on 189 lw and FM. (Yoshinori Kato, Japan DX Corner 3/23, via Mike Fern)

**UKRAINE** - Radio Kiev will soon start rebroadcasting a 30-minute news and current affairs program from Radio Canada International in Ukrainian on its domestic service. No date has been set. (Andrew Simon, RCI, on RNMM 3/28 via Mike Fern)

**UZBEKISTAN** - The English service of R.Tashkent is hrd on 9600 and 15470 in Colombia 1200-1230. This is beamed to SEA, but signals are good in Bogota. A 2nd English broadcast is heard at 1330-1400. The address is: Radio Tashkent, 49 Khorezm St., Tashkent. (Carlos Daniel Cuenca, Bogota, Colombia, on DXPL 3/23 via Mike Fern)

**U A E** - Abu Dhabi hrd on 17855 & 15315 in AA 1600-2100, since 4/1. From 2100 on 13605, 11965, 9780 and new 11980, in Arabic to 0110\*v. (Ernie Behr)

**VATICAN** - Vatican Radio has made extensive changes to its sked. Many broadcasts retimed, along with new freqs. English to Afr at 0500 on 17710, 17730, 21650; at 0630 on 11620, 17730, 21650; at 1730 on 17710, 17730, 21650; at 2100 on 11620, 17710, 17730. To NA at 0250 only on 7305 & 9615. To Asia, ANZ at 0145 on 11890, 15090; at 1345 on 11830, 15090, 17880; at 1545 on 15090, 17880; at 2245 on 11830, 15105. To Europe at 0500 on 526, 1530, 6248, 7250; at 1345 on 526, 1530, 6248, 9645, 11740; at 1950 on 526, 1530, 6248, 7250. (Bill Matthews)

**YUGOSLAVIA** - The [possible D91] schedule of English broadcasts from Belgrade follows: 0100-0145 to NA on 9620 and 11735; 1300-1330 to NA on 21715; 2200-2245 to Europe on 5955 and 6100. 2200-2245 to Africa on 15165. (CIDX Messenger on DXPL 3/23 via Mike Fern)

#### **CLANDESTINE**

-CAMBODIA - The Voice of Democratic Kampuchea (Cambodian: Samleng Kampuchea Pracheathipatei) broadcasts in support of the former Khmer Rouge regime. Xmtrs believed in People's Republic of China. Sked: 0400-0500 on 15110, 17680; 0900-1000 on 11780, 11835, 1300-1400 on 6025, 9440, 2330-0030 on 7350, 9440; all in Cambodian. (WBI 3/29)

The Voice of the National Army of Democratic Kampuchea (Cambodian: Samleng Kangtoap Cheat Kampuchea Pracheathipatai) supports the coalition gov't of Democratic Kampuchea & is hostile to the present Phnom Penh gov't & to Vietnamese involvement in Cambodia. Sked is 0400-0500, 0900-1000, 1100-1530, 2315-0200, all in Cambodian; 1530-1600 in Vietnamese. All transmissions on 5408-v kHz. (WBI 3/29)

The Voice of the Khmer QSLd for reception while I was on Okinawa. v/s illegible, but did include sked: Sked: 0200-0300 (Su), 0400-0700, 0900-1400, 2230-0200; all in Cambodian and all on 6325 & 1250. (Mike Hardester, NC) VOK (Cambodian: Samleng Khmer) describes self as a non-communist national Cambodian BC stn in the liberated zone of Cambodia under the leadership of Sihanouk and Son Sann. Gives same sked & says 1250 not confirmed. (WBI 3/29)

-**COLOMBIA** - Twenty three years of military activity have come to an end for the Popular Liberation Army, which has put down its arms & entered into normal political activity. News reports say there are now only two anti-government groups left still under arms. There may be here some explanation for the disappearance of Radio Patria Libre. Perhaps the whole anti-government/guerrilla effort in Colombia is running out of steam.

A report in one Colombian newspaper suggests that both Patria Libre and its opposite voice, El Pueblo Responde, are based in Santander province. When active, Patri Libre broadcasts speeches by a Father Manuel Perez. Pueblo Responde's content is said to condemn terrorist activity in Santander and urge rebels to give up and return to civilian life. (Gerry Dexter in Clandestine Confidential, 4/91)

-**ETHIOPIA** - The V. of Ethiopia on the Path to Democracy, controlled by the Ethiopian People's Rev. Party, is on 7010 since 3/2. Sked daily 1530-1615, & 0400-0445. (WBI 3/15 & 3/22)

-**GUATEMALA** - La Voz Popular is reported active on frequencies varying around 3600 & 7000 kHz. The station is said to make frequency jumps every few seconds & IDs as "una emisora de la Unidad Revolucionaria Nacional Guatemalteca". This from DXer Bernard Grundl who was visiting Guatemala, via DSWCI's ShortWave News. Grundl reports the announced sked as: Tuesday 2315-0025 on 7000v; Wednesday 0200-0310 on 3650v; Friday 2315-0025 on 7000v; and Saturday 0200-0310v on 3650. These are UTC days. Actual 3 MHz frequency usage has included such as 3545, 3680, 3700, 3710. An anti-Guatemalan clandestine was active using this station name a few years ago, so perhaps this is the same station. Haven't had a chance to check for this here yet and, for that matter, have seen no reports of it. (Gerry Dexter, in Clandestine Confidential, 4/91)

-**IRAN** - Station IDing as Voice of the Guerrillas (Persian: Seda-ye Cherikha), the radio of the Feda'i-ye Khalq Guerrillas of Iran (Persian: Cherikha-ye Feda'i-ye Jhalq-e Iran) has probably broadcast since 1989. Sked: 0300-0400 & 1730-1830 in Persian on 4357v. Times are approximate & frequency varies in the range 4345-4375 kHz. (WBI 3/29)

The Voice of the Sarbedaran [Union of Iranian Communists] (Persian: Seda-ye Sarbedaran), states its aim is to assist in presenting the views and opinions of the Union of Iranian Communists. Thought to have broadcast since at least 1989, transmission times vary: 1730-1830 Persian on 4207 kHz. (WBI)

R.Iran Touters announced 3/14 it would end broadcasts 3/20. (WBI 3/22)

-IRAQ - The reappearance of R.Baghdad on 15600 kHz has forced the Voice of Free Iraq to move to 15606 NF. // 17960 9570; and on 1053 mw from 1300-0100. (Sanat Virakoon on RNMM 3/28 via Mike Fern)

V. of Rebellious Iraq anncd sked as 0730-0930, 1230-1430 & 1730-1930 on 7097 kHz, but monitoring indicates transmissions are 2-1/2 hours or longer. (Monitoring research 3/15-20, WBI 3/22)

V. of the People of Kurdistan ancd it would suspend use of 3935 kHz for several days. Noted to have returned to 3960 at 1900 3/19. Stations 41 meter channel is 7030 kHz. (WBI 3/22)

R. of Iraqi Republic via Jeddah xmtrs, no longer uses slogan "V of Free Iraq"; hrd 4/13 on 17960, 15605 & 9570 from 2100 in Arabic w/new ID & NA to 2321\*. First part of ID unchanged: "Idh'at-ul-gumhuriya al-Iraqiya fi Baghdad", then several slogans & "Saut al .... Iraqiya" (two words unclear; did not ID as "Saut ul-Iraq al-Hurr"; next day, 4/14, hrd on 17960, 15600 & 9570 to 2318\*, while Baghdad was on 15605.3. (Ernie Behr)

The Voice of Iraqi Kurdistan noted 3/29 at 1840-1930\* on 5684 kHz w/anti-Saddam slogans interspersed with Kurdish songs. (WBI 4/5)

The Voice of Free Iraq has changed its name to the Voice of the Iraqi Opposition. The station had a staff of 40, headquartered near Jidda in Saudi Arabia. It broadcast on 4 shortwave and two m.w. channels. BBC has no real clues to its location. It still announces "Radio of the Iraqi Republic from Baghdad." Items in Kurdish and in Turkmen have been carried. It has been calling for the overthrow of Saddam Hussein, but it is a moot point whether the station has instructed people to overthrow him or have just been raising the issue. Currently heard in Europe from 1100-2400 on 9570, 15600/15605, and 17960 kHz. (Richard Measham, WBI, and Jonathan Marks on RNMM 4/18 via Mike Fern)

BBC has identified two genuine clandestine stations [as monitored -- mf] in Kurdistan. One is the "Voice of the People of Kurdistan" on 3900v. The other, "The Voice of Iraqi Kurdistan" uses a frequency varying between 5500 and 5900 kHz. Hard to find, very difficult audio also, between \*1500-1800\*; occasional loggings by DXers in Europe. (Richard Measham, WBI, on RNMM 4/18 via Mike Fern)

-KASHMIR - Voice of Kashmir Freedom on 5000 kHz is sked 0230-0300, 0700-0730, 1100-1130, 1430-1500, and 1630-1700 in Urdu and Kashmiri. Hrd in England 0230 w/clear IDs in Kashmiri & Urdu, despite QRM from YVTO, Caracas. ID in Urdu sounds like "Sadayi Baryati Kashmir." (Dave Kernock, March "Communication" (British DX Club) on DXPL 3/23 via Mike Fern)

-LAOS - The Radio Station of the Government for the Liberation of the Lao Nation was observed 3/27 at 0725 on 10203 kHz; the station had not been traced since 2/16. (WBI 4/5)

-SRI LANKA - The radio war in Sri Lanka continues. A station calling itself "Voice of the Tamil People" is on 990 mw. The 60-minute morning broadcast takes the Sri Lankan government line. Tamil film music is interrupted by short news and propaganda items. The rebel Tamil Tigers now have a 150-watt FM transmitter near the abandoned Telecom tower in Jaffna. The hour-long broadcast uses the ID "The Voice of the Tigers" on 94.1 mHz. The engineering and program production are professional quality. Commercial power in Jaffna has been off since last June. Fuel and batteries of all kinds are not just banned by the government, they are seized from travelers as well. So are flashlights, radios and recorders. (?? in Jaffna on RNMM 4/18 via Mike Fern)

Clandestine Confidential is available from editor Gerry L. Dexter, RR4, Box 110, Lake Geneva, Wisconsin 53147. Subscription is \$10 for 6 issues (\$13 foreign).

**DISCLAIMER** - Any opinion expressed herein by me is my own, not that of the VOA, by which I am employed, but which I here in no way represent. (DF)

CREDITS: AC - Arthur Cushen; DXPL - DX Party Line on HCJB; FT - Fine Tuning DX Bulletin; JM - Jonathan Marks; NU - Numero Uno weekly newsletter; QLB - Quito Log Book by Rich McVicar & Ken MacHarg on DXPL (HCJB); RBDX - Radio Budapest DX Show; RJDXC - R.Japan DX Corner; RNMM - Radio Nederland Media Network; SCDX - Sweden Calling DXers. WBI - World Broadcasting Information (copyright BBC Monitoring Service - may not be reproduced absent permission of BBCMS)

Material for LN may be submitted either on paper or as an MS-DOS text file on any size MS-DOS diskette; or by EMAIL on CompuServe (ID 76702,771). EMAIL can also reach me on CompuServe through the gateways from Internet and MCI Mail. Prodigy JDBM33A. Genie mail address is D.FERGUSON14. I check CompuServe daily, the SWL Echo & Prodigy almost daily, & GENIE less often. Your support is encouraged & very much appreciated. Dan

# QSL Reports



**Sam Barto**  
47 Prospect Place  
Bristol, CT 06010



**ZHH**



*Turns me on!*

via Cichorek

**NOTE:** The ZHH QSL was submitted by nearly everyone who reported receiving a QSL from the station.

- ALASKA:** KNLS 11880 f/d cd. in 28 ds. w/ a small blue/white pennant. (Palmerheim-WA). 7365 f/d cd.w/ sked. and pennant in 16 ds. (Carberry-CA).
- ALBANIA:** Radio Tirana 16230 just a Happy New Year's cd. in 184 ds. (Yamada-JPN).
- ALGERIA:** Radio Algerienne 9535 f/d cd. in 84 ds. for 2 IRCs. (Nibecker-MEX)...f/d stands for full data on card...Sam.

- ANTIGUA:** Deutsche Welle 9670 f/d "Reunification" cd. in 116 ds. (Peake-IA). 6040 f/d "Map" cd. w/ site indicated in 25 ds. v/s Peter Senger. (D'Angelo-PA).
- ASIATIC RUSSIA:** Radio Moscow 9795, 17690, 9505 and 15180 via Kozomolsk-on-Amur f/d cd. in 80 ds. (Rigas-IL). 11710, 12010, 5905, 9895, 7345, 7260, 15425, 7270, 21480, 17665 and 17605 via Petropavlovsk-Kamchatsky f/d cds. in 80 ds. (Rigas-IL).
- AUSTRALIA:** VLBA 2310 via Alice Springs f/d "ABC Map" cd. in 9 wks. for \$1.00. (Kohlbreuner-PA). Radio Australia 15320 f/d ltr. in 31 ds. for 1 IRC. Also rcvd. poster calendar and sked. (Batson-WV). 25750 via Darwin f/d ltr. w/ calendar in 20 ds. (Yamada-JPN).
- AUSTRIA:** Radio Austria International 9870 f/d "Vienna Railroad Station" cd. in 57 ds. (Levison-PA).

**NOTE OF CONDOLENCE:** A few days ago I received a letter from one of our monthly contributors, Mr. Harold Levison. His wife passed away just 13 days short of their 50th year anniversary. Harold says that he hasn't done too much listening lately because his ICOM R70 has been in the shop for repairs. We all send our sympathy during this time of grief....I know the type of situation that Harold is in and I hope his receiver gets fixed so that it can provide at least a minimal amount of alternative distraction. Things like this make us realize that there are more important things in life than verifying that rare and elusive station...Sam.

- AUSTRIA:** Radio Austria International 6015 via Sackville f/d cd. in 2 mo. (Boulden-CA).... Sorry gang, should be listed under Canada...Sam.

- HONAIRE:** Trans World Radio 9535 f/d "Open Air Market" cd. in 1 mo. (Roswell). Radio Nederland 15315 f/d cd. in 28 ds. w/ schedule, station info., sticker and calendar. (Mayberry).

- BRASIL:** Radio Alvorada de Parintins 4965 f/d cd. in 52 ds. for a PT rpt. and \$1.00. This after a f/up rpt. (Wakisata-JPN). Radio Educacao Rural 4755 n/d form ltr. in 37 ds. for a PT rpt. and \$1.00. v/s Ailton Guerra, Gerente. (Wakisaka-JPN). Radio Cancao Nova 9675 prepared cd., w/ ltr., schedule and sticker in 33 ds. for a PT rpt. and \$1.00. v/s Tadeu Rodrigues Machado. This was after a f/up rpt. (Wilkins-CO). Radio Pioneira de Teresina 5015 p/d ltr. in 32 ds. for a PT rpt. and \$1.00. v/s P. Tony Batista, Director. (Wakisaka-JPN).

- HUNGARY:** Radio Sofia 11660 cd. w/ schedule in 66 ds. (Darling-PNG). f/d "The Etur" cd. in 65 ds. for 2 IRCs. (Carson).
- CAMEROON:** CRTV Bafoussam 4000 f/d prepared cd. in 52 ds. for a FR rpt and ms. (Hosmer-MI).

DEAR BIR Samuel Barto :

tor.

Confirming your listening of our signals "RADIO MURMANSK" on the 88 z of October, 1978 from 86.25 to 86.37 UTC in frequency 3930 khz (Monchegorsk Radiostation).

Sincerely, *S.M.* Perederi D.V.  
/Chief engineer/

s. Murmansk

13.10.89.



**NOTES:** Don Hosmer reports that during the recent Persian Gulf crisis he did 5 live reports from his basement DX shack for a local TV station. It was quite interesting but made him nervous each time. Hi! Richard Wallace says he finally got his QSL from the BBC. Some stations send schedules and the like but have a no-QSL policy. Can it be that much harder to enclose a QSL card?...Sam. Randy Doyle of P.O. Box 228, Winslow, AR 72959 sent in his first report to the Column. He is a retired journalist. Randy needs the address for KUSA. Can someone assist him? Don Weber has been receiving nothing but a hard time from the VOA in trying to QSL the Wertachtal site. Even the schedule said this was the site but it came back with Poro on it. Eventually he got the QSL but this time with the incorrect date!

**CAMEROON:** CRTV Douala 4795 f/d personal ltr. in 6 wks. after a f/up rpt. w/ \$2.00. v/s James Achanyi-Fontem. Station now requires \$2.00 for rp. (Lobdell-MA).  
CRTV Bertoua 4750 f/d prepared cd. w/ ltr. in 57 ds.  
 \* same v/s as above. New Addr: CRTV, Feedback, P.O. Box 986, Douala. (D'Angelo-PA). CRTV Yaounde 4850 p/d cd. in 7 mo. for a FR rpt. and ms. (Butcher-MA).

**CANADA:** CHU 14670 n/d "Sir Sanford Fleming" cd. in 123 ds. for a taped rpt. and 2 f/up rpts. (Peake-IA). Radio Canada International 15260 f/d "Satellite" cd. for the "700th SWL Digest Program". Sticker rcvd. (Hosmer-MI). CFXY 6080 f/d cd. in 3 wks. w/ station history. (Boulden-CA). CRZU 6160 p/d "CBC Centre" cd. in 12 ds. (Yamada-JPN). same cd. in 2 wks. (Boulden-CA).

**CELEBES:** RRI Ujung Pandang 4719.3 f/d cd. in 1 mo. v/s Drs. H. Harmyn Husein. (Hazzard).  
**CHILE:** Radio Nacional de Chile 15140 f/d ltr. w/ goodies in 22 ds. after 4 f/up rpts. in SP w/ \$1.00. v/s Carlos Toledo Verdugo, QSL Manager. Addr: Casilla 296, San Fernando, VI Region, Chile....The v/s stated do not mention RN de Chile on envelope and enclose 3 IRCs or \$1.00 for rp. (Hazzard-PA).

**CHINA, PEOPLES REP. OF:** BPM 9351 p/d ltr. in 40 ds. for ms. (Turnick-PA). Radio Beijing 11715 f/d cd. in 29 ds. (Mayberry). 7350 and 7190 via Kunming f/d cd. in 3½ mo. (Barto) 9820, 4200 and 11650 via Sian f/d folder cd. in 4 mo. (Barto). 6933 and 7375 f/d cd. w/ schedule in 3 mo. (Barto). Pujian Front PBS 7850 f/d cd. in 4 mo. for 83 reception. (Barto). Yunnan PBS 4759 f/d cd. in 3½ mo. (Barto-CT).

**CLANDESTINE:** Voice of Afghan Unity 17540 cd. in 2½ yrs. for 2 IRCs. Addr: P.O. Box 2605, \* 2000 Hamburg 60, Germany. (Darling-PNG). Voice of June 4th 15280 n/d ltr. in 10 ds. v/s Sanyuan Li, Director who stated... "To my amazement, I indeed found that your recording was our broadcast to China! We have received several recordings, but none of them were proved to be our broadcast, so yours is the first one recorded in the USA." (Berg-MA)....Great! Voice of the Khmer 6325 p/d ltr. w/ schedule in 44 ds. for a reception from Okinawa. Addr: VOK, c/o P.O. Box 22-25, Ramindra P.O., Bangkok 10 220, Thailand. (Hardester-OKI).

**COLOMBIA:** Ondas del Orteguzza 4975 n/d form ltr. w/ sticker in 39 ds. for a SP rpt. and \$1.00. v/s C.P. Norberto Plaza Vargas, Subgerente. (Wakisaka-JPN). same w/ f/d prepared cd. in 5 mo. for a SP rpt. and ms. (Orcutt-NY). Radio Melodia 6045.6 p/d ltr. in 2 mo. for a SP rpt., \$1.00, ms. and 6 f/up rpts. This was from an 86 reception. Also rcvd. pennant. v/s Gerardo Paez Mejia, VP. (Palmersheim). 6045 f/d prepared cd. in 28 ds. for a SP rpt. and \$1.00. Pennant rcvd. Addr: Calle 61, No. \* 3B-05. (Wilkins-CO). La Voz del

Río Arauca 4895 prepared cd. in 28 ds. for a SP rpt. and \$1.00. Addr: Box 16555, Bogota. (Wilkins-CO). same after 4 f/up rpts. in SP for ms. and SASE. v/s Guillermo Pulido, Gerente. (Turnick). Caracol Melva 6150 beautiful color cd cd. in 3½ mo. for a SP rpt. v/s Luis Edo. Bejarano J., Jefe de Produccion. Sticker rcvd. Addr: A.A. 8700, Bogota. (Berg-MA).

DEVLET METEOROLOJİ İŞLERİ  
 GENEL MÜDÜRLÜĞÜ  
 P.İ. 401. ANKARA

TURKISH STATE METEOROLOGICAL SERVICE  
 P.O. Box 401. ANKARA

Dear ORCUTT,

Thank you for your kind letter of 30<sup>th</sup> December 1990 concerning reception report on our radio broadcast.

I would like to inform you that your report on the reception of the Voice of Meteorology is entirely in conformity with our transmissions being made on 6900 kHz.

The Turkish State Meteorological Service employs a transmitter with a power of 5 kw for the purpose of the Voice of Meteorology. The antenna used is a delta matched open wire balanced 500-600 Ohms and 28 m. long by a height of 17 m. from the ground.

**COSTA RICA: Radio Reloj** 4832 p/d cd. in 37 ds. for a SP rpt. and \$1.00. (Washburn-ME).

**Radio Lira Internacional - AMR** 9725 f/d cd. w/ schedule and pennant in 51 ds. (Prisco-PA). same w/ "Coat of Arms" cd. and pennant in 93 ds. (Martin-MI). **TIPC** 5055 f/d cd. w/ sticker in 32 ds. v/s Juan Ochoa Sr., Administrador. (Doyle-AR). **Radio For Peace International** 21565 f/d cd. w/ schedule in 29 ds. for 2 IRCs. (Martin). 13630 f/d cd. in 20 ds. for \$1.00. (Prisco). f/d "Dove" cd. in 38 ds. w/ ltr. (MacHarg).

**CUBA: Radio Habana** 11820 f/d cd. in 122 ds. for 1 IRC. (Batson-WV). 9505 f/d cd. in 120 ds. for 1 IRC. (Batson-WV).

**CYPRUS: HFBS** 7125 p/d "Logo/Map" cd. in 42 ds. for \$1.00. (Hosmer-MI).

**CZECHOSLOVAKIA: Radio Praha International** 7345 via **Litomyšl** f/d cd. in 50 ds. (Rigas-IL). f/d cd. in 32 ds. w/ schedule, pennants and stickers. (Mayberry-TX). f/d cd. in 1 1/2 mo. (Boulden). f/d "Kono-piste Chateau" cd. in 35 ds. (Levison-PA). f/d "Kromeriz Chateau" cd.



**AFRICA 1**  
Radio continent de l'Afrique - 1980

Libreville, le 24 Décembre 1980

Cher Monsieur J. WEBER  
DONALD  
3188 WALTER ROAD  
WESTLAKE OHIO 44148  
WARO ALAND  
FINLANDE

Cher Monsieur,

Vous avez reçu votre demande de GEL.

Après vérification auprès de nos services, nous pouvons confirmer votre GEL.

Prévisions : 15 478 Dhs  
Date : 18 Oct 1987  
Reire : 19030  
RISPO : 43.234

Si vous remarquez de nous avoir écrit et espérons que vous avez apprécié nos programmes.

Le Directeur Technique.



SATURDAYS SUNDAYS!!  
**Radio Free New York**



in 51 ds. (Peake-IA). **OLB5** 3170 f/d cd. in 29 ds. for ms. after 2 f/up rpt. (Turnick-PA).

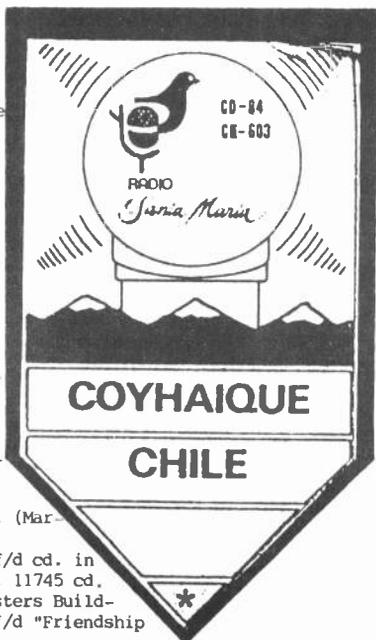
**DUBAI: UAE Radio and TV Dubai** 21605 f/d "Map" cd. w/ schedule in 83 ds. for 2 IRCs. v/s K.F. Fenner. (Martin). same w/ schedule in 44 ds. (Prisco). 15320 f/d cd. w/ schedule & pennant in ww ds. for 1 IRC. (Doyle-AR).

**ECUADOR: HCJB** 9745 f/d "T-6" cd. in 43 ds. w/ calendar and schedule. (Mayberry-TX)... About your question, I really don't have any deadline. Just get your rpt. in and they will appear in the Column... Sam. same cd. w/ schedule in 46 ds. (Doyle-AR). cd. in 35 ds. v/s Glen Volkhardt. (Peake-IA). same in 2 mo. (Grenier-NV). cd. w/ schedule in 28 ds. for 2 IRCs. (Carberry-CA). 21480 f/d cd. in 38 ds. v/s Sam Rowley. (Peake). 25950 (SSB) cd. w/ schedule in 29 ds. for 2 IRCs. (Darling-PNG). 15155, 9745, 17890 and 11835 f/d "Chimborazo Mtn." cd. in 38 ds. (Peake). 15155 f/d cd. in 2 mo. (Grenier-NV). **Radio Centro** 3290 2 page personal ltr. in 1 mo. for a SP rpt. and \$1.00. v/s Luis A. Gamboa T., Director-Gerente (Lobdell-MA). **Radio Federacion** 4960 p/d ltr. w/ f/d prepared cd. in 2 mo. for a SP rpt. & ms. v/s Prof. Albino M. Utitiaj P., Dirigente de Medios Devcomunicacion. (Orcutt-NY). **Radio Jesus del Gran Poder** 5050 f/d prepared cd. after 4 f/up rpt. in SP w/ ms. Pennant was rcvd. (Turnick-PA). **Radiodifusora Nacional del Ecuador** 15220 f/d "Mtn. Cotopaxi" cd. in 3 minutes! I guess you were at the station. Addr: Rich McVicar, HCJB, Casilla 691, Quito. (MacHarg). **La Voz del Upano** 5040 p/d ltr. w/ calendar and 3 stickers for a SP rpt. v/s Dolores M. Palacios C., Director. (Yamada-JPN).

\* **Radio Pcos del Oriente** 3270 p/d "Diploma of Honor" cd. in 55 ds. for a SP rpt. and HCJB sticker. Card was signed by almost everyone at the station! Addr: 11 De Febrero y Mariscal Sucre, Lago Agrio, Provincia Sucumbios, Ecuador. (MacHarg).

**ENGLAND: HFBS** 21735 p/d cd. in 36 ds. for 2 IRCs. (Martin-MI). 17695 f/d cd. in 60 ds. (Rigas-IL).

**EUROPEAN RUSSIA: Radio Moscow** 21680 via **Armavir** f/d cd. in 1 mo. v/s Mrs. Elena Frolovskaya. (Butcher-MA). 11745 cd. in 3 mo. (Lare-MI). 11630 via **Moscow** f/d "Ministers Building" cd. in 3 mo. (Lare). 9820 via **Leningrad** f/d "Friendship House" cd. in 2 mo. (Butcher-MA).





**EURO PIRATES: Free Radio Service Holland** 7490 f/d cd. of their "10th Birthday" in 81 ds. for 1 IRC. (Dieterich-GER). **Radio 48** [England] 6220 p/d ltr. in 40 ds. for 1 IRC. (Dieterich). **Radio Confusion** [England] 6290 p/d "Indie Sounds" cd. in 155 ds. for \$1.00. (Dieterich). **Starclub Radio** [Germany] 6315 f/d cd. in 51 ds. for ms. Also rcvd. personal ltr. and info. sheet on Starclub where the Beatles started their career. (Dieterich). **Radio Orang Utan International** [Holland] 6206 f/d ltr. w/ sticker in 9 ds. for 1 IRC. (Dieterich). **Radio Benelux** [Germany] 7480 f/d folder QSL in 1 mo. for ms. Station info. was rcvd. (Dieterich). **Radio TelStar** [Holland] 6220 p/d ltr. in 24 ds. for 1 IRC. (Dieterich). **Radio Tower** 15050 (USB) f/d blue "Logo" cd. w/ personal ltr. and a postcard in 24 ds. for \$1.00. (Palmerheim).

**FINLAND: Radio Finland** form ltr. in 36 ds. explaining why they don't QSL. (Mayberry).

**FRENCH GUYANA: Radio Japan** 15325 n/d "Flower" cd. in 5 wks. (Lobdell-MA).

**GABON: Swiss Radio International** 12035 f/d cd. in 34 ds. (Hazzard-PA). **Africa No. One** 15475 via **Libreville** f/d "World w/ Headset" cd. and a ltr. in 405 ds. for a FR rpt. and ms. (Butcher-MA).

**GERMANY (East): Radio Berlin International** 15350 cd. w/ ltr. in 66 ds. (Darling-PNG).

**GERMANY (West): Radio Bremen** 6190 f/d cd. in 67 ds. w/ 2 stickers. (Dieterich-GER). same in 78 ds. w/ station stickers. (D'Angelo-PA). **Sueddeutscher Rundfunk** 6030 f/d "Funkhaus" cd. in 39 ds. w/ station history and stickers. (Dieterich). **Deutsche Welle** 9605 f/d cd. in 123 ds. for 1 IRC. (Batson-WV). 9765 f/d "Reunification" cd. in 2 mo. (Boulden).

**GREECE: Voice of Greece** 11645 f/d cd. w/ schedule in 30 ds. (Carberry-CA). 9420 f/d cd. w/ personal ltr. and schedule in 2 mo. (Boulden). **Radiophonikos Stathmos Maledonias** 9425 via **Kavala** n/d ltr. w/ schedule in 3 mo. (Barto-CT).

**GUAM: KSDA** 11980 f/d "Map" cd. w/ schedule and sticker in 57 ds. (Dieterich). **KIWR** 11650 f/d cd. w/ personal note and schedule in 26 ds. for 3 IRCs. (Martin-MI).

**GUATEMALA: Radio Tezulutlan** 4835 f/d cd. w/ form ltr. in 42 ds. for a SP rpt. and \$1.00. v/s Alberto PA Macz, Director. (Wakisaka-JPN).

**HAITI: Radio 4VEH** 4930 f/d cd. in 3 mo. for a FR rpt. and \$1.00. (Wakisaka-JPN).

**HAWAII: WHVH** 15000 f/d "Outrigger" cd. in 17 ds. v/s Noboru Hironaka, Engineer-in-Charge. (Fanderys-OH). 10000 p/d folder cd. in 15 ds. w/ schedule. (Mayberry).

**HONG KONG: HRC** 17830 f/d "Chinese Junks" cd. in 49 ds. Thanks to D'Angelo for addr. \* (Levison-PA). **VPSB** 4232.5 f/d ltr. in 1 mo. for \$1.00. (returned). (Lare-MI). **VPS35** 8539 f/d ltr. in 1 mo. (Lare-MI)...Last two are time signal stations.

**HUNGARY: Radio Budapest** 9520 f/d cd. w/ nice pennant in 36 ds. (Doyle). 9835 f/d cd. w/ schedule in 23 ds. (Levison-PA).

**ICELAND: INBS** 3295 f/d cd. in 6 wks. for 1 IRC. (Lobdell). f/d photo of "Reykjavic" cd. in 5 wks. for 2 IRCs. (Allen-OK). 13855 f/d cd. in 16 ds. (Wallace-CT).

**INDIA: All India Radio** 9910 p/d cd. in 54 ds. (Macharg). 11620 via **Bangalore** f/d cd. \* in 7 wks. (Klinck-NY).

**IRELAND: Radio Dublin International** 6910 f/d cd. w/ several stickers and a personal \* ltr. from v/s Bernard Evans in 105 ds. after a f/up rpt. (Wakisaka-JPN).

**ISRAEL: Kol Israel** 11605 f/d cd. in 59 ds. for 1 IRC. Schedule rcvd. (Batson-WV). 9435 f/d cd. in 48 ds. for 1 IRC. (Batson). 11655 f/d cd. in 58 ds. for 2 IRCs. (Martin-MI).

**ITALY: UNESCO Radio** 9815 via **IRRS** \* f/d ltr. w/ schedule for 1 IRC. v/s Ms. Maha Bulos. (Turnick). **RAI** 9575 f/d cd. in 5 wks. (Boulden). **United Nations Radio** 9815 via **IRRS** f/d cd. in 69 ds. for ms. v/s Carmen Blandon. Schedule rcvd. (Turnick). **AMR-Europe** 7230 f/d "World Map" cd. w/ sticker and ltr. in 65 ds. (Turnick).



Wir danken Ihnen für Ihren Empfangsbericht und bestätigen Ihnen gern die Richtigkeit Ihrer Beobachtung. Sollten unsere Sender ANTICLA

am 3.10.1990 UTC  
um 0100-0150 kHz  
auf 6040  
Thank you for your reception report which has been checked with our schedules and found to be correct. We are very glad to hear with verify your report.

Deutsche Welle  
HA Hochfrequenztechnik

*Rob Sage*

Deutsche Welle Postfach 9000 50  
D-5000 Köln 1  
Bundesrepublik Deutschland



Bill Kurrasch  
5607 Lincoln Road  
Ontario  
N.Y. 14519

USA

**ITALY: Voice of Europe** 7538 f/d cd. in 30 ds. (Rigas-IL). **European Christian Radio** 6210 f/d cd. in 26 ds. for \$1.00. v/s John Adams, Director. (D'Angelo-PA). same w/ personal ltr. in 5 wks. for \$1.00. (Allen-OK).

**JAPAN: JYJ** 8000 f/d cd. in 3 wks. for 1 IRC. (Boulden). **Radio Tampa** 3945 f/d cd. w/ ltr. in 10 ds. (Carberry-CA). 3925 f/d cd. w/ schedule in 1 wk. (Grenier). 9595 f/d cd. w/ sheet of stickers in 14 ds. for 2 IRCs. (Doyle-AR). **Radio Japan** 9505 n/d cd. w/ schedule in 1 mo. (Mayberry). 15325 cd. w/ sticker in 2 wks. (Carberry-CA).

**KOREA, REPUBLIC OF: Radio Korea** 9640 f/d "Temple Windbell" cd. w/ schedule in 42 ds. for 2 IRCs. (Martin-MI). 11715 f/d cd.

\* w/ schedule in 183 ds. (Levison-PA). **HLA** 5000 f/d cd. w/ schedule in 17 ds. (Palmer-IAOS: **Lao National Radio** 7383 via **Savannakhet** cd. w/ schedule in only 4 sheim-WA). \* years after 2 f/up rpt. (Darling-PNG).

**LEBANON: King of Hope** 6280 f/d cd. in 46 ds. for 1 IRC. (Butcher-MA).

**LUXEMBOURG: Radio TV Luxembourg** 15350 f/d cd. w/ stickers in 35 ds. for 1 IRC. (Martin).

**MALI: Radio Beijing** 11715 via **Bamako** f/d cd. in 27 ds. (Turnick). 9770 f/d cd. in 2 mo. (Boulden). f/d "Silk Figurine" cd. w/ newspaper in 38 ds. (Prisco-PA).

### Canadian Broadcasting Corporation

is pleased to verify your reception

on December 16 1990

of its transmissions from

Station CKZU

Frequency 6.16 MHz

Power 1000 Watts

This station is on the

CBC Pacific Network

Per Dave Neustadt

Date February 4, 1991

Comments Thank you for your report

**MALTA: Voice of the Mediterranean** 9765 f/d "Art" cd. in 141 ds. for 1 IRC. (Dieterich-GER). **Deutsche Welle** 11865 and 9565 f/d cd. w/ site noted in 25 ds. (D'Angelo-PA).

**MEXICO: Nucleo Radio Mil** 6010 f/d prepared cd. in 3 wks. after a f/up rpt. in SP w/ \$1.00. (Allen-OK).

**MONACO: Trans World Radio** 9480 f/d cd. w/ schedule in 12 ds. (Name?)

**NEWFOUNDLAND: CKZN** 6160 f/d "CBC" cd. w/ form ltr. in 24 ds. v/s S. Williams. (Fanderys-OH).

**NEW IRELAND: Radio New Ireland** 3905 f/d ltr. in 27 ds. for ms. v/s Otto A. Malatana, Station Manager.

**NEW ZEALAND: Radio New Zealand International** 9700 f/d cd. w/ schedule and Tiki in 1 mo. (Carberry-CA).

**NICARAGUA: Radio Informaciones de Centro America**

\* 4919 n/d black T-Shirt "RICA" in 7 wks. for a SP rpt. and \$1.00. v/s Digna Bendana B., Director. This via registered mail. Addr: A.P. 38, Sucursal 14 de Septiembre, Managua. (Howard-CA).

**NIGERIA: PRCN Kaduna** 4770 f/d personal ltr. in 26 ds. for ms. v/s Johnson D. Alle. Also rcvd. schedule. (Butcher). **Radio Nigeria** 6050 via **Ibadan** p/d ltr. in 6 mo. for ms. after a f/up rpt. (Klinck-NY).

**NORTHERN IRELAND: Northern Ireland Relay Service** 6273 f/d

\* blue cd. w/ info. sheet in 3 wks. for a taped rpt. and \$1.00. (Berg-MA). 6272.4 f/d cd. in 3 wks. for \$1.00. v/s Andy Craig, Engineer. (Kohlbrener-PA).

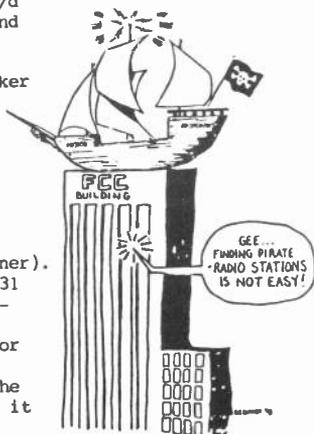
**NORWAY: Radio Norway International** 9590 f/d cd. w/ sticker and schedule in 56 ds. (Dieterich). 15220 same in 31 ds. w/ schedule. (Carberry-CA).

**PAKISTAN: Radio Pakistan** 21520 n/d ltr. in 51 ds. w/ magazine and stickers saying that they don't transmit to SA. (MacHarg). 11570 ltr. in 114 ds. (Darling).

**PAPUA NEW GUINEA: Radio Morobe** 3220 f/d ltr. in 25 ds. for ms. v/s Aloysius R. Nase, Station Manager. (Hazzard-PA). **Radio Sandaun** 3205 p/d ltr. in 7 wks. for ms. v/s Gabriel Deckwalen, Station Manager. (Kohlbrener).

**PARAGUAY: Radio Nacional del Paraguay** 9735 n/d ltr. in 31 ds. for a SP rpt. v/s Augusto Ocampos Caballero, General Director. (Yamada-JPN).

**PERU: Radio San Miguel** 4966 f/d ltr. w/ station stamp for a 1985 reception. NZ DXer Paul Edwards visited the station saw my rpt. and mailed the QSL from Chile. The whole of Peru is in a very bad state especially when it comes to QSLing. (Berg-MA).



**PERU: Radio Ancash** 4991 n/d ltr. w/ great postcard in 20 ds. for a SP rpt. and \$1.00. v/s Sr. Armando Moreno Romero. (Wakisaka-JPN).

**PHILIPPINES: VOA** 21585 cd. in 116 ds. (Darling). 11785 f/d cd. in 200 ds. after several ltrs. and telephone calls. (Webster-OH). 15290 cd. in 2 mo. (Boulden).

**PORTUGAL: Radio Portugal** 15250 cd. w/ sked. in 32 ds. (Darling-PNG). 11840 via **Pegoses** f/d cd. w/ site and power in 30 ds. after a f/up rpt. (Rigas-IL).

**ROMANIA: Radio Romania International** 15250 f/d "Folk Costume of Central Romania" cd. w/ schedule in 267 ds. (Yamada-JPN).

**RWANDA: Deutsche Welle** 15270 f/d cd. w/ site in 9 wks. (Kohlbremer-PA). 17860 f/d cd. in 30 ds. Letter was rcvd. (Hazzard-PA).

**SARAH: Radio TV Malaysia** 4970 via **Kota Kinabalu** p/d "Map/Logo" cd. in 26 ds. for ms. (Hosmer-MI).

**SAINT HELENA: Radio Saint Helena** 11092.5 f/d "Coat of Arms/Map" cd. in 5 mo. for 3 \* IRCs. v/s Joy Lawrence. (Lare-MI). same for 3 IRCs. in 147 ds. v/s Anthony Leo, Station Manager. (D'Angelo-PA). in 4½ mo. w/ station history. (Allen-OK). in 133 ds. for 3 IRCs. (Hosmer-MI). in 127 ds. w/ form ltr. for 3 IRCs. (Swedberg-OR). in 150 ds. for \$1.00. (Rigas-IL).

**SAIPAN: KHI** 9530 f/d "DIY" cd. in 44 ds. for ms. (Hosmer-MI).

**SARAWAK: Radio TV Malaysia** 4950 via **Kuching** f/d "Broadcasting House" cd. in 96 ds. for ms. (Hosmer-MI).

**SAUDI ARABIA: BSKSA** 15060 f/d cd. w/ schedule, form ltr. and book in 1 mo. via registered mail. (Swedberg-OR).

**SEYCHELLES: BBC** 15420 f/d ltr. direct from site in 46 ds. for ms. v/s Peter J. Loveday, Senior Transmitter Manager. (Turnick-PA). p/d ltr. in 42 ds. from site for 1 IRC. (Hazzard-PA).

**SOUTH AFRICA: Radio Truth** 5015 rcvd. acknowledgement from the SABC \* w/ a denial of any knowledge of the station except that it has been off the air since 9/90. (Klinck-NY).

**SPAIN: EBC Time Signal Station** 12008 f/d cd. in 1 mo. for \$1.00 \* which was returned. (Lare-MI).

**SWAZILAND: Trans World Radio** 3200 and 3240 f/d cd. w/ site in 4 mo. for a taped rpt. and ms. along w/ \$1.00. (Klinck-NY). 11755 f/d folder cd. in 111 ds. Sticker and schedule were rcvd. (Carson).

**SWEDEN: Radio Sweden International** 9695 f/d "Stockholm" cd. in 25 ds. (Carberry-CA). 11705 f/d cd. in 25 ds. w/ schedule, poster and DX tips. (Mayberry-TX).

**SWITZERLAND: Swiss Radio International** 17730 f/d "The Munot Tower" cd. in 1 mo. (Grenier). f/d cd. w/ schedule in 37 ds. (Mayberry-TX). 12035 f/d "Lucerne" cd. w/ sked. in 1 mo. (Carberry). **Radio Beijing** 3985 f/d cd. in 25 ds. (Rigas-IL). (Boulden).

**SYRIA: Syrian Radio and Television** 15095 f/d cd. in 5 mo. w/ sticker and schedule.

**TADZHIKISTAN: Radio Moscow** 12025 via **Dushanbe** f/d cd. in 10 wks. (Klinck-NY).

**TAIWAN: Voice of Free China** 5950 f/d cd. w/ schedule and newspaper and sticker in 17 ds. (Carberry). f/d "Orphans Art Work" cd. in 43 ds. for 3 IRCs. (Carson). 11805 f/d cd.

## QSL

Certificado de Sintonía

Emisora Armonías del Caqueta, Florencia

A Sr. Richard A. D'Angelo

Muchas gracias por su informe de recepción. Tenemos el gusto de confirmar su control de nuestra emisión en 4.915 kHz. de fecha 16 de Febrero de 1989 a las 10.34 a 11.12 horas de UTC con 3,000 vatios de potencia.

*P. Alvarado Serna*

firma y sello oficial



Muchas gracias por su carta con el informe de sintonía de nuestra Emisora. No le había escrito antes, pues parece que su carta anterior se extravió. In saludo muy afectuoso para su esposa Susan y sus dos hijos.



Emisora  
Armonías del Caqueta

H.J.V.K.  
30 KW - 970 KHz  
Canal preferencial  
3 KW - 4915 KHz  
Onda corta



A todos les deseo muchas felicidades en Navidad y Año Nuevo. Espero seguir recibiendo sus comunicaciones. Reciba el saludo de éste su amigo:

*P. Alvarado Serna*  
P. Alvarado Serna Alzate  
Director.

in 29 ds. w/ schedule. (Mayberry).  
**THAILAND: Radio Thailand** 9655 f/d cd. in 40 ds. v/s Bubba Laemluang, Chief of External Services. (Rigas).  
**TOGO: Radiodiffusion Television Togolaise** 5047 f/d cd. in 39 ds. for a FR rpt., tape and ms. (Wallace-CT).  
**TONGA: TBC** 5030 n/d "A3Z" cd. in 3 wks. v/s S. Tavake Fusimalohi, General Manager. (Howard-CA).  
**TURKEY: Voice of Turkey** 9445 f/d "Vase" cd. w/ schedule and stickers in 39 ds. (Mayberry). same in 57 ds. w/ stickers and schedule. (MacHarg). **Turkish Police Radio** 7370 f/d cd. in 94 ds. for a taped rpt. and ms. (Klinck-NY). f/d cd. in 2 mo. for a taped rpt. and ms. (Orcutt-NY).

**EMISORAS**

**JESUS DEL GRAN PODER**

"VOZ CRISTIANA EN EL CIELO DE AMERICA"

OM 670 KHz  
OC 5050 KHz  
FM 1025 MHz

**QUITO**

**ECCUADOR**

**UKRAINIAN SSR: Radio Moscow** 9685 and 9870 via **Vinnitza** f/d cd. in 80 ds. w/ site. (Rigas-IL). 9685 via **Simeferopol** f/d "Council of Ministers Building" cd. in 3 mo. (Lare-MI). 7115 via **Lvov** f/d cd. in 80 ds. Has anyone ever QSLed this freq. as **Plowdiv?** (I believe so...Sam) (Rigas-IL).

**USA: WHRI** 13760 f/d cd. in 72 ds. w/ schedule. (Mayberry-TX). 9495 f/d cd. in 2 mo. (Bouden). **WWV** 10000 f/d folder cd. w/ station info. in 40 ds. (Mayberry-TX). **WCSN** 9890 f/d "Antenna" cd. in 1 mo. (Grenier-NV). 9850 f/d "DIY" cd. in 22 ds. for ms. (Hosmer-MI). **KTEN** 15590 f/d "Antenna" cd. in 35 ds. (Prisco-PA). same in 23 ds. w/ schedule. (Mayberry). p/d cd. in 21 ds. (Peake-IA). two cards were rcv'd. for rpts. to the CA and UT addresses. (Berg-MA). 15595 f/d cd. in 2 mo. for ms. (Wilkins-CO). **Radio Libertas** 11790 via **WHRI** f/d cd. in 90 ds. (Rigas-IL). **Radio New York International** 7520 via **WMCR** f/d cd. in 73 ds. for ms. (Turnick-PA). same w/ personal ltr. from Randi Steele in 30 ds. w/ schedule. (Mayberry). f/d paper cd. in 29 ds. for SASE and \$1.00. (Hosmer-MI). **WYFR** 17612 f/d cd. in 18 ds. w/ personal note and schedule.

(Mayberry). **WINB** 15295 f/d cd. in 31 ds. w/ schedule. (Mayberry) **WSHB** 15610 form ltr. w/ sticker in 23 ds. after a f/up rpt. (Mayberry). 7395 f/d "DIY" cd. in 27 ds. for ms. (Hosmer-MI). **Voice of Free China** 5950 via **WYFR** f/d cd. w/ schedule in 21 ds. (Levison-PA). f/d "Hanging Scrool" cd. w/ stickers in 27 ds. (Levison-PA). f/d "Art" cd. in 38 ds. w/ sticker and pocket diary. (Levison). **VOA Bethany** 17800 cd. in 2 mo. (Bouden). 19261 "Special EDXC" cd. in 224 ds. after a f/up rpt. (Darling-PNG). 11835 (site?) cd. in 3 wks. (Bouden). **La Voz de Fundacion** 9465 via **WHRI** cd. w/ ltr. and schedule in 44 ds. for \$1.00. (Darling-PNG). **Radio Free New York** 7520 via **WMCR** p/d cd. in 59 ds. (Mayberry).

**USA (Pirates): Voice of Pancho Villa** 7415 f/d cd. in 9 ds. for ms. (Turnick-PA). **CFTN** 7410 f/d cd. in 1 mo. (Rigas-IL). **Radio USA** 7417 f/d cd. w/ ltr. in 2 mo. and station info. (Orcutt-NY). **Radio Mexico International** 7414 f/d multi-colored computer generated form ltr. in 65 ds. for ms. Also rcvd. pen from Roseland Farms Organic Meats. (Palmerheim-WA). **Boner Radio International** 7415 f/d color photo of announcers w/ bags over their heads in 69 ds. (Zeller-OH). **WHD** 7415 f/d B&W "Transmitter and Tower" drawing in 148 ds. to the Wellsville addr. (Zeller) **Voice of Anarchy** 7413 f/d station data sheet in 44 ds. (Zeller-OH)....If the FCC reads this stuff, it can be rather funny!...Sam.

Dear Mr. D'Angelo

Thank you for your report!

Confirming our transmission JYY on 10 MHz

Day	Month	Year	UTC/GMT
	19	Nov. 1990	12:00 -12:10

Remarks: It's very alrightful if you to send a kind information

Standard-Frequency and Time-Signal Station JYY  
Frequency and Time Standards Section  
Standards and Measurements Division  
Communications Research Laboratory  
Ministry of Posts and Telecommunications  
2-1, Nukui-Kitamachi 4-chome,  
Koganei-shi, Tokyo 184 Japan

**DR** COMMUNICATIONS RESEARCH LABORATORY

20 NOV 1990  
TXN FR  
UR QS

**1991 MINISTERIO DE EDUCACION Y CULTURA**

VICARIATO APOSTOLICO DE MENDEZ

**CRECERA**

EMISORA VOZ DEL GRAN NCVB-7

BACHILLERATO TECNICO

AGROPECUARIO FORESTAL  
CORTE Y CONFECCION  
MANUALIDADES Y ARTESANIAS  
CIENCIAS SOCIALES  
ELECTRICIDAD

**USSR: Radio Moscow** 17665 f/d "Kremlin" cd. in 76 ds. w/ decal. (Batson-WV) 7115 f/d "Kosmos Hotel" cd. in 59 ds. (Batson-WV) 9765 f/d "Peoples Friendship House" cd. in 76 ds. (Batson). 15190 cd. w/ schedule of other Lao stations in 3 yrs. after 2 f/up rpts. Posted from Paris! This is the Laos transmission. (Darling-PNG).

Till next time.....73s

*Sam*

# Tropical Band Loggings

Sheryl Paszkiewicz  
1015 Green Street  
Manitowoc, WI 54220



- 2310 AUSTRALIA, VLBA, 3/17, 1050 unusually strong w/phone-in  
pgm, 772325 much weaker. (Clark-ON)
- 2410 NEW GUINEA, R. Enga, 3/18, 1133 w/mx pgm, // other PNG  
stations, gone by 1155. (Field-MI) 3/15, 1135-1138 w/  
sing-sing, tlk in PD. 3/17, 1111 w/wx rpt, "Sounds of  
Silence," "Bonanza" theme, best sig this spring (Clark-ON)
- 2588.6 INDONESIA, unid, 3/17, 1235 very weak w/tlk by M & instl  
mx, gone by 1240. (Allen-OK)
- 2743.3v INDONESIA, unid, 3/17, 1239 w/M anncr, drum beat & pops,  
gone by 1251, very weak. (Allen-OK)
- 2904.8 INDONESIA, unid, 3/17, 1222-1229 strange lcl ID but didn't  
sound like Ngada, "R. Pemerintah Daerah Tingkat Dua ?  
Siaran Tingganulan(?)" regional nx by OM (Allen-OK)
- 3005 INDONESIA, unid, 3/17, 1249 very weak & distorted, perhaps  
another Bandung spur? Couldn't tell if //3204.4 (Allen-OK)
- 314.2vt SUMATRA, RPKDT2 Belitung, 3/19, 1229-1246 a capella vcls,  
pgm abt family, poss. ID 1236, sig FMing so tough to tune.  
Weak & 1st time here. (Allen-OK) v=variable t=tentative--sp.
- 3270.1 ECUADOR, Ecos del Oriente, 3/6, 0235-0259\* sports, pops,  
ballads, ID, ads, jingles, NA, poor in ute QRM (Alexander)
- 3290 ECUADOR, R. Centro, 3/12, 0757-0801 light piano, IDs, FC,  
Slogans, echo effects, lost at 0801. (Jordan-PA) 3/25,  
1054 w/TC, tlks. (Field-MI)
- 3295t ICELAND, INBS, 3/10, 2320 Icelandic, class mx, tlk, poor-  
fair and //6218. (Karcheski-MA) Must've been them--sp.
- 3300 GUATEMALA, R. Cultural, 3/21, 0330 EG ID, "Through the  
Bible," S10=344. (Carson-OK) 3/08, 0423 EG rel pgm w/  
comedic overtone, S10=333. (Levison-PA)
- 3310.3 BOLIVIA, R. San Miguel, 3/9, 0953 good w/piano & vcls,  
TC, morning greetings, sound effects, ID 1001. (Clark-ON)
- 3336v INDONESIA, unid, 3/17, 1254-1257\* brief anmt, instl mx,  
conditions favor Nusa Tenggara the most today. (Allen-OK)
- 3366 GHANA, GBC-2, 0524 EG ID, rooster crow, into lcl dialect.  
(Barr-IL) 3/5, 2254-2305\* EG nx, sports, various IDs,  
TCs, "Epilogue" pgm, ID, s/off anmts, S10=453. (D'Angelo)
- 3394.8yv ECUADOR, R. Zaracay, 3/5, 0250 tlk show, 0258 ID & s/off.  
(Egger-VA)
- 3905 NEW IRELAND, R. New Ireland, 3/17, 1127-1140 w/devotional,  
anmts in PD/EG, ID, TC 1135, incredibly strong. (Clark-ON)  
3/4, 1150-1209 fade w/insts, some vcls, YL host, 1200 ID,  
chimes, S10=222. (D'Angelo-PA)
- 3925 JAPAN, R. Tampa, 3/13, 0906 w/tlks in EG/JP, pop mx.  
(Grenier-NV)
- 3935p NEW ZEALAND, ZLXA, 3/11, 0650 w/tlk by accented W, too  
weak to make out pgm content, fade by 0700. (Clark-ON)
- 3935 UNID, 3/10, 0630 North African sounding station, might have  
been there at 2300 too but vy weak (Berg-MA)
- 4065 CLANDESTINE, Vo Iranian Kurdistan, 3/7, 0326 in Farsi w/  
mx, anmts 0330, NA, 0333 ment Kurdistan, orch mx, 0334 ment  
Kurdistan, Iran, tlks. Anyone have addr? (Karcheski-MA)
- 4300 PERU, 3/13, 0920 Andean mx, is this R. Moderna or R. El  
Puerto? (Field-MI)
- 4485 USSR, site?, 1141 tlk in lang //4620, no ID. (Field-MI)
- 4600v IRAQ, R. Baghdad, 2/28, 0305 AR depressing mx, tlks,  
ID 0316, good sig. tnx tip fm ANARC net. (Karcheski-MA)
- 4600.1 BOLIVIA, R. Perla del Acre, 3/16, 0015-0045 anmts, IDs,  
LA mx, weak but clear. (Alexander-PA)
- 4607p IRIAN JAYA, RRI Serui, 3/23, 1100 mx, IN tlks. (Field-MI)
- 4680 ECUADOR, R. Nac. Espejo, 4/2, 0102 anmts, ID, hvy SSB  
QRM at times. (Egger-VA)

- 4754.9 BRAZIL, R. Educacao Rural, 3/29, 2350-0025 rel tlks, prayer, rel mx, ID 0003, good. (Alexander-PA)
- 4761 VENEZUELA, R. Frontera, 3/6, 0235-0300\* tlks, instls, ads, jingles, ID, vcl NA at s/off, also hrd next day at 1005. (Alexander-PA) 3/18, \*1000-1035 choral NA, state? anthem, ID, FC, LA vcls, IDs, "Frontera, la radio con la buena musica." SIO=353. (D'Angelo-PA)
- 4765 CONGO, RTV Congolaise, 3/27, 2240-2303 FR hilife mx, slow tlk, ID 2301, nx //5985 under WYFR in FR. (D'Angelo-PA)
- 4765 UNID, 4/7, 2325-2359\* FR tlks, vcls, poor-fair w/fades. 2359 seemed to go off & Moscow came on. (Hardester-NC) Most likely the Congo till RM buried 'em--sp.
- 4770 NIGERIA, R. Nigeria, Kaduna, 3/17, 2240 EG pop mx, IDs. (Klinck-NY)
- 4775 BRAZIL, unid, 3/11, 2346-0004\* mx pgm. Also 3/14 on till 0030. S/off time doesn't match anything in WRTH. (Field-MI)
- 4785.6 COLOMBIA, Ecos del Combeima, 3/5, 0009-0020 ID, ads, "Super" promos, tlk. (Alexander-PA) 3/3, 1032-1104, tlk, IDs, TCs, ment Super Radio net, full ID 1101. (D'Angelo-PA)
- 4800 DOMINICAN REPUBLIC, R. Norte, 3/10, 2330 but no positive ID this day. Hvy QRN, hrd ment Santiago. Also 3/18, carrier on 0930, pgm start 1035+, IDs as La N-103.5 MHz, frecuencia modulada estereo, para todo el pais." (Berg-MA) Jerry says they also ment the SW freq.--sp. 3/24, 0501-0545 pops, FC, ID, ads, sounds Top 40. On later dates hrd w/terrible reception, slogans, ment Santiago. (Jordan-PA) 3/18, 0521 exc. sig w/mx, s/off anmts 0544. (Field-MI)
- 4800 ECUADOR, R. Popular, 3/31, 0232-0313 mx, tlks, ID 0309. (Wallace-CT)
- 4805 UNID, 4/1, 1015 mx, TCs in SP after each song. (Field-MI)
- 4815 BURKINA FASO, RTV Burkina, 3/17, 2245 FR tlk by 2 OM. (Klinck-NY)
- 4818 VENEZUELA, R. Tachira, 3/16, 0130-0220 spur from 4830. Also hrd 4842. Anmts, LA mx, IDs, ads, strong. (Alexander-PA)
- 4820 ANGOLA, EP da Huila, 3/26, 2244-2304\* instls, tlk, ID 2300, s/off anmts, orch NA, ID'd as Radio Nacional. . . SIO=352. (D'Angelo-PA)
- 4820 HONDURAS, La Voz Evangelica, 3/5, 0300, "El Mejor Camino" pgm. (Edger-VA)
- 4820.8t PERU, R. Atahualpa, 3/21, 0540 Peruvian mx, big het & weak sig. (Flynn-OR)
- 4824.9 BRAZIL, R. Cancao Nova, 3/24, 0020-0035 anmts, Braz. pops, ID, ads //6105, 9674.9 (Alexander-PA)
- 4825t BRAZIL, R. Educadora Braganca, 3/23, 0855 tlk, rel pgm, prayer over "Ave Maria." Tent. ID. (Alexander-PA)
- 4825 PERU, LV de la Selva, 3/18, 1035-1051 vcls, 1038 ID, TC, ment Iquitos. SIO=453. (D'Angelo-PA)
- 4830 BOLIVIA, R. Grigota, 2/18, 0500-0515 mx, tlks, ID 0509 by W. (Wallace-CT) Must've been running late--sp.
- 4830 VENEZUELA, R. Tachira, 3/16, 0520 putting out spurs on 4818, 4842. (Berg-MA)
- 4832 COSTA RICA, R. Reloj, 3/12, 0810-0835 mx, nx 0828, sound effects, clock ticks during nx, ads, IDs. (Jordan-PA)
- 4834.4 MALI, RTV Malienne, 3/17, 2249 AR, lcl mx, anmts. (Klinck-NY)
- 4835 GUATEMALA, R. Tezulutlan, 3/6, 0213-0230 cmtry, mx, children's choir, ID 0224. (Wallace-CT)
- 4835 PERU, R. Maranon, 1120 w/tlk & lcl mx, ID 1125. SIO=252. (Barr-IL) Was Tezulutlan off? This is a tough catch--sp.
- 4840 CHINA, Vo Strait, 3/20, 1324 tlk in CH, ment Taiwan. (Grenier-NV)
- 4843.2y MAURITANIA, ORTM, 3/7, 0010-0059\* AR tlk, mx, phone-in, Qur'an, s/off w/NA. (Alexander-PA)
- 4845 BRAZIL, R. Cabocla, 3/10, 1000, ID, FC. (Berg-MA)
- 4845 MAURITANIA, ORTM, 3/17, 2251 AR mx, tlk, ID. (Klinck-NY)
- 4850 CAMEROON, CRTV Yaounde, 3/17, 2230 w/class mx, good sig. (Edger-VA) 3/17, 2252 FR w/Western pop mx. (Klinck-NY)
- 4860 INDIA, AIR Delhi, 3/5, \*0028-0043\* IS, 6 TP, Hindi nx, EG nx 0035, weak. (Alexander-PA)

4865 COLOMBIA, Caracol Arauca, 3/13, 0700 Caracol ID, nx, ads, SIO=433. (Carson-OK)

4870 BENIN, ORTB, 3/17, 0205 w/class mx, weak. (Edger-VA)

4870 ECUADOR, R. Rio Amazonas, 3/10, 0300-0333\* w/pops, HC mx, anmts, suddenly off 0333 w/no NA or anmt. (Alexander-PA)

4871.2 IRIAN JAYA, RRI Wamena, 3/16, 1154 EZL mx, chime IS, anmt, switched to 4866.5 at 1200, IS, switch also noted on other days. (Clark-ON)

4875 BRAZIL, Super R. Roraima, 3/12, 0012-0029 phone tlk, folk mx, IDs, echo IDs, gone by 0029. (Jordan-PA)

4875 CHINA, Vo Jinling, 3/14, 1301 CH tlk. (Grenier-NV)

4881.2 INDONESIA, unid, 3/16, 1155-1200 fade, fair carrier, weak audio. (Clark-ON)

4890 GABON, R. France Int'l relay, 3/30, 0443 FR w/tlk & mx, ID 0500. SIO=252. (Barr-IL)

4890 SENEGAL, ORTS, 3/17, 2254 w/tlk in lang, FR ID. (Klinck-NY)

4895 USSR, R. Moscow NAB, 3/18, 0215 EG answering listeners' questions. (Field-MI) 4/4, 0310-0350 RS R. Moscow, topical tlk, lively mx, nx, QRN, QRM. (Jordan-PA)

4898.8v ECUADOR, R. Centinela del Sur, 3/17, 0032-0120 canned ID, jingles, TCs, econ/political tlk. (Allen-OK) 3/16, 2345-0015 TCs, pops, ads, ID 0011, s/off at 0214. (Alexander-PA)

4900 UNID, 3/19, 0128 SP tlk, nx, 0159 s/off, sounded like "desde Cototan," maybe Centinela del Sur since I think I hrd refs to Loja. Also 3/25, 1104 vcls by M, tlk in SP, faded by 1120. (Field-MI)

4902 SRI LANKA, SLBC, 3/16, 2320 carrier, 2326 drum, etc. IS, choral anthem, TP 2330 & faded. (Clark-ON)

4904.5 CHAD, RN Tchadienne, 3/28, 0456 FR tlks & regional mx. SIO=353. (Barr-IL)

4910 CAMBODIA, Vo People of Kampuchea good w/nx in Cambodian. Fading 2315+ on 3/15. (Clark-ON)

4910 HONDURAS, LV de la Mosquitia, 3/29, 0229-0235 w/rel mx, tlks, poor sig. (Jordan-PA)

4915 GHANA, GBC-1, 3/10, 0615 EG nx & tlks. (Grenier-NV)

4919 BRAZIL, unid, 3/24, 2320 fairly good, rel pgm. (Berg-MA)

4920 AUSTRALIA, VLN4 Brisbane, 3/13, 0817 EG discussion on Aust. exports. (Grenier-NV)

4931.7t JAVA, RRI Surakarta, 3/17, 1520 unfamiliar IS, IN drama, weak sig. (Flynn-OR)

4935 KENYA, KBC, 3/10, \*0155-0225 EG flute/drum IS, "This is KBC Nairobi," TP, choral NA 0200, rel pgm, prayer, light instls, nx 0215, very good. (Alexander-PA)

4940 VENEZUELA, R. Continental, 3/31, 0356-0409 LA mx, R&B mx, ID 0405. (Wallace-CT)

4950.1 PERU, R. Madre de Dios, 3/16, 0005-0045 anmts, IDs, ads, SP pops. (Alexander-PA)

4954.9t PERU, R. Cultural Amauta, 3/21, 0520-0530, ment Huanta, TC, Brazilian seemed to be mixed in too. (Flynn-OR)

4960.7 ECUADOR, R. Federacion, 3/6, 0040-0101\* SP/Quechua tlk, pops, ID, marching band rendition of NA. (Alexander-PA)

4965 BRAZIL, R. Alvorada, 3/9, \*0858-0910 pops, anmts, ID, tlks. (Alexander-PA)

4965.2 COLOMBIA, R. Santa Fe, 3/7, 1015-1030 tlk, sev. ads, jingles, ID, very good, not on daily. (Alexander-PA)

4970 VENEZUELA, R. Rumbos, 3/21, 0333 SP nx, IDs, ads, full ID 0400, SIO=434. (Carson-OK)

4990 NIGERIA, R. Nigeria, Lagos, 3/17, 2257 EG Western mx. (Klinck-NY)

4995 MONGOLIA, R. Ulan Bator, 3/17, 1145 tlks, seemingly in RS, interspersed w/short mx breaks //4829.3, 7262. (Clark-ON)

5011v ECUADOR, Esc. Radiofonicas Pop, 3/8, 0145-0206\* tlk in Quechua, ment Ecuador, folk mx, ID, anmts. (Jordan-PA)

5020 NIGER, La Voix du Sahel, 3/28, 0558 FR tlk & mx but too weak to send a rpt. (Barr-IL)

5020 SOLOMON ISLANDS, SIBC, 3/15, 0750 EG ID, orch mx, nx.  
(Grenier-NV)

5025 BENIN, ORTB Parakou, 3/17, 2250 FR 1cl mx, ID 2300.  
(Klinck-NY)

5025 CUBA, R. Rebelde, 3/15, 0450 tlks abt Bush and Baker.  
(Grenier-NV)

5030 ECUADOR, R. Catolica Nacional, 3/9, 2350-0015 cmtry, nx,  
ID 0000. (Wallace-CT)

5030 TONGA, TBC, 3/17, 0530 carrier, 0550 vcls, 0557 YL anncr,  
vcls past 0600, rel pgm, fading by 0605. (Clark-ON)

5041 ANGOLA, EP de Benguela, 3/26, 2235-2304 PT tlks on phone,  
2239 ID, Afr. vcls, echo ID 2259, instl, nx, lost to s/off  
and/or QRN. SIO=252. (D'Angelo-PA)

5047 TOGO, RTV Togolaise, 2/3, 2130-2200 FR, Afr. pop mx, tlks,  
ID 2200. (Wallace-CT) 3/18, 2259 FR tlk, ID. (Klinck-NY)

5049.8 ECUADOR, R. Jesus del Gran Poder, 4/9, 1045 prayer, probably  
rosary. SIO=343. (Barr-IL)

5052 SINGAPORE, SBC, 3/28, 1305 EG nx by W, pop mx. (Grenier-NV)  
I have yet to hear this station--sp. 3/10, 2300 w/pips,  
nx, full ID 2305 //5010, ads to 2312 fade. Also 3/15 till  
2315 fade. (Clark-ON)

5057y FRENCH GUIANA, RFO Cayenne, 3/8, 0223-0405 FR pops, seemed  
request pgm, ads, jingles, nx on hour, ID. (Jordan-PA)

5059 ECUADOR, RN Progreso, 3/23, 0300-0331\* tlks, LA mx, s/off  
w/vcl NA, fair-good. (Alexander-PA)

5320 CHINA, CPBS, 3/20, 1338 CH tlks. (Grenier-NV)

5535.5 COLOMBIA, Ecos del Tiarez? 3/5, 0135-0403\* tnx FT logs.  
EZL mx, HJ folk mx, ID 0238, 0313, s/off w/Beethoven's  
"Fuer Elise." NA, pulled plug halfway thru. (Alexander-PA)

5660.5 PERU, LV de Cutervo, 3/10, 0135-0230 lots of tlk, ID 0147,  
light instls, Andean mx, weak. (Alexander-PA)

5680h CUBA, R. Rebelde, 3/30, 0654-0730 anmts, mx, tlks, 710x8,  
also hrd 710x5 on 3550. (Alexander-PA)

Just got back from Milwaukee, where I saw the Bucks smoke the Pacers  
in the last game of the season. Back to shortwave. . .

Thank you to everyone who sent in their loggings. Things seem to be  
slowing down but there's still something interesting to tune for.

JOHN SGRULETTA called to say he heard La Voix du Zaire, Lububashi  
on 7202 kHz. This counts as the radio country of Katanga. John  
is sending a tape with his report. Hope that does the trick! He  
also managed to hear the test from Northern Ireland in March.  
Congratulations!

From JERRY KLINCK: "I guess this will be my last report till  
whenever, as I am shutting down and ripping apart very shortly.  
I'll be glad when it's over. I received some info from our friend  
at CRTV which might be of interest to the membership: 'CRTV Bertoua  
has just come back on the air after a very long break which was due  
to the lack of spares to repair the transmitter. Another station  
receiving similar attention is CRTV Bafoussam. CRTV's Buea trans-  
mitter is heard well in spite of its only 4 kW because of the eleva-  
tion of the region, which is virtually on the Cameroon mountain.'  
Well, 73 and good DX till the snow flies. . Jerry."

While it's true IAN MCFARLAND won't be the regular host on Radio  
Japan's DX Corner, you may hear him there from time to time. After  
speaking to him after his resignation announcement on RCI, I learned  
he tried to take the SWL Digest program with him but this was not  
possible.

If you haven't tuned into HCJB's DX Party Line lately, I suggest you  
check it out. It's expanded to 45 minutes and full of DX tips and  
new features of interest to newcomer and hardcore DXer alike. RICH  
MCVICAR is host at 0030 & 0230 Sundays. Happy 30th Anniversary, DXPL.

# International Band Loggings

5901-30000 kHz

Wallace C. Treibel  
357 N.E. 149th Street  
Seattle, WA 98155



- 5930 CZECHOSLOVAKIA R Prague in EG 0313, hard times for Czech spas, g (Carson OK 4/4)  
5960 CANADA R Japan relay in EG 0300, DX pgm, quiz, nx, mx (Wallace MA, Carson OK)  
59952 PERU R Melodia in SP 0745, LA mx, SP pops, TC's, ID (Alexander PA 3/30)  
6040 ANTIGUA D Welle relay in EG 0103, nx, sports, fqys (Wolfson OH, Levison PA)  
6045 CHINA Hohhot Mongolia in CH 1405, ID, tlk, vocals (Seyfer, Beijing CHINA 3/12)  
60886 CHILE R Esperanza in SP 0930, relig mx, ID, TC (Berg MA 3/24, Clark ONT 3/9)  
6115 PERU R Union in SP 0700, ezl mx incl El Condor Pasa etc, exc (Forth IL 3/16)  
61354 SOCIETY IS. RPO Tahiti in FR 0740, local vocal mx, exc, //11827 (Clark ONT 3/17)  
6120 ALBANIA R Tirana in EG 2238, Albanian refugees in Italy, //11825 (Prath FL 3/9)  
6180 BRAZIL RN Amazonia in PT 2230-2257\*, pops, ads, ID, //11780 (Alexander PA 3/23)  
6185 MEXICO R Educacion in SP 0329, tlks, ID, lcl mx (Klinck NY 4/4)  
62004 PERU R Huamanga in SP \*1027, mx, annmcs, several ID's, p (Alexander PA 3/9)  
6576 NO. KOREA R Pyongyang in EG 1134, ID, pgm on KR people, f (Hart MN 3/15)  
67547 PERU R La Merced (t) in SP 0025, LA mx, too wk to read ID (Alexander PA 3/17)  
6873 USA VOA Peeder Greenville in EG 0407, nx, ID, mx, cmtry (Wolfson OH 3/10)  
6974 CHINA Hohhot Mongolia in Mongolian 1242, ID, tlk, vocals (Seyfer CHINA 3/14)  
7115 BULGARIA R Sofia in EG 0405, tlk on changing polit system, g (Levison PA 3/3)  
71904v EQUATORIAL AFRICA R Africa in EG 2256\*, "Voice of Faith", ID (Hardester NC 4/7)  
72028 ZATRE LV du Zaire(t) in FR(p) \*0357, IS, NA, lcl mx, hvy QRM 0400 (Alexander PA)  
7240 AUSTRALIA RA in Tok Pisin 1030, nx, sports nx, TC, ID, mx, f-g (Jordan PA 3/12)  
7255 BOTSWANA RB Gaborone in Setswana 0330, tlks, US pops, ID, rooster crowing IS on the hr, Afro hi-life mx, interviews, p (Jordan PA 4/5)  
7255 NIGERIA VoN in EG 0510, lcl mx, ID, nx, cmtry (Klinck NY, Hart MN, Carson OK)  
7260 VANUATU RV Efate Is. in EG/lang 0700, mx, chatter, ID, fqy, g (Clark ONT 4/1)  
72844 MALI RTVM Bamako in FR 0705, mx, exc, //96357, 119603 (Clark ONT 3/10)  
7295 MALAYSIA RIM Radio 4 in EG 1324, sports nx, jingle, ID (Grenier NV 3/28)  
7345 CZECHOSLOVAKIA R Prague in EG 0300, nx, cmtry, //5930 (Hart MN, Levison PA)  
7370 TURKEY TK Police Radio in TK 0456, IS, choral NA, ID, exc (Clark ONT 3/17)  
ED NOTE: This is a remarkable catch. A strong signal with only 1 kw output!  
7375 COSTA RICA RPFI in EG 0205, tlk, ID, "World of Radio" SW pgm, cmtry on Iraq refugee situation, old rx (Hardester NC 3/13, Weidman WV 3/17, Wallace MA 3/31)  
7465 ISRAEL KI in SP 0130, nx, tlk (Weidman WV) in EG 0104, cmtry (Carson OK 3/16)  
7516 CHINA CPBS2 Beijing in CH/EG 1430, EG lesson, many // fqys (Seyfer CHINA 3/19)  
8007 CHINA CPBS2 Xian in CH 1325, tlk, WRTN lists as inactive (Seyfer CHINA 3/12)  
8634 BRAZIL PPR, EMBRATEL time sta w/pipw, 0125-0130\*, also on 8492, 12738, 17194, 22352, 22420. Actually a rebroadcast of PPE, the real time sta (Wallace MA 4/8)  
9505 BRAZIL R Record in PT 0040, soccer match, "Pelota" on-scene, g (Flynn OR 3/15)  
9540 VENEZUELA RN in EG/SP 0330-0346\*, nx, ID's, addr, tlk, IS (Alexander PA 3/8)  
9545 ANTIGUA Deut Welle relay in EG 0315, site ID at s/off 0350 (Carson OK, Hart MN)  
9545 SOLOMON IS. SIBC in Pidgin 0750, tlk on communications in S Pacific, g over QRM from co-channel Deut Welle, //5020 only f (Clark ONT 3/17)  
9560 FINLAND RF in multi-lang 0622, IS, ID, nx, FN lang pgm, f (Jordan PA 3/11)  
9580 AUSTRALIA RA in EG 0852, cmtry on civilian deaths in Iraq (Grenier NV) in EG 1300, bomb in Sri Lanka fish market (Wallace MA) in EG 1440, sci tlk (Hart MN)  
9595 JAPAN R Tanpa Tokyo in EG/JP 0944, EG lessons (Grenier NV 4/3)  
9620nf CUBA RHC in SP 2355\*, LA mx, ID, f (Jordan PA 3/19) ED: Yes, Rufus this must be a new freq. I logged it here last August. Don't know why WRTN failed to list it.  
9630 SPAIN REE in FR 0255, IS, TC, ID, intl mx, nx, tlk (Batson WV, Hart MN)  
9690 SPAIN R Beijing relay in EG 0300, tlk on trade with USA, nx on UNICEF, Saddam Hussein, and Yugoslavia, etc (Grenier NV 3/25, Wallace MA 3/17)  
9760 ALBANIA R Tirana in EG 2344, ID, tlk on coming elections, //11825 (Hart MN 3/10)  
9835 HUNGARY R Budapest in EG 0130, nx, cmtry (Carson OK, Levison PA, Grenier NV)  
9835nf NO. KOREA R Pyongyang in KR \*1600, NA, KR tlks, opera mx, //11845, f-g, seems to be a repl for 9220 which was not hrd (Treibel WA 4/13)  
9950 SYRIA R Damascus in EG 2205, tlk re Iraqi uprising, //12085 (Prath FL 3/9)  
10260 CHINA CPBS2 Beijing in CH 1215, drama, WRTN lists inactive (Seyfer CHINA 3/12)  
11040 CHINA CPBS2 Beijing in CH 0915, opera in CH, f (Jordan PA 3/12)  
11335 NO. KOREA R Pyongyang in RS 0950\*, tlks, chorals, ID, NA, g (Jordan PA 3/12)

11650 GUAM KTWR Merizo in EG 1530, relig pgm, mailbag (Hart MN 3/6, Grenier NV 3/28)  
 11660 BULGARIA R Sofia in EG 1945, "Letterbox", mx, tlks (Prath FL 3/10)  
 11685nf CHINA R Beijing in EG 0430, "Current Affairs", CH mx, mail, exc (Jordan PA 3/20)  
 11685nf MONACO RMC in FR \*0430-0730\*, ads, jingles, ID's, FR pops, abrupt s/off, best  
 after 0458 when Beijing & RFI off, pips 0700 (Alexander PA 3/16, Berg MA 3/10)  
 11715 MALI R Beijing relay in EG 0300, nx, cmntry, ID, CH lang lesson, QRM from Radio  
 Nederland at 0327 (Levison PA 3/16, Sampson WI 3/1, Klinck NY 3/18)  
 11735 YUGOSLAVIA RY in EG 0100, nx, tlk on elections, cmntry (Grenier NV, Carson OK)  
 11770 USSR R Kiev in EG 0015, cmntry on nuclear arms, miners requests (Levison PA 3/6)  
 11780 BRAZIL RN da Amazonia in PT 2145, sports, promos, ads, ID (Alexander PA 3/17)  
 11840 SRI LANKA R Japan relay in EG/JP 0159, ID, pips, theme, nx, mx (D'Angelo PA 3/3)  
 11865 NORWAY R Denmark relay in DN 0429, IS, ID in EG, nx in DN, f (Carson OK 4/6)  
 11870 JAPAN RJ in EG 1536, tlk on train stations in Japan (Grenier NV 3/6)  
 11895 GUAM KTWR Merizo in Nepali 1329, IS, ID in EG, mx pgm, relig tlk (Carson OK 4/9)  
 11910 AUSTRALIA RA in EG 1335, "Australian Comment", pop mx, wx, g (Carson OK 4/9)  
 11920nf SOUTH AFRICA RSA in EG 0400, topical & world nx, mx sels, p (Jordan PA 3/20)  
 11930 NETHERLANDS ANTILLES TWR in EG 0310, relig pgm, exc (Hart MN, Carson OK 4/7)  
 11930 AUSTRALIA RA in EG 1135, tlk re Buddhism & Christianity, p (Wallace MA 3/30)  
 11940 ROMANIA RRI in EG 0359, IS, ID, nx, polit cmntry, DX pgm, f (Carson OK 4/6)  
 12000 AUSTRALIA RA in EG 1620, tlk on human rights in China (Grenier NV 3/21)  
 12035 GABON Swiss Red Cross R relay in PT 2210, UN data, SRI pgm 2230 (Wallace MA 4/4)  
 12035 SWITZERLAND SRI in EG 0218, "Dateline", features, g (Grenier NV, Carson OK 4/5)  
 12745 INDIA VUC Time Station 0824-0915+, time pips in CW mode, weak (Wallace MA 3/31)  
 13605 AUSTRALIA RA in EG 1650, rpt on cricket, world nx (Grenier NV, Zilmer NM 4/11)  
 in CH 1300-1400, fluttery sig, CH songs, ID (Wallace MA 4/4)  
 13610 GERMANY D Welle Leipzig in GM 2020, Persian Gulf war nx (Klinck NY 3/18)  
 13625 NO. MARIANAS KPBS Saipan in EG 2029, polit cmntry, ID 2029 (Klinck NY 3/18)  
 13630 COSTA RICA RPPI in EG 0240, mailbag, new SSB fqys discussed, f (Carson OK 3/31)  
 13665 PAKISTAN RP in EG 1530, songs, bad hum, //17555, 17565 (Flynn OR 3/13)  
 13675 UNITED ARAB EMIRATES R Dubai in EG 0330, tlk on Kuwaiti problems, Iraq to reopen  
 schools within week, "The Beloved Sand" drama (Carson OK 3/14, Sampson WI 3/3)  
 13675 BELGIUM RTBF Brussels in EG 0035, tlk on nationalism in Yugoslavia, f, //13720  
 ED: I have no info to the effect that the 13720 //fqy may be via a relay site.  
 13720nf BELGIUM RTBF in EG 0030, cmntry on mined waters in the Gulf, g (Levison PA 3/6)  
 13855 ICELAND INBS in Icelandic 1915, tlks, nx, ID at 1936 (Wallace CT)  
 149176 KIRIBATI RK in EG 0647, R Australia football, into lang 0700 (Clark ONT 3/14)  
 15031nfv COSTA RICA RPPI in EG 2225-0310, ID, "Caribbean Echo", "World of Radio" DX pgm,  
 speech on racism in America (Berg MA, Alexander PA, Zilmer NM, Carson OK 4/5)  
 15095 PHILIPPINE IS. FEBC in Mandarin 0450, very weak but clear fcy (Flynn OR 3/11)  
 15120nf NEW ZEALAND RNZ in EG/lang 1755, IS, nx in Samoan/Nauruan 1840, wx in EG, g  
 this fcy repl for 15130. Change to 13785 planned as of 5/12/91 (Clark ONT 3/15)  
 15140nf? PHILIPPINE IS. R Veritas Asia in EG 1530\*, ID, world nx (Flynn OR 3/9)  
 151708 SOCIETY IS. RFO Tahiti in FR 0632, Polynesian mx, call-in show (Klinck NY 3/29)  
 15210nf SRI LANKA R Japan relay in EG 2150, mx, features, site ID, sked (Jordan PA 3/16)  
 15250 PORTUGAL RPI in EG 2100, nx, wx, fcy & time sked, DX pgm (Zilmer NM 3/29)  
 15265 INDIA AIR in EG 2201, nx, ID, cmntry, local mx, tlks, p (D'Angelo PA 3/16)  
 15310 BULGARIA R Sofia in EG 1430, nx, cmntry, mx (Zilmer NM 3/31)  
 15330 BULGARIA R Sofia in EG 2240, "History Club", nx, ID, "What do Bulgarians talk  
 about during the week?" (Prath FL 3/9, Hart MN 3/10)  
 153452 ARGENTINA R Nacional in SP 0000, soccer, ID, polit tlk (Zilmer NM, Wallace CT)  
 15375 SPAIN REE in EG 1936, feature on SP children at play, mx, f (Hart MN 3/20)  
 15410 PHILIPPINE IS. VOA relay in CH 1312, nx, tlks, mx ID, f (Wallace CT 3/30)  
 15420 SEYCHELLES BBC relay in EG 0400, roundtable on US influence in Afr (Wallace MA)  
 15450 TUNISIA RT Tunisienne in AR 1705, Koran recitn, //11550, 17500 (Flynn OR 3/19)  
 15485 TURKEY VOT Ankara in TK 0515, Mideast mx, pips, ID, //11925, f (Westdal CA 3/28)  
 15525 SWITZERLAND SRI in EG 2100, nx, "Grapevine Letters" (Zilmer NM 4/7)  
 15560 NETHERLANDS ANTILLES RN relay in EG 0030, special SSB test w/Happy Station pgm,  
 In reduced-carrier USB, exc sig w/no QRM, //6165 in AM mode (Wallace MA 4/8)  
 15640 ISRAEL KI in EG 0107-0125\*, pgm on Passover, Q & A, singing, g (Sampson WI 3/31)  
 15645nf BANGLADESH RB in EG \*1230-1300\*, world nx, polit cmntry, exc (Zilmer NM 4/11)  
 15670usb CYPRUS Radio 4 Feeder in EG 1427, relay of domestic stn, many ID's, pgm skeds,  
 "Monologue", f w/deep fades (D'Angelo PA 3/17)  
 15670usb UNITED KINGDOM BFBS in EG 1430, DJ pgm of tlk/mx, BBC nx 1500 beamed to Persian  
 Gulf armed forces (Zilmer NM 3/29) ED: See Cyprus above. Some QRM, maybe?  
 17545 ISRAEL KI Home Service in HB 1230, Reshet Bet pgming on 24 hr basis this fcy,  
 //13753, 156175. This is not a new fcy as erroneously rptd last month.  
 17575 MADAGASCAR R Nederlands relay in EG 1515, travel guide in E Eur (Carson OK 3/12)

17720 USSR R Vilnius in EG 2305, nx, ID, mx pgm, //17690 (Prath FL 3/9)  
 17745 ALGERIA R Algiers in AR 1640, mx, cmntry, ID at 1700 (Wallace CF)  
 17745 ROMANIA RRI in EG 0530, s/on Afr svce, nx on Gulf war, mx, //15380 (Hart MN 3/3)  
 17770 NEW ZEALAND RNZ in EG 0448, "Checkpoint", nx at 0500, g (Carson OK 3/14)  
 17795 AUSTRALIA RA in EG 0100, ID, world & lcl mx, mx, to SE Asia (Weidman WV 3/19)  
 21465 GERMANY Deut Welle in GM 1417, mx, ID, f, ex RBI fqy (Carson OK 4/8)  
 21490 AUSTRIA RAI in EG 0850, financial & sports rpts, into GM 0858 (Jordan PA 3/12)  
 21505 SAUDI ARABIA BSKSA in AR 1235, tlks, AR mx, ID (Prath FL 3/9)  
 21645 FRANCE RFI in EG 1245, rpt on recent film festival in France (Prath FL 3/9)  
 21740 AUSTRALIA RA in EG 0035-0330+, rock mx, feature on research, nx (Jordan PA 4/3)  
 21750mf CHINA R Beijing in AR 1600, IS, ID, nx?, f (Treibel WA 4/15)  
 21770 FRANCE RFI in EG 1400, nx, cmntry, beam to Asia & Oceanie (Zilmer NM 3/22)  
 25740 GERMANY Deut Welle in GM 1210-1355\*, nx, tlks, mx, ID's, fqys (Jordan PA 3/12)  
 286507 USA Goddard Space Center in EG 1450, communications between ground and space  
 shuttle Atlantis landing at Edwards AFB, CA, touchdown 1355 (Zilmer NM 4/11)

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CLANDESTINE STATIONS

9045 Iran's Flag of Freedom in multi-lang \*0330, theme, ID incl EG, tlk (Forth 3/23)  
 15100 Iran's Flag of Freedom in multi-lang \*0645, IS, EG ID, tlk, mx (Alexander 3/9)  
 17890 AV Resistance do Galo Negro in PT 2155-2229\*, Afr hi-life mx, ID 2158, nx 2200,  
 US pops, s/off w/band anthem, vg, hrd only on Sun & Wed (Alexander PA 3/6)

PIRATE STATIONS

7412 KNBS in EG 0156, promos, names of those sending rcpn rpts, alert for the  
 Emergency Employee Drug Testing System, "The station with your mind in mind",  
 QSL offer for 3 stamps at Wellsville address, vg, off 0205 (Berg MA 3/23)  
 7415 Voice of 1932 in EG 0415, big band mx, ID's (Wolfson OH 3/31)  
 7415 Voice of Pancho Villa in EG \*0400-0405\*, Pancho annod his return w/o Cisco once  
 again for his annual Winter SWL Festival bcst, interview, exc (D'Angelo PA 3/24)  
 7415 He Man Radio in EG 0249, QSL w/another stn, tlk on radio buttons (Wolfson 3/31)  
 7415slab Voice of the People of Iraq(USA site) in EG \*0401-0404\*, opened with "Beloved  
 Kuwaiti neighbors and friends..." very anti-Saddam, polit satire (D'Angelo 3/4)  
 7415 Samurai radio in EG 0330-0412, mx, address Blue Ridge Summit, PA, invite rpts,  
 mx, dedication, Elton John (Wolfson OH, Field MI, Wallace MA, Berg MA all 3/31)  
 7415 WGAW in EG 0209, mx, "Guy Talk", interview, political tlk (Wolfson OH 3/31)  
 7416 Delta Tango 306 in EG 2311-0106\*, New Wave mx, ID, tlks, Cheers theme, rock mx,  
 off color tlk, address Box 69, Wolf Run, OH? (Berg MA 3/9, Karcheski MA 3/10)  
 74165 Radio USA in EG 1451, rock mx, ID, recycling center ad (Wolfson OH 3/17)  
 7510 KTBN(p) In EG 0210, gospel pgm, promos for 2 books, "Jack and Nancy Presents"  
 ID as "...TBN the Broadcasting Network" (Hardester NC 3/21)  
 7520 Voice of Oz in EG 2135, mx, maildrop info, multi-lang ID (Karcheski MA 2/24)  
 15043 Radio Beaver in EG 2152-2206\*, oldies pop mx, ID's, address, s/off w/"Leave It  
 to Beaver" theme, some audio distortion (Alexander PA 3/16)  
 15015 Radio USA in EG 2116, ID, rock mx, f (Berg MA 3/30-31)  
 15043 Radio Blandx in EG 2105, parodies, mx, req rpts, off abruptly 2115 (Berg 3/30)  
 15050 Netherlands Radio Tower in EG 0220, rock/pops, ID's, addr Utrecht (Alexander PA  
 3/16-17) In EG 0112 on USB (Wallace MA 3/17, 4/7) in EG 0238 w/test xmsn on 3/16  
 saying that "official" xmsn would be tomorrow, s/off 0327, g (Berg MA)

\*\*\*\*\*

Solar Flux has averaged around 220 since the first of April. Undoubtedly this means that I should receive another armload of reports next month. Hopefully, there will be some rare DX items in the pile. Thanks to those who sent in their reports for the above listings. I finally received my copy of the Tropical Band International Listening Guide which I ordered from Peacewood Publications in Germany in June 1990. The form memo enclosed said "due to lack of personal capacity we are not able to fulfill your wish earlier" The form was initialed 2/22/91 but was mailed on 4/10/91. Wow, talk about understaffing! Anyway, it looks as though the publication is worth the wait. Their International band semi-annual listening guides are top-notch in my opinion.

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# Publisher's Page

Bill Oliver  
45 Wildflower Road  
Levittown, PA 19057



## OVERSEAS MEMBERS - PLEASE NOTE!

As you know, last year we switched to SAL mail delivery to avoid having to increase the dues for overseas members. After reviewing the latest postal and SAL rate increases, we have decided on the following changes:

1. The overseas surface rate of \$23.00 a year is no longer available. Surface rates are now so close to SAL that it would be fooling to continue them.
2. We are adding the option of the old Air Mail delivery at the following rates:

	<u>SAL</u>	<u>AIR MAIL</u>
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Please remember that you do not have to renew at the Air Mail rate if you are content with SAL delivery. These changes are effective immediately.

## NO COLLECT CALLS ON THESE ADS, PLEASE.

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FOR SALE: GE World Monitor 7-2990 with digital readout. Tunes 3.5 to 30 MHz plus AM and FM. Wide and narrow bandwidth and BFO for SSB. Runs on batteries or 110/220 AC. In carton with operator and service manual. Price \$75.00, I pay UPS. Thomas Cameron, 9 Ridgewood Drive, Northfield, NJ 08225. Phone (609) 641-4106 2100 to 0100 UTC.

FOR SALE: Drake R-4B receiver with crystals for all major SWBC bands, R-4C spinner knob, record out, MS-4 speaker, and dust covers. Price \$325.00. MS-4 speaker, \$35.00. INFO-TECH M-6000 v5.0 demodulator, Panasonic 9" B&W monitor, \$525.00. Daiwa AF-606K audio filter, \$95.00. Steven R. Lare, 824 West 25th Street, Holland, MI 49423, Phone (616) 335-2270.

FOR SALE: Drake R-7A receiver with 6.0, 4.0, 2.3, 1.8, and 0.5 filters. Drake SPR-4 receiver with calibrator and noise blanker and matching MS-4 speaker. Both radios in mint condition with manuals. R7A has the service manual. First \$1,200.00 takes both receivers. Also Autek QF-1A SSB/CW/AM filter, \$50.00. Palamar amplifier and filter with AC adaptor, \$45.00. Grove Mini-Tuner 3, \$40.00. All of the above in mint condition. Stephen Leite, 190 Healy Street, Fall River, MA 02723. Phone (508) 675-2830 from 2100 to 0130 UTC.

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WANTED: Old shortwave receivers such as Zenith, Scott, and Halli-crafters in any condition. C. Blatter, 610 West Sunset Drive, Redlands, CA 92373. Phone (714) 792-4104.

WANTED: Schematic for Hammarlund HQ145X receiver. Please contact Nancy Butler, Editor of "Helping Hand", The News Journal Papers, P.O. Box 15505, Wilmington, DE 19850. Please refer to File Number C-279. Phone (800) 235-9100. Fax (302) 324-5509.

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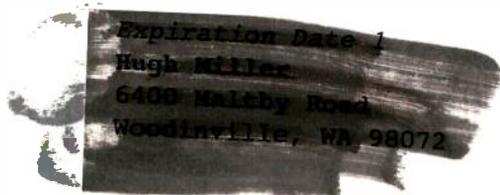
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## FIRST CLASS MAIL



The Journal of the  
North American Shortwave Association

ISSN 0160-1989

**Executive Director:** Bob Brown, 238 Cricklewood Circle, Lansdale, PA 19446

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