

# NASAA

# the JOURNAL

## NORTH AMERICAN SHORTWAVE ASSOCIATION

VOLUME XXXV111 NUMBER 12

DECEMBER 1998



# Holiday Greetings



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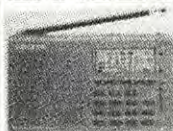


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Ho, ho, ho... 'tis the season to be a jolly DX'er! Happy holidays to the entire membership. Will that choice new receiver make its way into your hands this holiday season? Let's get those reminders out there for the family to pick up on!

Once again, a brief reminder that my new e-mail address is [rdangelo3@aol.com](mailto:rdangelo3@aol.com). Please use it for all NASWA correspondence. My old address is no longer in use.

One of the things that makes this a great place to work is the quality of the staff the helps edit and assemble the Journal each month. Without hours upon hours of volunteer participation, there would be no Journal. A shining example of teamwork, cooperation and our club motto—Unity and Friendship—is the effort that goes into our popular Easy Listening column. Early in 1997, Rich Cuff had to step down on a temporary basis as editor. John Figliozzi grabbed a bat and pinch hit. Last month John ended an 18-month stint as temporary editor of the Easy Listening. Richard Cuff is back and his first effort, after his extended vacation, appears this month. Thank you John and welcome back Rich! Incidentally, you can catch the fine work of Mr. and Mrs. Hospitality at the Winter SWL Festival in Kulpville in a couple of months. These two keep the hospitality suite in high gear in addition to their regular Easy Listening forum, which is one of the most popular features in FEST history.

Member Bob Padula is pleased to announce that Edition Number 6, December 1998, of

### ANARC SWL Ham Net


Tune in Sunday mornings at 10 A. M. Eastern Time on 7240 LSB for the latest in shortwave, medium wave and longwave 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. Contributions are also accepted via the Internet Relay Chat (IRC) channel #swl while the net is in progress. Net Controls Dave Kirby N1DK, Hausie WB4JSP, and Bob Curtis W1EXZ host an always lively gang of DX monitors. (Best heard in the eastern half of NAm) Net info is also available at [http://www.trsc.com/swl\\_net.htm](http://www.trsc.com/swl_net.htm). If you miss the net, you can hear it in RealAudio on the Internet, on Dave Kirby's home page, <http://www.ncweb.com/users/dkirby/>. Dave also posts text versions of loggings.

the popular *Australasian Shortwave Guide* ("ASWG6") is planned to be published on 12 December (print edition only—no electronic version!). ASWG6 is 28 pages in A4 format. Although targeting listeners from primarily in Australia, New Zealand and the Pacific Islands and secondarily in Asia, the Far East, the Indian sub-continent, the Indian Ocean, and Siberia, readers elsewhere will also find the general articles of interest. ASWG6 is a comprehensive alphabetical listing by country of programs beamed to Australia, Oceania, the Far East, South Asia, and the Indian sub-continent, for the W98 (1998) Winter Season.

Our Motto is - "Unity and Friendship"

Details are given of frequencies, times, broadcast days, target areas relay sites, languages and other information. This listing of several hundred entries is applicable for the five month period commencing October 25 and concluding on March 28 1999. There is also a new special Graphical Index on an hour-by-hour basis, referenced and linked to the main alphabetical country listings. ASWG6 will have data not published in the standard annual texts. ASWG6 will include the following features: DXing Singapore prepared by Mick Ogrizek, DXing From Asia, Austria Calls the World and International Broadcasting. Price for ASWG6 is unchanged—A\$10 in Australia (elsewhere via economy airmail: A\$15, US\$10, 10 IRCs) from Bob Padula, 404 Mont Albert Road, Surrey Hills, Victoria 3127, Australia (E-mail: padula@compuserve.com)

It's time for another brief reminder about our monthly mailing date for the Journal. The Bulletin goes to the printer on the last Saturday of the month (publication day). The book, as **Bill Oliver** is fond of calling the Journal, is mailed "officially" on the Friday after the last Saturday of the month. The November edition of the Journal was actually mailed a day early on Thursday morning (November 5). Please keep this in mind when inquiring about missing bulletins. When the last Saturday is near the end of the month, the mailing date extends into the following, i.e. cover, month. Please keep this in mind when asking about missing books. Give the Journal a chance to arrive, hi!

That's it for this month. Enjoy this month's edition of the JOURNAL; it's another good one. 

## Musings

*This column provides a forum where members can express comments, ideas, and thoughts about NASWA or the SW radio hobby. Please feel free to comment on anything presented this month (or previous months). Opinions expressed here are solely those of the submitters. Please submit all Musings to Richard A. D'Angelo, 2216 Burkey Dr., Wyomissing, PA 19610 or via email: rdangelo3@aol.com.*

**Joe Buch <joseph.buch@dol.net>, PO Box 1552, Ocean View, DE 19970**

Following up on Jim Conrad's Musing in the October NASWA Journal, I also have been pondering what the design of a short-wave receiver should include for the next millennium. Naturally, the ability to receive and decode the new digital transmission format will be essential. I have previously presented in my Tech Topics column the features such a receiver would have according to the Digital Radio Mondiale consortium now developing the new standard. I now propose a new function I elect to call "Mute-On-Keyword".

As long as the digital receiver needs a digital processor chip or two anyway, why not implement user programmable voice recognition software as an integral part of the radio. That way I could program my radio to mute as soon as words and phrases like "Cheezuss", "salvation", "Y2K", "won't you support this ministry?", "Monica" or "cigar" are heard.

The "mute-on-keyword" function could help reverse the trend of declining short-wave listening among young people. Many of us ponder and lament in this forum why young people are no longer coming into this hobby. Could it simply be that parents just do not want their offspring's mind being warped by the mindless rantings of bigots, racists, and money-grubbing charlatans who spew their trash as the word of God? Young minds are very impressionable and easily influenced by continual streams of paranoia such as those that emanate from most US commercial short-wave broadcasters. If they are not preaching fear of the coming judgment day, or the forced return to the barter economics of caveman civilization as a result of the conspiratorial actions of the New World Order, they are

predicting the end of civilization as we know it on midnight, December 31, 1999. Why would any responsible parent buy their kid a shortwave radio?

Until commercial short-wave broadcasters clean up their act, the responsible parent must exercise the right to be selective about the ideas to which their young family members are subjected. Until listeners push commercial broadcasters to begin acting with some responsibility for what they air, the lure of easy money will continue to guarantee these rants will continue. Maybe automated, user-programmable, censorship is the answer.

The "mute-on-keyword" function of the millenium 2000 receiver would allow parents to exercise this discretionary responsibility automatically and once again restore short-wave listening to the safe hobby it was when I was cutting my short-wave eye teeth at age 10. In those days we only heard radio rantings about Communists under our beds, the world running out of oil by 1962, and imminent nuclear annihilation. Ah, for those simpler times.

**Richard D'Angelo <rdangelo3@aol.com>, 2216 Burkey Drive, Wyomissing, PA**

November saw our first DXpedition of the season. This was our first DXpedition to French Creek State Park. It's a little closer for our Philadelphia based contingent; also, Gifford Pinchot was booked solid so we had to find a new spot. This location had been talked about for years as an alternative so we put "Plan B" into effect.

The thorns at French Creek were not as plentiful as those at Gifford Pinchot, so my clothing held up just fine. Fred Kohlbrenner and I arrived around 2:00 PM on Thursday, November 5, but the "uniforms" in-charge wouldn't give us the key to the cabin until 3:00 PM. Everything is now computerized so when the system crashes, you can't get your key to the cabin. Apparently, the state modernized with "old" computer systems. Nothing like the lowest cost bidder getting the project. So we waited and did some antenna work prior to getting official title to the cabin for the weekend.

Bob Montgomery, Kris Field and Ed Mauger arrived, in that order I might add, on Thursday afternoon. After setting up, Ed drove home for his headphones. Thankfully, he lives only about 15 miles from the cabin. Personally, I think he was bored with us after only an hour. Conditions were far from spectacular until Saturday afternoon when some Indo's began rolling in but the cabins were electrically quiet so we now have two DXpedition sites.

There were no major weather catastrophes that usual surround our DXpeditions. There was a lot of talk about mayonnaise but I was too tired to fully comprehend what was going on.

#### **FRENDX: Twenty Five Years Ago....**

What would December be without Charlie Loudenboomer's "Twas the Night Before Christmas?" Jimmy C. Jones was the winner of the Tall Tale contest. Jones' entry was about the freezing point of standing waves at -41 degrees Fahrenheit. Scott Reeves compiled a listing of English language programs to North America. The World Radio TV Handbook was being offered to members for \$6.50, which was \$1.00 off the cover price. Larry Yamron notified members that a local branch was being formed in Pittsburgh. Harry van Gelder sent a letter to all DX Federations, Councils, and clubs publicizing DX Rally 1974. Dan Ferguson informed members that club dues would remain at \$10.00 per year with the Mid-Month Flashsheet costing \$2.00 per year. In the QSL Report, John Campbell reports verification from the rare hospital ship "De Hoop." Other fine catches included Lakeland Radio, La Voix de Revolution, Burundi, That TV, and Turks & Caicos Islands.

## Calendar Of Events

**Dec 18 Meeting. Philadelphia Area NASWA Chapter.** Kulpsville Holiday Inn, Kulpsville, PA at 7:30 PM. For more information contact Dan Cashin at 610-446-7831.

**Dec 18 No Meeting. Boston Area NASWA Chapter.** The December meeting of BADX has been cancelled. The next meeting will be January 15 at The Lexington Club, Rts. 4 & 225, Lexington, MA at 7:30 PM. The location is 1/4 mile west of Rt. 128, Exit 31. For more information contact Paul Graveline at 978-470-1971 or Internet: 74007.3434@compuserve.com. The URL for the BADX guys is <<http://www.anarc.org/naswa/badx/>>.

**Dec'98 Contest. 1998 African DX Contest** organized by Gruppo Radioascolta Liguria ("GRAL") will take place between 2200 and 2300 on December 20, 1998. Details in October's *Journal*. Send your entry to Alessandro Micheli, Via Lausen 16, 38050 Canal S. Bovo, Trento, Italy.

**Jan 8 Meeting.** The Tidewater SWL's meet at 6:30 PM. For more information plus meeting location contact Joe Buch at [joseph.buch@dol.net](mailto:joseph.buch@dol.net)

**Jan 8 Meeting. The Cincinnati/Dayton Monitoring Exchange (MONIX)** meet at the Lebanon Citizens National Bank on U.S. Route 42 in Mason at 7:00 PM. For more information contact Mark Meece at 513-743-8089 or e-mail at <[mmeece@siscom.net](mailto:mmeece@siscom.net)>. For additional information about MONIX, check out their web site at <<http://www.siscom.net/~mmeece/monix.html>>

**Mar'99 Contest. 1999 North American DX Championships.** Further information will be published in the *Journal* or you can send a self-addressed stamped envelope to 1999 NADXC, c/o Dr. Harold Cones, 2 Whits Court, Newport News, VA 23606.

**Mar'99 Convention. The 12th Annual Winter SWL Festival** will be held at the Kulpsville Holiday Inn (Exit 31 on the Northeast Extension of the Pennsylvania Turnpike) on 12-14 March 1999. Organized by the infamous "gang of three" (Messrs. Brown, Cones, and Field) this all wave gathering attracts about 200 hobbyists each year.

**Apr'99 Convention/DX Camp.** The Danish Shortwave Club International will hold its **Annual General Meeting and DX Camp** during the weekend of April 30-May 2, 1999 at a scout camp in the dunes of the west coast of Jutland, Denmark. Details to follow.

**Apr'98 Convention. The 35th Annual International World Wide Continental DX Association (IWWCDXA)** will be held in Tahiti at the Charlie Loudenboomer Estate on April 1, 1998 from noon until midnight. Charlie will lecture continuously during this 12-hour period on a variety of boring subjects some of which may actually pertain to shortwave radio. Registration fee is a modest \$150.00 with an extra \$50.00 charge for the traditional hamburger helper banquet. More information is available from Charlie at <[cl@sucker.com](mailto:cl@sucker.com)>.

Members are invited to submit items to be included in this calendar to Rich D'Angelo (Internet: [rdangelo3@aol.com](mailto:rdangelo3@aol.com)) or Ralph Brandt (Internet: [ralph@mcs.com](mailto:ralph@mcs.com)).

## Contribute!

Send your loggings and QSL information off to our Distributing Editor, **Fred Kohlbrenner** (2641 South Shields Street, Philadelphia, PA 19142). He will forward them to the appropriate editor. Remember, Fred has now expanded his business to include QSL report information and totals for the **Scoreboard** column. He can also be reached through the Internet at: [fkohl@ix.netcom.com](mailto:fkohl@ix.netcom.com).

# Easy Listening

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Allentown, PA 18104  
Internet: rdcuff@sprintmail.com

## It's Great to be Back

Hello again! It's great to be back as the editor of *Easy Listening*. Before I go any further I wish to thank John Figliozzi from the bottom of my heart for filling in for more than two years as column editor. The column has been in great hands during my absence, and I hope I can continue to build on John's excellent contributions. John certainly won't be disappearing from the hobby, as his other efforts in books and periodicals will now be able to receive a higher level of support. John will also be contributing from time to time in the column here as well.

## So What Did I Miss?

The past two years have generally seen short-wave diminish in its importance as a medium for international broadcasters to deliver their message. Some key developments:

- ¶ **Radio Canada International** survived extinction threats and finally appears to be on solid footing.
- ¶ **Radio Australia**, an underfunded broadcaster even three years ago, has seen nearly half its transmitter plant shut down, and is no longer managed as an independent entity. Nearly all its programming originates from, or is also aired by, the domestic Radio National network, and Radio Australia is managed as a part of Radio National.
- ¶ **The Christian Science Monitor World Service**, a 'round-the-clock news and analysis effort, was shuttered, with all Christian Science programming now religious.
- ¶ **The Voice of America** adopted a 24-hour news and analysis format of its own, called *VOA News Now*.

- ¶ **Radio New Zealand International** has lost much of its independent programming.
- ¶ **Radio Portugal** no longer broadcasts in English.
- ¶ **The BBC World Service** scaled back from five program streams to three streams, and appears on the verge of launching a separate (my own speculation) 24-hour news service built on the format of *The World Today*. The Beeb continues to annoy listeners with ill-advised schedule changes and strategies.
- ¶ **Radio Norway International** no longer broadcasts in English.
- ¶ **Merlin Network One** has arrived on the air, mostly with a music format.

I'm sure I missed some of the more significant developments, but these were the station developments that came most readily to mind.

To some extent, we only have ourselves to blame. We need to make clear to broadcasters that our listening makes a difference in our attitudes, opinions, and behaviors about their country, people, and economy.

Myopic politicians and policymakers also share in the blame. Speaking as a marketing manager, I believe broadcasters are being shortsighted in eliminating or reducing short-wave as a medium, especially in the developing world, because it is very difficult to look at the cause & effect of different delivery methods in listeners' (think consumers) attitudes and opinions. As a marketer, it's very difficult to trace *which marketing tools* were effective in convincing a customer to do business with me. Was it an advertisement? A trade show? A press release? A direct mail piece? Tracing the initial source is very difficult.

Clearly, though, we as listeners need to become activists. At the Winter SWL Festival a few years back, I was struck by the passion of a couple attendees for a particular program host on WCCR. Do you show your passion for your favorite broadcaster or program?

## The Internet and Shortwave Radio

I could consume a lot of space hashing and rehashing the relationship between the Internet and Shortwave Radio, but I won't. The 'net has greatly facilitated access to up-to-date schedule and frequency information for major broadcasters, and nearly all broadcasters can be E-mailed. However, detailed program information—the type I report on in this column—is still very difficult to come by, except perhaps 1 to 2 weeks in advance. A few broadcasters, specifically HCJB and Radio for Peace International, have created E-mail lists utilized in "pushing" program and station information to listeners.

Aside from information, the other significant role of the 'net is the availability of live and on-demand audio from more than 1700 sources, most of them radio stations. While Internet audio should still be considered somewhat experimental, with connectivity not universally reliable, the diversity of programming options - even just considering those broadcasters traditionally called "shortwave broadcasters" is remarkable. As a parent with two young children, much of my listening is "catch as catch can", and I listen to tape recorded downloaded files quite frequently.

Given the role of "webcasting" as part of the media mix, I do plan to report on programs originating from international broadcasters that air at times when a particular broadcaster doesn't propagate well to most of North America.

My reasoning is that the *message* is what's important in the context of Easy Listening,

whereas the *media* is less important. My basic criteria is that a broadcaster must have a significant shortwave presence for much of its output if it's to be discussed here. For example, an international broadcaster that's audible as part of the new *WRN from NPR* can be covered here, but NPR originated programming that's available only via satellite or webcast can't be covered here. If you'd like to debate that approach, feel free to drop me a note, or, better yet, submit your thoughts in a Musing to Rich D'Angelo.

## Program Exchange

Several months back, John Figliozzi started a new regular segment entitled "Program Exchange", incorporating your selections and suggestions for programming. I will keep this tradition going—as long as you support it with your submissions. I'll take written copy, E-mail, faxes (610-954-7045), or whatever format you're comfortable with.

### Radio Australia: *The Planet*

**Weekdays, 1300 UTC:** First, from Bob Montgomery: Some fantastic music in the a.m, 1300 to 1500 UTC. *The Planet* features a wide variety of music, anything from Reggae to CW, and to real ridge runner music. Really good stuff. Some mornings, several types of music and not all the same for several hours. Can't say I have ever heard pop on at this time but much Jazz and sometimes some good folk. Blue grass this particular morning. Lucky Oceans (originally born Reuben Gosfield in Philadelphia) hosts Monday through Thursday, Robyn Johnston on Fridays. Doug Spencer produces the program for Australia's Radio National, and can be contacted at ABC Radio National, GPO Box 9994, Perth, W.A. 6001, Australia.

### Radio Australia: *Money, Markets & The Economy*

**Sundays, 1130 UTC:** One of the problems with business and economic news these days is the emphasis on instant analysis, with very little depth. You don't see analysis, you just see reaction. Radio Australia has been offer-

ing a 13-episode series, *Money, Markets & The Economy* that seeks to demystify the external forces and political motivations that shape macroeconomic behavior. The program has been airing Sundays, 1130 UTC; the program is also available on-demand in RealAudio, (URL: <http://www.abc.net.au/money>) and other live airings, available in RealAudio, can be found from the Radio Australia website. The 13<sup>th</sup> edition will air December 6<sup>th</sup>; and the series will then be repeated starting with the 1<sup>st</sup> edition (per personal correspondence from RA).

#### Merlin Network One

**Daily, 2000 to 0600 UTC:** From John Figliozzi, here's the program schedule for Merlin Network One:

**Daily except Wednesdays:**

0000 *The MNO Music Jam*

2000 *The Rock Radio Network* (from 1800)

**Wednesday**

00:00 *The MNO Music Jam*

20:00 *The MediaZoo\**

21:00 *Atmospherics*

22:00 *The 2 hour Album Zone*

**North American target Frequencies:**

0000-0300: 9560 kHz

0300-0600: 9895 kHz

2000-2200: 11985 kHz

#### HCJB—DX Partyline

**Sundays, 0110 and 0410 UTC:** Also, from Mr. Figliozzi: Next weekend, HCJB's *DX Partyline* starts a new feature titled "Tech Talk with Dr. Rick." This will be the first regular technical spot for SWLs since the demise of "The Two Bobs" on SRI some years ago. (Arnie Coro's program on RHC is technical in nature, but oriented more toward hams—and more advanced ones at that, IMHO.)

From what I understand, the spot will work very much like "The Two Bobs" or if you prefer the *Swiss Shortwave Merry-Go-Round*. Technical questions related to SWLING from listeners will be answered. More details are on the HCJB website.

## BBC World Service Highlights

As usual, we'll preview upcoming **BBC World Service** series and occasionally profile ongoing offerings. I'll focus on prime time airings in the Americas stream, when possible given the program schedule. First, though, I'll highlight a phenomenon which happens only once every nine years.

### Light Entertainment

Thursdays, 0330: *Brain of Britain* reaches a nine-year climax with the following series of programs:

December 17<sup>th</sup>: The finals for *Brain of Britain 1998*, with Robert Robinson presiding.

December 31<sup>st</sup>: The 1998 champion (crowned on the 17<sup>th</sup>) faces off against the 1996 and 1997 champions for the title *Brain of Brains*.

January 7<sup>th</sup>: The 1998 Brain of Brains faces off versus the 1995 and 1992 Brain of Brains for the crown of *Top Brain*, awarded once every nine years!

The only other Americas airing on shortwave is the prior Saturday at 0730; you might also be able to catch the European feed Mondays at 1830.

### General Features

Sundays, 0130—*On Your Behalf* is a 12-part 15-minute listener contact series for listeners with a sense of curiosity regarding what they've heard (presumably, on the World Service). The program is hosted by Malcolm Billings, who hosts and produces the popular program *Heritage*. *On Your Behalf* also airs Fridays at 1615.

Mondays, 0130, beginning December 7<sup>th</sup>—*Pick of the World* returns for a 16-week run. Daire Brehan picks her favorite programs for the prior week for a repeat airing. Daire can apparently be influenced by listener suggestions regarding which programs are worth repeating; E-mail your suggestion to [pick@bbc.co.uk](mailto:pick@bbc.co.uk). Also airs Sundays 1615.

Mondays, 0530, beginning December 7<sup>th</sup>—*Tying The Knot* is a five-part 30-minute series looking at wedding celebrations and their cultural contexts in five diverse cultures, ranging from Nigeria to Hungary to Pakistan and beyond. Also airs Saturdays 1030 and Mondays 2130.

Saturdays, 0130, beginning December 26<sup>th</sup>—*Small Worlds* is a six-part 15-minute series investigating the unique lifestyles of the world's 'microstates'—those countries small in landmass and population. Why do Monaco, Iceland, Samoa, Kiribati, Nauru, and the Seychelles all have minimal starvation, homelessness, unemployment, or crime? Repeated Fridays 1515.

#### Science and Technology

Tuesdays, 0145, beginning December 15<sup>th</sup>—*Wild Tales* is an eight-part 15-minute series inviting eight different naturalists the opportunity to relive some of their most memorable and fascinating animal encounters. You can hear about Polynesian snails, anaconda snakes in Guyana, and leech plagues in the Amazon. Joanna Pinnock hosts; also airs Fridays 1230.

Tuesdays, 0330, beginning December 29<sup>th</sup>—*Watershed* is a four-part 30-minute series examining the possibility that demand for water may soon exceed its global supply. Water has long been a source of conflict, between Egypt and Ethiopia, and Israel and Palestine, to name a few countries. Andy Kershaw discusses water problems with politicians, environmentalists, scientists, and people at the heart of the problem. Repeated Tuesdays 1130.

#### The Arts

Saturdays, 2230: *Play of the Week* synopses:

Saturday, December 12<sup>th</sup>: *The Cyclist* is a simple fable-cum-morality tale, where an innocent dreamer, known only as the Narrator, is desperate to see the world. He leaves his sheltered Indian village and sets off to cycle round the world. Written by Vijay Tendulkar, one of India's foremost modern playwrights.

Saturday, December 19<sup>th</sup>: *The Spectre Bridegroom* is based loosely on a Washington Irving short story as a Christmas fairytale with a distinctly science fiction flavor. Hattie, a practical, of not particularly beautiful young girl, is promised in marriage to the heir of an old and honorable family. Said gentleman shows up to claim Hattie's hand, but he is, alas, crushed to death by a passing waste disposal unit from the planet Ord. Hattie's despair is ameliorated by the Model G28 humanoid aboard the waste disposal unit, but Hattie's father isn't so sure. Written by Diane Ney, a previous winner of the BBC World Service Playwriting Competition.

Saturday, December 26<sup>th</sup>: *Mr. & Mrs. Nobody* is a stage play based on George and Weedon Grossmith's comic masterpiece *The Diary of a Nobody*. Keith Waterhouse wrote the stage play based on this and his own work *Mr. Pooter's Diary*. Dame Judy Dench and Michael Williams are featured.

That's it for December—have a wonderful holiday season! See you next year

73 DE Richard



#### Welcome to the following new NASWA members

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Craig F. Eaton, Rochester, NY  
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## DX Target: Radio MINURCA

### United Nations Mission Radio in the Central African Republic

by Richard A. D'Angelo

During the summer of 1998, a small radio station, established by the United Nations Security Council began broadcasting on FM in Bangui, the capital city of the Central African Republic. By November, Radio MINURCA was able to add shortwave broadcasting, thus becoming the first UN "mission" station to operate on shortwave. I was fortunate to catch a broadcast from this new shortwave broadcast station during its first week of operation and received some interesting information from its director, David Smith. More about Radio MINURCA, its role in Africa, and its programming a little later. First, let's take a brief look at the Central African Republic.

### The Country

The Central African Republic, as its name implies, lies in central Africa and is bordered on the north by Chad, on the east by Sudan, on the south by the two Congos and on the west by Cameroon. The landlocked nation has an area of 622,436 sq. km (about 240,323 sq. mi.). Bangui is the capital and largest city.

### Land, Natural Resources, and Climate

The Central African Republic is situated on the northern edge of the Congo River Basin. Most of the land is a plateau that ranges in elevation from 610 m to 790 m (about 2000-2600 ft). There are two ranges of hills in the north and northeast that rise to maximum heights of about 1400 m (about 4600 ft). Most of the country is savanna, which is grassland interspersed with trees. Open grass-

land is found in the extreme north, and dense rain forest covers the major part of the south-western part of the country. The mineral resources of this primarily agricultural country are relatively undeveloped. Diamonds are the dominant exploited mineral, but deposits of uranium exist, as well as iron ore, gold, lime, zinc, copper, and tin. Commercially valuable trees include the sapele mahogany and the obeche. Almost every animal of the African tropics is found in the country. However, David Smith notes, "There is fabulous scenery in the country, and I have heard that there is lots of big game too, but, after seven months in Bangui, I have yet to see anything more exotic than a dog." The climate of the Central African Republic is hot and humid; the average temperature is about 26°C (79°F). Tornadoes and floods are common at the onset of the rainy season, which lasts from June to November. Annual rainfall varies from about 1800 mm (about 70 in) in the Ubangi River valley to about 200 mm (about 8 in) in the semi-arid north.

### Population

The main ethnic groups of the Central African Republic are the Baya, Banda, Sara, Mandjia, Mboum, and M'Baka. About 49 percent of the population inhabit small villages, living and working according to traditional customs. The population of the country was 2,054,610 in a 1975 census and was estimated in 1995 to be 3,429,000. Most of the population is concentrated in the western half of the country, where Bangui (Population estimated in 1988 as 451,590), the capital and chief city, is located. An estimated 60 percent of the total population follow traditional religions, about 35 percent are Chris-

tian, and 5 percent are Muslim. French is the official language, but Sango is the most common African language and numerous other African languages are also spoken. Only 38 percent of the population are literate.

## Economy

The Central African Republic is one of the most underdeveloped areas in Africa. Growth of the export economy is hindered by the difficulty of transporting goods to a seaport. The country has no railroads. Consequently, river systems are important arteries of transportation. About 60 percent of the population earns their livelihood by farming. The agricultural output is fairly evenly balanced between subsistence and export crops. The principal sources of revenue are diamonds, coffee, tobacco, cotton, and timber exports. The annual national budget in the early 1990s showed revenues at \$175 million and expenditures at \$312 million.

Only about 3 percent of the total land area is suitable for crops. The government has organized agricultural cooperatives, placing primary emphasis on introducing new crops that are expected to produce a higher income. The government encourages the cultivation of tobacco, sesame, and rice. The most important cash crop has traditionally been coffee, but production declined along with market prices in the early 1990s. Cotton, which is widely cultivated, is now the leading cash crop and represents 23 percent of export earnings.

Manufacturing activity in the Central African Republic is very limited. Products include cottonseed, peanut, and sesame oils; textiles; leather goods; tobacco products; soap; flour; bricks; and paint. The annual output of electricity is about 96 million kilowatt-hours, approximately 69 percent of which is generated in hydroelectric installations. Gem diamonds account for nearly all the country's mineral output and 63 percent of its export revenue.

France and Belgium are by far the leading trade partners, and some commerce is also carried on with the nearby nations of

Cameroon, Congo, and Gabon, with which the Central Africa Republic is linked in the Customs and Economic Union of Central Africa. In the early 1990s annual exports earned about \$138 million while imports cost \$205 million. Station Director DEavid Smith offers the following comments about the economy. "The only textile mill in the country closed down a couple of years ago. The UCATEX factory in Bangui is waiting for the elements to knock it down. A big part of the problem is lack of infrastructure. It takes almost a week to drive from the coast (Doula, Cameroon) and only the most sturdy of vehicles dare make the trip. A good highway and rail line to Douala could help boost the economy of this country."

## Government

In 1981, army officers overthrew the government of the Central African Republic and suspended a constitution that had been approved earlier that year. A new constitution calling for a single-party republic was approved by referendum in November, 1986. Under this constitution, a president and the Council of Ministers, which the president heads, hold executive authority; the president is popularly elected to a six-year term. The National Assembly, the 85 members of which are popularly elected to five-year terms, holds legislative authority. In 1992, the constitution was revised to allow for a multi-party system. A recent series of mutinies has resulted in the current UN peace-keeping mission.

## History

Most of the ethnic groups inhabiting the present-day Central African Republic entered the region in the 19th century to escape Fulani armies or to avoid slave traders operating in the Congo River Basin and modern Sudan. In the 1880s, the French annexed the area and in 1894 it was organized as the territory of Ubangi-Chari. In 1910, the dependency became part of the Federation of French Equatorial Africa. From 1946 to 1958, the territory had its own elected legislature and was represented in the French National Assembly. In 1958, the dependency gained

autonomy as the Central African Republic; it became fully independent on August 13, 1960. At one time in late 1976, the country was briefly renamed the Central African Empire.

## The Station

Radio MINURCA is the UN's peacekeeping radio station in Bangui. Radio MINURCA commenced broadcasting on July 22, 1998 on FM 100.8 MHz in Bangui using a 500 watt transmitter. After running test transmissions of music from July 22 through July 27, the station's first live program was broadcast at 0815 UTC on July 27th. It consisted of an interview with the UN's Special Representative to the Secretary General, Mr. Oluyni Adeniji. Shortwave broadcasting commenced at 1600 UTC on Saturday, November 7, 1998 on 9900 kHz. The station uses a 20-kilowatt transmitter, which is running at only 12 kilowatts. Programming is targeted to the Central African Republic from studios located in Bangui.


The UN mission was established in Bangui in April, 1998, by action of the UN Security Council, in order to ensure security and stability in the country following three violent mutinies. Radio MINURCA is part of the UN's peacekeeping mission. MINURCA (Mission des Nations Unies en Republique Centrafricaine) was established by the UN Security Council in April, 1998, and is scheduled to continue until February 28, 1999. While Radio MINURCA is scheduled to cease broadcasting on that date, there is the possibility that either the mission will be extended or another UN agency may take over operation. David Smith, Director of Radio MINURCA, would like to see the Radio MINURCA continue because the station "is extremely popular here and provides the only independent voice in the country."

Radio MINURCA is enjoying many firsts for the UN: first mission radio to broadcast 24 hours a day, seven days a week; first UN mission radio to broadcast on shortwave; and first UN mission radio station to use local presenters for all of its programming. The first program broadcast on Radio MINURCA was called TGV Musique, presented by Carlos Valenzuela, who also hap-

pens to be chief of the station's electoral unit. The station also carried a "once-off" reggae program, in English, on Saturday, November 16, 1998, that was heard worldwide by DXers and shortwave listeners including myself. Jamaican-born Henry Thompson, the station's communications chief, who made his first radio appearance with that broadcast, presented the program. Station Director David Smith says, "The 'once-off' reggae program has proven so popular that we've decided to 'cement' it into the Saturday 2100 UTC slot. We have literally been bombarded with e-mails from all around the world complementing Radio MINURCA and Henry Thompson on REGGAE NIGHT."

Most of the station's programming is in Sango and French, although Radio MINURCA also carries some live programming from the BBC Africa Service in English (0500-0600 and 1745-1900 UTC). There are plans to run some English and French programming from Radio Netherlands in the near future. The target audience is the people of the Central African Republic and the bulk of the station's current programming deals with preparations for legislative elections scheduled for Sunday, November 22, 1998, and again on December 13, 1998. Presidential elections are scheduled for late 1999, but it is unclear whether the UN will still be in Bangui at that time.

The station is very interested in receiving reception reports. They can be sent by regular postal mail to the station at: Radio MINURCA, David Smith, Director, P. O. Box 2732, Bangui, Central African Republic. According to Mr. Smith, "e-mail is rather fragile in the Central African Republic, so I use two different systems. One of them usually down." E-mail reception reports can be sent to David Smith at <admin@intnet.cf> or <smith2.unep@un.org>. Alternatively, you can try sending a reception report to their FAX number 1-212-963-9715, which, by the way, is in New York City.

Grab this one while it lasts. Report loggings of this new station to Wally Treibel for the International Band Log Report and verifications to Sam Barto for the QSL Report. Good luck with this DX target. 

# Equipment Reviews

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## The Ten-Tec Model RX-320 PC Radio

This has been one of the most fun-to-use receivers I have ever tested—I think that any SWL with a computer would love to have one of these radios! Since the radio's control functions and most of the signal processing are done via software, the radio has a fantastic price to performance ratio, with a price of \$295 plus shipping. The Ten-Tec RX-320 is a 3 x 6.25 x 6.5 inch black metal box that plugs into a serial port of a personal computer running Windows 3.1 or 95. The computer must be a 386 or better and have at least one megabyte of free hard disk space available. The DSP functions are handled by a chip in the receiver, so processor speed is not important for receiver performance. I used a 200 MHz Pentium and response to commands was almost instantaneous. The receiver is supplied with a 9 pin (DB9) serial cable, AC adapter, a patch cord for connecting the receiver's audio output to the computer's sound card line input, control software on a 3.5 inch diskette and a telescoping whip antenna which screws into the radio's circuit board via a hole in the top cover. Provision for an external antenna (RCA phono connector) and an external 4 ohm speaker (1/8 inch jack) are available on the radio's rear panel.

The RX-320 is a general coverage receiver with a frequency range of 100 kHz to 30 MHz. Demodulation, filtering and AGC are all done by digital signal processing. Reception modes of AM, USB/LSB and CW are supported. There is no synchronous AM mode. The receiver's IF bandwidths are 8, 5, 2.5, 1.8 and 0.5 kHz (shape factor 1.5:1 or better) on the latest models. The receiver was originally equipped with 6 and 3 kHz values instead of the 8 and 5 kHz and the advertising

I have seen as late as the November 1998 QST still shows values of 6 and 3 kHz. The folks at TenTec told me that the change was made for better SWL performance. AM sensitivity is rated as 0.64  $\mu$ V with the wide filter (80% modulation, one kHz tone, 12 dB S+N/N). SSB sensitivity is 0.3  $\mu$ V with the 2.5 kHz filter. Third order intercept is specified as +10 dBm with a 90 dB dynamic range with the 2.5 kHz filter with 50 kHz signal spacing. The radio is a triple conversion design with intermediate frequencies of 45 MHz, 455 kHz and 12 kHz—the final conversion being for the DSP circuitry.

### Installation

I really appreciate that TenTec supplies all the necessary cables for connecting the RX-320 to a computer. They even include a RCA connector for the external antenna jack. The radio does require a free serial port to be connected to, but it can be configured to use COM 1-4. The serial cable and the audio patch cable are six feet in length, to allow placing the receiver away from the computer and monitor. The control software is loaded from a 3.5 inch diskette and takes up less than a megabyte of hard disk space. The software version I received with the radio was Version 1.25, but Version 1.26, which repairs a couple of glitches, is now available on the TenTec Website. I initially had no audio output from the sound card, but this was a problem with my computer. I had to activate the line input via the sound card's mixer program. It took longer to figure this out than it did to install the software and start using the radio! If your computer doesn't have a sound card, the RX-320 provides a one watt output to drive an external 4 to 8 ohm speaker.

## Gee, it looks like a radio!

At this point, I strongly advise you to go to TenTec's Website ([www.tentec.com](http://www.tentec.com)) and download the RX-320 control program software, since a picture is worth 10,000 words. The software will operate without the radio. Once the control program is started, the main screen comes up with three windows: the radio panel, the memory window and the spectrum scan display. These windows can be opened or closed by clicking on buttons on the program's toolbar or via the "View" option on the Menu bar. The radio panel window is the primary one that most operators will use. It looks just like the front panel of a typical communications receiver with frequency display, tuning knob (with spinner indent!), pushbuttons for mode, filter and tuning step and a slider for volume control. The computer's pointing device (I prefer a trackball to a mouse, due to limited real estate on the desk) is used to select the desired function. The top portion of this window has the frequency display, with readout to 1 hertz. Along with the frequency the current filter, mode and tuning step are displayed. There is a clock with both local and UTC times displayed. The radio's clock is slaved to the computer's clock. Offset between UTC and local time is set via the "Options" button on the toolbar or via "Setup"

on the Menu bar. Just below the frequency display is the log scale. The log scale is calibrated in 2 kHz steps and covers a span of approximately 260 kHz. A red index line in the center of the log scale indicates the currently tuned frequency.

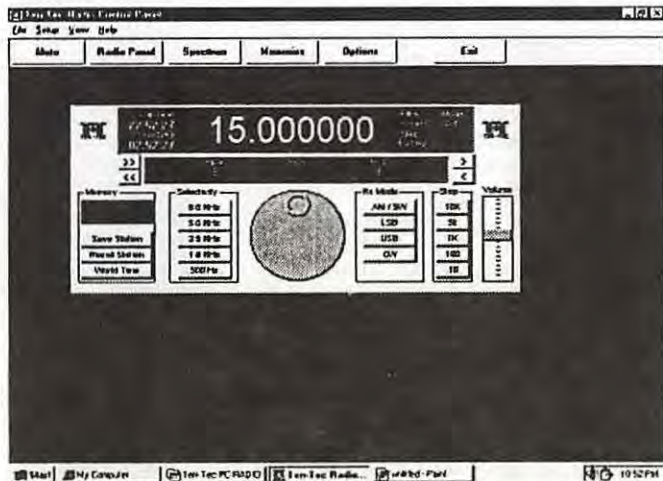
## Where's the tuning knob?

The log scale can be "dragged" to retune the receiver—very useful for quick frequency excursions, but not very precise. At the right end of the log scale are right and left arrowheads. When these are clicked the radio will tune in steps based on the currently selected step size in the direction of the selected arrowhead. Available step sizes are 10, 5 or 1 kHz or 100 or 10 hertz. When a specific mode is selected, a default tuning step is selected: 5 kHz in AM and 100 hertz for SSB/CW. These defaults cannot be reset. At the left end of the log scale are double left and right arrowheads. When these are clicked, the radio tunes in steps equal to 10 times the current step size.

Yes, there is a (virtual) tuning knob. By pointing to the tuning knob on the panel display the radio can be tuned by clicking. Point to the upper half of the knob and a clockwise arrow appears. The receiver then tunes up in frequency by the selected step size for each click—

point to the lower half of the knob to tune downward. The receiver tunes continuously if the left mouse button is held depressed. For those who refuse to use a mouse, the computer's Up and Down arrow keys will also tune the radio.

Direct frequency entry is also possible via the numeric keypad (Num Lock must be enabled). I found it easiest to enter frequencies in MHz for-



mat, i.e. with a decimal point. Kiloherz entry can be forced by typing "k" instead of "Enter" after the desired numerals. The instruction manual states that the program will attempt to determine the format based on the numbers entered. This didn't work too well—entering frequencies less than "1000" tuned the radio in kHz, but numbers greater than 1000 resulted in the radio tuning to hertz. For example, entering "7,8,0,Enter" tuned to my local talk station on 780 kHz, but typing "1,2,9,0,Enter" tuned the radio to 1.290 kHz—below the reception range of the radio! I found it easier to use the "k" method to enter medium and longwave frequencies and the decimal point and "Enter" for shortwave—zeroes after the decimal point do not have to be entered. By clicking on the frequency display, a numeric entry window is opened and the desired frequency can be typed in, but I don't see much point in this, as it requires an additional mouse click compared to the keypad entry method.

## Other controls

To the left of the tuning knob are the buttons for bandwidth selection: 8, 5, 2.5, 1.8 and 0.5 kHz. Any of these values can be selected for any mode, but the defaults when a specific mode is selected is 8 kHz for AM, 2.5 kHz for LSB/USB and 1.8 kHz for CW. Further to the left of the tuning knob are the memory controls. At the top of this column is the memory display—this shows the station identifier (i.e. "BBC") when the receiver is tuned to a frequency that has been saved in memory. Below this window are the memory save and recall buttons. When the "Save" button is clicked, the "Station Information Sheet" pops open. This permits entering the station call sign or identifier, frequency, mode, bandwidth, country, language and notes. Pressing the "Recall" button pulls up the memory window—which I will describe later. The bottom button in this column is "World Time"—clicking this button tunes the radio to 10 MHz in AM mode. The default frequency for the "World Time" button cannot be altered. Unfortunately, there's no way to go back to the frequency the radio was tuned

to, other than using the keypad or the other tuning methods—it would be nice if clicking the "World Time" button a second time would return the receiver to the previously tuned frequency.

To the right of the tuning knob are the mode buttons: AM, LSB, USB and CW. The AM button is labelled "AM/SW", I presume for those North Americans who equate "AM" with the medium wave band. Contrary to what is shown in the ads for the RX-320, there is no "SAM" button for synchronous AM detection (hopefully a future development, but "not at this time" according to TenTec). Further to the right are the tuning step buttons: 10K, 5K, 1K, 100 and 10 hertz. There are no provisions for 9 kHz steps for overseas MW listeners. The minimum tuning step of 10 Hz is adequate for SSB/CW signals, but is still too coarse for really good ECSS tuning of AM signals with music content, although it is adequate for voice programs. The other obstruction to ECSS tuning is outlined below. Any tuning step can be selected for any mode, but switching modes resets the receiver for the default step for that mode; 5 kHz for AM and 100 hertz for the other modes. In addition, switching modes changes the resolution of the tuning display to the default tuning step for that mode.

## Zero-beating, Not!

This can present a problem when attempting to "zero-beat" a station to measure the exact frequency or for ECSS tuning of AM signals. An example is in order to illustrate this. If the radio is tuned to a signal at 9.755 MHz in AM mode, then switched to USB and 10 Hz tuning step selected, the signal is zero beat at 9.75486 (the master oscillator is off slightly—TenTec says that the capability to adjust this oscillator will be incorporated into future software revisions), then switch to LSB to compare the sidebands. At this point, the tuning step switches to 100 Hz, which is OK, because it can be changed, but the receiver retunes to 9.75480 MHz (note that the tuning goes to the lower 100 Hz increment, not the nearest). Therefore, one sideband cannot be

compared to the other without resetting the tuning step size and retuning. If the AM mode is then re-selected the receiver retunes to 9.755 MHz, since the tuning step defaults back to 5 kHz and the display reverts to 1 kHz resolution. Going back to the zero-beat frequency requires resetting the tuning step and retuning the radio. The solution would be to have "sticky" defaults where the software remembers the last step used for a particular mode or being able to specify the defaults via an options menu.

## Unique S-meter

A non-standard "S" meter can be displayed by checking a box in the User Options brought up by the "Options" button on the toolbar or via the "Setup" choice on the Menu bar. It is non-standard in two ways: it has a 0 to 80 scale rather than "S" units and it has TWO needles! The lower needle indicates the current relative received signal strength while the upper is a "peak hold" indicator with a decay time of about one second.

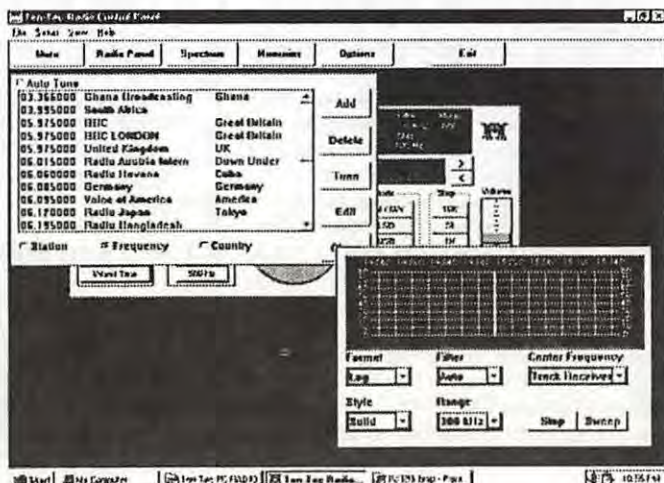
## Other features

So far, what I have described is a radio with a virtual front panel. However, the RX-320 software has two additional components that make it more than that. Although these features are available through software control programs for other radios, TenTec's implementation of them make them very functional and easy to use.

The first of these features is the memory window. When this option is selected, a window opens with a list of stations stored in memory displayed. The memories can be reviewed by scrolling through the list. The

memories can be displayed in order of call sign/station identifier, country of origin or frequency. Clicking on a memory highlights the listing and it can be tuned, deleted or edited. The edit command pulls up the "Station Information Sheet" which contains fields for station, frequency, mode, bandwidth, country, language and notes. There is no "Copy" command for making duplicate entries where only one field such as the frequency needs to be changed. On the main memory screen is a radio button for "Auto Tune"—when this option is selected, the radio will automatically tune to the desired memory channel with a single mouse click.

I found the memory list to be very useful and quick to use. The number of available memory channels is only limited by the computer's available RAM, according to the manual, although surely what is meant is hard disk space, since the receiver's memories are non-volatile. The manual states that any PC will store 1000's of memories. The only drawback I can foresee to this memory capacity is that there is no way to search the list of memories. I think it would be nice if there was a search function, especially if it was the type of search that Microsoft uses in some of their programs where the search results automatically narrow as more characters of the desired search target are typed in. Unfortu-



nately, based on my correspondence with TenTec, there are no plans to implement such a feature at this time.

## Is the band open?

The other feature of the RX-320 that I found quite exciting was the spectrum window. This window is a spectrum analyzer display, which shows a plot of signal strength vs. frequency. The sweep widths available are 1.5 MHz, 750, 300, 150, 75, 30 or 3 kHz. The center frequency can be the frequency that the receiver is currently tuned to or can be input by the user. The sweep time is 25 seconds and the receiver mutes during the scan. Once the scan is completed, the user can point to the spikes on the display and tune to that frequency by clicking. I found that the spikes lagged the actual frequency by one or two kilohertz, so some fine-tuning may be required. This was no big deal, since it just involves moving the mouse pointer and clicking a time or two. The spectrum analyzer works quite well—it does a good job of distinguishing signals from noise. I really enjoyed this capability, especially for band-scanning and searching for new stations.

## Is it a good radio?

Since the RX-320 has no front panel controls and signal detection and processing are handled by a couple of integrated circuits, the overall cost of the radio is low. I would comfortably state that this is the best radio available for \$300. Due to the inherent cost savings in the design, overall performance is approximately equivalent to "normal" radios costing up to twice as much. Of course, one must factor in the cost of the required computer system, but most people that would be interested in the RX-320 have a computer already. I don't have any experience with the Icom PCR-1000 or the Winradio, so I can't compare how the TenTec performs relative to these other PC radios. The PCR-1000 and Winradio do have VHF/UHF coverage, unlike the RX-320, which only goes up to 30 MHz.

Due to its lack of advanced features such as passband tuning and notch filter, the RX-320 isn't a replacement for kilobuck DX machines, but it does a creditable job for both program listening and DX'ing. Sensitivity is more than adequate, especially with an outdoor antenna. I could routinely copy hams on ten meters and got plenty of stations on the tropical bands. The filtering, due to the tight skirt selectivity inherent with DSP filters, is outstanding. The 8 kHz bandwidth was excellent for program listening and the 5 kHz value works well for rejecting adjacent channel interference. The 5 kHz filter sounds somewhat "pinched" (consistent with the tight skirts), but the receiver could be off-tuned by one kHz or so to "brighten up" the sound while still rejecting interference. Both the 2.5 and 1.8 kHz filters were very useful for listening to hams. The AGC characteristics were good overall, although there was some "thumping" on weak signals. I couldn't detect any difference in the AGC when switching from AM to SSB modes. I was unable to detect any spurious signals from local MW broadcasters, either above or below the standard AM broadcast band, even with a half wavelength 90 meter dipole. TenTec rates the receiver's dynamic range at 90 dB (2.5 kHz bandwidth at 50 kHz spacing) and the third order intercept at +10 dBm. I thought that the audio quality was excellent, but this will be dependent on the quality of the sound card and speakers that are attached to the host computer. The built-in audio amplifier had more than enough power to drive a Drake MS-4 speaker to room-filling volume. The external speaker output can be used for headphones, but a mono to stereo adapter is required for stereo headphones.

## Hints and quirks

With my particular computer and monitor, I was unable to use the RX-320's whip antenna for anything more than a quick test due to computer noise. Most of the noise was from the monitor. Based on my experience, I would recommend locating the antenna for

the radio as far from the computer as possible and using good quality coaxial cable to connect the antenna to the RX-320. Initially, I still had a noise problem when using an outdoor antenna with a coax lead-in—I found that center conductor of the coax had a poor solder joint at one of the connectors. Resoldering the joint almost completely removed the noise. The connecting cables for the radio are six feet in length, so the radio can be placed away from the computer and closer to the antenna. A good earth ground can be useful for reducing noise, as well.

When I used the control program with my monitor set for large fonts, the bottom 1/5 of the clock digits were cut off. Switching the monitor preferences for small fonts restored the full clock display.


I did notice some quirks with the memory display window on the radio panel. I had saved the frequencies for RFPI (6,975 and 15,049 kHz) in memory. I was quite surprised to see "RFPI" pop up in the memory window as I was tuning the 160 meter ham band one evening, at 1942 kHz. Subsequently, "WLW" (normally at 700 kHz) appeared in the window as I tuned past 13,807 kHz while bandscanning. Note that the radio didn't tune to these frequencies—just that the stored station identifier appeared in the display window. I'm not sure what causes these anomalies.

Occasionally, the control program wouldn't start—a "floating point error" message was displayed. This is a bug that occurs when the S meter display option is chosen. Version 1.26 of the control software supposedly fixed this bug, but I still had the problem intermittently. While cycling the power switch in frustration during one occurrence of this problem, I managed to break the switch. Fortunately, the power switch is the only component that is not mounted on one of the RX-320's two circuit boards, so a quick trip to

Radio Shack and some soldering was all that was needed. The power switch is somewhat awkward to reach, but the receiver can be left powered up at all times.

## The fun factor

I really enjoyed using the TenTec RX-320. My usual radios are beyond an arm's length from my computer, so it was really nice to be able to open the receiver's window and retune the radio while using the computer. I had no conflicts while using the radio with any software. While I would like to see some changes, primarily being able to specify defaults, adjust the master oscillator and adding a search function to the memory page, the RX-320 is a solid performer and is really fun to use. Selectable sideband synchronous AM detection would also be a nice addition, but I am unsure of the feasibility of this modification. A programmer's reference guide is available at TenTec's website, so it will be interesting to see if any third-party software becomes available.

I think that the highest compliment that I can pay to a piece of review equipment is that I end up buying it instead of sending it back. That's my plan for the RX-320. I would also like to compliment TenTec's factory service—I managed to break the potentiometers on my 1254 kit receiver—they sent me replacements at no charge. If you would like to see another review of the TenTec RX-320, check out Tom Sundstrom's review in the Receiver Shopping List at the Radio Nederlands website ([www.rnw.nl](http://www.rnw.nl))—he gives it five stars and I concur. The price for the receiver is \$295 plus shipping direct from TenTec. The radio has a 30 day money back guarantee (minus shipping charges) and a one year warranty. TenTec's address is 1185 Dolly Parton Parkway, Sevierville, TN 37862; (800) 833-7373; E-mail: [sales@tentec.com](mailto:sales@tentec.com) ; Website: [www.tentec.com](http://www.tentec.com). 

## The Sun And Short-Wave Reception (Part 7)

This month the glossary of terms associated with the sun and shortwave propagation continues.

**PLAGE** Bright areas in the chromosphere overlying sunspots. The source of EUV radiation. It exists from the emergence of the first magnetic flux until the widely scattered remnant magnetic fields merge with the background.

**PLAGE CORRIDOR** A space in chromospheric plage lacking the usual intensity and coinciding with the polarity inversion line.

**PLAGENIL** Spotless disk free of plage.

**PLASMA** An ionized gas in which there are approximately equal numbers of positive ions and negative particles. There may also be many neutral particles, as is the case for the ionosphere.

**PLASMA FREQUENCY** The maximum frequency of the internal oscillations of a plasma. The plasma frequency is proportional to the square root of the electron density.

**PLASMAPAUSE** The outer boundary of the earth's plasmasphere. The plasmasphere resides in the magnetosphere and consists of ions and electrons. The plasmopause may be considered an extension of the ionosphere.

**POLAR CAP ABSORPTION (PCA)** An anomalous condition of the polar D Region ionosphere whereby HF and VHF (3-300 MHz) radio waves are absorbed, causing blackouts, and LF and VLF (3-300 kHz)

radiowaves are reflected at lower altitudes than normal. PCAs and proton events occur simultaneously. PCAs are almost always preceded by a major solar flare on the visible hemisphere of the sun. The time between the flare event and the onset of the PCA ranges from a few minutes to several hours. Transpolar radio paths can be disturbed for days or weeks following the end of a proton event.

**POLARIZATION** In an ionized medium in the presence of a magnetic field, a radio wave is split into two circularly polarized components. Each component propagates independently. These components are called the ordinary and extra-ordinary waves. The division of wave energy depends on the angle the wave makes with the magnetic field. At low frequencies, the extra-ordinary wave is heavily attenuated.

**PRODUCTION** In the ionosphere, "production" refers to the process of producing free electrons.

**PROMINENCE** A term identifying cloud-like features in the solar atmosphere. The features appear as bright structures in the corona above the solar limb and as dark filaments when seen projected against the 0 solar disk.

Figure 4 shows several prominences as viewed in H-Alpha light. (See Part 5 of this series.)

**PROTON** A positively charged nuclear particle associated with solar flares.

**PROTON EVENT** By definition, the measurement of at least 10 protons/sq.cm/sec/steradian at energies greater than 10 MeV. A steradian is a solid angle in spherical geometry. There are Pi steradians in a sphere.

**PROTON FLARE** A flare that liberates significant amounts of high energy protons. If this stream intercepts the earth, the protons can cause a polar cap absorption (PCA).

**QUIESCENT PROMINENCE (FILAMENT)** A long, sheet-like prominence extending nearly vertically above the solar surface. Figure 4 shows some.

**QUIET** A description of geomagnetic disturbance conditions meaning a geomagnetic Ap index level of less than 8. Another definition refers to solar activity levels with less than one chromospheric event per day.

**RADIO EMISSION** Emissions of the sun in radio wavelengths. These emissions are roughly categorized into two types, bursts and long duration background radiation. Radio burst emissions provide to scientists an early alert signal that a flare has occurred. The intensity of the radio emission from the sun often increases during solar flares and above large sunspot groups. In addition, the sun produces a background radio noise flux which depends on frequency and varies in the course of the solar cycle. Units for solar radio flux are  $10^{-22}$  Watts/meter<sup>2</sup> (also known as a solar flux unit or s.f.u.). Solar flux units are measured at a wavelength of 10.7 centimeters and reported on WWV and on the web by the NOAA Space Environment Center. The background flux level averaged over a 30 to 90 day period is strongly correlated to ionospheric ionization levels and maximum useable frequencies.

Four categories of radio emission bursts have been defined:

- **Type I** A noise storm composed of many short, narrow-band bursts in the metric range (50 to 300 MHz)

- **Type II** Narrow-band emission that sweeps slowly downward in frequency from around 300 MHz toward the vicinity of 10 MHz. Type II emissions occur and are correlated roughly with major flares and are evidence of a shock wave moving through the solar atmosphere.

- **Type III** Narrow-band solar noise bursts that sweep from about 500 MHz to 500 kHz in a few seconds. Type III bursts often occur in groups and are sometimes associated with complex solar active regions.

- **Type IV** A smooth continuum of broadband bursts primarily in the 30 to 300 MHz range. These bursts are associated with some major flare events beginning 10 to 20 minutes after the flare maximum, and can last for hours.

**RADIO EVENT** Flares with centimetric bursts and/or correlated with a Sudden Ionospheric Event (SID).

**RECOMBINATION** The process of joining together of ions and free electrons in the ionosphere to form neutral atoms or molecules.

**RECURRENCE** Describes the recurrence of physical parameters on the sun every 27 days (the rotation period of the sun).

**REFLECTION** Radio waves are refracted in the ionosphere. The rays actually bend like a column of soldiers marching from a smooth surface into a muddy field at an angle. The column will bend in the direction of the muddy field. The amount of refraction depends on the electron density of the ionosphere and the operating frequency. To simplify ray path analysis, scientists often substitute a simple straight-line ray path for the real ray path, as though the ray reflected from a mirror. Thus radio waves are often referred to as being reflected from the ionosphere.

**REFRACTIVE INDEX** An index to define the amount of refraction a wave will undergo when it enters a medium.

**RETARDATION** The delay in radio wave propagation caused by the slowing down of the wave as it goes through the ionosphere. This is an effect that must be compensated for in precision satellite navigation systems like GPS. GPS measures the difference in arrival time of a signal transmitted on two frequencies. The difference in delay is proportional to the total delay allowing receivers to compensate for total ionospheric delay time.

**RIOMETER** (Relative Ionospheric Opacity meter). A specially designed radio receiver for continuous measurement of cosmic noise reaching the surface of the earth. The absorption of cosmic noise in the polar regions is very sensitive to the solar low-energy cosmic ray flux.

**SEASONAL ANOMALY** See Winter Anomaly.

**SECTOR BOUNDARY** An area of demarcation between sectors of the solar wind and the predominant direction of the interplanetary magnetic field.

**SHORT WAVE FADE (SWF)** A subset of Sudden Ionospheric Disturbances (SIDs) whereby short-wavelength radio transmissions, VLF, through HF, are absorbed for a period of minutes to hours. When you hear your first one, you will think your radio is broken or the antenna fell to the ground.

**SHORTWAVE FADEOUT** See Daylight Fadeout.

**SID** Sudden Ionospheric Disturbance. See Daylight Fadeout.

**SIGNAL-TO-NOISE-RATIO** The ratio of the power of a signal to the power of the noise in the receiver equivalent noise bandwidth. Usually expressed in decibels.

$S/N \text{ db} = 10 \log (P \text{ signal}/P \text{ noise})$

**SKIP DISTANCE** The minimum distance from the transmitter for which a reflected wave will return to earth from the ionosphere when the operating frequency is above the vertical incidence critical frequency. Within the skip distance, only ground wave propa-

gation is possible. The higher the operating frequency, at a given level of ionization in the ionosphere, the longer the skip distance.

**SKY WAVE** The radio wave which propagates to and from the ionosphere. Sometimes called the ionospheric wave to distinguish it from the direct (line of sight) wave and the ground wave.

**SMOOTHED SUNSPOT NUMBER** An average of monthly sunspot numbers centered on the specified month. Smoothed numbers tend to obscure the effect of short term variations to allow major long term trends to be identified. The smoothed sunspot number is used to define the start and end times of a solar cycle.

**SOLAR ACTIVITY** A generic term to describe any change in the sun's appearance or behavior. You will hear solar activity described as very low, low, moderate, high, or very high.

**SOLAR CONTROL** The term used to indicate that the behavior of an ionospheric region is dominated by the sun.

**SOLAR CYCLE** Solar activity levels go up and down over a period of about 11 years. At solar maximum, the solar activity is high and so too the radiation output which affects the ionosphere. At solar minimum, the opposite is true. Some scientists think they also see a 22 year cyclic component. There have been times in history when the usual solar cycle disappeared for decades. These periods have been associated with droughts on earth as determined from old tree growth rings and historical records. Long period solar cycles may be responsible for climatological cycles on earth such as the widely touted global warming.

**SOLAR FLUX UNIT** Unit of radio emission from the sun defined as  $10^{22}$  Watts/meter<sup>2</sup>. At the minimum of the solar cycle, when there are no sunspots, the solar flux measured on earth at 10.7 centimeters wavelength is about 68 solar flux units. At solar maxima this measurement can rise into the hundreds of solar flux units.

# Listener's Notebook

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**KINDA SQUEEZED FOR SPACE** this month (at least it's for a good reason!), but had to sneak in my sincere thanks to everyone whose listening and reporting and cooperation have made this column possible for another year. Here's wishing everyone a happy holiday and a DX-packed new year!

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## AFGHANISTAN *Radio Voice of Shari'ah*

|           |                       |                   |
|-----------|-----------------------|-------------------|
| 0130-0355 | Pashto/Dari           | 7201v 4774v Sa-Th |
| 0330-0800 | Pashto/Dari           | 7201v 4774v Fr    |
| 1230-1430 | Pashto/Dari           | 7201v 4774v       |
| 1430-1500 | Nuristani/<br>Pashavi | 7201v 4774v       |
| 1500-1600 | Pashto/Dari           | 7201v 4774v       |
| 1600-1615 | Urdu                  | 7201v 4774v       |
| 1615-1645 | Turkmen               | 7201v 4774v       |
| 1630-1645 | Urdu                  | 7201v 4774v       |
| 1645-1700 | Arabic                | 7201v 4774v       |
| 1700-1715 | English               | 7201v 4774v       |
| 1715-1745 | Pashto/Dari           | 7201v 4774v       |

Provincial station *Takhar Radio* is on 7085 kHz (BBCM) 7070v Afghanistan (t) 1200-1330 weakish station 3 time pips at 1230 and Afghanistan and Kabul in ID. Frequency moves and much ham QRM. (25-Nov/Goonetilleke-SRI)

**ALGERIA *Radio Algiers International*** in English noted on 6160 at 1600-1700. (1-Nov/RVI Radio World/BC-DX/Bueschel-GER)

**ANGOLA 4914.43 R. Nacional de Angola, 0413-0428**, "R. Nacional da Angola a seu servico" Talking abt the death of some one. (28-Oct/Iversen/DSWCI DX-Window/Petersen-DEN)

4950 *Radio Nacional de Angola, 0039-0045*, W speaker in Portuguese talking to various people on the phone. Clear ID at 0041. 24343 (20-Nov/Veldhuis/DSWCI DX-Window/van den Boogert-TWN)

11954.74 *R. Nacional, 0125* nice signal with mix of PT-language and US/UK pop music, even some country mx, announced by man. Considerably stronger than WINB-11949.94 at the same time. (4-Nov/Novello-NC)

**ARGENTINA 15820.0L *Radio Rivadavia***, Buenos Aires, 0700-0710 good, after the usual canned ID, the 5 minute micro news "El Rotativo del Aire" was broadcast with weather report. (22-Nov/TIN-JPN/Relampago DX) //13363.50 (22-Nov/van Rooy/DSWCI DX-Window/van den Boogert-TWN)

**BHUTAN 5030 *Bhutan B.S.(p)***, 1250, in Nepali. Heard local pops in good condition but was gone due to carrier came on of BBC at 1256. (3-Nov/Iwata/Kanto DXers Circle/DSWCI DX-Window/van den Boogert-TWN) 5030 *Bhutan BS* local lang into EE at 1315 to 1400\*. Much better signal now, and will improve as winter progresses. (23-Nov/Goonetilleke-SRI)

**BOLIVIA 3493.8 *Radioemisora Padilla, 0023-0105***, sports news about Oriente Petrolero and Copa Bolivar. ID "Usted esta en sintonia de Radio Emisora Padilla, transmitiendo en la frecuencia de 3475 kHz, banda de 90 metros onda corta...Padilla, capital de la provinci en nuestros estudios son las 9 de la noche 5 minutos." (6-Nov/Iversen/DSWCI DX-Window/Petersen-DEN)

4471.85 *Radio Movima, 2310-2315*, Spanish, talk, mid-sentence ID (23-Nov/Philips/DSWCI DX-Window/van den Boogert-TWN)

4549.45 *Radiodifusroa Tropico, 2300-2320*, Spanish, continuous talk, ID, teleprinter and CW QRM (23-Nov/Philips/DSWCI DX-Window/van den Boogert-TWN)

4702.21 *R. Eco, San Borja, Beni, 2255 M* announcer with monologue including numerous IDs in passing. Canned ID 2302. Clobbered by huge chirping ute 2304. First time I've heard this one since last May. (23-Nov/Novello-NC)

The missionary organization SIM reports that *Radio Mosoj Chaski* will soon go on the air in Cochabamba, following the recent granting of a license by the Bolivian government. The station has already produced and recorded 1 year of programs in the Quechua language. The construction of the studio building is completed, and the programming team has moved in. Construction continues on the caretaker's quarters at the 10 kW transmitter site. Radio Mosoj Chaski will proclaim the Christian Gospel in Quechua to the entire nation. I would assume by this that the station will use SW, since a 10 kW MW transmitter would not give national coverage. (Colin Miller-CAN, VE3CMT, Oct 28/BC-DX/Bueschel-GER)

**BRASIL** 4865.14 *Radio Missoes da Amazonia* 0904 in Portuguese with lively music, definite canned ID @0910, then talking atop music (voice mixed too low and unintelligible); both music and voice ended at 0914\*, when station seemingly pulled the plug. If this is a real signoff time, North American DX'ers will have to be up at a godawful hour to log this one! (25-Nov/Quaglieri-NY)

**CENTRAL AFRICAN REPUBLIC** 9900 *Radio Minurca* (Mission des Nations Unies en Republique Centrafricaine) is active. Sked appears to be: BBC 1800-1900 French 1900-2000 music 2000-2230+ Address is B.P. 2732, Bangui, Central African Republic, FAX 236-61-2108, E-mail: radmin@intnet.cf (Berg+Kohlbrener+Fine+Nordic DX)

**CHILE** *Radio Voz Cristiana* is operated by the UK-based Christian Vision organization, which also operates Christian Voice radio in Zambia. Main production studios are in Miami (USA).

|           |                 |                        |
|-----------|-----------------|------------------------|
| 0000-0100 | Spanish/English | 21550 15375 11745 6070 |
| 0100-0500 | Spanish/English | 15375 11745 11690 6070 |
| 0500-0600 | Spanish/English | 15375 11690            |
| 0600-0800 | Spanish/English | 11690                  |
| 0800-0900 | Spanish/English | 11890                  |
| 0900-1000 | Spanish/English | 11890 6070             |
| 1000-1100 | Spanish/English | 15375 11890 6070       |
| 1100-1200 | Spanish/English | 21500 15375 6070       |
| 1200-1300 | Spanish/English | 21500 15375 9635       |
| 1300-2000 | Spanish/English | 21550 21500 17680 9635 |
| 2000-2100 | Spanish/English | 21550 21500 17680 6070 |
| 2100-2300 | Spanish/English | 21550 17680 11745 6070 |
| 2300-2400 | Spanish/English | 21550 15375 11745 6070 |

(BBCM) [BBCM says programs are in Spanish and English, but I've yet to see English reported-AQ]

**CLANDESTINE- AFRICA** *Voice of Democratic Eritrea - The Voice of the Eritrean Liberation Front Revolutionary Council* (Arabic "Sawt Eritrea al-Dimuqratiya—Sawtu Jabhat al-Tahrir al-Eritrea") 1500-1530 Arabic/Tigrigna 9230 (BBCM)

*Voice of Free Eritrea* (Arabic "Sawt Eritrea al-Hurrah," Tigrigna "Demtsi Natsa Eritrea") 1530-1600 Arabic/Tigrigna 9230 Mo-Fr (BBCM)

*Voice of Truth* (Arabic: Sawt al Haqq)

|           |          |            |
|-----------|----------|------------|
| 1530-1600 | Arabic   | 9230 Sa/Su |
| 1600-1630 | Arabic   | 9230 Mo-Fr |
| 1600-1630 | Tigrigna | 9230 Sa/Su |

(BBCM)

*Radio of the Voice of Freedom and Renewal, Voice of the Sudan Alliance Forces, Voice of the Popular Armed Uprising* (Arabic: idha'at sawt al-hurriyah wa al-tajdid, sawt quwwat al-tahaluf al-sudaniyyah, sawt al-intifadah al-sha'biyyah al-musallahah).

|           |        |       |
|-----------|--------|-------|
| 0400-0500 | Arabic | 7000v |
| 1600-1700 | Arabic | 7000v |

(BBCM)

**CLANDESTINE—LATIN AMERICA** Colombian clandestine *Voz de la Resistencia* 6239.80 at 1059 strong and clear with vocal anthem mentioning "companeros," straight into musical selections. Just missed an annc before the anthem, but voiceover during second song after anthem said "Transmite La Voz de la Resistencia." These guys play some nice cumbias—shame about the telco-quality audio. Tnx Morhmann/Valko tip via Johnson. 1051 Nov 10, came on with a Spanish-language version of "Seasons in the Sun" (of all things), then one other LAM popular song, then "Companeros de la FARC" anthem. M announcer with s/on sequence just before 1100, giving schedule as 6:00 to 7:30 in the morning (1100-1230 UTC) and 4:30 to 6:00 in the evening (2130-2300 UTC) on 6240. Then back into music. (9-Nov/Novello-NC)

**CROATIA** *Croatian Radio* B98:

|           |        |                    |
|-----------|--------|--------------------|
| 0000-0200 | 6165D  | 9925J              |
| 0200-0400 | 6165D  | 9925J              |
| 0400-0500 | 6165D  | 9925J              |
| 0500-0600 | 6235D  | 7305D 9925J        |
| 0600-0730 | 6235D  | 7305D 9830D        |
| 0730-0800 | 6165D  | 7305D 9830D        |
| 0800-1200 | 6165D  | 7185D 9830D 13820J |
| 1000-1200 | 6165D  | 7185D 9830D 13820J |
| 1200-1630 | 6165D  | 7185D 9830D        |
| 1630-1730 | 6235D  | 7305D 9830D        |
| 1730-1900 | 6235D  | 7305D              |
| 1900-2030 | 6235D  |                    |
| 2030-2400 | 6165D  |                    |
| 2100-2200 | 13830J |                    |

D=Deanovec, J=Jülich (6-Nov/EDXP/Padula-AUS)

**DOMINICAN REPUBLIC** 2700.09h *Ondas del Yuna*, Bona0, 2305 noted back on the air with merengues with a rural flair mixed with usual bachata mx and live, excited M and W announcers. 0000 finally a canned "Ondas del Yuna" ID; heard well past 0230 with this format. A pleasure to hear this one back post-Georges, and at its former good strength. (13-Nov/Novello-NC)

4779.86 *Onda Musical*, 2300 making one of its infrequent appearances with bachatas, "incon-

fundible" IDs, and good signal despite low het. (15-Nov/Novello-NC)

**ECUADOR** 4814.35 *Radio El Buen Pastor*, Saraguro, 0149-0251, saludos between songs, mentions of "Saraguro" and a bank in "Loja." ID's in passing as "...sintonia de 90.3..." (probably their FM outlet?), and program "Programacion Romantica." 0247 switch to a 3 minute dramatic promo which included a canned "Radio El Buen Pastor" ID, then back to announcer and musica romantica (19-Nov/Mohrmann/DSWCI DX-Window/van den Boogert-TWN)

**ERITREA** Conflicting reports from various sources have made for some confusion re the actual schedule for *Voice of the Broad Masses of Eritrea* (VOBME), the official government-run radio of Eritrea. Below is my best guess-AQ. ID in Arabic: "Huna Asmara, Idha'at Sawt al-Jamahir al-Iritriyyah." ID in Tigrigna: "Ezi Kab Asmara Zemehalalef Medeber Radio Demtsi Hafash Eritrea Eyu." ID in Amharic: "Yeh be Asmera ketema yemigegne yesifw yeritrea hezeb demts yeamarigna agelgilot new."

|           |          |                 |
|-----------|----------|-----------------|
| 0330-0430 | Afar     | 7175 Sa         |
| 0330-0430 | Arabic   | 7175 Mo-Fr      |
| 0330-0430 | Tigrigna | 6190 7100 Mo-Fr |
| 0400-0500 | Tigre    | 6190 7100 Sa    |
| 0430-0500 | Amharic  | 7175            |
| 0430-0530 | Tigre    | 6190 7100 Mo-Fr |
| 0500-0600 | Afar     | 7175 Mo-Fr      |
| 0500-0600 | Arabic   | 7175 Sa         |
| 0500-0700 | Tigrigna | 6190 7100 Sa/Su |
| 0700-0730 | Tigrigna | 6190 7100 Su    |
| 0930-1030 | Arabic   | 7175            |
| 0930-1030 | Tigrigna | 6190 7100 Mo-Fr |
| 1000-1300 | Tigrigna | 6190 7100 Su    |
| 1300-1400 | Arabic   | 7175 Mo/Th/Sa   |
| 1300-1400 | Tigre    | 6190 7100 Su/Tu |
| 1300-1400 | Tigrigna | 6190 7100 We/Fr |
| 1400-1500 | Afar     | 7175 Su-Fr      |
| 1500-1530 | Bilen    | 7175 Mo/Th      |
| 1500-1530 | Saho     | 7175 Tu/Fr      |
| 1500-1600 | Kunama   | 6190 7100       |
| 1530-1600 | Amharic  | 7175            |
| 1600-1700 | Tigre    | 6190 7100       |
| 1700-1800 | Arabic   | 7175            |
| 1700-1830 | Tigrigna | 6190 7100       |

(BBCM + Goonetilleke-SRI)

**ETHIOPIA** 9560.2 *Radio Ethiopia*, Gedja, 1352-1359, Native music, M speaker in Afar, IS at 1358, followed by opening announcement of Arabic Service and chimes. (19-Nov/Veldhuis-HOL/DSWCI DX-Window/van den Boogert-TWN)

7160 *Radio Ethiopia* in FF 1700-1730, very good signals //9560. One is reminded of Radio Voice of the Gospel ETLF in the '60ies when these transmitters were their property. Wonder if they ever got any compensation? (23-Nov/Goonetilleke-SRI)[I don't believe so. - AQ]

**GERMANY** *High Adventure Ministries* have eliminated their evening European English broadcasts

(1900-2100 on 5975 and 2100-2300 on 6000 kHz), replacing them with a daily 4 hour morning block of programming to Europe, 0700-1100 on 5975 KHz, via DTK Jülich. (Darg-HAM UK/DSWCI DX-Window)

5850 *Sunrise Radio* via Jülich, 1420 with usual programming, back here ex-6110. Discovered by checking out a cry for help from a listener, who misses his favourite office station "since a couple of days." (13-Nov/Ludwig/DSWCI DX-Window/Petersen-DEN)

**GUYANA** 3289.93 *Voice of Guyana* noted at 0940 in English at listenable level (finally) with hindi-type music interrupted every measure for an English translation by W, pgm ended 0950, then hyper car dealer ad, then M "You are tuned to the Voice of Guyana..." into W more subcontinental-type mx. (25-Nov/Quaglieri-NY)

**INDIA** 4950 *AIR Srinagar*, 1535-1550, news in English, AIR ID; mention of Kashmir after the news, but again a general ID and continuing with news in vernacular. Poor signal. (20-Nov/Pijpers/DSWCI DX-Window/van den Boogert-TWN)

4960.05 *AIR Ranchi* (p), 1530-1544, TS, short instrumental tune, W with ID and news in English, correspondent reports. News ended at 1544 with short instrumental tune. Quite good until 1533. The only source that lists AIR here is Klüngenfuss '98, and it says transmitter site is Ranchi. Can anyone confirm this? Haven't seen this one mentioned in the DX press recently. (2-Nov/Veldhuis/DSWCI DX-Window/Petersen-DEN) 4960 *AIR Ranchi* tested here only a few days in early November, but is now off. Earlier in '98 tested 3305 again for few days. (22-Nov/Goonetilleke-SRI)

12040 is another new frequency from *AIR* in Hindi at 1615-1730 hrs to ME. (8-Nov/Dasgupta-IND/DSWCI DX-Window/Petersen-DEN)

**INDONESIA** 2960.0 *RPDT2 Manggarai*, talk of local information by M at 1145. Local pops at 1147. Jakarta news relay at 1200. ID by M at 1223 as "...siaran kami Radio Pemerintah Daerah Tingkat Dua Manggarai," local pops at 1237. Not relayed Jakarta news at 1300. Poor. (14-Nov/Yamada-JPN/Jembatan DX)

3074.20v Unidentified, 1156-1315, no relay of RRI Jakarta news at 1200. Popular music, dangdut music, and M mentioned as "...Kalimantan Selatan." Also mentioned "...Kalimantan Selatan" at 1303. At 1315 signal going down. First heard this on Nov. 5. Weak. (5-Nov/Schulze-PHL/Jembatan DX/Yamada-JPN)

3204.4 *RRI Bandung*, at 1353 with W talk. Local news started at 1400. Also heard at 1813 with Sundanese traditional music. SCI at 1858 and Jakarta news relay at 1900. ID at 1907 then Sundanese traditional music again. Poor. (14-Nov/Yamada-JPN/Jembatan DX)

3231.9 **RRI Bukittinggi**, local news was heard at 1531. The ending music was "Bagimu Neg'ri" with chorus. ID at 1536 then short local traditional play. ID again at 1538 and followed to lagu melayu. Fair. (7-Nov/Yamada-JPN/Jembatan DX)

3395.1 **RRI Tanjung Karang**, 1046-1055, Bahasa Indonesia, with Indonesian pop music, 1048 Qu'ran. (14-Nov/Kecskes/DSWCI DX-Window/Petersen-DEN) I believe the new name for Tanjung Karang is Bandar Lampung. (Veldhuis-HOL) **RRI Bandar Lampung**, 1450-1500, BI, man talking, local ID. (7-Nov/Schnitzer/DSWCI DX-Window/Petersen-DEN)

3644.3 **RRI Fak Fak** (p), M talk at 1835. Already not heard at 1900. (14-Nov/Yamada- JPN/Jembatan DX)

3905 **RRI Merauke**, \*1858, S/on with music, followed at 1859 by Song of the Coconut Island. At 1900 Warta Berita by M speaker in Bahasa Indonesia, followed by choir with Love Ambon. At 1905 on Nov 19 ID by W speaker: "Radio Republik Indonesia Merauke," and on Nov 20 same by M speaker (also at 1905), followed both days by western popmusic with Indonesian M songs. (19-Nov/van Rooy/DSWCI DX-Window/van den Boogert-TWN)

3976.1 **RRI Pontianak**, 1420, M speaker in Bahasa Indonesia, by re-check at 1455 western popmusic with Indonesian M songs, at 1457 M speaker in Bahasa Indonesia until 1459, then Song of the Coconut Island, followed by Warta Berita at 1500 by M speaker. (22-Nov/van Rooy/DSWCI DX-Window/van den Boogert-TWN)

3985.8 **RRI Surabaya**(p), all night wayang kulit program at 1855. Not relayed Jakarta news at 1900. Poor. (14-Nov/Yamada-JPN/Jembatan DX)

4606.45 **RRI Serui** (p), 1135-1150 fade out. Traditional Indonesian mx w/ talks by W anncr in Indonesian. (4-Nov/Rippel/DSWCI DX-Window/Petersen-DEN)

4606.3 **RRI Serui** 1250 w/beautiful Indo ballads. (23-Nov/Goonetilleke-SRI)

4696.50 **R. KIP**, 1927-1932, BI with Gamalan play (14-Nov/Kecskes/DSWCI DX- Window/Petersen-DEN)

4753.3 **RRI Ujung Padang**, 2020-2144 carrier cut, interesting mix of music with choir vocals and middle-eastern type music. Carrier cut in the middle of a long talk by a man and woman about Ujung Padang. Fair. (7-Nov/D'Angelo-PA/DSWCI DX-Window/Petersen-DEN)

4766.2 **RRI Medan**, Jakarta news relay at 1203. Dangdut music at 1213. ID by W then radio drama. Heard today only. Still not heard regularly. (6-Nov/Yamada-JPN/Jembatan DX)

4777.1 **RRI Jakarta**, 2148-2225 fade-out, Vocals until SCI at 2158, Jakarta news at 2200 and more music until fade out. Poor to fair. (7-Nov/D'Angelo-PA/DSWCI DX-Window/Petersen-DEN)

4789.13 **RRI Fak Fak**, 1155 lagu selections and impossibly deep-voiced M announcer; SCI three times 1159, then RRI ID. (9-Nov/Novello-NC)

4874.38 **RRI Sorong**, 1150 local Elvis doing "Can't Help Falling In Love With You;" Leo Sayer's "When I Need You;" M and W announcers; SCI twice just before 1200. Signal only fair, but readable. (3-Nov/Novello-NC)

4925.0 **RRI Jambi**, \*2156-2245 fade-out, IS to RRI Jambi ID by woman at 2158, followed by SCI. At 2200 another RRI Jambi ID followed by local news with many items about Jambi. (7-Nov/D'Angelo-PA/DSWCI DX-Window/Petersen-DEN)

11760.0 **RRI Jakarta**, Cimanggis, Badminton [badminton?-AQ] game of Indonesia open was heard at 1315. //3355.3kHz, 4606.4kHz, 4753.4kHz, 4777.1kHz, 4925.0kHz, 5040.0kHz, 9565.0kHz, 9630.0kHz, and 15125.0kHz. (1-Nov/Yamada-JPN/Jembatan DX)

**RRI Ambon** 4945.0 inactive recently. (Schulze-PHL)

**RRI Banjarmasin** 3250.0 still inactive.

**RRI Jambi** 4927 and 3355.3kHz reactivated on Oct 26 after several days absence.

**RRI Manokwari** 3987.2 not heard at local evening.

**RRI Medan** 4766.2 active again on Nov 11.

**RRI Padang** 3959.7 still inactive.

**RRI Sorong** 4874.4 Nov 14 active after several days absence.

**RRI Ujung Pandang** 2490.0 not heard at local midnight, 14-Nov. (Yamada-JPN/Jembatan DX)

**IRAN** Again, ignore the full schedule in last month's LN! Here's the *Voice of the Islamic Republic of Iran* current observed schedule (Nov 12-13) including a lot of new frequencies:

|           |            |   |
|-----------|------------|---|
| 0000-0030 | Arabic     | 5995 6120 6145                                  |
| 0000-0630 | Farsi      | 15084   |
| 0030-0130 | Bengali    | 6015 6185 9515                                  |
| 0030-0130 | English    | 6065 9022 9685                                  |
| 0030-0130 | Spanish    | 6010 6175 9650                                  |
| 0030-0230 | Arabic     | 5995 6120 7270                                  |
| 0100-0300 | Dari*      | 7180  |
| 0130-0230 | Spanish    | 6010 6065 6175 9650                             |
| 0130-0230 | Urdu       | 6005 6190 7130                                  |
| 0230-0330 | Arabic     | 5995 9565                                       |
| 0230-0330 | Pashto     | 6005 6190 7130                                  |
| 0230-0330 | Spanish    | 6065 6175                                       |
| 0300-0330 | Armenian   | 7235  |
| 0300-0330 | Uzbek*     | 7180  |
| 0330-0400 | Arabic     | 6195* 7115* 7130 7295*<br>9565 9670* 9770 15125 |
| 0330-0400 | Arabic-IRI | 5995 6020* 6145 9695                            |
| 0330-0430 | Swahili    | 11750 13605 15320 15610                         |
| 0330-0500 | Tajik      | 7180  |



|           |                    |                                   |
|-----------|--------------------|-----------------------------------|
| 1300-2215 | Arabic-d           | 12140 9815 5915                   |
| 1315-1330 | Georgian           | 15640 11605                       |
| 1500-1530 | English            | 17535 15650                       |
| 1500-1600 | Persian            | 15640 9435 7465                   |
| 1600-1625 | Hebrew-g           | 7465 9435 15640 Fr                |
| 1600-1625 | Persian            | 15640 9435 7465 Su-Th             |
| 1600-1625 | Spanish/<br>Ladino | 21625 15640 11605<br>9435 7465 Sa |
| 1600-1800 | Hebrew-b           | 17545 15615 11590                 |
| 1630-1645 | French             | 15650 11605 9435                  |
| 1645-1655 | English            | 15650 11605 9435                  |
| 1700-1725 | Yiddish            | 11605 9435 9365 7465              |
| 1725-1735 | Moghribi           | 9365                              |
| 1725-1745 | Romanian           | 11605 9435 7465                   |
| 1735-1745 | Spanish            | 9365                              |
| 1745-1800 | Hungarian          | 11605 9435 7465                   |
| 1745-1800 | Ladino             | 9365                              |
| 1800-1825 | Yiddish            | 11605 9435                        |
| 1800-1900 | Hebrew-b           | 15615 11585 9390                  |
| 1800-2000 | Russian            | 9435-(from 1830) 7465             |
| 1900-2000 | Hebrew-b           | 11585 9390 9365 7495              |
| 2000-2025 | English            | 15640 11605 9435 7465             |
| 2000-2200 | Hebrew-b           | 11605 11585 9390 7495             |
| 2030-2045 | French             | 15640 11605 9435 7465             |
| 2045-2100 | Spanish            | 15640 9435 9365 7465              |
| 2200-2300 | Hebrew-b           | 15640 11585 9390 7495             |
| 2300-2400 | Hebrew-b           | 7495                              |

Hebrew-b= relay of Network B (Reshet Bet) Hebrew-g=Reshet Gimel Arabic-d = relay of Network D (Reshet Dalet) (BBCM)

**KAZAKHSTAN** *Kazakh Radio's* external service is relayed via transmitters in Ukraine. It may also be carried on Kazakh Radio's domestic second program.

|           |         |                                    |
|-----------|---------|------------------------------------|
| 1200-1220 | English | 11840-ukr 9620-ukr Fr/Sa           |
| 1200-1220 | German  | 11840-ukr 9620-ukr Su/Mo/<br>We/Th |
| 1200-1220 | Turkish | 11840-ukr 9620-ukr Tu              |
| 1220-1240 | English | 11840-ukr 9620-ukr We              |
| 1220-1240 | Russian | 11840-ukr 9620-ukr Su              |
| 1220-1240 | Tatar   | 11840-ukr 9620-ukr Fr              |
| 1220-1240 | Uighur  | 11840-ukr 9620-ukr Mo/Tu/<br>Th/Sa |
| 1240-1300 | Azeri   | 11840-ukr 9620-ukr Th              |
| 1240-1300 | English | 11840-ukr 9620-ukr Tu              |
| 1240-1300 | Korean  | 11840-ukr 9620-ukr Su/Mo/<br>We/Fr |
| 1240-1300 | Russian | 11840-ukr 9620-ukr Sa              |

(BBCM)

Radiochannel "Euraziya"

|           |         |                           |
|-----------|---------|---------------------------|
| 0940-1000 | Russian | 5970 6000 9505 9620 11720 |
| 1020-1040 | Russian | 9505 9602 11720           |

("Club DX"/VOR/RUS-DX/Klepov-RUS)

**KENYA** 4880 *KBS* in vernaculars 1600-1700+. Note that Nairobi/4935 is off the air due to transmitter problems. Should come back soon from past experiences. (23-Nov/Goonetilleke-SRI)

**KOREA—NORTH** 2850 *Korean Central Broadcasting Station*, Pyongyang, 2211, M and W talk in

Korean and martial music. Loud for a couple of minutes.//3350. (22-Nov/Harms-MD)

**KYRGYZSTAN** 4010 *Radio Bishkek*, 1757, W speaker in Kyrgyz with pieces of rock music with Kyrgyz M songs, followed by ID by W speaker at 1759 sounding as "Kyrgytski Radio." (13-Nov/van Rooy/DSWCI DX-Window/Petersen-DEN)

**LAOS** 4683 *Houa Phan* noted 1030-1230 with fair reception, also *Luang Prabang good* on 6974 1000-1230\* and \*0050-0110\*. Both relay Vientiane with bell chimes and news from around 1159. //6130. (7-8-9-Nov/Davies-THA/BC-DX/Bueschel-GER)

**LIBERIA** 5100 *Radio Liberia International* with rap music at 2251. Radio Liberia ID at 2259. (9-Nov/Ross-ONT)

**LITHUANIA** *Radio Baltic Waves* is a surrogate broadcaster for Belarus transmitted from Lithuania. Station heard testing on 6240 at 1630 on 13-Nov (Kuhl-GER), and earlier (4-Nov, by Elbe) on 6235 with 8-letter groups in Russian. The transmitting facility is already installed somewhere in the Northern Lithuania with a 10 kW transmitter and a zenith radiation antenna system in order to get a better coverage of such a close target area. The reason for creating of the RBW/RG scc is a very bad situation concerning the human rights and freedom of expression, which occurred due to the current behavior of the Belorussian authorities. (Vadim Alexeev-RUS/MIDXB/Pashkevich-RUS/BC-DX/Bueschel-GER) According to e-mail QSL transmitter location was Ute-nea, Power 2.5 kW, antenna fullwave dipole, 1/5 wavelength height, beamed 135/315. Here's an excerpt of an eMail of RBW, from Rimantas Pleikys, ripple@rc.lrs.lt (Elbe/DSWCI DX-Window/Petersen-DEN)

**MADAGASCAR** 3287.7 *RTV Malagasy*, Antananarivo, 1641. Traces of music under noise and UTE-QRM. Weak, but definitely // stronger 5009.5 kHz. (21-Nov/Veldhuis-HOL/DSWCI DX-Window/van den Boogert-TWN)

5009.56 *RTV Malagasy*, Antananarivo, easy listening songs, low pitch M announcer. (Schaay-HOL/DSWCI DX-Window/van den Boogert-TWN)

**MALAYSIA** *Radio Malaysia Sarawak* noted signing on at 0100 with IS and ann on 7130 Kuching, so this daytime-only freq evidently is active (but reception is difficult later in the day here). Still no sign of 5030 Kuching and 6060 Miri, the latter freq in particular is a clear channel all evening so I'm fairly convinced Miri is now inactive. (30-Oct/Davies-MLY/BC-DX/Bueschel-GER)

**MOLDOVA** All *Radio Moldova International* shortwave broadcasts are transmitted via facilities located at Galbeni, Romania.

|           |          |      |
|-----------|----------|------|
| 0230-0255 | Spanish  | 9590 |
| 0300-0330 | Romanian | 7500 |

|           |          |       |
|-----------|----------|-------|
| 0330-0355 | English  | 7500  |
| 0400-0425 | Russian  | 6135  |
| 0430-0455 | English  | 7500  |
| 1200-1225 | Spanish  | 15315 |
| 1230-1300 | Romanian | 15315 |
| 1930-1955 | Russian  | 6135  |
| 2000-2025 | French   | 7520  |
| 2030-2055 | Spanish  | 7520  |
| 2100-2125 | French   | 7520  |
| 2130-2155 | Spanish  | 7520  |
| 2200-2225 | English  | 7520  |
| 2300-2325 | English  | 7520  |

(BBCM)

7520 R. *Moldova Int.*, Oct 25, 0510 strong signal but oh! That transmitter hum! Underneath, barely distinguishable English program surely they know about this colossal problem. (Ormandy) [So why don't they do something about it, huh? HvB] They surely want to do something about it, but they don't have the power to do so. I had regular correspondence with Radio Moldova a while back. The only thing they can do is pass on complaints to the Romanians, but it's Romania who apparently refuses to use a better transmitter for RMI's broadcasts. (Schaay-HOL/DSWCI DX-Window/Petersen-DEN) [Audio analysis of the horrible signal reveals sharp spikes of hum at 50, 100, 150 and 200 Hz, which would indicate faulty regulation of the transmitter's power supply.-AQ]

**MOROCCO RTVM**, B98 via "Morocco" transmitters, Arabic: 0000-0500 11920, 1100-1500 15335, 2200-0000 15335. I am unclear as to whether Tangier or Briech is the site. (EDXP/Padula-AUS)

**MYANMAR 5973 Myawadi Broadcasting Station** in Burmese 1200-1300, again 1430-1530 UTC causing heterodyne to BBC. A regular in Colombo. (22-Nov/Goonetilleke-SRI)

5985.85 *Radio Myanmar*, 1340, M and W speakers in Bamar, at 1358 local hsiang waing music with drums called pat waing and a circular rank of small bulbed bronze gongs called kyi waing, followed by M speaker in Bamar at 1400. Not // 4725. (21-Nov/van Rooy/DSWCI DX-Window/van den Boogert-TWN)

**NEPAL 5005.3 R Nepal**, 0030, VN, ID, reports, trad-mx (8-Nov/Schneeberger/DSWCI DX-Window/Petersen-DEN) Who knows the correct shortwave transmitter-site location of *R. Nepal*? WRTH 98, TBS and Tropenbandliste are saying Khumaltar; PWBR says Hariharpur; and Klingenfuss Shortwave Frequency guide says Pokhara during winter month-sand Bardibas during the summer. Maybe they have a mobile transmitter: -) (Schothmans/HC-DX/DSWCI DX-Window/van den Boogert-TWN) (See *LN Extra*, last page of *International Loggings*, for the answer.)

**NEW ZEALAND Radio New Zealand International** revised as of 30-November:

|           |            |
|-----------|------------|
| 0706-1015 | 9700 Sa/Su |
| 0706-1015 | 9700 Mo-Fr |

|           |                  |
|-----------|------------------|
| 1015-1205 | 9700 occ. sports |
| 1206-1650 | 6105 occ. sports |
| 1650-1951 | 11675 Mo-Fr      |
| 1855-1958 | 11675 Sa-Su      |
| 1952-0705 | 17675 Su-Th      |
| 1959-0705 | 17675 Fr/Sa      |

(Sainsbury-RNZI)

B98 sked for *Radio Reading Service*: ZLXA 3935 24-hrs, 7290 1900-0500. Reports sought to PO Box 360, Levin 5500, with return postage. (EDXP/Padula-AUS)

**OMAN** Scrub last month's data; here's another *R. Oman* current observed schedule:

|           |                  |
|-----------|------------------|
| 0200-0400 | 6085 7120 7230   |
| 0400-0600 | 7230 9515 11890  |
| 0600-0800 | 13620            |
| 0800-1200 | 13620 17630      |
| 1200-1300 | 7230 13620 17630 |
| 1300-1400 | 7230 13620 15140 |
| 1400-1600 | 7230 15140 15375 |
| 1600-1800 | 7230 11805 15375 |
| 1800-1900 | 7230 11805 11890 |
| 1900-2130 | 7230 9735 11890  |

(12-13-Nov/Timofeyev-RUS/DSWCI DX-Window/Petersen-DEN)

**PAKISTAN Radio Pakistan**, external services:

|           |             |                               |
|-----------|-------------|-------------------------------|
| 0100-0215 | Urdu        | 15485 11975                   |
| 0230-0245 | English-DSN | 15485 15235 11975 9470        |
| 0330-0400 | Gujarati    | 17555 15325                   |
| 0500-0700 | Urdu        | 17555 15175 11725             |
| 0800-1104 | Urdu*       | 17835 15530                   |
| 0900-0930 | Indonesian  | 17535 15405                   |
| 1000-1030 | Tamil       | 17535 15320                   |
| 1100-1230 | Hindi       | 13580 11995 9510              |
| 1105-1120 | English-DSN | 17835 15530                   |
| 1200-1230 | Chinese     | 15430 11895                   |
| 1200-1245 | Bengali     | 15625 11975                   |
| 1300-1345 | Persian     | 15625 11935                   |
| 1330-1530 | Urdu**      | 15465 15170 11570             |
| 1430-1500 | Turki       | 6075 5060                     |
| 1515-1545 | Russian     | 9330 5060                     |
| 1600-1630 | English***  | 17720 15465 15325 15170 11570 |
| 1700-1730 | Turkish     | 13580 12015                   |
| 1700-1900 | Urdu        | 15335 11570                   |
| 1800-1845 | Arabic      | 9330 7470                     |
| 1800-1900 | Urdu****    | 9475                          |
| 1930-2000 | French      | 11570 9400                    |

DSN=dictation-speed news\*0805-0810 news in English\*\*1400-1410 news in English from domestic service\*\*\*1600-1615 news from domestic service, 1615-1630 dictation speed news\*\*\*\* Islamabad program (BBCM)

HOME SERVICE SCHEDULES:

|           |             |       |
|-----------|-------------|-------|
| 0045-0345 | 4790e Fr    |       |
| 0045-0435 | 4790e Sa-Th |       |
| 0100-0102 | Urdu        | 6070d |
| 0200-0225 | Urdu        | 6070d |

|           |                     |        |
|-----------|---------------------|--------|
| 0230-0245 | SSN                 | 6070d  |
| 0300-0310 | English nx          | 6070d  |
| 0330-0430 | Balti HS            | 7200a  |
| 0400-0404 | Urdu                | 9645d  |
| 0445-0545 | Sheena HS           | 7200a  |
| 0500-0504 | English nx          | 9645d  |
| 0600-0604 | Urdu nx             | 7110c  |
| 0600-0604 | Urdu reg nx         | 9645d  |
| 0604-0800 | Rawalpindi pgm      | 7110c  |
| 0700-0704 | Punjabi regional nx |        |
| 0700-0704 | Punjabi             | 9645d  |
| 0800-0804 | Sindhi              | 9645d  |
| 0800-1115 | Islamabad pgm       | 7110c  |
| 0800-0804 | Sindhi regional nx  |        |
| 0900-0904 | Pushtu regional nx  |        |
| 1000-1004 | Urdu nx             |        |
| 1100-1104 | English nx          |        |
| 0800-1215 | 7265e Sa-Th         |        |
| 0900-0930 | Indonesian          | 11835d |
| 0900-1215 | 7265e Fr            |        |
| 1000-1030 | Tamil               | 11835d |
| 1100-1104 | English             | 11835d |
| 1200-1210 | Urdu nx             | 9645d  |
| 1200-1805 | 4790e               |        |
| 1230-1300 | Kashmiri            | 9645d  |
| 1300-1304 | Urdu HS             | 6180a  |
| 1302-1309 | Punjabi reg nx      | 9645d  |
| 1304-1316 | Pushtu HS           | 6180a  |
| 1309-1316 | Sindhi reg nx       | 9645d  |
| 1323-1600 | Pushtu HS           | 6180a  |
| 1400-1414 | English nx/mx       | 9645d  |
| 1414-1422 | Balti HS            | 5045b  |
| 1422-1430 | Sheena HS           | 5045b  |
| 1500-1530 | Urdu nx             | 9645d  |
| 1600-1630 | EE SSN              | 7230d  |
| 1615-1700 | Aaina HA            | 7310a  |
| 1700-1715 | Urdu/Pasmanzar      | 7230d  |
| 1730-1800 | Turkish             | 7230d  |

a=API2 100kW b=API3 100 kW c=API4 100kW d=API7 10 kW link services from Islamabad e=API8 100 kW Rawalpindi III

#### REGIONAL SERVICES

##### Quetta 10kW

|           |            |
|-----------|------------|
| 0045-0345 | 5025 Fr    |
| 0045-0404 | 5025 Sa-Th |
| 0400-0820 | 7155 Fr    |
| 0600-1145 | 7155 Sa    |
| 1000-1145 | 7155       |
| 1200-1805 | 5025       |

##### Peshawar 10kW

|      |           |
|------|-----------|
| 6140 | 1100-1400 |
|------|-----------|

(1-Nov/Green-UK/DSWCI DX-Window/Petersen-DEN)

**PAPUA NEW GUINEA** 3315.00 *Radio Manus*, 1016-1030, In Pidgin with Top music chart count down. (14-Nov/Kecskes/DSWCI DX-Window/Petersen-DEN)

3335.0 *Radio East Sepik*, 1029-1035, Pidgin & ID, Time checks, program info, PNG's native

drums and sing-sing music. (14-Nov/Kecskes/DSWCI DX-Window/Petersen-DEN)

3345 *Radio Northern*, 1136, Back to back "Island Music." ID and mentions of PNG by M announcer at 1145. Back to Island music with M chorals. (15-Nov/Rippel/DSWCI DX-Window/Petersen-DEN)

3385 *Radio East New Britain*, 1155, Beautiful M chorals. ID by W and time check at 1151 into program announcements. (15-Nov/Rippel/DSWCI DX-Window/Petersen-DEN)

**PERU** 3172.7 *Radio Municipal* (t), 0943, tent. propagation fair, but static preventing firm ID, news at 1000 and mention of Peru by W news reader, lots of pennywhistle instruments. Logged here only to advise others that it is still on. (13-Nov/Norrie/DSWCI DX-Window/Petersen-DEN)

3235 *Radio Luz y Sonido*, with QSL card in 71 days, letter with a stations introduction, both signed by Pedro Martinez Tineo, Administrador, two postal-cards, a 100 Intis banknote, Address: Jiron Dos de Mayo No. 1286, Oficinas 308-309, Huanuco, Peru. (Monges/DSWCI DX-Window/Petersen-DEN)

3250.77 *Radio Comas*, 0430-0456\*, very nice Andean music (huaynos) in program "Folclore peruano por Comas AM. (5-Nov/Schmid/DSWCI DX-Window/Petersen-DEN)

4563.73 *R Uno*, Chiclayo, 0941-1043, Andean music, TC's and ID's "Somos Radio Uno la Diferente...." wildly swinging carrier frequency between 63.73 and 64.26. (22-Nov/Mohrmann/DSWCI DX-Window/van den Boogert-TWN)

4700.58 *R. Origen*, Huancavelica, 2345 Peruvian flutes and Andean vocals, M DJ, ID "...en Radio Origen" in passing 2352. (18-Nov/Novello-NC)

4748.29 *R. Huanta 2000*, Huanta, Ayacucho, 1058 noted in passing with ad string and ID by man, weak signal in rising noise. (14-Nov/Novello-NC)

4824.42 *Radio La Voz de la Selva*, Iquitos, \*0954-1000 fair, s/on with salsa, then a canned ID "La Voz de la Selva, que buena voz" was announced. (21-Nov/TIN-JPN/Relampago DX)

4855.57 *R. La Hora*, Cuzco, 2320 excited man with live commentary of what sounded like a parade, numerous ID's in passing. Good signal but faded considerably by 2345 or so. (5-Nov/Novello-NC)

4935 *R. Tropical*, Tarapoto, 1113 news being read by two M announcers taking turns, phoned-in reports from correspondents, numerous IDs in passing. (14-Nov/Novello-NC)

4950.15 *R. Madre de Dios*, Puerto Maldonado, Madre de Dios, 0032 tuned in just as M was giving a full ID: "...Radio Madre de Dios, una voz en el servicio del pueblo..." and mentioning AM and FM frequency. Nice to get an instant ID on this one after other sessions of listening to the entire rosary. (19-Nov/Novello-NC)

4970.97 *Radio Imagen*, 0934-0950, program "El Tatu Tatu Madrugador" with chicha music. (3-Nov/TIN/DSWCI DX-Window/Petersen-DEN)

5018.65 *R. Horizonte*, Chachapoyas, 0010 W DJ with pretty local flute-led stuff, very nice audio but splash from Rebelde-5025. 0049 canned ID, then into church remote. (6-Nov/Novello-NC)

5024.98 *R. Quillabamba*, Quillabamba, Cusco, 0115 presumed the one talking here with fair signal in Rebelde-5025's absence. (6-Nov/Novello-NC)

5305.01 *Radio La Inmaculada*, 1120-1130, program "Alegre Despertar" with folklore nacional. ID "Ud. escucha a La Inmaculada, su radio." (7-Nov/TIN/DSWCI DX-Window/Petersen-DEN)

5522.23 *Radio Sudamerica*, Cutervo, 1057-1012 fair, no stop chicha songs until 1110. At 1110 ID "Usted escucha a Radio Sudamerica transmitiendo desde la Provincia de Cutervo, Cajamarca, Peru." (21-Nov/TIN-JPN/Relampago DX)

5677.98 *Radio Ilucan*, 0348\*, caught their sign off announcement. Very strong, excellent signal. (13-Nov/Mohrmann/DSWCI DX-Window/Petersen-DEN)

5558.19 *R. Lajas*, Chota, Cajamarca, 0002 M harmony group vocals with rustic guitars, into comunicados by man after ID 0004. (19-Nov/Novello-NC)

5949.32 UNID OA station which had been first observed on 22/AUG/98, was heard again at 1113, with a religious programming in Spanish. Sometimes mentioned "Gloria Dios..." According to "Latinoamerica DX" of Emilio P. Povrzenic, this outlet identified itself as "Proyeccion Cristiana" for the station name or program. Need more work. (21-Nov/TIN-JPN/Relampago DX)

5995.22 *Radio Melodia*, Arequipa, 0805-0830, romantic music, folk tunes, announcing "Melodia, Romantica!" (7-Nov/Phillips/DSWCI DX-Window/Petersen-DEN)

6535.7 *Radiodifusoras Huancabamba*, 2335-2340, Spanish, musical interlude, talk, Huancabamba heard mid sentence. (23-Nov/Phillips/DSWCI DX-Window/van den Boogert-TWN)

6618.57 *Radio Super Sensacion*, Huancabamba, 1042-1045, poor modulation, playing huaynito criollo. (3-Nov/TIN/DSWCI DX-Window/Petersen-DEN)

6674.76 *Radio Impacto*, Aramango, 1024-1046, poor signal with QRM from a utility station. Playing many rustic OA folklores. At 1040 ID "Somos Radio Impacto Internacional y saludamos a toda la gente que nos escucha en Aramango y diferentes puntos de la Provincia de Bagua. Tambien saludos especiales para los oyentes de Rioja, Nueva Cajamarca, Naranjos, Tarapoto, Moyobamba, y todos...gracias por su amable sintonia." (21-Nov/TIN-JPN/Relampago DX)

6690.06 *Radio Estudio DW*, Naranjos, 1046-1052 weak signal, huayno s & saludos. At 1052 ID "Estas con la primera, Estudio DW." (21-Nov/TIN-JPN/Relampago DX)

6797.58 *Radio Ondas del Rio Mayo*, 1051-1055, a new version identification was heard as "OBX9N 1490 kHz onda media, OAX9Q 5045 kHz onda corta banda internacional. Es Radio Difusora Comercial Ondas del Rio Mayo con sus oficinas centrales en el Jiron Huallaga 348, Distrito Nueva Cajamarca, Provincia de Rioja, Republica del Peru," then local advs. of some stores in Nueva Cajamarca. Interestingly, the station now announces its shortwave outlet as 5045 kHz with callsign OAX9Q instead of former nominal channel 6803 kHz. (3-Nov/TIN/DSWCI DX-Window/Petersen-DEN)

7003.37 *Radio La Voz de las Huarinjas*, Huancabamba, 1118-1130 poor, program "Amanecer en los Andes." (21-Nov/TIN-JPN/Relampago DX)

7745.8 *Radio Cristal*, San Hilarion, 2345-0005, Spanish, andean music with announcements by woman. (13-Nov/Schnitzer/DSWCI DX-Window/Petersen-DEN)

**PHILIPPINES** *R. Pilipinas*, B98: All via Tinang—English and Filipino 0230-0330 15120 15270 11805, 0330-0400 17730 15330 13770. (Padula-AUS/EDXP) 11730 *Radyo Pilipinas*, 1900, Filipino, ID, politics and news. I think this is a new frequency on a clear channel. (9-Nov/Schneeberger/DSWCI DX-Window/Petersen-DEN) Both Klingenfuss '98 and the latest IIG database list them here in English, 1730-1930.—Veldhuis. 11890 *Radio Pilipinas*, 1804, program in Filipino (14-Nov/Mendez/DSWCI DX-Window/Petersen-DEN)

**DZRM** Quezon City is listed on 9616 (yes, 9616) for B98 in the ITU's Tentative HF Broadcasting Schedule, with 3 kW, 2100-1500, non-directional. (Padula-AUS/EDXP) Further info from a QSL letter: Call sign: DUR2 Power: 250 Watts Transmitter: modified BC-610 US Army Signal Corps Antenna: 2dB bi-directional quad loop antenna directed north and south. Antenna/transmitter location: Marulas, Valenzuela, Metro Manila Programming: relays DZRB Radyo ng Bayan 738 kHz or DZRM Radyo Manila 1278 kHz. (van den Boogert-TWN)

**QATAR** *QBS* was noted on new 11820 (ex-17895) at 0705-1305. (12-13 Nov/Timofeyev-RUS/DSWCI DX-Window/Petersen-DEN)

**RUSSIA** Current *Radio Minsk* schedule: 0200-0400 and 2000-2200 on 7105 and 7210. English service: Mo 0300, Tue 2030 and 2130, Wed 0300, Thu 2030 and 2130, Fri 0300, Sat 0300, Sun 0300. German service: Wed 2030 and 2130, Thu 0300, Sat 2030 and 2130, Sun 0300, 2030 and 2130. (R. Minsk/Ludwig-GER)

Latest check of *R. Kyzyl* shortwave transmissions is: \*2322-approx.0130\*, \*1120-approx.1230\*—all on 5550.3v, local program till 0000, 0010-0100 and till 1200—other time with *R. Rossii* program //5290 (28-29-Oct/Timofeyev-RUS)

**SAUDI ARABIA BSKSA** current observed schedule:

|            |                    |  |
|------------|--------------------|--|
| 0000-0600  | MAP                | 9870                                     |
| 0300-0600  | HQ                 | 9608v                                    |
| 0300-0600  | HQ                 | 9553.6 9608v 9718.3 9740<br>11935 17720  |
| 0300-1700+ | 2nd Arabic program | 9578.6 (also aud. on 4790 "subharmonic") |
| 0400-0500  | Somali             | 15165                                    |
| 0400-0600  | Turkish            | 15275                                    |
| 0500-0600  | Swahili            | 17760                                    |
| 0600-0900  | HQ                 | 9715                                     |
| 0600-0900  | MAP                | 9530 9718.3 9870 11818.5<br>11868.4      |
| 0800-1000  | French             | 15335                                    |
| 0900-1200  | HQ                 | 9715 17880 21495                         |
| 0900-1200  | MAP                | 9870 11818.5 15275                       |
| 1000-1200  | Indonesian         | 21670                                    |
| 1200-1230  | MAP                | 9870 15175 15377 15435                   |
| 1200-1400  | Urdu               | 15345                                    |
| 1200-1600  | HQ                 | 15161.8 15170.1                          |
| 1230-1500  | MAP                | 15175 15377 15435                        |
| 1400-1500  | Bengali            | 15345                                    |
| 1400-1600  | Farsi              | 11745                                    |
| 1400-1600  | French             | 15170                                    |
| 1400-1600  | HQ                 | 11785                                    |
| 1500-1600  | Turkmen            | 9730                                     |
| 1500-1700  | CI                 | 11780 11910 11948.3                      |
| 1600-1700  | Bambara            | 17760                                    |
| 1600-1700  | HQ                 | 9730 11708.2 11785<br>11833.6            |
| 1700-1800  | HQ                 | 9730 11708.2 11833.6                     |
| 1700-1800  | MAP                | 11780 11910 11948.3                      |
| 1700-2100  | 2nd Arabic program | 12038.6                                  |
| 1800-2300  | HQ                 | 11935                                    |
| 1800-2300  | MAP                | 9555 9870                                |
| 2300-2400  | MAP                | 9870                                     |

(Timofeyev-RUS/DSWCI DX-Window/Petersen-DEN)

**SEYCHELLES FEBA** in Divehi still being jammed on Fridays only from 1630-1700 on 11665. This is the first Divehi foreign broadcaster and Maldives is against any Christian broadcasts claiming to be a 100% Islamic State. Jamming is of a varying tone hardly noticeable interference, but maybe strong in the Maldives. They are listed to have one 30Kw and another 7.5 shortwave transmitter. What lengths people go to. (20-Nov/Goonetilleke-SRI) [Indeed.-AQ]

**SOLOMON ISLANDS 5020 SIBS**, 1134-1156\*, Easy listening instrumentals and vocals hosted by a woman. Fair to good reception and sudden off while checking Merauke. (8-Nov/D'Angelo-PA/DSWCI DX-Window/Petersen-DEN)

**SOMALIA 6843 R. Hargeisa**, good reception for last few days and English/Somali lesson has been observed at 1739-1746 and it is interesting to note that after *R. Mogadishu/V.O.P* Radio Hargeisa also has started to broadcast English program, However still no trace of *R. Mogadishu/V.O.P* it was on 6873v 3 months ago. (15-Nov/Vaghee-MAU)

**SOUTH AFRICA Channel Africa** change to schedule in last month's LN: 1700-1730 English and 1730-1755 Portuguese now on 17860 (ex-17870). (Otto-SENTECH)

**TAJIKISTAN 4635 R. Dushanbe 1**, 1800, Tajik with mention of Dushanbe, piece of music and news, At recheck 1814 Tajik talk with mention of Dushanbe, Turkish Tartar music with handdrums and local flute and Tajik M songs at 1825 local sitar with Tajik W songs (sounding the same as the music you hear from Uzbek Radio) (13-Nov/van Rooy/DSWCI DX-Window/Petersen-DEN) 7515 **Tajik Radio** 1828 new freq for Dushanbe with Central Asian vocals and lengthy, mournful instrumental selections till 1849, when into talk by woman in presumed Tajik (closely related to Farsi). Back to instrumentals at 1856, followed by brief announcement at 1900 and off. Audio seemed to fade up and down at times. ID per Padula in EDXP. (1-Nov/Hill-MA)

7465 **Voice of Tibet** 1220-1255 in Tibetan on air on new channel 1225-1255 via Dushanbe, ex- 7470. No more //11520. (25-Nov/Goonetilleke-SRI)

**Democratic Voice of Burma** observed on new 7490 via Dushanbe (x9985, x11580), //DTK Jülich on poor co-ch stns spoiled 15330. Always time delay noted between both channels! (14-Nov/Bueschel-GER/BC-DX/Bueschel-GER) 5945 NF Democratic Voice of Burma in Burmese 1245-1345 deliberately close to Yangon/5985 kHz, //15330 and 7490. (23-Nov/Goonetilleke-SRI) [A report from the same day and same reporter (Victor Goonetilleke) lists the three freqs for this broadcast as 5945, 7490 and 15330. Which combination is correct—this one or the previous?-AQ]

**THAILAND 6070 R. Thailand** 1100-1600 mixing Singapore to 1400, then in the clear. // to better 4830 and poorer 7115. (23-Nov/Goonetilleke-SRI)

**TUNISIA RTT** was noted on a new freq of 7215 (ex-7225) at 0400-0700, 7225 at 1700-2330 at present (other channels are: 7280 0400-0600 1700-2330, 11730 0700-1700, 12005 0500-0600 1700-2330, 15450 and 17735 0600-1700) (12-13-Nov/Timofeyev-RUS/DSWCI DX-Window/van den Boogert-TWN)

**URUGUAY** While visiting 9650-*Emisora Ciudad de Montevideo* we learned from Jorge Yizmeyan that they are thinking to leave the current frequency in the 31mb and take amove into the 49mb (still on an unknown channel). He did no mention of the also assigned 19mb fcy and probably there is no

connection with the pair of 49 mb frequencies recently offered by the telecom authorities. (Nigro-URU)

**USA** 2939.84H *KVLH*, Pauls Valley OK, 0050 Superstrong with FM country format and no ads at all; 0124 ID for "KVLH-KTOK." 2 x 1469.92. (8-Nov/Novello-NC)

25910 *WJFP* Fort Pierce, 1523-1600, with Gospel program in English and several IDs, FM feeder; quite good at times, but heavy fading; completely disappearing soon after getting dark outside (15-Nov/Kuhl/DSWCI DX-Window/Petersen-DEN)

**UZBEKISTAN** Current observed schedule of *Radio Tashkent*:

|           |         |                                   |
|-----------|---------|-----------------------------------|
| 0000-0030 | Uighur  | 5040                              |
| 0100-0130 | English | 5955 5975 7105 7285 9540          |
| 0130-0200 | Dari    | 5955 5975 7285                    |
| 0130-0230 | Uzbek*  | 7105 9540                         |
| 0200-0230 | Pushtu  | 5955 5975 7105 7285 9540          |
| 0230-0330 | Uzbek** | 5955 5975 7105 7285 9540          |
| 0330-0430 | Uzbek*  | 7105 9540                         |
| 0500-1300 | Uzbek*  | 15165 15330                       |
| 1200-1230 | English | 5060 5975 6025 9715               |
| 1230-1300 | Urdu    | 5060 5975 6025 9715               |
| 1300-1330 | Hindi   | 5060 5975 6025 9715               |
| 1300-1330 | Uzbek*  | 15330                             |
| 1330-1400 | English | 5060 5975 6025 9715               |
| 1330-1400 | Uighur  | 5040                              |
| 1330-1400 | Uzbek*  | 7105 15330                        |
| 1400-1430 | Uighur  | 5040                              |
| 1400-1430 | Urdu    | 5060 5975 6025 9715               |
| 1400-1430 | Uzbek*  | 7105                              |
| 1430-1500 | Chinese | 5040                              |
| 1430-1500 | Hindi   | 5040                              |
| 1430-1550 | Uzbek*  | 7105 9540                         |
| 1500-1530 | Uighur  | 5040                              |
| 1520-1550 | Dari    | 5975 6025 7285                    |
| 1550-1630 | Uzbek** | 5975 6025 7105 7285 9540          |
| 1630-1700 | Farsi   | 5975 6025 7285                    |
| 1630-1700 | Uzbek*  | 7105 9540                         |
| 1700-1730 | Arabic  | 5975 6025 7285                    |
| 1700-1730 | Turkish | 7105 9540                         |
| 1730-1830 | Uzbek** | 5975 6025 7105 7285 9540          |
| 1830-1900 | Farsi   | 5975 6025 7105 7285 9540          |
| 1900-1930 | Arabic  | 5975 6025 7105 7285 9540          |
| 1935-2030 | German  | 5025 5035 5060 7105 9540<br>11905 |
| 2030-2100 | English | 7105 9540                         |
| 2100-2300 | Uzbek   | 7105 9540                         |
| 2330-0000 | Chinese | 5040                              |

Uzbek\*=Uzbek R. HS 2nd program (//4850 0000-2300) Uzbek\*\*=FS (R. Vatandosh) Uighur at 0000, 1330, 1400 and 1500 only as a tentative language. (28-29-Oct/Timofeyev-RUS)

7105 *Radio Tashkent* noted well in English 0109. (26-Nov/Fine-VA)

After a brief stay on 7400 kHz *IBRA Radio* in Bagnali from Tashkent is now back on 15470 khz at 1330-1400 hrs. (30-Oct/Dasgupta-IND)

**VENEZUELA** 9640 *Ecos del Torbes* 2124 man in Spanish with play-by-play of sporting event (presumably fthol), including lots of gooooooooools. Stronger than // 4980, which was just beginning to fade in; buried at 2130 by AWR s/on. First time I've heard the 31M channel in ages. (1-Nov/Hill-MA)

**VIETNAM** Regionals audible here incl *Lao Cai* 5597 and 6668 (both vary +/- 1 kHz or so) at 1200- 1340 (noted 8 Nov among others). Both freqs in // whenever I have checked. Also UNID location on 6468, 1000-1030 & 1200-1330, additional relays Hanoi HS prgr1 0930!-1000 //5925, 9875 on certain days only. No trace found of *Son La* on clear channel 4740, may have changed freq or be inactive. (9-Nov/Davies-THA/BC-DX/Bueschel-GER)

5034.74 *Dia Tieng Noi*, Hanoi, 1155 Hmong language service with fragile-sounding reed instrument mx to 1159, short orchestral theme with probable ID spoken over by M then by W, bit of talk by W, then into extended talk by M after 1200, then into solo vocalizations by W 1210. All // 6165 which was stronger, and lasted until AIR \*1229. Growl on xmtr but good audio on a very good Asian morning; and definitely varying from 5035.00 as logged by Hans van den Boogert in September. (20-Nov/Novello-NC)

**RADIO FREE IRAQ** *Radio Free Iraq* is on the air. Schedule:

0300-0400 5965K 7110K 7275K 9740L  
1600-1700 6130K 9540W 9850L 11915W

K=Kavala L=Lampertheim W=Woofferton (Clandestine Radio Watch/Schoech-GER) (DX'ers can now kiss Ethiopia-7110 goodbye-AQ)

**UNIDENTIFIED** There is a weak signal on 6055 after Rwanda goes off, heard virtually every day, but neither Al Quaglieri-NY or I have been able to figure out who this is. (Sundstrom-NJ) Re the weak stn you and Tom Sundstrom are hearing on 6055 after Rwanda s/off at 2100 (DXW 139), a possibility is *JOZ*. Beginning around this time of year, we move toward grayline at that hour—sunrise in Japan, sunset here. The 3925 outlet becomes fairly regular for about two months around 2100-2200, and there's no reason the 6055 outlet wouldn't propagate as well. (Hill-MA)

UNID Russian 6915, 2150 western songs man in Russian, ad "upotenie" then close at 2200\*; modulation problems (19-Nov/Liangas-GR)

**RAMADAN** Ramadan will begin on December 20th this year. (Veldhuis/DSWCI DX-Window/van den Boogert-TWN) Ramadan will begin on December 20th this year. (Veldhuis/DSWCI DX-Window/van den Boogert-TWN)

**SWF**

# Pirate Radio Report

Chris Lobdell  
P.O. Box 146  
Stoneham, MA 02180-0146  
Internet: clobdell@media@one.net

Hello and welcome to the last **PIRATE RADIO REPORT** of 1998! I hope all of you had a great Thanksgiving. Now it's time for Christmas.

## FCC Cracks Down on Pirates!

If you've been tuning the pirate bands over the past few weeks and haven't heard anything, don't worry. It's not bad propagation, a broken radio or antenna that's the cause.

What some are calling "*The Great Halloween Pirate Massacre of 1998*" occurred on October 30th and 31st when the friendly FCC agents tracked down and visited four alleged pirate operators in Massachusetts, Illinois, Texas and California. The stations were handed violation notices, told to stop operations immediately and warned that fines or equipment seizures would be forthcoming if broadcasts continued.

These were the first such busts since 1995 and word traveled throughout the pirate community like lightning, causing all those not visited to go silent.

In addition to the FCC visits, word leaked out of an operation "*Clean Sweep*" in which the FCC is going to keep track of all SW pirates, obtain search/seizure warrants and bust all those selected on the same day. This story has not been confirmed and some are doubting its validity.

Despite all this, we do have some logs to report, although most were made before the FCC enforcement activities occurred.

My thanks go to our faithful reporters *Bill Wilkins* in MO and *David Krause* in Ohio. Many thanks guys! If not mentioned it was 6955 kHz.

**JERRY RIGGED RADIO** was heard with their Halloween show on November 1st at 0001 UTC featuring a séance and eerie music. [Wilkins-MO]

**PARTIAL INDIA RADIO**, a funny parody of AIR was heard on October 17th at 0026 UTC reading letters from listeners and mentioning Pakistan. [Wilkins-MO] Also heard on October 25th at 2145 UTC. [Krause-OH]

**RADIO EUROGEEK** usually makes an appearance just before or after the annual *Radio St. Helena* broadcast. This year was no exception. They were heard from 1804-1841 sign off. Format included pop mx and talk about leaving pirate radio due to financial difficulties. The frequency was 11092.5 USB. They use the Providence drop. [Wilkins-MO, Krause-OH]

**RADIO FREE SPEECH**, featuring Bill O. Rights was noted in the AM mode at 1144 UTC on October 24th with a scary Halloween show. [Krause-OH]

**RADIO METALLICA WORLDWIDE**, popped up on 7415 kHz on October 17th at 1948 UTC. Dr. Tornado was playing rock and German steel metal music. [Krause-OH]

**RADIO ONE**, was heard on October 17th at 2324 UTC with station IDs and Rockabilly mx. They use the Belfast drop. [Krause-OH]

## It's Europirate Season Again!

Now that darkness is upon us, don't forget to check for *Europirates* between 0600-0900 UTC in the frequency range of 6200-6400 kHz on Saturday/Sunday AMs.

Farmers From Holland is usually found around 6300 kHz. If they are coming in good, try looking for a few others. Some others may be testing from Europe between 2300-0500 on 6955 kHz if the frequency is vacant. If you hear anything, be sure to report in to us here at the PIRATE RADIO REPORT!

Until next month, Merry Christmas and Happy Pirate DX!

—Chris



# QSL Report

Sam Barto  
47 Prospect Place  
Bristol, CT 06010

- ALASKA:** KNLS 7365 f/d "Bears of Alaska" cd. in 12 wks. for \$1.00. (Tilbury).  
**ALBANIA:** Trans World Radio 11625 f/d "Family Group Tunes in the Radio" cd. w/ schedule and business cd. in 73 ds. (Humenyk-ONT).  
**ALGERIA:** Radio Algiers International 15160 f/d cd. in 115 ds. for 1 IRC. (Neal-TX).  
**ANGUILLA:** The Caribbean Beacon 6090 f/d cd. in 2 wks v/s B. Monsell Hazell, Chief Engineer. (Klinck-NY)  
**ANTARCTICA:** Radio Nacional Arcangel San Gabriel 15476 f/d "Logo/Map/Penguin" cd. in 71 ds. for a SP rpt. and \$1.00. v/s Hugo Carlos Casela, Teniente Coronel Base Esperanza. (Stephens-AL).  
**ANTIGUA:** BBC 5975 f/d ltr. in 3 wks. via London for \$1.00. v/s Hild Myklebust. (Myers-VA). Deutsche Welle 6185 f/d "Köln Cathedral" cd. in 52 ds. for an E mail rpt. v/s B. Klaumann. (Delmage).



MERRY CHRISTMAS  
AND  
HAPPY NEW YEAR

自由中國之聲 敬賀  
VOICE OF FREE CHINA



- ARGENTINA:** LS6 Radio  
 \* Rivadavia 8098 p/d ltr. w/ stickers in 2 wks. for a SP rpt. and \$1.00. v/s Marcelo Mithieux, Gerente Tecnico, who insists that a listener or hobbyist must be retransmitting LS6 because they only have a medium wave outlet on 630. (Loudell-DE).

- ARMENIA:** Radio Mitternachtsruf sent a ltr. to Marlin Field in which they stated that their program is no longer being transmitted over Radio Armenia International. They now utilize the facilities of Radio Luxembourg.

- ASCENSION ISLAND:** Radio Japan 9665 f/d cd. in 24 ds. v/s Y. Fushimi. (Palmerheim-WA). BBC 12095 f/d cd. in 62 ds. v/s Nicola Nicholls. (Humenyk).

- ASIATIC RUSSIA:** Voice of Vietnam 7250 via Armavir f/d (Humenyk).

cd. w/ ms. and paper pennant in 61 ds. (Humenyk). Radio Nederlands 17580 via Khabarovsk f/d "CIS" relay cd. in 20 ds. (Loudell-DE). Voice of Russia 5905, 5930, 6150 and 7330 via Petropavlovsk-Kamchatka f/d cd. in 3 mo. (Palmerheim-WA). 7175 via Khabarovsk f/d cd. in 3 mo. (Palmerheim-WA). 5920 via Komsomolsk-Amur f/d cd. in 3 mo. (Palmerheim-WA).

Belgium

THIS IS TO VERIFY YOUR REPORT ON OUR BROADCAST OF Jan. 15, 1970  
 STATION ORU 22.0v - 22.35  
 FREQ 9.350 704Z  
 100 Kw. - 20.3kw

BELGIAN NATIONAL BROADCASTING SERVICE  
 SHORTWAVE SERVICE P. O. B. 38 - BRUSSELS 1 - BELGIUM



To: Harry Neal

This confirms your report of HCJB's transmissions on 21455 kHz in the 13 meter band.

Date 19 April 98  
Time 2049  
Mode \_\_\_\_\_

The transmitter used was a Gates with a power of 500 watts through a rhombic antenna directed 35/22x degrees. HCJB's shortwave transmitters and antennas are located at Pifo, Ecuador.

73 and God bless,

[Signature]  
Frequency Manager

HERALDING CHRIST JESUS' BLESSINGS

**AUSTRALIA: Radio Australia** 12080 via Brandon f/d "Studio" cd. in 2 mo. w/ sticker. (Palmerheim) 17795 and 21740 via Shepparton f/d "ABC South-Bank Centre" cd. in 73 ds. w/ sticker and sked. \* (Humenyk). **Australian Defense Forces Radio** 14790 p/d ltr. w/ pins in 3 wks. for a taped rpt. and \$2.00 (returned) v/s Barry Looms, Pre-senter. (Myers-VA).

**AUSTRIA: Radio Austria International** 9655 f/d "Imperial Family in Go-

lollo, Hungary" cd. w/ ltr. in 14 ds. for 2 IRCs. (Brouillette-IL). **BOLIVIA: Radio Nacional de Huanuni** 5964 personal ltr. in 3 mo. for a \* SP rpt. after several f/up rpts. v/s Luisa Santos Flores, Secretaria General. Pennant was rcvd. (Field-MI).

**BRASIL: Radio Novas de Paz** 9515 f/d cd. in 2 mo. on my 4th try for a PT rpt. This is my 119th QSL from Brasil - more than any other country. (Field-MI)

NOTES: Paul Brouillette of 611 Illinois St, Geneva, IL 60134 would like to contact Harold Levison in PA. If you read this Harold or if any of our members have the address, please contact Paul.....Sam.

\* **Radio Trans Mundial do Brasil** 11705 personal ltr. was rcvd. for an EG rpt. v/s Jose Eduardo Dias. (Field-MI)  
\* **Radio Alvorada Londrina ZYG641** 4865 n/d ltr. in 9 mo. after a f/up rpt. v/s Manuel Joaquim.

**CANADA: CKZU** 6160 p/d blue "CBC Centre" cd. in 16 (Palmerheim) ds. for ms. v/s Dave Newbury. (Loudell-DE). **CHN** 6130 f/d ltr. in 64 ds. w/ decal. v/s Wayne Harvey, Chief Engineer. (Borokowski-NY).



RADIO TV  
MALAYSIA  
KOTA KINABALU



Q  
S  
L

Dear George Marot:

Thank you for your reception report. We are pleased to verify your reception of our station transmitting from Sabah.

Date of Reception: 11-01-1998  
Time: 05:58-06:30  
Frequency: 4970 kHz  
Transmitter Power: 10 kilowatts



[Signature] (ANGACK SEPUMAN)

Official Seal

same in 2 wks. for ms. (Loudell). **Radio Canada International** 5960 f/d "Royal Mounties" cd. in 21 ds. w/ sticker and schedule. Also rcvd CIDX info. (Borokowski). **Radio Japan** 11705 via Sackville f/d "Drying Octopuses" cd. w/ sked. and brochures in 3 wks. (Loudell). 6120 f/d cd. w/ stickers and schedule in 35 ds. (Clapper-NY).

**CHILE: Voz Cristiana** \* 9630 f/d cd. in 2 wks. for a f/up rpt. to the FL addr. for \$1.00. (Tilbury).

**Weekend Music Radio**

Through the day and into the night

Thanks GEORGE of Mrs. Kison for the reception report, which was checked against our station log, and found to be correct. The report was of value to our high frequency bureau. Thank you for your support and interest in WMPR. All our transmissions come from Scotland unless otherwise stated. Your reception details were as follows...

|                                   |                                 |
|-----------------------------------|---------------------------------|
| DATE: <u>23 18 1998</u>           | SINPO: <u>2482</u>              |
| TIME: <u>2354</u> UTC/GMT         | POWER: <u>400</u> Watts         |
| FREQ: <u>6952-2</u> kHz           | ANTENNA: <u>1/2 Wave Dipole</u> |
| COMMENTS: <u>GREAT - REC DONE</u> | SIGNED: <u>[Signature]</u>      |

Box 88, 1st Floor Suite, 888 Balfour Road, London, SE23 8XJ  
14 Stone Row, Coleraine, Northern Ireland, BT52 1EP

WWW: <http://www.pp.hogja.net/jonnywme/> E-Mail: <wmsw@aol.com>



*Avec les compliments de*  
**L'OFFICE DE RADIODIFFUSION  
 ET TELEVISION DU BENIN**  
**STATION NATIONALE**  
 B. P. 366 COTONOU (REPUBLIQUE DU BENIN)  
 Tél. (229) 30 10 96 & 30 14 37 - Fax (229) 30 04 48

REPUBLIQUE DU BENIN



21550 f/d cd. in  
 80 ds. for 2 ms.  
 (Neal-TX).  
**CHINA, PEOPLES REP.**  
**OF: Radio Exter-**  
**ior de Espana**  
 11910 via Xian  
 p/d ltr. in 2 mo.  
 (Barto-CT).

**CLANDESTINE: Voice**  
 \* of Democratic Eritrea 9230 n/d  
 ltr. in 1 mo. v/s  
 Seyoum O. Michael,  
 Member of the Executive Committee  
 of the Eritrean Liberation Front.  
 Addr: P.O. Box  
 200343, 53134  
 Bonn, Germany.

\* (Field-MI). Rainbow Radio 9855 via Julich f/d prepared cd. in 17 ds. (Kusalik-ALB).

**NOTES:** Ed Tilbury says that he is trying to verify a lot of the easy stuff that has eluded him in the past. He has about 30 reports outstanding. His fingers are crossed regarding Azerbaijan, Zanzibar, Eritrea and Tajikistan. Allan Loudell says he has been fairly lucky recently. Thanks for the great QSL report...Sam. Denis Pasquale is looking forward to the DX season. With the lousy winter weather due pretty soon, it seems that everyone is looking to the upcoming DX season...Sam.

**COSTA RICA: Radio Exterior de Espana** 11815  
 p/d ltr. in 2 mo.  
 (Barto-CT).

**CUBA: Radio Habana Cuba**  
 6000 f/d "DX Club"  
 cd. #1 (!) in 5 mo.  
 (Palmerheim).

**CYPRUS: Cyprus Broadcasting Corporation** 9760 f/d color  
 "CBC Studio" cd.  
 in 7 wks. for 1 IRC.  
 (Tilbury).

**CZECH REP: Radio Prague**  
 9435 f/d "Aero 50" cd.  
 w/ several 75th Anniversary stickers, sked.  
 and a plastic station pennant in 18 ds. (Delmage-ALB). 17845 f/d  
 cd. in 1 mo. w/ bookmark  
 and sticker. (Palmerheim)

**ECUADOR: Radio Buen Pastor** 4815 n/d personal ltr. in 2 mo. for a SP rpt.  
 Station pennant was rcvd. v/s Juana Guaman, Sec. (Field-MI).

**ENGLAND: WYFR** 13710 via  
 via Skelton  
 cd. w/ site  
 in 2 mo. w/  
 stickers and  
 schedule.  
 (Kusalik-ALB).

**TELE RADIO STEREO**

Ufficio Pubblicita  
 00136 Roma - Via Carlo Evangelisti, 2  
 tel. 3452131 - 3450845



*Dear Listener,*  
**SAM BARTO :**

*Carissima SAM :*

*Ringraziandoli per la simpatica lettera e per l'attenzione che prestai ai programmi di F.R.P. confermiamo il tuo rapporto di ascolto, con la speranza che sarai sempre nostro ascoltatore*

*affettuosamente*  
 F.R.P.

*pr. DARIO SBRIGOLI. D'Avellase*  
*D. Maffeiham & M. Uge*

*Deltafili :*  
**FREQUENZA = 6012,6 kHz ; POTENZA = 5 Kw**  
**GIORNO = 10 Aprile 1998 ; ORARIO = 2315-2329 UTC**



National Democratic Alliance NDA  
Voice of Sudan Reception Verification Certificate  
Transmitting from Liberated Areas (Sudan)

**NDA**

Awarded to

**Mr. Norman Constanti**

Frequency: 8000 kHz  
Time: 16:00 - 16:25:15  
Date: 8<sup>th</sup> August 1998

We confirm with pleasure your listening report, which conforms to the programs we broadcast.

Wednesday, 16 September, 1998

On behalf of Sudan Voice team  
Abdullah F. El-Mahdi  
NDA SVA Office Director

**ENGLAND: Merlin Network One** 13690 via **Skelton** f/d ltr. in 24 ds. v/s Michelle Franks. (Palmerheim). 15590 via **Woofferton** f/d ltr. in 24 ds. (Palmerheim). 9780 f/d cd. in 25 ds. for \$1.00 (returned). (Pasquale-PA). **Radio Canada International** 9735 f/d "Olympic" cd. in 25 ds. w/ sked. sticker and pennant. (Palmerheim).

**EUROPEAN RUSSIA: Voice**

**of the Mediterranean** cd. in 2 mo. w/ stickers and schedule. (Field-MI).  
\* **Radio Irina** 15580 and 9550 (**Moscow?**) f/d cd. in 2 mo. after several f/up rpts. v/s Dr. Dao Tri Noc, US Rep. Addr: 6433 Northanna Drive, Springfield, VA 22150. (Field-MI).

**FINLAND: Radio Finland** 9780 f/d form ltr. in 42 ds. direct from the transmitter site. v/s Raimo Makela. (Palmerheim-WA).

**FRENCH GUIANA: Swiss Radio International** 9905 via **Montsinery** f/d "William Tell Monument" cd. in 221 ds. for 2 IRCs. (Brouillette-IL). f/d "Schloss Valerina" cd. in 18 ds. (Borokowski-NY).

**GEORGIA: Voice of Hope** 12125 via **Tbilisi** f/d cd. w/ site and schedule in 5 wks. (Barto-CT).

**GERMANY: Croat**

**Radio** 5840 and 6120 via **Julich** f/d cd. in 3 mo. w/ personal ltr. (Field)  
**Deutsche Welle** 9545 via **Nauen** (old DDR) p/d cd. in 3 mo. (Barto)  
**Adventist**

**SPECIAL OFFER:** Our customers have spoken. The enclosure of used postage stamps as a form of gift with your reception reports seems to be working. For 1998 we are now offering the following:

\$10.00 will bring you 1300 foreign stamps;  
\$15.00 will net you a total of 2300 stamps. With either order you will receive an additional

600 stamps (US). That's 1900 total for only \$10.00 or 2900 for only \$15.00. You will not be disappointed. Please try to include an extra \$3.00 for overnight USPO delivery. Mail your order to your NASWA QSL Editor.



**World Radio** 9835 via **Julich** f/d "Transmitter Site" cd. in 18 ds. for \$1.00. v/s Adrian Peterson. (Kusalik). **Voice of Hope** 15715 via **Julich** f/d cd. in 28 ds. via UK addr. (Palmerheim-WA).

**GERMANY (Clandestine): Radio Rainbow** 5904 via **Julich** f/d cd. w/ personal \* ltr. in only 10 ds! for an EG rpt. (Field-MI).

**GUAM: Adventist World Radio KSDA-1** 9355 f/d QSL #1 w/ site in 18 ds. v/s Adrian Peterson. Schedule was rcvd for \$1.00. (Kusalik). **KSDA-2** 11980 same as above w/ 92-93 cd. (Kusalik). **KSDA-3** 9370 f/d "Floral Design" cd. in 18 ds. w/ schedule. (Kusalik). **KSDA-4** 9650 f/d "25th Anniversary" cd. in 18 ds. w/ schedule. (Kusalik-ALB). **KSDA** 11775 f/d "AWR #2" cd. in 35 ds. w/ AWR stamp and schedule. (Humenyk-ONT).

**NOTES: Henry Lazarus's** QSL from Radio Ayabaca in Peru (as reported last month) was his first shortwave QSL for 1998! We do look forward to hearing from you more often. Ayabaca is a great catch!

Sam. **Mark Humenyk** says he mailed a reception report to the IBRA Office in Ontario but it was returned by the post office. I would suggest mailing to Sweden... Sam. **Allan Loudell** sends his greetings to everyone and hopes that this DX Season will surpass the last one. I hope so too!... Sam.

**WRNO**

4339 I-10 SERVICE ROAD, METAIRIE, LOUISIANA 70006  
TELEPHONE (504) 889-2424

# LRA 36

RADIO NACIONAL  
-ARCANGEL SAN GABRIEL-

QTH  
9411 Base ANTARTICA ESPERANZA  
TERRITORIO ANTARTICO ARGENTINO  
REPUBLICA ARGENTINA

UBICACION GEOGRAFICA

-Lat 63° 24' Sur  
-Long 56° 59' Oeste



mo. direct from the station. (Field-MI). f/d prepared and stamped cd. in 7 wks. The card looked like it had kicked around the floor of the v/s's pickup truck for a couple of weeks before he mailed it. Hi!

**ITALY:** RAI 9675 and 11850 f/d "Guglielmo Marconi" cd. (Tilbury).

\* w/ stickers in 2 mo. (Loudell-DE). Tele Radio Stereo 6012.6 f/d ltr. in 3 mo. w/ station stickers. (Barto-CT).

**LIBERIA:** Star Radio 3400 n/d hand written ltr.

\* in 1 mo. Addr: Foundation Hironnelle, 3 Rue Traversiere, 1018 Lausanne, Switzerland. (Field-MI)...Nice QSL. Thanks for the addr.

**MALAGASY REPUBLIC:** Adventist World Radio 4960

I rcvd. a ltr. from the station which stated

**VERIFICATION SIGNERS:** Radio Television Malagasy

5009 Mamy Rafeno Manantsoa, Director of Radio.

Addr: B.P. 422, Anosy, Malagasy Republic. Voice

of Malta 9660 M. Delu. Addr:

St. Francia Ravelin, Floriana VLT15, Malta, Radio

Pakistan 5085 Anver Inayet

Khan, Engineering Manager at

Rawalpindi. Ondas del Huallaga

3330 Flavino Llanos M.

Addr: Jiron Leonico Prado 723

Apartado 343, Huanco, Peru.

Murmansk Radio 5930 D. Pere-

deri, Chairman...via PLAY DX



Voz Cristiana &  
Christian Voice

that 3215 is the only channel used not 4960. (Field-MI).

**MALAYSIA:** Voice of Malaysia 15295 beautiful f/d cd.

of "Beach/Palm Trees" w/ decal and a very attract-

ive program guide in 52 ds. for 1 IRC. v/s Jamilah Jaafar. Also

rcvd a bookmark station pennant. (Delmage-ALB).

**MALUKU:** RSPDK Maluku Tengah 3578.3 f/d personal ltr. in 8 mo. after a

\* f/up rpt. in IN. v/s Muchlis Hatala. (Palmersheim-WA).

**MOLDOVA:** Radio Moldova International 7500 f/d "Supreme Court of Mol-

dova" cd. w/ ltr. in 33 ds. for 1 IRC. Also rcvd. stamps and a cal-

endar. (Pasquale-PA).

**MOROCCO:** VOA 17895 f/d "Utah" cd. in 6 wks. (Tilbury).

**NEWFOUNDLAND:** CKZN 6160 p/d "Map of Labrador and Newfoundland" cd. in

2 wks. w/ form ltr. and sticker for ms. (returned). v/s S. Williams.

(Loudell). same in 13 ds. for 1 IRC (returned). (Brouillette).



**NEW ZEALAND:** Radio New Zealand In-

ternational 11905

f/d "Kiwi" cd. in

15 ds. for \$2.00.

Sticker and sked.

rcvd. (Borokowski).

**NORWAY:** Radio Denmark

9975 and 11635 p/d



## Radio San Marino International

Shortwave Station from the Republic of San Marino

"Logo" cd. in 2 mo. (Barto).

**PALAU:** KHBN 9985 f/d "Map" cd. in 1 mo. for \$1.00. (Tilbury).

**PERU:** Radio San Nicolas

- \* 5470 f/d cd. in 3 mo on my 3rd try for a SP rpt. v/s Dr. Juan Jose Grandes Vargas, Director General. (Field).
- \* **Radio San Juan** 4000 personal ltr. w/ QSL cd. and a photo of the station in 5 mo. on my 3rd try in SP. v/s Santiago Lopez Valderrama, Director General. (Field-MI). **Radio Ritmo** 5602.2 f/d cd. on my 5th try for a SP rpt. and a 93 reception. (Field). **Radio Luz y Sonido** 3235 p/d cd. w/ f/d ltr. and several postcards in 1 yr. for a SP rpt. \$1.00 and ms. v/s Pedro Martinez Tineo. (Myers-VA). **Radio La Hora** 4977.1 f/d prepared cd. w/ personal ltr. in 14 mo. after 3 f/up rpts. in SP for an 88 reception. v/s Carlos Gamarra M., Director. (Palmer-sheim-WA). 4855-4860 4 cds. for various reports in 5 mo. after many rpts. (Field-MI). 4855.4 f/d prepared cd. in 3½ yrs. for a SP rpt., tape and \$1.00. This is my 15th QSL from Peru - not too bad for one who once hated doing Spanish DX. (Klink-NY).

**PHILIPPINES:** Far East Broadcasting Co. Radio Internacional **DZF9** 15095

f/d cd. w/ sticker and schedule in 5 wks. (Barto-CT). f/d ltr. in 2 mo w/ schedule. (Barto). 9795 f/d cd. in 3 mo. w/ postcards. (Barto-CT). 9475 f/d cd. in 2 mo. w/ sticker. (Barto). **DZF9** 11635 f/d "Filipino Kalesa" cd. w/ schedule & sticker in 1 mo. (Barto).

**CONFIRMACION DE ESCUCHA**

ORA Sr. NORMAN CONSTANT  
 OTH 3577 Hwy T ROSEBUD, MO 65054 - USA  
 Fecha 25-12-97 OTR 2339-2343 UTC  
 Banda 19 MHz Señales \_\_\_\_\_  
 Sus datos de recepción coinciden correctamente con los archivos de programación de esta radioemisora Antártica Argentina

**EQUIPAMIENTOS**

Potencia en KW 1 kw antena Zinca  
 Frecuencias de emisión 15476 (VIA AMERICA)  
 Horarios de emisión 0930-1100 hrs  
 Desde el TAA un cordial saludo y gracias por su atención

Base Antártica Esplotanza de Agosto 1978

**VERIFICATION SIGNERS: Feeling FM** 11133 (USB relay) Carlos A. Taglia Pietra, Subgerente Tecnico. **Radio Alvorada de Londrina** 4865 Padre Manuel Joaquin.

**Radio Transmundial** 11705 Sergio Paulo Da Silva, Director. Addr: C.P. 18300, Vila Alexandria, Sao Paulo 04699-970 SP. **China Radio International** 9665 via **Brasilia** Ying Lian, English Service. **Radio Brasil Central** Fernandes, Director Administrativo. Addr: Rua Dona Adelaide 430, Jardim Bela Vista, 74001-070 Goiana, Brasil. **Radio Nationale du Cambodja** 11938 Ken Yan. **Radio Rainbow** 9855 T. Assefa. Addr: P.O. Box 140104, DE-53056 Bonn, Germany.

same cd. in 54 ds. w/ a personal ltr. from Ellen Valdez. Also rcvd. sticker, schedule, station info. and a calendar. I even rcvd. an official receipt for the \$1.00 that I sent to the station. (Borokowski-NY). **Voice of America** 17735 and 18820 via **Poro** f/d "Hawaii" cd. in 88 ds. (Humenyk-ONT).

**PORTUGAL:** RDP Internacional 17745, 17725, 15555 and 15200 f/d cds. in 6 wks. (Barto). 13640, 13700, 11770, 11840 and 9520 f/d cd. in 7 wks (Barto). 9765, 11770, 11840, 13640 and 13700 f/d cds. in 1½ mo. (Barto). 17725, 15555 and 9780 f/d cd. w/ ltr. and postcard in 2 mo. (Barto-CT). 13640 and 13700 f/d cd. w/ ltr. in 2½ mo. (Barto). 6150 and 9570 f/d cd. in 5 wks. (Barto-CT). 21655 f/d "Torre de Belem and Centro Cultural de Belem" cd. w/ sked. report form and a ltr. *La Gran Cadena Radial de la Paz*



Recuerdo de  
**RADIO  
ABAROA**



CP 136  
4760 Kcls

**RIBERALTA  
BENI-BOLIVIA**

Special Edition" cd. in 18 ds. for \$1.00. v/s Adrian Peterson. (Kusalik-ALB).

**SINGAPORE:** Radio Japan 11740 via Kranji f/d "Autumn at the Asagiri Highlands Below Mt. Fuji" cd. w/ sked. in 1 mo. (Barto).

**VERIFICATION SIGNERS:** BBC Asian Relay Station 11955 Miss Jaruwan Meesaurtong, Executive Secretary. Addr: P.O.

Box 20, Muang, Nakhon Sawang 60000, Thailand. Turkmen

Radio 5015 K. Karen, Chief of the Technical Department. Addr: 3 Mollanepes Street, Ashgabat 744000. Merlin Network One 9795 Michelle Franks, Assistant for Scheduling and Frequency Management. Addr: Merlin Communications, c/o Bush House, Strand, WC1, London, UK.

Radio Blandenque Argentina 9955 via WRMI Raul Gonzales, DJ, Box 293, Merlin, Ontario, NOP 1W0, Canada....via PLAY DX....Sam.

**QSL VERIFICATION**

**RADIO STATION** Voice of Broad Masses of Eritrea  
**TRANSMITTING FROM:** ASMARA-ERITREA

Dear Mr. GEORGE MAROTI

We confirm with pleasure your reception report which conforms to the programs we broadcast. THANK YOU.

FREQUENCY: 70.85 KHZ

Date 29.1.98 Time 04:20 - 05:40 UTC

LANGUAGE TIGRIGNA & TIGRE

Signature P.T.O



\* schedule. v/s Kathy Otto. (Humenyk). f/d cd. in 1 mo. for a 95 reception. (Field-MI). Adventist World Radio 6000 via Meyerton f/d cd. in 2 wks. v/s Adrian Peterson. (Field).

**SPAIN:** China Radio International 9690 cd. in 1 mo. w/ paper cut. (Levison-PA). f/d "CRI Building" cd. in 32 ds. (Palmerheim). Radio Exterior de Espana 17890, 17805 and 17755 p/d ltr. in 2 mo. (Barto). 6055

f/d "Studio" cd. w/ schedule and station info. under separate cover in 13 wks. (Loudell-DE). same in 100 ds. w/ sticker for 1 IRC. (Griffin).

**SWITZERLAND:** Swiss Radio International 9885 f/d "Zurich" cd. in 10 wks. (Loudell-DE).

**TAIWAN:** Radio Taipei International 9680 f/d "Foreign Language Staff" cd. in 53 ds. (Levison-PA).

**D. P. R. S.**

Dutch Pirate Radio  
Service

12 Dorman Road  
Preston PR2 6AS  
England



**POLAND:** Polskie Radio Warsaw 9525 f/d "Logo" cd. in 92 ds. w/ personal ltr., stickers & report forms. v/s Rafal Kiepuszewski. (Borowski-NY).

**RWANDA:** Deutsche Welle 15275 via Kigali f/d "Rhine River" cd. in 6 mo. This was 3 mo. after a f/up rpt. w/ \$1.00. Rcvd. ltr. from Mrs. Silke Broker indicating that the personnel at the DW Technical Advisory Service is very tight. (Tilbury).

**SAO TOME:** VOA 11975 f/d cd. in 1 mo. (Tilbury).

**SERBIA:** Radio Beograd 7200 f/d "Radio Yugoslavia Listeners Club" cd. w/o site in 10 wks. for a rpt. sent to the Radiotelevisia Srbije address. (Tilbury). Radio Yugoslavia 11870 f/d cd. in 5 mo. w/ stickers. (Palmerheim-WA).

**SICILY:** Radio Uno 6160 via Caltanissetta p/d cd. w/ site in 16 mo. (Maroti-NY).

**SLOVAKIA:** Radio Slovak International 15460 f/d cd. in

38 ds. (Palmerheim). Adventist

World Radio 11610 via Rimavska f/d "AWR

Special Edition" cd. in 18 ds. for \$1.00. v/s Adrian Peterson. (Kusalik-ALB).

ecuador cross



S/200

**UKRAINE: Radio Ukraine International** 12050 via Kiev f/d "16th Century Bronze Bible Plate" cd. in 69 ds. w/ schedule. (Humenyk). **Universal Life** 11605 n/d hand written ltr. from the CT address in 5 wks.(Field-MI).

**USA: Radio Taipei International** 5950 f/d "Mountain and Plains" cd. w/ sked. and stickers in 1 mo. (Loudell-DE). f/d "Insect and Bug" cd. in 70 ds. w/ bookmark. (Palmerheim). **WHRA** 9400 f/d cd. in 5 mo.

v/s Loren Holycross.(Palmerheim). 13760 f/d "Globe/Logo" cd. in 150 ds. w/ schedule.(Humenyk). **KJES** 11715 f/d stamped USPO postcard in 3 wks. for \$1.00.(Tilbury). 15384.8 f/d folder cd. in 5 mo.(Palmerheim). **WINB** 11950 f/d cd. in 57 ds. v/s Fred W. Wise.(Humenyk-ONT). **WBCQ** 7415 f/d "Rainbow over the Earth" cd. in 16 ds. for \$1.00.(Pasquale-PA). same in 1 mo.(Field-MI). f/d cd. in 8 ds. v/s Elayne Starr, Office Manager.(Palmerheim-WA). **Voice of Greece** 9775 via Delano f/d Parliament cd. in 26 ds.(Palmerheim). **WRMI** 9955 f/d "Everglades Nat-

**NOTES: Denis Pasquale** says that he now has a little more time for DXing again. Reception seems to be running hot and cold but not quite as good as was predicted. Hopefully it will improve. He also wants to start sending out more reception reports. Its a good time for follow up reports also...Sam. **Paul Brouillette** says he has about 20 reports currently outstanding but at least he has gotten some replies. Sometimes its like a crap shoot...Sam. **Mickey Delmage**, VP of CIDX, says that he has been a NASWA member for many years but has never gotten around to sending in any reports for the Column. I'm very glad to have you with us and keep the reports flowing in...Sam.

via Constanti

Radio

# IRAQ

INT. BAGHDAD

We thank you for your reception report and are pleased to confirm that you have heard our station on RF. CR. TX at 20.28 - 20.10 GMT on 13.860 kHz SPD

Sincerely yours,  
**A** PRIORITAIRE PAR AVION  
*Rifisityarpiö*

**ICW** ICELANDIC NATIONAL BROADCASTING SERVICE  
 HAFSLUNDUR ESTABLISHED 1.100 REKJAVIK

20 ISLAND 20

*Norman Constanti*

3578 HWY T

Rosebud, Missouri

63091 - U.S.A.

TEL. 802 886 - 271 REKJAVIK - ICELAND - 0-112

ional Park" cd. in 75 ds. w/ schedule and sticker. v/s Jeff White.(Humenyk). **Radio Free Asia** 11590 (Dushanbe), 9330 (KWHR) and 7550 (Kamo) f/d personal ltr. w/o sites in 1 wk. after a f/up rpt. Sticker and schedule rcvd.(Field)

**USA (Pirates):** next QSL Column...Sam.

**UZBEKISTAN: Radio Tashkent** 1775 f/d cd. from the Soviet era in 9 wks. for a US dollar.(Tilbury). 6025, 5975, 7285 and 7105 f/d cd. in 3 mo. on my 2nd try. (Field-MI).

**VATICAN CITY: Radio Vatican** 15570 f/d cd. in 69 ds. for 1 IRC.(Griffin-VA). 9585 f/d "Transmitter/Tower" cd. in 3 mo.(Barto-CT).

**WEST BERLIN: Deutschland: Radio Berlin** 6005 f/d orange "Logo" cd. w/ station info., pens and stickers in 3 mo. for \$1.00(returned). (Loudell-DE).

We actually had a full Column this month. Best of QSLing.....

*Sam*

# Net Notes

Tom Sundstrom

P.O. Box 2275  
Vincentown, NJ 08088-2275  
Fax: 609-859-3226  
Internet: trs@trsc.com  
http://www.trsc.com

There is a good source for the transmission schedules of Radio Kuwait<sup>1</sup> now. The page is on the Web servers of the Ministry of Information.

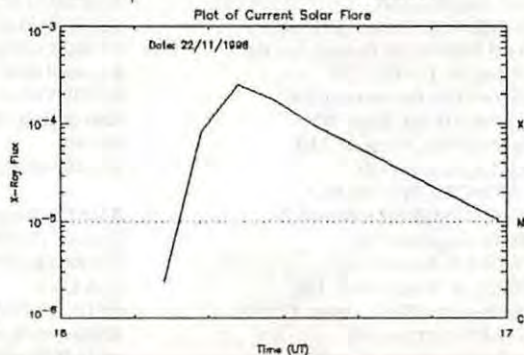
Those of you active on the Internet know of the long-running Drake R8 in North Carolina that you can tune and listen to audio clips with a Web browser. Now there is a virtually complete compilation of all such receivers on the Web, compiled by a Danish radio amateur.<sup>2</sup>

On Sunday, Nov 22 a number of us were "chatting" online in the #swl IRC channel<sup>3</sup> and I was listening to some great music from Porgy and Bess on the BBC-Africa service on 15400. At 1619 UT, within 30 seconds the signal disappeared completely, as did all other signals on the

HF spectrum.

It was a flare, and Mark Fine pointed us to a page on the IPS Australia Web site. The "Real Time SWF Coverage Prediction"<sup>4</sup> page provides a map of the impact and a link to a second page<sup>5</sup> that updates every 30 seconds with the flare intensity as it rises and falls in magnitude. The flare ended at 1700 UT.

Very interesting, indeed!

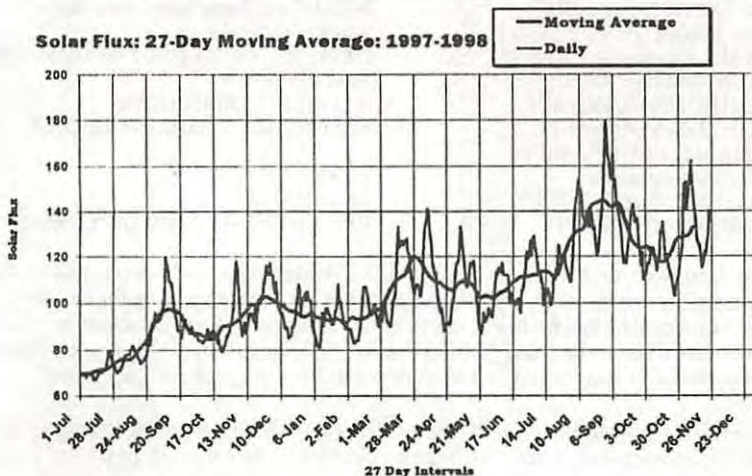


<sup>1</sup> [www.molinfo.gov.kw/ENG/FREQ/SW.htm](http://www.molinfo.gov.kw/ENG/FREQ/SW.htm)    <sup>4</sup> [www.ips.gov.au/asfc/current/rtalf.html](http://www.ips.gov.au/asfc/current/rtalf.html)

<sup>2</sup> [www.qsl.net/oe3mzc/receivers.html](http://www.qsl.net/oe3mzc/receivers.html)

<sup>5</sup> [www.ips.gov.au/asfc/current/track.html](http://www.ips.gov.au/asfc/current/track.html)

<sup>3</sup> [www.trsc.com/irc\\_faqs.html](http://www.trsc.com/irc_faqs.html)



# Contributors' Page

Fred S. Kohlbrenner  
2641 S. Shields St.  
Philadelphia, PA 19142  
Internet: fkohl@ix.netcom.com


## DEADLINE FOR CONTRIBUTIONS IS THE 10th OF THE MONTH

The following members sent in contributions:

Brian ALEXANDER, Mechanicsburg, PA  
John BOONE, Spring, TX  
Ralph BRANDI, Tinton Falls, NJ  
David CLARK, Thornhill, ONTARIO  
Peter COSTELLO, Matawan, NJ  
Rich D'ANGELO, Wyomissing, PA  
Ralph FAMULARO, Hyogo-ken, JAPAN  
Kris FIELD, HORSHAM, PA  
Bob FRASER, Cohasset, MA  
Hugh GRIFFIN, Jr, Portsmouth, VA  
Bob HILL, Littleton, MA  
Mark HUMENYK, Weston ONTARIO  
Fred KOHLBRENNER, Philadelphia, PA  
David KRAUSE, Eastlake, OH  
Harold LEVISON, Philadelphia, PA  
George MAROTI, Mt. Kisco, NY  
William McGUIRE, Cheverly, MD  
Jim MOATS, Ravenna, OH  
Winter MONGES, VENEZUELA  
Bob MONTGOMERY, Levittown, PA  
Gary NEAL, Sugarland, TX  
Ed NEWBURY, Kimball, NE  
Jay NOVELLO, Wake Forrest, NC  
Takayuki Inoue NOZAKI, Tokyo, JAPAN  
Marina PAPPAS, Huron, SD  
Stephen PITTS, Minnetonka, MN  
Bob RAYMOND, Nashua, NH  
Chuck RIPPEL, Cornland, VA  
Betsy ROBINSON, Clinton, TN  
Conrad ROUTH, Chamblee, GA  
Giovanni SERRA, Rome, ITALY  
John SGRULETTA, Mahopac, NY  
Bill SMITH, Mineola, TX  
Mike STRAIN, Bayville, NJ  
Ed TILBURY, Ankorage, AK  
Fred TRESHER, Philadelphia, PA  
Patrick VAN LOO, Washington, DC  
Mark VELDHIUS, NETHERLANDS  
Gerald WITHAM, Keaau, HI  
Terry WOLF, Bellville, OH  
Dan ZIOLKOWSKI, Hanburg, NY

R8B AOR AR-7030 100' LW  
R8 70' LW  
R8A NRD-515/SE-3 ANC-4 Carolina Beam  
AR3030 DX-390 YB400 70' LW Tun-4A  
R8 FL-3 200+500' beverages  
ICF-SW55 ATS-803A R5000 LW  
R8 SP600 beverages  
Sony ICF-2003 ICF-SW100S 2m LW  
DX150B LW  
Sony 2010 120' dipole at 35'  
Magnavox D-2935 AN-60 DX-SWL sloper  
R8 NRD-525 Datong FL-3 AD Sloper  
Kenwood R600  
R8 R70 YB400  
Sony 2010 10/45m dipoles MFJ-956 tuner  
DX-380  
DX-440 48' indoor LW  
R388 DX Pro active antenna  
Grundig YB-400  
WJ-1000 R8 G' Sloper 20' loop  
R8A LW's  
NRD515 NRD535 FRG7000  
R8 Eavesdropper  
NRD-535D FRG-7 Eavesdropper RW Loop  
DX-398 20m 5/8 wave vertical  
WJ-HF1000A R8B R390A/SE-3 51S-1 LW's  
Sony 2010 Indoor antenna  
NRD-535D AD 60' Sloper  
NRD-525 AD Sloper  
NRD-515 AD Sloper Moseley trap dipole  
R8B R70 51J4 Beverage  
DX380, 390, 394, 398 FRG-7 MFJ-1020B LW  
AOR-7030 80' LW  
ATS-818 Sony 2010 FRG-7700  
R8B FRG-100 DX-390 Delta Loop Dipole  
R8 ANC-4 135' LW  
Sony 2010 LW  
R8 Sloper SPS NRF-7 SEM QRM Eliminator

Loggings from Kris Field, Rich D'Angelo, Bob Montgomery, and I were made while on a Dxpedition to French Creek State Park near Reading, PA. Also attending for the first time was NASWA member Ed Mauger. It was our first trip to this park, and the lack of the underbrush and thorn bushes we're used to at Gifford Pinchot Park made stringing antennas there almost a pleasure. We've already scheduled another trip to French Creek for December.

I'd like to thank our members who have taken the time to contribute to the Journal over the past year, and I wish everyone in the club Seasons Greetings and a very Happy New Year! 

# Tropical Band Loggings

**Sheryl Paszkiewicz**  
P.O. Box 152  
Manitowoc, WI 54221-0152  
spaszkie@msn.com

- 2310 AUSTRALIA ABC 10/9 0910 interview, ment Australia, Canberra, 0930 nx (Ziol-NY) 11/13 1300 poor (Smit-TX)
- 2325 AUSTRALIA ABC 11/13 1300 poor (Smit-TX)
- 2410 NEW GUINEA R Enga 10/13 1144 presumed, tlk, mx (Pitt-MN)
- 2485 AUSTRALIA ABC 11/13 1300 poor (Smit-TX) 10/11 1540 election results (With-HI)
- 2850 N KOREA KCBS 10/12 1550 KR vcls, ID //3220 (With-HI)
- 3025 N KOREA Frontline Soldiers R 10/11 KR 1605 drama (With-HI)
- 3210 COSTA RICA REE 11/16 0100 ID, cmtry (Boon-TX)
- 3220 ECUADOR HCJB 10/29 0230 tlk, ID (Rout-GA)
- 3223 INDIA AIR Shimla 10/11 1610 HD tlks, p-f (With-HI)
- 3224.9 PERU Luz y Sonido 11/3 1018 folk mx, tlk (TIN-JP)
- 3235 NEW BRIT RWNB 11/1 1151 ID, C&W, s/off anmts (Maro-NY)
- 3250 HONDURAS Luz y Vida 11/16 0045 ID, tlk, rustic mx (Boon)
- 3280 ECUADOR LV del Napo 10/12 0920 QU huaynos, band mx (Robi)
- 3289.8 GUYANA Vo Guyana 11/14 0305 song abt Carib. PSA (Nove-NC) 11/8 0353 ID, clear (Fiel-PA) 10/4 0745 VOA pgm Issues in the Nx, lcl ID ment 5950 too, big band mx (Alex-PA) 10/24 0345 EG sports pgm, call ins (Krau-OH)
- 3290 CHINA CNR 10/11 1550 slow tlk, pops, march 1600\* (With-HI)
- 3315 INDIA AIR Bhopal 11/7 0102 tlk, SC vcls (Kohl-PA) 11/7 0050 great vcl pgm, f-g (D'An-PA) 10/21 \*0025 IS not // 5010, pretty weak (Nove-NC)
- 3320 N KOREA PBS 10/16 1655 regional mx, ID, nx (With-HI)
- 3324.8 GUATEMALA R Maya 10/18 1110 Indian mx, jazz, ads (With-HI)
- 3325 SUMATRA RRI Palangkaraya 11/13 1226, tlk, mx (Smit-TX) ID?
- 3345 INDIA AIR Jaipur 10/22 \*0025 IS, Vande Mataram song (Nove)
- 3380 GUATEMALA R Chortis 10/178 1145 sports, mx, nx (With-HI)
- 3395 SUMATRA RRI Bandar Lampung 11/8 2159 tlk, IS, nx (Sgru-NY)
- 3905 IRIAN JAYA RRI Merauke 11/1 1200 SCI, ID nx (Maro-NY) 11/8 1159 SCI, talk but no ID so presumed (Fiel-PA) 11/8 0122 Big Band show, ID 0204 (Kohl-PA) 11/8 1136 C&W, instl SCI nx (D'An-PA) 10/29 1258 SCI, TP, ID, nx (Pitt-MN)
- 3976.1 KALIMANTAN RRI Pontianak 11/1 1515 ballads, IN tlk, ID, p-f (Veld-NETH)
- 4405 N KOREA RP 10/25 1700 SP IS, ID, nx, poor (With-HI)
- 4606.4 IRIAN JAYA RRI Serui 10/13 1258 SCI, TP, ID, nx (Pitt-MN)
- 4635 TAJIKISTAN TR 10/21 0100 string IS, Inja Dushanbe ID Nove
- 4735 CHINA Xinjiang 11/14 \*1100 IS, ID, IS, anmt, mx (Nove-NC)
- 4748.3 PERU R Huanta 2000 11/14 1058 ad string, ID (Nove-NC)
- 4753.3 SULAWESI RRI U-P 11/7 2117 IN tlk, hymn, SCI (Fiel-PA) 11/7 2020-2144 carrier cut, mx, tlk abt U-P (D'An-PA) 11/13 1233 tlk, fair (Smit-TX)
- 4760 AND ISL AIR Pt Blair 10/25 1130 ID, film mx (Nove-NC)
- 4770 NIGERIA Kaduna 2210 EZL.mx, ID (Smit-TX) 10/31 0500 lang w/Afr mx (Tres-PA)
- 4777.1 JAVA RRI Jakarta 11/7 2148 vcls, SCI, Jak nx (D'An-PA) 11/13 1233 fair w/pops (Smit-TX)
- 4779.8 ECUADOR R Oriental 10/20 1030 ID, mx (Robi-TN)
- 4789.1 IRIAN JAYA RRI Fak-Fak 11/9 1155 lagu, anmts, SCI, ID Nove
- 4790.4 PAKISTAN AKR 11/8 0214 tent w/tlk, ME mx, should have checked earlier, tnx Kohl (D'An-PA)

- 4810 **ARMENIA** *Vo Armenia* 11/4 2112 GM closing anmts, addr, chime IS, IDs //9965 (Hill-MA)
- 4815 **BURKINA FASO** *RTV* 2228 tlk, poor (Smit-TX)
- 4820 **BOTSWANA** *RB* 11/8 0325 //7255 (Fiel-PA) 10/31 0515 lang cmtry (Tres-PA)
- 4820 **HONDURAS** *LV Evangelica* 10/5 0330 rel pgm, EG ID (Boon-TX) I'm sorry I accidentally omitted yr logs last month but did send yr name to Fred—sp
- 4824.4 **PERU** *LV de la Selva* 11/7 \*0948 lively OA mx, echo IDs Kohl 11/3 \*0953 salsa, greeting, ID musica chicha (TIN-JP) 11/4 1000 ID, tlk, vcls, clear (Ziol-NY) 10/28 0227 mx, ID (Rout-GA)
- 4825 **GUATEMALA** *R Mam* 20/6 0045 SP marimbas (Rout-GA)
- 4828 **ZIMBABWE** *ZBC* 11/9 2140 instl, anmts, gone after 2200 (Nove-NC)
- 4830 **VENEZUELA** *R Tachira* 11/16 0200 pops, ID (Boon-TX)
- 4835 **MALI** *RTM* 2217 tlk (Smit-TX)
- 4840 **INDIA** *AIR Mumbai* 10/20 0040 sitar, film song, ads (Nove-NC)
- 4840.1 **VENEZUELA** *R Valera* 1-0/23 0109 tlk, mx, ID (Rout-GA)
- 4845.1 **GUATEMALA** *R Kekchi* 11/13 1230 good vcls (Smit-TX) 10/2 2350 ballads/pops, ID, drama (Alex-PA)
- 4850 **CHINA** *CNR* 11/4 2146 tlk, mx //7770 & 9064 (Hill-MA)
- 4855.6 **PERU** *R La Hora* 11/5 2320 live cmtry, poss parade, IDs Nove
- 4860 **INDIA** *AIR Delhi* 10/12 1221 SC mx, TP, EG ID, nx (Pitt-MN)
- 4870 **BENIN** *ORTB* 2243 solo vcl, p-f (Smit-TX) 10/31 0500 FR mx cmtry (Tres-PA)
- 4870 **ECUADOR** *LV del Upano* 11/6 0203\* anmts, ID, NA (D'Ang-PA) 10/29 0145 ID, anmts (Rout-GA)
- 4874.4 **IRIAN JAYA** *RRI Sorong* 10/30 0950 lagu lagu lcl ID (TIN-JP) 11/3 1150 Elvis, Leo Sayer, SCI (Nove-NC)
- 4875 **BRAZIL** *R Roraima* 10/6 0359 mx, ment Boa Vista (Rout-GA)
- 4880 **BANGLADESH** *RB* 11/9 1202 SC songs, tlk, fade 1225 (Nove-NC)
- 4890 **PAPUA** *NBC* 11/18 1300 listeners ltrs, cmtry, oldies (Boon) 10/20 1100 ID, nx, pops, ads for positions at various PNG stations (Ripp-VA) 10/19 1125 Mary Chapin Carpenter, YL anncr (Nove-NC) 11/13 1222 fine mx, booming in (Smit-TX) 10/19 1100 ID, job opportunities, Mary Chapin Carp (Robi)
- 4895 **INDIA** *AIR Kurseong* 11/14 \*1130 IS, vcls, pretty good (Nove)
- 4895 **SARAWAK** *RTM* 11/13 1326 tlk, poor (Smit-TX)
- 4915 **BRAZIL** *R Anhanguera* 10/27 0011 ID, backgd tlk (Sgru-NY)
- 4915 **GHANA** *GBC* 2222 tlk & mx (Smit-TX)
- 4919 **ECUADOR** *R Quito* 10/7 0300 ID, anmts, mx (Boon-TX)
- 4920 **INDIA** *AIR Chennai* 11/14 \*1200 IS, tlk, S9 (Nove-NC)
- 4920 **IRAQ** *R Baghdad* 11/8 2325 vcls & strings, TP nx ID (Nove-NC)
- 4925 **SUMATRA** *RRI Jambi* 11/7 \*2156 lcl ID, SCI, ID, nx abt Jambi choir, preaching (D'An-PA) 11/1 1509\* nx, promo, 1509 went off, good (Veld-NETH)
- 4930.6 **HONDURAS** *R Int'l* LA vcls EZL 10/12 (Ripp-VA)
- 4935 **KENYA** *KBC* 10/27 2104\* pop mx, anmts, ID, TP (Kohl-PA)
- 4935 **PERU** *R Tropical* 11/14 1113 nx, corres rpts, IDs (Nove-NC) 10/17 1010 fair sig, chicha & sev ads in Tarapoto (TIN-JP)
- 4940 **CHINA** *Vo Strait* 11/7 2132 CH tlk & lively mx (D'Ang-PA)
- 4955 **COLOMBIA** *R Nacional* 11/16 0230 romantic ballads, ID, Caracol nx (Boon-TX) 0201 EG Ids, Sam mx (Krau)
- 4960.1 **DOM REP** *R Cima* 10/18 0220 guitar/vcls, ID (Nove-NC) 11/2 0045 full ID, was trying for AIR Ranchi (Sgru-NY)
- 4964.7 **PERU** *R San Miguel* 11/6 1001 huaynos, ID, TC (D'An-PA) 10/26 1007 Andean mx, ment Cusco, weak (Ziol-NY)
- 4965 **ZAMBIA** *Christian Vo* 11/4 2250 pops, nx, tone (Nove-NC)

- 4971 PERU R *Imagen* 11/3 0934 "El Tatu Tatu Madrugador" pgm (TIN)
- 4975 PERU R *del Pacifico* 11/16 0400 ID, rel pgm (Boon-TX) 10/17 1003 vcls, tlks fair (Ziol-NY)
- 4980 VENEZUELA *Ecos del Torbes* 11/17 0300 long tlk, ID, mx (Boon 10/7 0230 SP tlk, LA pops (Boon-TX))
- 4990 INDIA AIR *Itanagar* 11/5 1200 low key vcls, noisy (Nove-NC)
- 4990.9 PERU R *Ancash* 10/28 0907 NA, anmts, ID, vcls (Kohl-PA)
- 4990.9 SURINAM R *Apintie* 10/12 0300 non-Latin mx (Ripp-VA)
- 4995.6 PERU R *Andina* 11/6 1014 ID, woman shouting (D'An-PA)
- 5010 INDIA AIR *Thiru.* 11/2 0040 SC mx, strong (Sgru-NY) 10/21 \*0020 IS, EG nx, vy good (Nove-NC)
- 5011.7 DOM REP R *Cristal* 10/3 0236\* continuous tlk so presumed rel & class mx, NA (Alex-PA)
- 5015 TURKMENISTAN R *Asgabat* 11/9 2105 strings, pops (Nove-NC) 11/6 2258 exotic mx (Kohl-PA)
- 5018.7 PERU R *Horizonte* 11/3 1120 cumbia peruana, poor (TIN-JP) 11/8 0009 lively mx, lds, TCs (D'An-PA) 11/6 0010 flute led mx, canned ID, church remote (Nove-NC)
- 5020t SOL ISL *SIBC* 11/13 1242 OC but no audio (Smit-TX)
- 5025 PERU R *Quillabamba* 10/17 1000 good w/folk mx, TC, ID (TIN) 11/6 0115 presumed in Rebelde's absence (Nove-NC)
- 5027.1 PAKISTAN *Quetta* 11/6 0117 Koran, urgent tlk, no Cuba (Hill)
- 5030 COSTA RICA *AWR* 10/23 0003 EG rel, asked for rpts (Levi-PA)
- 5030 SARAWAK *RTM* 11/13 1223 tlk, vcls (Smit-TX)
- 5035 BRAZIL R *Aparecida* 10/27 2357 mx ID (Rout-GA)
- 5035 CENT AFR REP R *Cent.* 2233 poor, tent w/Brazil QRM (Smit)
- 5040 GEORGIA *RG* 11/9 2150 Scott Joplin, IS (Nove-NC)
- 5040 INDIA AIR *Jeypore* 11/6 0030 ID, lcl mx, tlk nx (Mont-PA) pres 10/24 0015 tone, IS, TP, nx (Sgru-NY) 11/7 \*0025 OC Hindi vcls, TP, ID, nx (D'An-PA) 10/25 \*0025 IS, Vande Mataram song (Nove-NC)
- 5050 INDIA AIR *Aizawl* 11/14 \*1130 tlk (Nove-NC)
- 5050 TANZANIA *RT* 11/7 0200 AR prayer, SH tlk, ID, mx (Kohl-PA)
- 5054 COSTA RICA *Faro del Caribe* 11/17 0400 rel pgm (Boon-TX)
- 5054.9 FR GUIANARFO 10/18 2230 zouk, ragga, Montell Jordan Let's Ride, ID (Nove-NC)
- 5100.1 LIBERIA R *Liberia* 11/15 2145 western pop mx, reggae, insp tlk, IDs (Bran-NJ) 11/5 2125 nx, lds, hlife, TC (Kohl)
- 5145 CHINA *CRI Hohhot* 11/1 1318 RS tlk, mx, tnx van Rooy (Veld-NETH) Tnx & tnx to Marie for forwarding
- 5305 PERU R *La Inmaculada* 11/7 1120 "Alegre Despertar" & ID TIN
- 5522.2 PERU R *Sudamerica* 11/5 0020 Andean mx, phone ins ID (Kohl) 1120 11/3 fair ID, TC (TIN-JP)
- 5745 USA *WHRI* 10/6 0100 anmts, ID, rel pgm (Rout-GA)
- 5760.3 PERU R *Sorocucho* 11/8 0958 s/on routine, lds, TCs (D'An)
- 5770 NICARAGUA R *Miskut* 10/23 0130 beaut sig reggae, EG Carib accented anncr (Nove-NC)
- 5825 USA *WEWN* 10/6 0200 rel pgm, ID (Rout-GA)
- 5835 KALININGRAD R *Ned* 11/6 \*2027-2125\* IS ID, TP, DT pgm, pop mx, nx & sports (Kohl-PA) 11/6 2127\* DT pgm, saxophone, ID 2 min of dead air b4 s/off (D'An-PA)
- 5865 BULGARIA *RB* 10/31 0237 tlk, ID (Rout-GA)
- 5875 ENGLAND *BBC* 10/6 0109 ID (Rout-GA)
- 5880 VATICAN *VR* 11/1 0445 tlk, IS, ID (Rout-GA)
- 5885 VATICAN *VR* 11/1 0500 IS anmts, ID (Rout-GA)

# International Band Loggings

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- 5975 **UZBEKISTAN R Tashkent** in EG 0100, quiz questions, mx, vcls, ID's, g (Robinson TN 10/18)
- 6010 **MEXICO R Mil** in SP 0832-0915, L Am mx, SP rock tune, frequent ID's, TC (Kohlbrener PA 10/14)
- 6020 **UKRAINE RUI** Kiev in EG 0100, nx, cmntry, ID, class mx, pops, //5905, 7205 (Alexander PA 10/31)
- 6025 **DOMINICAN REPUBLIC R Amanacer** in SP 1210, relig hymns, QRM R Marti (Novello NC 10/20)
- 6070v **CHILE V Christiana** in SP 0130-0305+, L Am mx, contemp relig mx, ID's, tlks, poor with lots of slop from adjacent channel, //11690 and 96304 with the best signal (Alexander PA 10/10)
- 60999v **ALBANIA R Tirana** in Albanian 1330, TP, ancmt, ID, lcl nx, f-g (Serra ITALY 10/10)
- 61151 **ALBANIA R Tirana** in EG 0330 (new time), nx, ID, press review, lcl mx, //7160 (Alexander 10/31)
- 6120nf **GERMANY R Vilnius** Lithuania relay Julich in EG 0030-0059\*, s/on ancmts, ID, nx, cmntry, lcl mx, nx cmntry re whether or not to close power plant, s vg (Alexander PA 10/31, Krause OH 11/2)
- 6130 **LAOS Lao Nat'l R** in lang 1143, lcl pop mx, long tlk, IS, clock tower bells, ID, nx (Marou NY 11/8)
- 6135 **BOLIVIA R Santa Cruz** in SP 0909, ID, pan flute mx, w/male vcl, p but clear (Ziolkowski NY 10/13)
- 6155 **UNITED KINGDOM R Japan** relay in EG 0051, cmnts on recycling paper, exc (Levison PA 10/14)
- 6188 **PERU R Oriente** in SP 1005, anmts, TC's, ads, ID's, NA, L Am mx (Kohlbrener PA, D'Angelo PA)
- 62501 **PERU L V de Andahuaylas** in SP 2216, ID, tlks, mx, nx, abruptly off 2245 (Montgomery PA 10/28)
- 6265 **ZAMBIA ZNBC Lusaka** in EG/lang 0249, IS, NA, "Radio One" ID, fgy, mx, sked (Kohlbrener 11/7)
- 66748v **PERU R Impacto** in SP 0007, DJ w/rustic vcls, ID's, p (D'Angelo PA 11/7) in SP \*1101-1145 f/o, NA, very long ID, fgy, and TC, ancd nominal fgy as 6675 but fgy varies, QRM (Nozaki JAPAN 11/3)
- 67977v **PERU R Ondas del Rio Mayo** in SP 0030, ID, nice mx, extreme fades (Montgomery 10/28) in SP 1015 Andean mx/flutes, tlks, outlet for MW 1490, lcl ads (Kohlbrener PA 11/7, Nozaki JAPAN 11/3)
- 66186v **PERU R Super Sensacion** in SP 1042, ID's, a TC's, huaynos mx (D'Angelo PA 11/6, Nozaki JP 11/3)
- 70406v **PERU R San Ignacio** in SP 2340, lks, promos, OA folk mx, clear ID, CWQRM (Alexander PA 10/2)
- 7125 **GUINEA RTV Guineenne Conarky** in FR 2255, long tlks, ID, mx, g (Raymond NH 11/3)
- 7130 **BOSNIA R Yugoslavia** relay in EG 0200, nx, cmntry, ID, p w/QRM from DW (Alexander PA 11/1)
- 71499v **ALBANIA RTV Shqiptar HIS** in AL 1011, continuous lcl pop songs, f/g (Serra ITALY 10/10)
- 7150nf? **GERMANY Int'l Broadcast Corp** (site?) in EG 0055, cmntry on SE Asia, ID 0056 (Costello NJ 11/5)
- 7170 **UNITED KINGDOM Merlin Net One** in EG 2230, rock mx, ID's, ads (Costello NJ, Krause OH 10/20)
- 7190nf **TURKEY V of Turkey** in EG 2215, feature on "Last Week in Turkey", exc (Fraser MA 10/12)
- 7200 **YUGOSLAVIA RTV Srbije** Belgrad in Serbian 1018, string mx, ID, folk songs (Serra ITALY 10/10)
- 7210 **BELARUS R Minsk** in EG 0205, ID's, nx, mx by lcl artist, fgy, QTH, //11670 (Kohlbrener 10/16)
- 7250 **RUSSIA V of Vietnam** relay Armavir in VT 0100, ID, nx?, harp notes, g (Robinson TN 10/19)
- 7250nf **HUNGARY R Budapest** in EG 2218, shortwave DX show, couple of ID's, g (Krause OH 11/1)
- 7255 **BOTSWANA R Botswana** in lang \*0247, barnyard animal cowbells IS, choral anthem, multi-lingual s/ on anmts including EG, tlk in lang, //4820, both signals fair (Alexander PA 10/25)
- 7255 **NIGERIA V of Nigeria** in EG 0635, pgm re Nigerian banking system, //15120 (Alexander PA 10/17) in EG 0500, Afro mx w/hand & chorus (Newbury NE 10/29) in lang? 2252, g (Strain NJ 10/17)
- 7260 **CHINA China R Int** Baoding in SH 1710, world nx, 10 sec cutoff @ 1720, //11960 (Witham HI)
- 7285 **GERMANY Deut Welle** in EG 0158, IS, ID, "Newslink", press review, f, //6035 (Moats OH 10/31)
- 7295nf **IRAN VOIRI** Teheran in Bosnian 1745, phone rpt, ID 1801, //7340, 9615, 11655 (Witham HI 10/15)
- 7350 **CHINA Heilongjiang PBS** Harbin in CH 1024-1130\*, drama pgm?, segments of CH operatic mx, poor signal mostly unreadable at s/off (Kohlbrener PA 11/8, Field MI 1/8)
- 7425 **BULGARIA R Bulgaria** Sofia in RS \*1900, IS, s/on anmts, ID's, world nx, f (Famularo JAPAN 11/6)
- 7500 **ROMANIA R Moldova** relay in EG 0355\*, nx, cmntry, ID, lcl mx, into lang 0400, p (Alexander 10/31)
- 7515nf **TAJIKISTAN Tajik R** Dushanbe in lang 1828-1900\*, Asian vcls, mournful sels, tlk, ID (Hill MA 11/1)
- 77458 **PERU R Cristal** in SP 2345-0200+, tlk, nice OA folk mx, surprisingly strong sig (Alexander PA 10/2)
- 8098nf **ARGENTINA R Rivadavia** in SP 2255, tlks, brief mx segments, "Radio Rivadavia" ID's at 2300, but after 2305 heard several mentions of "RAE Internacional", p (Kohlbrener PA 10/14)
- 9165v **AZERBAIJAN R Azerbaijan** in lang \*0215, IS thrice, ID mentioning Azerbaijan, choral anthem, vocal mx, nx (Rippel VA 10/18, Novello NC 10/19) in EG 1705-1731, tlk mostly unclear, many ments of Azerbaijan, anmts & lcl chant, nx, mx, poor audio (Serra ITALY 10/12, Raymond NH 10/31)

- 9200 **SUDAN S/NBC** Omdurman in AR \*0247, IS, NA, TP, tk in lang, Koran, f (Alexander PA 10/25)
- 9385 **GUAM KSDA** Agat Adventist World Radio in AR 1625-1700, relig pgm, replaces 9355 for AR xmsn, ments of Cyprus QTH, mx bks, familiar IS, fqys, ID's in AR/EG 1659, website (Treibel WA 11/11)
- 9465nf **CZECH REPUBLIC R Prague** in EG 0000, nx, wx rpt, "Current Affairs", mail, ID (Krause OH 11/7)
- 9480 **CZECH REPUBLIC R Prague** in EG 0334, nx, into classical mx, QRM 9475 (Sgrulletta NY 10/18)
- 9485 **BULGARIA RB** Sofia in EG 0000, IS, ID, nx, wx, cmnts on oil pipeline (Levison PA, Trescher PA)
- 94898 **ABKHAZIA R Abkhazia** Sukhumi in lang \*0329, IS thrice, ID "Govorit Sukhum", electronic pop mx theme "Children" by Robert Miles, into nx?, surprisingly strong S-9 signal! (Novello NC 10/18)
- 9505 **KAZAKHSTAN Kazakh Radio 2** in lang? 1240, stringed instrument and soaring male vcl, // to the Kiev relay on 11720, IS? tune at 1300 (Novello NC 10/22)
- 9550 **BANGLADESH R Bangladesh Betar** in EG 1230, regional nx, ID, lcl chants, QRM co-channel RHC all three reporters indicate distorted and/or poor reception (Kohlbrener PA, Witham HI, Serra ITALY)
- 9570 **ROMANIA RRI** Bucharest in RS \*1500, IS, ID, nx?, f-p (Famularo JP 11/1) in EG 2320, cmntry on local economy, tk on Romanian youth center, ID, rock mx, sports rpt (Krause OH, Levison PA)
- 9580 **AUSTRALIA RA** in EG 1235, interview author of "leftist" book on US problems (Newbury NE 10/14)
- 9580 **HUNGARY R Budapest** in EG 0100, ID, "Hungary Today", nx re NATO & Yugo (McGuire MD 10/6)
- 9610 **TAIWAN R Taipei Int'l** in EG \*1200, ID's in CH/EG, pips, "Taipei Magazine", f (D'Angelo PA 11/6)
- 9620nf? **UKRAINE Kazakh R** via Kiyev in lang? 1205, guitar mx, male vcls, //11720, g (Novello NC 10/19)
- 9640 **VENEZUELA Ecos del Torbes** in SP 2124, live soccer, //4980, buried 2130 by AWR\* (Hill MA 11/1)
- 9655 **TURKEY V of Turkey** in EG 0300, fqys, sked, world & national nx (McGuire MD 9/22) in EG 1235, commentator: re Cyprus saying "Greek side is quite wrong", f (Newbury NE 12/15)
- 9660nf **ECUADOR HCJB** Quito in FR 0045-0059\*, presumably repl for 9415 rptd in Passport 99. Actually, this is a return to 9660 which was last logged at this QTH during Summer '90, exc (Treibel WA 11/13)
- 9675 **PAPUA NEW GUINEA NBC** Port Moresby in EG 1220, "Friday Evening Music" island style chorals some C&W, ID's, using their alt fqy to 4890 on rptd date (Novello NC, Kohlbrener PA, both 10/23)
- 9690 **SPAIN China R Int'l** in EG 0315, ID, rpt on Asian econ crisis, features (Newbury NE, Levison PA)
- 97042 **ETHIOPIA R Ethiopia** in Vern 1245, tks, AR & pop mx, f (Trescher PA 10/31, Kohlbrener 10/15)
- 9840 **VIETNAM V of Vietnam** in EG 1333-1358\*, tks, vcls, no ID, //120196 (Ziolkowski NY 10/10)
- 9895 **UNITED KINGDOM Merlin Network One** in EG 0300, rock mx, ads, ID's, exc (Krause OH 11/3)
- 9900nf **CENTRAL AFRICAN REPUBLIC R Minurca** in EG/FR 1930-2105, faint bits of mx at first but signal improved at 2000, hi-life & Afro pop mx continued, ID in FR twice at 2043, QTH?, f-p signal with splatter from 9895 (Kohlbrener 10/10) also rptd by Johnson CO & Vaghjee MAUR — CUMBRE DX
- 9990v **EGYPT R Cairo** in EG 2323, nx, cmntry on tourism in Egypt, g (Raymond NH 11/8)
- 110925 **ST HELENA RSH** in EG 2000-2319\*, aned last annual pgm, phone calls from around the world, mx, E-mail QTH, ID, QSL info (Pappas SD, Strain NJ, Krause OH, Newbury NE all on 10/24)
- 11530 **LEBANON V of Hope** in EG/langs 1745, EG ID between pgms in other langs, g (Novello NC 10/22)
- 11595 **GREECE FTH** Athens in EG 2340, world nx, ID, fqys, GK mx (Krause OH 10/17)
- 11600 **CHINA R France Int'l** relay Xi'an in EG 1207, Afr & ME nx, nx abt France, ID, p (Krause OH 10/24)
- 11600 **CZECH REPUBLIC R Prague** in EG 2250, "The Arts" - Festival of Theatricals, g (Fraser MA 10/14)
- 11625nf **GUAM KSDA** Agat in EG \*1530, New fqy for Adventist World Radio "The World of Hope", ID, features, mx, E-mail address, into VT service 1600, g (Treibel WA 11/6)
- 11635 **PHILIPPINES FEBC** in EG 0935, "In Touch" relig pgm, ID, QTH at 0959, f (Kohlbrener PA 11/6)
- 11655 **NETHERLANDS RN** Flevoland in EG 1843, cmntry on Taiwan/China negotiations (Levison 10/16)
- 11660nf **FRENCH GUIANA Swiss R Int'l** relay in SP 2330 moving up a notch from listed 11650. Two OM's in animated discussions, Several ID's, fqy, and musical IS at 0000 sign off (Treibel WA 11/6)
- 11675 **NEW ZEALAND RNZI** in EG 1810, "Sounds of the South Pacific", promo, ID's, interview re politics in Fiji, song by the Crowded House, surprise to hear on ECNA early afternoons (Novello NC 10/22)
- 11675 **CHINA China Radio Int'l** in EG 1225, rpt from developing countries, econ nx, //11980 (Fraser 10/11)
- 11700 **HUNGARY R Budapest** in EG 2114, Shortwave DX pgm, ID's, g (Wolf OH 10/7)
- 117082v **SAUDI ARABIA BSKSA** in AR 1730, Qur'an pgm, distorted audio but good strength (Novello 11/12)
- 11710 **NORTH KOREA R Pyongyang** in EG 2129, usual propaganda, good pop mx, p (Raymond NH 11/1)
- 11710 **ARGENTINA RAE** Buenos Aires om EG 0200, nx of OAS, tango mx, g (Robinson TN 10/20) in SP 0238, L Am mx, tks in SP, several ments of MW "Radio Nacional Salta", ID (Kohlbrener PA 11/6)
- 11715nf **ITALY RAI** Rome in EG 2025, lcl pop mx, ID, f, //1115, 9670 both poor (Alexander PQA 10/31)
- 117341 **TANZANIA V of Tanzania Zanzibar** in SH 2100\*, indigenous mx with M East flare, s/off with NA, fair sig but required LSB to avoid QRM from 11735. S/off 1 hr later than usual (Alexander PA 10/3)
- 11755nf **CANADA Merlin Network One** relay in EG \*2000, "Rock Radio Network Review Show" with hard rock mx, studio guests, rock mx tk, promos, E-mail QTH, phone (Moats OH 10/30, Krause OH 10/25)

- 11800 ITALY RAI Rome in IT 2303, classical music selections, very little talk, IS, exc (Levison PA 10/8)
- 11810 ANTIGUA Deut Welle relay in SP 0238, singing in GM, classical mx, g (Newbury NE 10/11)
- 11815 BRAZIL R Brasil Central in PT 0015, ID, tk by OM, singing jingle, f, //4985 (Ziolkowski NY 10/17)
- 119026 SRI LANKA SLBC in lang 0025, chant by 2 OM's, ID, lcl mx, bad audio, p (Ziolkowski NY 10/17)
- 119043 CAMBODIA National Voice of Cambodia in lang 1239-1311\*, flute IS, pgm sked?, SEA mx, xmtr off after a very brief anmnt, QRM disappears after s/off (Rippel VA 11/11, Maroti NY 11/1)
- 119547 ANGOLA R Nacional de Angola in PT0125, US/UK pop/country mx (Novello NC 11/4) in PT 0457 hi-life mx, nx w/mentions of Angola, heavy splatter from 11960, f-p (Famularo JAPAN 11/6)
- 12015 GABON R France Int'l relay in EG 1615, peace negotiations re Congo, //15210 (Newbury NE 10/17)
- 120197 VIETNAM V of Vietnam in EG 1020, tkls by OM/YL, //9840, into lang 1030, p (Ziolkowski 10/27)
- 12030 FRANCER France Int'l in EG 1403, nx re int'l conference, ID, TC's, f (Famularo JAPAN 11/2)
- 12065 RUSSIA R Nederland relay Petropavlovsk in IN 1235, ID's, solid clear singing (Wolf OH 10/4)
- 12085 MONGOLIA V of Mongolia Ulan Bator in EG/CH \*1200, IS, s/on in CH, long tkls to 1230 change to EG pgming, IS repeated 3 times at 1230, ID in EG, sked, fqys, feature on student athletic competition, interviews, local mx (D'Angelo PA, Kohlbrenner PA, Montgomery PA, Rippel VA, Novello NC)
- 12130nf SOUTH AFRICA Adventist World Radio relay Meyerton in EG 1730-1800\*, relig pgm, sermon by OM w/Hindu accent. New fqy represents move from 12135 listed in PWBR 99, mail QTH in Nairobi, Kenya given at s/off, IS, ID's in multiple languages (Treibel WA 11/11)
- 13625nf INDIA AIR in EG 2306, YL on Indian political maneuvering, ID, g-f (Famularo JAPAN 11/5)
- 13650 GERMANY RVI Belgium relay in EG 1730, ID, European nx & wx, fqy, sked, p (Witham HI 10/25)
- 13670nf NETHERLAND ANTILLES RVI Belgium relay in EG 2227, IS, ID, fqys, "Radio World", skeds for RVI pgms, "World of Radio" DX pgm (Moats OH 10/25, Krause OH 10/25)
- 13730 AUSTRIA RAI Vienna in EG 1245, rpt on Central European Intuitive Meeting, exc (Fraser MA 10/12)
- 13830 SWEDEN R Sweden in EG 2038, "Sweden Today", topics going on in Sweden, vg (Krause OH 10/17)
- 15040 INDIA AIR Aligarh in EG 1025, tkls by OM, clear but weak, //11735, 13700, 11585 (Ziolkowski 11/4)
- 15050 COSTA RICA RFPFI in EG 0300, ID, interview re environmental destruction in Siberia (Witham OH 10/25)
- 15110 KUWAIT R Kuwait in EG 0546, 80's rock/pop mx, fqys, world nx 0600, f (Famularo JAPAN 10/25)
- 15120 NIGERIA V of Nigeria in EG 1035, nx, African drums, HCJB QRM wipe out \*1059 (Ziolkowski 11/4)
- 15125 TAIWAN R Taipei Int'l in EG 1313, domestic nx, wx rpt, "Taiwan Today", f-p (Famularo JP 10/28)
- 15130 NORTH KOREA R Pyongyang in SP 0146, ID, Korean military mx, flutter fade (Ziolkowski 10/27)
- 15150 CANADA RCI in EG 2145, tk on Quebec polit history, sked, inmailbag (Newbury NE, Famularo JP)
- 15155 FRANCERFI in EG 1230, nx headlines, "Discovery", med feature, sked, //11600 (Moats OH 10/27)
- 15160 ALGERIA RTV Algerienne in EG 1606, nx, mx breaks, ID 1610, pop/rock mx (Serra ITALY 10/2)
- 15185 TURKEY V of Turkey in EG 1308, ID, mx, feature on Turkish food (Krause OH 10/24)
- 15200 UZBEKISTAN R Mashal (Uzbek Radio 2 pgm) in Uzbek 1037, chant, pop mx, //15165 (Serra 10/11)
- 15200 UNITED KINGDOM R Caroline via Merlin Network One in EG 1828-1859\*, pop mx pgm, Elton John tune, ID's, poor under co-channel AIR xmsn (Kohlbrenner PA 10/14)
- 15215nf SOUTH AFRICA Channel Africa in EG 0519, human rights in Africa, Capetown jr. high school students practice conflict resolution skills, ID, f-g (Famularo JAPAN 11/6)
- 15235 LIBYA R Jamahiriya in AR 1925, AR mx with heavy instruments, ID, f (Newbury NE 10/6)
- 15240 SWEDEN R Sweden in EG 1130, "Sounds Nordic", top 5 singles, exc (Robinson TN 10/19)
- 15250 SRI LANKA VOA relay in EG 0058, ID, IS, "VOA News Now", f-p, only 35 kw (Moats OH 10/31)
- 15300 THAILAND VOA relay in EG 0119, NFL football scores, NYC marathon, ID, f (Famularo JP 11/2)
- 154651 PAKISTAN RP in Urdu 1518, tk abt Islam, world nx, anmt, ID, NA, muffled audio (Serra 10/11)
- 15505 KUWAIT R Kuwait in AR 1028, tk abt Kosovo crisis, //15495, 13620, f (Serra ITALY 10/11)
- 15540nf VATICAN STATE Vatican R in EG 1350, "Echoes of the World", QRM 15535 (Krause OH 10/10)
- 15570 JAPAN R Japan Tokyo in EG \*0100, IS, pips, s/on xmsn to E Asia, //15590, p (Ziolkowski 10/26)
- 15700nf BULGARIA RB Sofia in EG 1200, IS, ID, sked, nx, econ review, sports, //17500 (Moats OH 11/3)
- 15820nf ARGENTINA R Rivadavia Buenos Aires in SP 1002, "Contacto Directo" a.m. nx (Nozaki JP 11/3)
- 17575 FRENCH GUIANA RFI relay in EG 1230, France to sign charter on minority langs, g (Fraser 10/12)
- 17605 NETHERLAND ANTILLES RN relay in EG 1938, Clinton impeachment inquiry (Newbury NE 10/6)
- 17620 FRENCH GUIANA RFI relay in FR 2326, songs from the opera "Carmen", exc (Levison PA 10/14)
- 17715nf CANADA RCI Sackville in EG 1337, ID's, CBC show on politics in Quebec (Krause OH 11/7)
- 17755nf TURKEY V of Turkey in Azerbaijani \*0830, IS, ID's, TP's, nx, f-p with QRM (Famularo JP 11/5)
- 17790 ROMANIA RRI Bucharest in EG 1324, pgm re sights to see in Bucharest, vp (Krause OH 10/10)
- 17815nf TURKEY V of Turkey in EG 1408, Turkish recipes, ID, TK mx, strong siig w/QRM (Krause 10/31)
- 17815 BRAZIL R Cultura in PT 2258, drums, full ID, fqys 2301, bossa nova style mx (Sgrulletta NY 10/27)
- 17830 ASCENSION IS BBC relay in EG 2003, Malaysia to address kiddie-porn problem (Newbury NE 10/6)

- 17835nf **PAKISTAN RP** in EG 1100, slow speed nx, India & Pakistan Def Ministers meet (Kohlbrenner 11/6)
- 17870nf **SOUTH AFRICA Channel Africa** in EG 1759, IS, ID, TP, fgy. regional nx bulletin, sports nx with features on World Cup bid and YL marathon runner, g (Moats OH 11/1)
- 17885 **UNITED ARAB EMIRATES Abu Dhabi** in AR, local chants, AR mx, //21630 (Serra ITALY 10/11)
- 18950nf **NORWAY RNI** in NO 1815, practically all tk in NO, ID in EG, interview?, exc (Levison PA 10/15)
- 21455usb **ECUADOR HCJB** Quito in EG 1418, "Key Light", relig tk, mail, ID, fgy, TP, f-p (Moats OH 10/28)
- 21460usb **COSTA RICA RFPI** in EG 1657, anms, ID, mx, QTH, p (Serra ITALY 10/12) in EG 2310, feature on catching fish using salt - pro & con, exc (Levison PA 10/14)
- 21500nf **TURKEY V of Turkey** in TK 0633, instrml mx, "Ankara" ID, econ tk, //21715 (Famularo JP 10/25)
- 21550 **UNITED KINGDOM Merlin Network One** in EG 1830, rock star interview, rock mx (Krause 10/31)
- 21670 **FINLAND YLE R Finland** in EG \*0730, ID, "Capital Cafe", no nx today, g-f (Famularo JP 11/1)
- 21695 **SRI LANKA D Welle** relay in EG 0626, rpt on poor Russian potato harvest, //17820 (Famularo 10/25)
- 21745 **CZECH REPUBLIC R Prague** in EG 1400, nx, wx rpt, "Encore" w/oldies mx, ID's (Krause OH 11/7)
- 21810 **SWEDEN R Sweden** in EG 1229, IS, ID, fgy, update on fire tragedy, "Spectrum", g (Moats OH 10/31)
- 26470 **USA WJFP Ft Pierce, FL** in EG 2023, Jumpin Joe w/numerous ads/PSAs, hip-hop mx w/anemts for continuous jazz station. Apparently simultaneous w/FM xmsns. Deep fades (D'Angelo PA 11/6)

## Clandestine, Tentatives, Presumed, or Unknown

- 6205 **UNIDENTIFIED** v/in to tk in lang 0225-0400+, classical mx, 6 pips 0300, Russian? (Alexander 10/10)
- 62398 **CLANDESTINE (Colombia) LV de la Resistencia** in SP 1059, vcl anthem, nice cumbias mx, telco-quality audio, Spanish lang version of "Seasons in the Sun", strong & clear sig (Novello NC 11/9)
- 7110nf? **SITE? R Liberty s/on w/multi-lingual ID's \*0258-0305+**, into unident lang 0300 (Alexander PA 11/1) ED: VOA sked lists RL s/on at 0300 in AR from Morocco relay. Could be a move down 1 MHz?
- 7201 **AFGHANISTAN(tent) V of Sharia** in lang? 1627, Qur'an recitations, tlks, p (Famularo JP 11/6)
- 7465nf? **CLANDESTINE (Tibet)** via Tajikistan? in lang? 1220, 5 note chime IS, Asian tune, ID, s/on tune was used throughout pgm as a bumper, IS few times before 1255 s/off (Novello NC 11/7)
- 79999 **CLANDESTINE V of Sudan** (p) in lang 0400, ments of Sudan, lcl folk mx, g (Alexander PA 10/31)
- 9165 **AZERBAIJAN(p) R Dada Gorgud?** in lang 0315-0359\*, RS classical mx, M East type mx, tlks, g (Alexander 10/31) in lang? 1259, mx bridge, ID?, tk, very weak but clear (Ziolkowski NY 10/10)
- 95684 **CLANDESTINE V of the Iraqi People** in lang? 2134, ME vcls, long tlks, ID, nx (D'Angelo PA 11/5)
- 11605 **CLANDESTINE V of Oromo Liberation** via Germany? in Amharic(p) 1745, flute & Mid East mx, abrupt cut-off at 1759, g (Witham HI 10/11)

## Listener's Notebook Extra

by Al Quaglieri

**NEPAL** On several occasions over the years, I have visited all of the main facilities of Radio Nepal. This is the answer to your query as mentioned in your bulletins.

1. **Singha Durbar.** This location is in the capital city Kathmandu. It was previously a school for the children of the royal family and it was taken over for use by Radio Nepal in 1951. The original transmitter here was a 250 watt shortwave unit. This facility was subsequently rebuilt and it is in use as the main offices and studios of Radio Nepal.

2. **Jawarlakhel.** This location is on the edge of Kathmandu. It was assumed in 1962 and the original shortwave transmitter was re-installed to this location and re-tuned to a mediumwave channel. Four more transmitters were installed here, each made by AWA in Australia. These were two at 5 kW on shortwave and two at 1 kW mediumwave. When the Khumaltar base was established, the units at Jawarlakhel were used only on an emergency basis and they were tested regularly just once each year. This facility is probably by now no longer in use.

3. **Khumaltar.** This location is further oput on the edge of Kathmandu, though by now the area may be already built up. It was opened in 1967 with a Marconi 100 kW for use on SW and a 5 kW for use on MW. Two additional 100 kW units from Harris were installed in 1977 & 1982, both for use on SW.

4. **Pokhara.** No SW transmitter has ever been in use at this location, though it had been under consideration. There is a 100 kW MW unit at Pokhara, which is located towards the middle of the country. It is a beautiful tourist location.

5. **Hariharpur.** This is an alternative name for the location of the SW base at Khumaltar and it is listed this way in Passport to World Band Radio, but not in the WRTVHB.

In view of the interest in this topic, we will present a "Station Profile" on Radio Nepal in "Wavescan" early in the New Year. All other major topics in Wavescan for the remainder of 1998 are already allocated. (Petersen, AWR, IN)

# English Schedules

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Prepared 17 Nov 1998.

|           |                              |           |           |           |           |           |           |
|-----------|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 0000-0015 | V. of Cambodia               | 11940.3as |           |           |           |           |           |
| 0000-0015 | Radio Japan                  | 6155.0eu  | 6180.0eu  | 9665.0af  | 11705.0na | 11815.0as | 13650.0as |
| 0000-0027 | Radio Prague Int'l           | 7345.0na  | 9465.0na  |           |           |           |           |
| 0000-0029 | tw hfa Radio Canada Int'l    | 6040.0am  | 9535.0am  | 11855.0am |           |           |           |
| 0000-0030 | Radio Cairo                  | 9900.0am  |           |           |           |           |           |
| 0000-0030 | Radio Thailand               | 9655.0af  | 9680.0va  | 11905.0af |           |           |           |
| 0000-0030 | BBC World Service            | 3915.0as  | 5965.0as  | 5970.0sa  | 5975.0am  | 6175.0na  | 6195.0as  |
|           |                              | 7110.0as  | 9410.0as  | 9590.0am  | 9915.0sa  | 11945.0as | 11955.0as |
|           |                              | 12095.0sa | 15280.0as | 15310.0as | 15360.0as | 17790.0as |           |
|           |                              | 7215.0as  | 9890.0as  | 11760.0as | 15185.0as | 15290.0as | 17735.0pa |
|           |                              | 17820.0as |           |           |           |           |           |
| 0000-0030 | VOA                          | 5995.0ca  | 6130.0ca  | 7405.0sa  | 9455.0ca  | 9775.0sa  | 11695.0ca |
| 0000-0030 | tw hfa VOA                   | 13740.0sa |           |           |           |           |           |
|           |                              | 7410.0as  | 9705.0as  | 9950.0as  | 11620.0as | 13625.0as |           |
| 0000-0045 | All India Radio, Delhi       | 11845.0am | 13650.0am | 15230.2am |           |           |           |
| 0000-0056 | Radio Pyongyang              | 5960.0am  | 9755.0na  |           |           |           |           |
| 0000-0059 | Radio Canada Int'l           | 9660.0pa  | 12080.0va | 15240.0pa | 17715.0as | 17750.0as | 17795.0va |
| 0000-0100 | Radio Australia              | 21740.0va |           |           |           |           |           |
|           |                              | 7375.0na  | 9485.0na  |           |           |           |           |
| 0000-0100 | Radio Bulgaria               | 15665.0as |           |           |           |           |           |
| 0000-0100 | KHBI Salpan, Marianas        | 3215.0na  | 5070.0na  | 7435.0na  | 13845.0na |           |           |
| 0000-0100 | WCCR Nashville TN            | 6085.0na  | 9505.0na  |           |           |           |           |
| 0000-0100 | WYFR Okeechobee FL           | 6165.0na  | 9845.0na  |           |           |           |           |
| 0000-0125 | Radio Netherlands            | 15450.0as |           |           |           |           |           |
| 0000-0200 | FEBC Manila                  | 6055.0na  |           |           |           |           |           |
| 0000-0200 | Radio Exterior de España     | 5825.0na  | 5850.0eu  |           |           |           |           |
| 0000-0200 | WEWN Birmingham AL           | 7535.0na  | 9430.0am  |           |           |           |           |
| 0000-0200 | WSHB Cypress Creek SC        | 6975.0va  | 15049.1va | 21460.1uf |           |           |           |
| 0000-0300 | R. for Peace Int'l           | 7395.0af  |           |           |           |           |           |
| 0000-0300 | WHRA Greenbush ME            | 17510.0as |           |           |           |           |           |
| 0000-0400 | KWHR Naalehu HI              | 11660.0as |           |           |           |           |           |
| 0000-0400 | Overcomer Ministries         | 7315.0am  |           |           |           |           |           |
| 0000-0400 | WHRI Noblesville IN          | 5745.0eu  |           |           |           |           |           |
| 0000-0400 | s tw hfa WHRI Noblesville IN | 5755.0eu  |           |           |           |           |           |
| 0000-0400 | m WHRI Noblesville IN        | 7355.0va  |           |           |           |           |           |
| 0000-0400 | WRNO New Orleans LA          | 11905.0na |           |           |           |           |           |
| 0000-0400 | WWBS Macon GA                | 3935.0do  | 7290.0do  |           |           |           |           |
| 0000-0500 | s a ZLXA New Zealand         | 5020.0do  |           |           |           |           |           |
| 0000-0500 | s a SIBC Solomon Islands     | 9545.0do  |           |           |           |           |           |
| 0000-0500 | s a SIBC Solomon Islands     | 9625.0do  |           |           |           |           |           |
| 0000-0600 | CBC Northern Service         | 3985.0eu  | 9560.0na  |           |           |           |           |
| 0000-0600 | Merlin Network One           | 5085.0am  | 6890.0uf  |           |           |           |           |
| 0000-0600 | WGTC McCaysville GA          | 9745.0na  | 12015.0na | 21455.0uf |           |           |           |
| 0000-0700 | HCJB Quito Ecuador           | 3925.0do  | 4890.0do  | 9520.0do  | 9675.0do  | 11880.0do |           |
| 0000-0700 | Na'l' BC, Papua NG           | 17675.0va |           |           |           |           |           |
| 0000-0715 | Radio New Zealand Int'l      | 3270.1af  | 3289.9af  |           |           |           |           |
| 0000-0705 | NBC Windhoek, Namibia        | 11950.0am |           |           |           |           |           |
| 0000-0800 | WINB Red Llon PA             | 4835.0do  |           |           |           |           |           |
| 0000-0830 | ABC Alice Springs            | 5025.0do  |           |           |           |           |           |
| 0000-0830 | ABC Katherine                | 4910.0do  |           |           |           |           |           |
| 0000-0830 | ABC Tennant Creek            | 6090.0am  |           |           |           |           |           |
| 0000-1000 | Caribbean Beacon             | 3289.8do  | 5949.4do  |           |           |           |           |
| 0000-1000 | Voice of Guyana              | 9955.0sa  |           |           |           |           |           |
| 0000-1000 | WRMI Miami FL                | 6150.0do  |           |           |           |           |           |
| 0000-1100 | SBC Radio 1, Singapore       | 7415.0na  |           |           |           |           |           |
| 0000-1100 | WBCQ Monticello ME           | 3945.0do  | 4960.0do  | 7260.0do  |           |           |           |
| 0000-1100 | Radio Vanuatu                | 5810.0va  |           |           |           |           |           |
| 0000-1400 | KAIJ Dallas TX               | 7295.0do  |           |           |           |           |           |
| 0000-1600 | RTM Radio 4, Malaysia        | 7510.0na  |           |           |           |           |           |
| 0000-1600 | KTBN Salt Lake City UT       | 11530.0me |           |           |           |           |           |
| 0000-2200 | Voice of Hope, Lebanon       | 4010.0eu  | 4050.0eu  |           |           |           |           |
| 0010-0020 | Kyrgyz Radio, Bishkek        | 6155.0eu  | 6180.0eu  | 9665.0af  | 11705.0na |           |           |
| 0015-0100 | Radio Japan                  | 6080.0as  | 7110.0as  | 9600.0as  | 15280.0as | 17790.0as |           |
| 0030-0045 | BBC English Teaching         | 7325.0na  |           |           |           |           |           |
| 0030-0100 | ORF Vienna                   | 6120.0na  |           |           |           |           |           |
| 0030-0100 | Radio Vilnius, Lithuania     | 9655.0as  | 11905.0as | 13695.0na |           |           |           |
| 0030-0100 | Radio Thailand               | 5965.0as  | 5970.0sa  | 5975.0am  | 6175.0na  | 6195.0as  | 9410.0as  |
| 0030-0100 | BBC World Service            | 9590.0am  | 9915.0sa  | 11955.0as | 15310.0as | 15360.0as |           |
|           |                              | 5995.0ca  | 6130.0ca  | 7405.0sa  | 9455.0ca  | 9775.0sa  | 11695.0ca |
|           |                              | 13740.0sa |           |           |           |           |           |
| 0030-0100 | tw hfa VOA                   | 6055.0am  | 7260.0af  | 9022.0am  | 9685.0ca  |           |           |
|           |                              | 6005.0as  | 9730.0as  | 15425.0as |           |           |           |
|           |                              | 15280.0as | 17790.0as |           |           |           |           |
|           |                              | 7150.0na  |           |           |           |           |           |
|           |                              | 6010.0na  | 9675.0na  | 11800.0na |           |           |           |
| 0030-0430 | VOIRI Teheran                | 6200.0na  | 7345.0na  |           |           |           |           |
| 0030-0430 | Sri Lanka B'casting Corp.    | 5940.0na  |           |           |           |           |           |
| 0045-0100 | BBC English Teaching         | 5930.0na  | 7300.0ca  | 9440.0sa  |           |           |           |
| 0050-0100 | Int'l BC Tamil               |           |           |           |           |           |           |
| 0050-0110 | RAI, Rome                    |           |           |           |           |           |           |
| 0100-0127 | Radio Prague Int'l           |           |           |           |           |           |           |
| 0100-0127 | Voice of Vietnam             |           |           |           |           |           |           |
| 0100-0130 | Radio Slovakia Int'l         |           |           |           |           |           |           |

|           |          |                           |           |           |           |           |           |           |  |
|-----------|----------|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--|
| 0100-0130 |          | Swiss Radio Int'l         | 9885.0na  | 9905.0na  |           |           |           |           |  |
| 0100-0130 |          | VOA                       | 7115.0as  | 7200.0as  | 9740.0as  | 9850.0as  | 11705.0as | 15250.0as |  |
|           |          |                           | 15300.0as | 17740.0as | 17820.0as |           |           |           |  |
| 0100-0130 | twhf a   | VOA                       | 5995.0ca  | 6130.0ca  | 7405.0sa  | 9455.0ca  | 9775.0sa  | 13740.0sa |  |
| 0100-0130 | m        | Voice of Deliverance      | 6155.0na  |           |           |           |           |           |  |
| 0100-0130 |          | Radio Tashkent            | 5955.0as  | 5975.0as  | 7105.0as  | 7285.0as  | 9540.0as  |           |  |
| 0100-0130 | mtwhf a  | Radio Yugoslavia          | 7115.0na  |           |           |           |           |           |  |
| 0100-0150 |          | Deutsche Welle            | 5960.0am  | 6040.0na  | 6145.0am  | 9640.0am  | 9700.0na  |           |  |
| 0100-0200 |          | Radio Australia           | 9660.0pa  | 12080.0va | 15240.0pa | 15415.0as | 17715.0va | 17750.0as |  |
|           |          |                           | 17795.0va | 21740.0va |           |           |           |           |  |
| 0100-0200 | s        | Good News World Radio     | 6155.0va  |           |           |           |           |           |  |
| 0100-0200 |          | Voice of Indonesia        | 9525.0va  | 11784.9na |           |           |           |           |  |
| 0100-0200 |          | Radio Japan               | 6150.0af  | 11860.0as | 11870.0af | 15325.0as | 15570.0as | 15590.0as |  |
|           |          |                           | 17685.0pa | 17810.0as | 17835.0sa | 21670.0pa |           |           |  |
| 0100-0200 |          | Radio Ukraine Int'l       | 5905.0eu  | 6020.0eu  | 6030.0na  | 6080.0eu  | 7150.0na  | 7205.0eu  |  |
|           |          |                           | 7420.0eu  | 9560.0eu  | 9610.0eu  |           |           |           |  |
| 0100-0200 |          | BBC World Service         | 5965.0as  | 5970.0sa  | 5975.0am  | 6175.0na  | 6195.0as  | 9410.0as  |  |
|           |          |                           | 9590.0am  | 9915.0sa  | 11955.0as | 12095.0sa | 15280.0as | 15310.0as |  |
|           |          |                           | 15360.0as |           |           |           |           |           |  |
| 0100-0200 |          | WYFR Okeechobee FL        | 6065.0na  | 9505.0na  | 15165.0as |           |           |           |  |
| 0100-0500 |          | Radio Havana Cuba         | 6000.0na  | 9820.0na  | 13605.0uf |           |           |           |  |
| 0100-0500 |          | WWCR Nashville TN         | 3215.0na  | 5070.0na  | 5935.0na  | 7435.0na  |           |           |  |
| 0130-0150 |          | Voice of Greece           | 7430.0na  | 7450.0na  | 9375.0na  | 9420.0na  |           |           |  |
| 0130-0200 |          | ORF Vienna                | 7325.0na  | 9495.0sa  | 9870.0sa  |           |           |           |  |
| 0130-0200 |          | Radio Myanmar             | 7185.0do  |           |           |           |           |           |  |
| 0130-0200 |          | Radio Sweden              | 7265.0af  | 9435.0as  |           |           |           |           |  |
| 0130-0200 |          | VOA                       | 7115.0as  | 7200.0as  | 7405.0    | 9740.0as  | 9775.0    | 9850.0as  |  |
|           |          |                           | 11705.0as | 15250.0as | 15300.0as | 17740.0as | 17820.0as |           |  |
| 0130-0200 | twhf a   | VOA                       | 5995.0ca  | 6130.0ca  | 9455.0ca  |           |           |           |  |
| 0140-0200 |          | Vatican Radio             | 7335.0au  | 9650.0au  |           |           |           |           |  |
| 0200-0205 |          | Croatian Radio, Zagreb    | 9925.0na  |           |           |           |           |           |  |
| 0200-0210 |          | Radio Bangladesh          | 4880.0as  |           |           |           |           |           |  |
| 0200-0230 |          | Radio Budapest            | 6135.0na  | 9835.0na  |           |           |           |           |  |
| 0200-0230 |          | Radio Myanmar             | 7185.0do  |           |           |           |           |           |  |
| 0200-0230 |          | Radio Yugoslavia          | 7130.0na  |           |           |           |           |           |  |
| 0200-0250 |          | Deutsche Welle            | 6035.0as  | 7225.0as  | 7285.0as  | 9615.0as  | 9765.0as  | 9815.0as  |  |
| 0200-0256 |          | Radio Romania Int'l       | 6155.0na  | 9570.0na  | 7195.0as  | 9510.0as  | 9690.0as  | 11940.0as |  |
| 0200-0259 |          | Radio Canada Int'l        | 6155.0am  | 9535.0am  | 9755.0na  | 9780.0am  | 11865.0am |           |  |
| 0200-0300 | twhf a   | RAE Buenos Aires          | 11710.0am |           |           |           |           |           |  |
| 0200-0300 | twhf a   | RD Nacional de Colombia   | 4955.0am  |           |           |           |           |           |  |
| 0200-0300 |          | Radio Korea               | 11715.0sa | 11810.0sa | 15575.0na |           |           |           |  |
| 0200-0300 |          | Voice of Russia           | 7180.0na  | 9865.0na  | 9875.0na  | 12020.0na |           |           |  |
| 0200-0300 |          | Radio Taipei Int'l        | 5950.0na  | 7130.0as  | 9680.0na  | 11740.0am | 11745.0va | 11825.0pa |  |
|           |          |                           | 15345.0as |           |           |           |           |           |  |
| 0200-0300 |          | BBC World Service         | 5970.0sa  | 5975.0am  | 6175.0na  | 6185.0am  | 9410.0as  | 9605.0as  |  |
|           |          |                           | 9770.0af  | 9915.0sa  | 11955.0as | 15280.0as | 15310.0as | 15360.0as |  |
| 0200-0300 |          | VOA                       | 7115.0as  | 7200.0as  | 9740.0as  | 9850.0as  | 11705.0as | 15250.0as |  |
|           |          |                           | 15300.0as | 17740.0as | 17820.0as |           |           |           |  |
| 0200-0330 |          | Radio Cairo               | 9475.0am  |           |           |           |           |           |  |
| 0200-0330 |          | KJES Vado NM              | 7555.0na  |           |           |           |           |           |  |
| 0200-0400 |          | WSHB Cypress Creek SC     | 5850.0na  | 7535.0va  |           |           |           |           |  |
| 0200-0400 |          | WYFR Okeechobee FL        | 6065.0na  | 9505.0na  |           |           |           |           |  |
| 0200-0500 |          | Radio Australia           | 9660.0pa  | 12080.0va | 15240.0pa | 15415.0as | 15510.0va | 17715.0va |  |
|           |          |                           | 17750.0as | 21725.0pa |           |           |           |           |  |
| 0200-0900 |          | Kenya BC Corp             | 4885.0do  | 4935.0do  |           |           |           |           |  |
| 0200-1000 |          | WEWN Birmingham AL        | 5825.0na  |           |           |           |           |           |  |
| 0215-0220 |          | Radio Nepal, Katmandu     | 3230.0as  | 5005.0as  |           |           |           |           |  |
| 0230-0245 |          | Radio Pakistan            | 9470.0as  | 11975.0as | 13609.2as | 15486.0as |           |           |  |
| 0230-0245 |          | BBC English Teaching      | 9825.0as  | 15405.0as | 17790.0as |           |           |           |  |
| 0230-0257 |          | Voice of Vietnam          | 5940.0na  |           |           |           |           |           |  |
| 0230-0300 |          | Radio Sweden              | 7280.0af  | 9455.0na  |           |           |           |           |  |
| 0230-0330 |          | Radio Pilipinas, Manila   | 11885.0pa | 15120.0pa | 15270.0pa |           |           |           |  |
| 0245-0300 |          | Radio Tirana, Albania     | 6115.0na  | 7160.0na  |           |           |           |           |  |
| 0245-0300 |          | BBC English Teaching      | 5995.0am  | 6110.0am  | 7235.0af  | 7325.0ca  | 9515.0am  | 9610.0af  |  |
|           |          |                           | 11865.0af |           |           |           |           |           |  |
| 0250-0300 | f        | Voice of Greece           | 7430.0na  | 7450.0na  | 9375.0na  | 9420.0na  |           |           |  |
| 0250-0310 |          | Vatican Radio             | 7305.0ca  | 9605.0am  |           |           |           |           |  |
| 0300-0305 |          | Croatian Radio, Zagreb    | 9925.0na  |           |           |           |           |           |  |
| 0300-0325 |          | Channel Africa, S. Africa | 9525.0af  |           |           |           |           |           |  |
| 0300-0327 |          | Radio Prague Int'l        | 7345.0na  | 9435.0na  |           |           |           |           |  |
| 0300-0329 |          | Radio Canada Int'l        | 6155.0na  | 9755.0na  | 9780.0na  |           |           |           |  |
| 0300-0330 | sm w f a | Radio Minsk, Belarus      | 7105.0eu  | 7210.0eu  |           |           |           |           |  |
| 0300-0330 |          | Malawi B'casting Corp.    | 3380.0do  |           |           |           |           |           |  |
| 0300-0330 | mtwhf a  | Radio Mexico Int'l        | 5985.0na  | 9705.0na  |           |           |           |           |  |
| 0300-0330 |          | Radio Thailand            | 9655.0am  | 11905.0am | 15460.0na |           |           |           |  |
| 0300-0330 |          | BBC English Teaching      | 15280.0as | 17760.0as | 21715.0as |           |           |           |  |
| 0300-0330 |          | BBC World Service         | 3255.0af  | 5975.0am  | 6005.0af  | 6175.0na  | 6185.0am  | 6190.0af  |  |
|           |          |                           | 6195.0eu  | 7160.0af  | 9410.0eu  | 11730.0af | 11760.0me | 11765.0af |  |
|           |          |                           | 11955.0as | 12095.0af | 15310.0as | 15360.0as | 17790.0as | 21660.0as |  |
|           |          |                           | 6035.0af  | 6080.0af  | 7105.0af  | 7290.0af  | 7340.0af  | 7415.0af  |  |
| 0300-0330 |          | VOA                       | 9575.0af  | 9885.0af  |           |           |           |           |  |
|           |          |                           | 4960.0af  |           |           |           |           |           |  |
| 0300-0330 | mtwhf    | VOA                       | 6045.0na  | 9535.0am  | 9640.0na  | 9700.0na  |           |           |  |
| 0300-0350 |          | Deutsche Welle            | 6990.0na  |           |           |           |           |           |  |
| 0300-0356 |          | China Radio Int'l         | 7375.0na  | 9485.0na  |           |           |           |           |  |
| 0300-0400 |          | Radio Bulgaria            | 5054.6ca  | 6175.0ca  | 9645.0ca  |           |           |           |  |
| 0300-0400 |          | TIFC Costa Rica           | 3249.5ca  |           |           |           |           |           |  |
| 0300-0400 | sm       | HRPC Honduras             |           |           |           |           |           |           |  |
| 0300-0400 |          | Radio Japan               | 17810.0as | 17825.0ca | 21610.0pa |           |           |           |  |
| 0300-0400 |          | Voice of Russia           | 5940.0na  | 7180.0na  | 9865.0na  | 9875.0na  | 12020.0na |           |  |
| 0300-0400 |          | Radio Taipei Int'l        | 5950.0na  | 9680.0na  | 11745.0as | 11825.0as | 15345.0as |           |  |

|           |        |                             |           |           |           |           |           |           |  |  |
|-----------|--------|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--|--|
| 0300-0430 |        | Radio Cultural, Guatemala   | 3300.0do  | 5955.0do  |           |           |           |           |  |  |
| 0300-0500 |        | WHRA Greenbush ME           | 7465.0af  |           |           |           |           |           |  |  |
| 0300-0530 |        | Zimbabwe BC Corp.           | 3306.0do  | 4828.0do  |           |           |           |           |  |  |
| 0300-0600 |        | Australian Armed Forces     | 14790.0uf | 15635.0uf |           |           |           |           |  |  |
| 0300-0600 |        | Radio Botswana              | 3356.0do  | 4820.0do  | 7255.0do  |           |           |           |  |  |
| 0300-0600 |        | KVOH Los Angeles CA         | 9975.0am  |           |           |           |           |           |  |  |
| 0300-0600 | s      | a Italian Radio Relay Svc   | 7120.0va  |           |           |           |           |           |  |  |
| 0300-0600 |        | Radio Rwanda                | 6055.0do  |           |           |           |           |           |  |  |
| 0300-0600 |        | Radio Uganda                | 4976.0do  |           |           |           |           |           |  |  |
| 0300-0700 |        | University Network          | 6155.0eu  | 12065.0as | 13645.0as |           |           |           |  |  |
| 0300-0800 | mtwhfa | WMLK Bethel PA              | 9465.0eu  |           |           |           |           |           |  |  |
| 0300-1200 |        | R. for Peace Int'l          | 6975.0va  | 15049.1va |           |           |           |           |  |  |
| 0300-2210 |        | Zambia Nat'l BC Corp.       | 6165.0do  | 6265.0do  |           |           |           |           |  |  |
| 0310-0315 | t hfa  | Kyrgyz Radio, Bishkek       | 4010.0do  | 4050.0do  |           |           |           |           |  |  |
| 0310-0340 |        | Vatican Radio               | 7360.0af  | 9660.0af  |           |           |           |           |  |  |
| 0329-0359 | sm     | Radio Canada Int'l          | 6155.0na  | 9755.0na  | 9780.0na  |           |           |           |  |  |
| 0330-0355 |        | Radio Moldova Int'l         | 7500.0na  |           |           |           |           |           |  |  |
| 0330-0357 |        | Radio Prague Int'l          | 9585.0as  | 11600.0as |           |           |           |           |  |  |
| 0330-0400 |        | Radio Tirana, Albania       | 6115.0na  | 7160.0na  |           |           |           |           |  |  |
| 0330-0400 | m      | La Voz Evangelica, Hond.    | 4819.2do  |           |           |           |           |           |  |  |
| 0330-0400 |        | Radio Budapest              | 9835.0na  | 11980.0na |           |           |           |           |  |  |
| 0330-0400 |        | Radio Pilipinas, Manila     | 13770.0pa | 15330.0pa | 17730.0pa |           |           |           |  |  |
| 0330-0400 |        | Radio Sweden                | 7115.0na  | 9435.0af  |           |           |           |           |  |  |
| 0330-0400 |        | Radio Dubai, UAE            | 12005.0na | 13675.0na | 15400.0na | 21485.0na |           |           |  |  |
| 0330-0400 |        | BBC World Service           | 3255.0af  | 5975.0am  | 6005.0af  | 6175.0na  | 6185.0am  | 6190.0af  |  |  |
|           |        |                             | 6195.0eu  | 7160.0af  | 9410.0eu  | 11730.0af | 11760.0me | 11765.0af |  |  |
|           |        |                             | 11955.0as | 12095.0af | 15280.0as | 15310.0as | 15420.0af | 17760.0as |  |  |
|           |        |                             | 17790.0as | 21660.0as |           |           |           |           |  |  |
| 0330-0430 |        | Radio Tanzania              | 5050.0af  |           |           |           |           |           |  |  |
| 0330-0430 |        | VOA                         | 6035.0af  | 6080.0af  | 7105.0af  | 7290.0af  | 7340.0af  | 7415.0af  |  |  |
|           |        |                             | 9575.0af  |           |           |           |           |           |  |  |
| 0340-0350 |        | Voice of Greece             | 7430.0na  | 7450.0na  | 9375.0na  | 9420.0na  |           |           |  |  |
| 0345-0400 |        | Radio Burundi               | 6140.0do  |           |           |           |           |           |  |  |
| 0345-0400 |        | Radio Tajikistan            | 7245.0as  | 9905.0as  | 11620.0as |           |           |           |  |  |
| 0400-0405 |        | Croatian Radio, Zagreb      | 9925.0na  |           |           |           |           |           |  |  |
| 0400-0415 | mtwhf  | Cameroon Radio-TV           | 4850.0va  |           |           |           |           |           |  |  |
| 0400-0425 |        | Voice of Vietnam            | 5940.0na  | 7270.0na  | 7400.0na  | 9839.9na  | 12019.5na |           |  |  |
| 0400-0427 |        | Radio Prague Int'l          | 9955.0na  |           |           |           |           |           |  |  |
| 0400-0429 |        | Radio Canada Int'l          | 6150.0me  | 9505.0me  | 9645.0me  |           |           |           |  |  |
| 0400-0430 | s      | a Voice of Armenia, Yerevan | 4810.0eu  |           |           |           |           |           |  |  |
| 0400-0430 | m whf  | Radio Mexico Int'l          | 5985.0na  | 9705.0na  |           |           |           |           |  |  |
| 0400-0430 |        | Voice of Russia             | 5920.0na  | 6065.0na  | 7125.0na  | 7180.0na  | 9850.0na  | 12000.0na |  |  |
|           |        |                             | 12020.0na | 13640.0na |           |           |           |           |  |  |
| 0400-0430 | s      | Voice of Russia             | 12060.0na |           |           |           |           |           |  |  |
| 0400-0430 |        | Channel Africa, S. Africa   | 5955.0af  |           |           |           |           |           |  |  |
| 0400-0430 |        | BBC World Service           | 3255.0eu  | 3955.0eu  | 5975.0am  | 6005.0af  | 6175.0na  | 6180.0eu  |  |  |
|           |        |                             | 6185.0am  | 6190.0af  | 6195.0eu  | 7160.0af  | 9410.0eu  | 11760.0me |  |  |
|           |        |                             | 11765.0af | 11955.0as | 12095.0af | 15280.0as | 15310.0as | 15420.0af |  |  |
|           |        |                             | 15575.0as | 17760.0as | 17790.0as | 21660.0as |           |           |  |  |
| 0400-0445 |        | WYFR Okeechobee FL          | 6065.0na  | 9505.0na  | 9985.0as  |           |           |           |  |  |
| 0400-0450 |        | Deutsche Welle              | 6015.0af  | 6065.0af  | 7225.0af  | 7280.0af  | 9565.0af  |           |  |  |
| 0400-0456 |        | China Radio Int'l           | 9730.0na  |           |           |           |           |           |  |  |
| 0400-0456 |        | Radio Romania Int'l         | 5990.0as  | 6155.0as  | 9570.0na  | 11740.0na | 11940.0na | 15335.0as |  |  |
| 0400-0500 |        | Radio Iraq Int'l            | 11785.0ir |           |           |           |           |           |  |  |
| 0400-0500 |        | Swiss Radio Int'l           | 9885.0na  | 9905.0na  |           |           |           |           |  |  |
| 0400-0500 |        | Voice of Turkey             | 6010.0as  | 7240.0va  | 9655.0va  | 21715.0as |           |           |  |  |
| 0400-0500 |        | Radio Ukraine Int'l         | 4820.0eu  | 6020.0eu  | 6030.0na  | 6080.0eu  | 7150.0na  | 7205.0eu  |  |  |
|           |        |                             | 7420.0eu  | 9560.0eu  | 9600.0eu  | 9610.0eu  |           |           |  |  |
|           |        |                             | 9695.0as  |           |           |           |           |           |  |  |
| 0400-0500 |        | Overcomer Ministries        | 7535.0eu  | 9840.0af  | 12020.0af |           |           |           |  |  |
| 0400-0600 |        | WSHB Cypress Creek SC       | 17780.0as |           |           |           |           |           |  |  |
| 0400-0700 |        | KWHR Naalehu HI             | 5755.0eu  | 7315.0am  |           |           |           |           |  |  |
| 0400-1000 |        | WHRI Noblesville IN         | 7395.0va  |           |           |           |           |           |  |  |
| 0400-1600 |        | WRNO New Orleans LA         | 6065.0do  |           |           |           |           |           |  |  |
| 0400-1600 |        | Christian Voice, Zambia     | 5975.0af  | 7235.0af  |           |           |           |           |  |  |
| 0425-0440 |        | RAI, Rome                   | 7500.0na  |           |           |           |           |           |  |  |
| 0430-0455 |        | Radio Moldova Int'l         | 3955.0eu  | 6180.0eu  | 6195.0eu  | 9410.0eu  | 6185.0am  | 6190.0af  |  |  |
| 0430-0500 | mtwhfa | BBC European Service        | 3255.0af  | 5975.0am  | 6005.0af  | 6175.0na  | 12095.0af | 15280.0as |  |  |
| 0430-0500 |        | BBC World Service           | 15310.0as | 15420.0af | 15575.0as | 17760.0as | 17790.0as | 21660.0as |  |  |
|           |        |                             | 3955.0eu  | 6180.0eu  | 6195.0eu  | 9410.0eu  |           |           |  |  |
| 0430-0500 | s      | BBC World Service           | 6035.0af  | 6080.0af  | 7170.0af  | 7290.0af  | 7415.0af  | 9575.0af  |  |  |
| 0430-0500 |        | VOA                         | 9775.0af  |           |           |           |           |           |  |  |
| 0430-0505 |        | TWR Swaziland               | 3200.0af  | 4775.0af  |           |           |           |           |  |  |
| 0430-0525 |        | Radio Netherlands           | 6165.0na  | 9590.0na  |           |           |           |           |  |  |
| 0430-0600 |        | Voice of Russia             | 5920.0na  | 6065.0na  | 7125.0na  | 7180.0na  | 9850.0na  | 12000.0na |  |  |
|           |        |                             | 12020.0na | 13640.0na |           |           |           |           |  |  |
| 0430-1000 |        | Radio Nigeria               | 3326.0do  | 3970.0do  | 4770.0do  | 4990.0do  | 6025.0do  | 6050.0do  |  |  |
|           |        |                             | 9570.0do  |           |           |           |           |           |  |  |
| 0445-0500 |        | WYFR Okeechobee FL          | 9985.0eu  |           |           |           |           |           |  |  |
| 0445-0915 |        | Ghana Broadcasting Corp.    | 3366.0do  | 4915.0do  |           |           |           |           |  |  |
| 0455-0825 |        | Voice of Malaysia           | 6175.0as  | 9750.0as  | 15295.0as |           |           |           |  |  |
| 0500-0505 |        | WWCR Nashville TN           | 2390.0na  | 5070.0na  | 5935.0na  |           |           |           |  |  |
| 0500-0505 | mtwhf  | WWCR Nashville TN           | 3215.0na  |           |           |           |           |           |  |  |
| 0500-0505 | s      | a WWCR Nashville TN         | 3210.0na  |           |           |           |           |           |  |  |
| 0500-0515 |        | Cameroon Radio-TV           | 4850.0va  |           |           |           |           |           |  |  |
| 0500-0515 |        | Kol Israel                  | 7465.0va  | 9435.0va  | 21620.0va |           |           |           |  |  |
| 0500-0515 |        | VOA                         | 5970.0af  | 6035.0af  | 6080.0af  | 7170.0af  | 7295.0af  | 9700.0af  |  |  |
|           |        |                             | 9775.0af  | 11825.0eu | 12080.0af | 15205.0me |           |           |  |  |
| 0500-0530 | w      | Malawi B'casting Corp.      | 3380.0do  |           |           |           |           |           |  |  |

|           |   |                           |           |           |           |           |           |           |  |
|-----------|---|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--|
| 0500-0530 |   | AWR Africa, Meyerton      | 5960.Oaf  | 6100.Oaf  |           |           |           |           |  |
| 0500-0530 |   | Channel Africa, S. Africa | 15215.Oaf |           |           |           |           |           |  |
| 0500-0530 |   | Swiss Radio Int'l         | 6165.Oeu  |           |           |           |           |           |  |
| 0500-0530 |   | BBC World Service         | 3255.Oaf  | 3955.Oeu  | 5975.Oam  | 6005.Oaf  | 6175.Oam  | 6180.Oeu  |  |
|           |   |                           | 6190.Oaf  | 6195.Oeu  | 7160.Oaf  | 9410.Oeu  | 9740.Oas  | 11760.Ome |  |
|           |   |                           | 11765.Oaf | 11955.Opa | 12095.Oeu | 15280.Oas | 15310.Oas | 15360.Oas |  |
|           |   |                           | 15420.Oaf | 15575.Oas | 17640.Oaf | 17760.Oas | 17790.Oas | 17885.Oaf |  |
|           |   |                           | 21660.Oas |           |           |           |           |           |  |
| 0500-0530 |   | Vatican Radio             | 9660.Oaf  | 11625.Oaf | 15570.Oaf |           |           |           |  |
| 0500-0550 |   | Deutsche Welle            | 6100.Ona  | 6120.Ona  | 6185.Ona  | 11795.Ona |           |           |  |
| 0500-0556 |   | China Radio Int'l         | 9560.Ona  |           |           |           |           |           |  |
| 0500-0556 |   | Radio Pyongyang           | 3560.Oeu  | 11710.1eu | 13790.Oeu |           |           |           |  |
| 0500-0556 |   | Radio Exterior de España  | 6055.Ona  |           |           |           |           |           |  |
| 0500-0600 |   | Radio Australia           | 9660.Opa  | 12080.Ova | 15240.Opa | 15510.Ova | 17715.Ova | 21725.Opa |  |
| 0500-0600 | s | a Radio Australia         | 17750.Oas |           |           |           |           |           |  |
| 0500-0600 |   | Radio Japan               | 6110.Ona  | 7230.Oeu  | 9835.Ona  | 11715.Oas | 11760.Oas | 11840.Oas |  |
|           |   |                           | 11850.Opa | 15230.Opa | 15590.Oas |           |           |           |  |
| 0500-0600 |   | Overcomer Ministries      | 9695.Oas  | 13810.Oas |           |           |           |           |  |
| 0500-0600 |   | WYFR Okeechobee FL        | 5985.Ona  | 9985.Oeu  | 11550.Oeu |           |           |           |  |
| 0500-0700 |   | Radio Havana Cuba         | 9550.Ona  | 9820.Ona  | 9830.Ouf  |           |           |           |  |
| 0500-0700 |   | Voice of Nigeria          | 7255.Oaf  | 15120.Oaf |           |           |           |           |  |
| 0500-0800 |   | Radio Kuwait              | 15110.Ova |           |           |           |           |           |  |
| 0500-0800 |   | SIBC Solomon Islands      | 5020.Odo  | 9545.Odo  |           |           |           |           |  |
| 0500-0800 |   | WHRA Greenbush ME         | 7435.Oaf  |           |           |           |           |           |  |
| 0500-1000 |   | Radio Liberia Int'l       | 5100.Odo  |           |           |           |           |           |  |
| 0500-1900 |   | ZLXA New Zealand          | 3935.Odo  |           |           |           |           |           |  |
| 0505-0600 |   | TWR Swaziland             | 3200.Oaf  | 4775.Oaf  | 9500.Oaf  |           |           |           |  |
| 0505-1100 |   | WWCR Nashville TN         | 2390.Ona  | 3210.Ona  | 5070.Ona  | 5935.Ona  |           |           |  |
| 0515-0530 | s | a BBC English Teaching    | 6135.Oaf  | 9515.Oaf  | 11940.Oaf |           |           |           |  |
| 0515-0530 |   | VOA                       | 5970.Oaf  | 6035.Oaf  | 6080.Oaf  | 7170.Oaf  | 7295.Oaf  | 9700.Oaf  |  |
|           |   |                           | 9775.Oaf  | 11825.Oeu | 12080.Oaf | 15205.Ome |           |           |  |
|           |   |                           | 6010.Oeu  | 7270.Oeu  | 9915.Oeu  |           |           |           |  |
|           |   |                           | 6015.Ona  | 6155.Oeu  | 13730.Oeu | 15410.Oeu | 17870.Oeu |           |  |
|           |   |                           | 4010.Odo  | 4050.Odo  |           |           |           |           |  |
|           |   |                           | 9655.Oeu  | 11905.Oeu | 15115.Oeu |           |           |           |  |
|           |   |                           | 15435.Oau | 17830.Oau | 21605.Oau | 21700.Oau |           |           |  |
|           |   |                           | 3955.Oeu  | 6180.Oeu  | 6195.Oeu  | 9410.Oeu  | 12095.Oeu |           |  |
|           |   |                           | 3255.Oaf  | 5975.Oam  | 6005.Oaf  | 6175.Oam  | 6190.Oaf  | 7160.Oaf  |  |
|           |   |                           | 9740.Oas  | 11760.Ome | 11765.Oaf | 11955.Opa | 15310.Oas | 15360.Oas |  |
|           |   |                           | 15420.Oaf | 15575.Oas | 17640.Oaf | 17760.Oas | 17885.Oaf | 21660.Oas |  |
|           |   |                           | 3955.Oeu  | 6180.Oeu  | 6195.Oeu  | 9410.Oeu  | 12095.Oeu |           |  |
|           |   |                           | 5970.Oaf  | 6035.Oaf  | 6080.Oaf  | 7170.Oaf  | 7295.Oaf  | 9700.Oaf  |  |
|           |   |                           | 9775.Oaf  | 11825.Oeu | 12080.Oaf | 15205.Ome |           |           |  |
| 0530-0600 | s | a BBC World Service       | 4828.Odo  | 5012.Odo  |           |           |           |           |  |
| 0530-0600 |   | VOA                       | 7145.Oaf  | 9710.Oaf  |           |           |           |           |  |
|           |   |                           | 4775.Oaf  | 9500.Oaf  |           |           |           |           |  |
|           |   |                           | 6155.Oaf  |           |           |           |           |           |  |
|           |   |                           | 4005.Oeu  | 5883.Oeu  | 7250.Oeu  |           |           |           |  |
|           |   |                           | 6090.Oua  | 6150.Oeu  | 9740.Oaf  | 9760.Ova  | 11905.Oaf |           |  |
|           |   |                           | 3380.Odo  |           |           |           |           |           |  |
|           |   |                           | 15215.Oaf |           |           |           |           |           |  |
|           |   |                           | 3955.Oeu  | 5975.Oam  | 6005.Oaf  | 6175.Oam  | 6180.Oeu  | 6190.Oaf  |  |
|           |   |                           | 6195.Oeu  | 7145.Opa  | 7160.Oaf  | 7325.Oeu  | 9410.Oeu  | 9740.Oas  |  |
|           |   |                           | 11760.Ome | 11765.Oaf | 11940.Oaf | 11955.Opa | 12095.Oeu | 15310.Oas |  |
|           |   |                           | 15360.Oas | 15420.Oaf | 15565.Oeu | 15575.Oas | 17640.Oaf | 17760.Oas |  |
|           |   |                           | 17790.Oas | 17885.Oaf | 21660.Oas |           |           |           |  |
|           |   |                           | 5970.Oaf  | 5995.Oaf  | 6035.Oaf  | 6080.Oaf  | 7170.Oaf  | 7285.Oaf  |  |
|           |   |                           | 11805.Oaf | 11825.Oeu | 11950.Oaf | 12080.Oaf | 15205.Ome | 15600.Oaf |  |
|           |   |                           | 11735.Oaf |           |           |           |           |           |  |
|           |   |                           | 6095.Ona  | 9530.Ona  | 11940.Ona |           |           |           |  |
|           |   |                           | 6045.Oaf  | 7225.Oaf  | 9565.Oaf  | 11785.Oaf | 17820.Oas | 21695.Ome |  |
|           |   |                           | 5975.Oeu  | 7230.Oeu  | 9835.Ona  | 11740.Oas | 11840.Oas | 11850.Opa |  |
|           |   |                           | 15590.Oas |           |           |           |           |           |  |
|           |   |                           | 9809.9do  |           |           |           |           |           |  |
|           |   |                           | 15460.Oau | 15470.Oau | 15525.Oau | 17570.Oau | 21790.Oau |           |  |
|           |   |                           | 6110.Oeu  | 13720.Oas |           |           |           |           |  |
|           |   |                           | 5985.Ona  | 7355.Oeu  |           |           |           |           |  |
|           |   |                           | 9780.3do  |           |           |           |           |           |  |
|           |   |                           | 3985.Ova  |           |           |           |           |           |  |
|           |   |                           | 9660.Opa  | 12080.Ova | 15240.Opa | 15415.Oas | 15510.Ova | 17715.Ova |  |
|           |   |                           | 17750.Oas | 21725.Opa |           |           |           |           |  |
|           |   |                           | 7535.Ova  | 9835.Oaf  |           |           |           |           |  |
|           |   |                           | 3316.Odo  |           |           |           |           |           |  |
|           |   |                           | 13810.Oas |           |           |           |           |           |  |
|           |   |                           | 5470.Odo  |           |           |           |           |           |  |
|           |   |                           | 7255.Odo  | 9600.Odo  |           |           |           |           |  |
|           |   |                           | 4775.Oaf  | 6100.Oaf  | 9500.Oaf  |           |           |           |  |
|           |   |                           | 6010.Oeu  | 9870.Oeu  |           |           |           |           |  |
|           |   |                           | 6015.Ona  |           |           |           |           |           |  |
|           |   |                           | 9850.Oeu  |           |           |           |           |           |  |
|           |   |                           | 6165.Oeu  |           |           |           |           |           |  |
|           |   |                           | 3955.Oeu  | 6195.Oeu  |           |           |           |           |  |
|           |   |                           | 5975.Oam  | 6005.Oaf  | 6175.Oam  | 6180.Oeu  | 6190.Oaf  | 7145.Opa  |  |
|           |   |                           | 7160.Oaf  | 7325.Oeu  | 9410.Oeu  | 9740.Oas  | 11760.Ome | 11765.Oaf |  |
|           |   |                           | 11940.Oaf | 11955.Opa | 12095.Oeu | 15310.Oas | 15360.Oas | 15420.Oaf |  |
|           |   |                           | 15565.Oeu | 15575.Oas | 17640.Oaf | 17760.Oas | 17790.Oas | 17885.Oaf |  |
|           |   |                           | 21660.Oas |           |           |           |           |           |  |
| 0630-0700 | s | a BBC World Service       | 3955.Oeu  | 6195.Oeu  |           |           |           |           |  |
| 0630-0700 |   | VOA                       | 5995.Oaf  | 7170.Oaf  | 11825.Oeu | 11950.Oaf | 15205.Ome |           |  |
| 0630-0700 | s | a VOA                     | 5970.Oaf  | 6035.Oaf  | 6080.Oaf  | 7285.Oaf  | 11805.Oaf | 12080.Oaf |  |

|           |        |                           |           |           |           |           |           |           |  |
|-----------|--------|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--|
| 0630-0700 |        | Vatican Radio             | 15600.0af |           |           |           |           |           |  |
| 0641-0656 |        | Radio Romania Int'l       | 11625.0af | 13765.0af | 15570.0af |           |           |           |  |
| 0645-0700 |        | BBC English Teaching      | 7105.0eu  | 9510.0eu  | 9530.0na  | 9625.0eu  | 11775.0eu |           |  |
| 0700-0715 | f      | Voice of Greece           | 5875.0eu  | 9635.0eu  |           |           |           |           |  |
| 0700-0715 |        | BBC World Service         | 7430.0eu  | 7450.0eu  | 9375.0eu  | 9420.0eu  | 9775.0au  |           |  |
|           |        |                           | 5975.0am  | 6005.0af  | 6175.0am  | 6180.0eu  | 6190.0af  | 6195.0eu  |  |
|           |        |                           | 7145.0pa  | 7325.0eu  | 9410.0eu  | 9740.0as  | 11760.0me | 11765.0af |  |
|           |        |                           | 11835.0af | 11940.0af | 11955.0pa | 12095.0eu | 15310.0as | 15360.0as |  |
|           |        |                           | 15485.0eu | 15565.0eu | 15575.0as | 17640.0eu | 17760.0as | 17790.0as |  |
|           |        |                           | 17830.0af | 21660.0as |           |           |           |           |  |
| 0700-0715 | s      | a BBC World Service       | 17885.0af |           |           |           |           |           |  |
| 0700-0730 | w      | Malawi B'casting Corp.    | 3380.0do  |           |           |           |           |           |  |
| 0700-0730 |        | Radio Slovakia Int'l      | 11990.0au | 15460.0au | 21705.0au |           |           |           |  |
| 0700-0745 |        | WYFR Okeechobee FL        | 7355.0eu  | 9455.0va  | 9985.0eu  |           |           |           |  |
| 0700-0756 |        | Radio Romania Int'l       | 17790.0af | 21480.0af |           |           |           |           |  |
| 0700-0800 | s      | Good News World Radio     | 13740.0va |           |           |           |           |           |  |
| 0700-0800 |        | KWHR Naalehu HI           | 11565.0pa | 17780.0as |           |           |           |           |  |
| 0700-0800 |        | Radio Myanmar             | 9730.0do  |           |           |           |           |           |  |
| 0700-0800 |        | Voice of Russia           | 15460.0au | 15470.0au | 15525.0au | 17495.0au | 17570.0au | 21790.0au |  |
| 0700-0800 |        | Radio Taipei Int'l        | 5950.0na  |           |           |           |           |           |  |
| 0700-0800 |        | Merlin Network One        | 6110.0eu  | 9915.0eu  | 13720.0as | 17630.0eu | 21550.0af |           |  |
| 0700-0900 |        | HCJB Quito Ecuador        | 9640.0pa  | 9775.0eu  | 21455.0uf |           |           |           |  |
| 0700-1100 |        | Radio Africa, Eq. Guinea  | 15185.0af |           |           |           |           |           |  |
| 0700-1600 |        | University Network        | 12065.0as | 17590.0eu |           |           |           |           |  |
| 0700-1900 |        | Sunrise Radio             | 5850.0va  |           |           |           |           |           |  |
| 0700-2200 |        | Nat'l BC, Papua NG        | 3925.0do  | 4890.0do  |           |           |           |           |  |
| 0705-0710 | mtwhfa | Croatian Radio, Zagreb    | 6235.0eu  | 6710.0eu  | 9830.0eu  | 13820.0au |           |           |  |
| 0705-1206 |        | Radio New Zealand Int'l   | 9700.0va  |           |           |           |           |           |  |
| 0710-0715 | s      | Kyrgyz Radio, Bishkek     | 4010.0do  | 4050.0do  |           |           |           |           |  |
| 0715-0730 |        | BBC English Teaching      | 6005.0af  | 9635.0eu  | 11680.0eu | 11845.0eu | 13745.0eu | 15335.0eu |  |
|           |        |                           | 15400.0af |           |           |           |           |           |  |
| 0715-0730 |        | BBC World Service         | 5975.0am  | 6175.0am  | 6180.0eu  | 6190.0af  | 6195.0eu  | 7145.0pa  |  |
|           |        |                           | 7325.0eu  | 9410.0eu  | 9740.0as  | 11760.0me | 11765.0af | 11835.0af |  |
|           |        |                           | 11940.0af | 11955.0pa | 12095.0eu | 15310.0as | 15360.0as | 15485.0eu |  |
|           |        |                           | 15565.0eu | 15575.0as | 17640.0eu | 17760.0as | 17790.0as | 17830.0af |  |
|           |        |                           | 21660.0as |           |           |           |           |           |  |
| 0715-0730 | s      | a BBC World Service       | 17885.0af |           |           |           |           |           |  |
| 0715-1700 |        | NBC Windhoek, Namibia     | 6060.0af  | 6175.0af  |           |           |           |           |  |
| 0730-0740 |        | Voice of Greece           | 7430.0eu  | 7450.0eu  | 9375.0eu  | 9420.0eu  | 9775.0au  |           |  |
| 0730-0745 |        | BBC English Teaching      | 5875.0eu  | 9635.0eu  |           |           |           |           |  |
| 0730-0745 | mtwhfa | Vatican Radio             | 4005.0eu  | 5883.0eu  | 6185.0eu  | 7250.0eu  | 9645.0eu  | 11740.0eu |  |
|           |        |                           | 15595.0eu |           |           |           |           |           |  |
| 0730-0800 |        | Radio Finland             | 9840.0va  | 21670.0as |           |           |           |           |  |
| 0730-0800 |        | Georgian Radio, Tbilisi   | 11910.0eu |           |           |           |           |           |  |
| 0730-0800 |        | Swiss Radio Int'l         | 9885.0af  | 11860.0af | 13635.0af |           |           |           |  |
| 0730-0800 |        | BBC World Service         | 5975.0am  | 6175.0am  | 6190.0af  | 6195.0eu  | 7145.0pa  | 7325.0eu  |  |
|           |        |                           | 9410.0eu  | 9740.0as  | 11760.0me | 11765.0af | 11835.0af | 11940.0af |  |
|           |        |                           | 11955.0pa | 12095.0eu | 15310.0as | 15360.0as | 15400.0af | 15485.0eu |  |
|           |        |                           | 15565.0eu | 17640.0eu | 17760.0as | 17790.0as | 17830.0af | 21660.0as |  |
| 0730-0800 | s      | a BBC World Service       | 15575.0as | 17885.0af |           |           |           |           |  |
| 0730-1300 | s      | a Italian Radio Relay Svc | 7120.0va  |           |           |           |           |           |  |
| 0740-0800 |        | KTWR Guam                 | 15200.0as |           |           |           |           |           |  |
| 0745-0755 | s      | a TWR Monte Carlo         | 9870.0eu  |           |           |           |           |           |  |
| 0745-0920 |        | TWR Tirana                | 9685.0eu  |           |           |           |           |           |  |
| 0755-0920 |        | TWR Monte Carlo           | 9870.0eu  |           |           |           |           |           |  |
| 0800-0810 |        | BBC World Service         | 6190.0af  | 7145.0pa  | 7325.0eu  | 9410.0eu  | 9740.0as  | 11940.0af |  |
|           |        |                           | 11955.0pa | 12095.0eu | 15310.0as | 15360.0as | 15400.0af | 15485.0eu |  |
|           |        |                           | 15565.0eu | 17640.0eu | 17760.0as | 17790.0as | 17830.0af | 21660.0as |  |
| 0800-0810 | s      | a BBC World Service       | 15575.0as | 17885.0af |           |           |           |           |  |
| 0800-0827 |        | Radio Prague Int'l        | 11640.0eu | 15260.0eu |           |           |           |           |  |
| 0800-0830 | s      | Universal Life, Germany   | 9930.0as  |           |           |           |           |           |  |
| 0800-0830 | w      | Malawi B'casting Corp.    | 5995.0do  |           |           |           |           |           |  |
| 0800-0830 |        | Radio Myanmar             | 9730.0do  |           |           |           |           |           |  |
| 0800-0830 | s tw   | Amateur Radio League, SAF | 7205.0af  |           |           |           |           |           |  |
| 0800-0900 |        | KNLS Anchor Point AK      | 7365.0as  |           |           |           |           |           |  |
| 0800-0900 |        | Radio Australia           | 5995.0pa  | 9580.0va  | 9710.0pa  | 12080.0va | 15415.0as | 15510.0va |  |
|           |        |                           | 17750.0as | 21725.0pa |           |           |           |           |  |
| 0800-0900 |        | Voice of Indonesia        | 9525.0va  | 11784.9va |           |           |           |           |  |
| 0800-0900 |        | Radio Korea               | 9570.0au  | 13670.0eu |           |           |           |           |  |
| 0800-0900 |        | KFBS Salpan, Marianas     | 11650.0as | 15380.0as |           |           |           |           |  |
| 0800-0900 |        | KHBI Salpan, Marianas     | 15665.0eu |           |           |           |           |           |  |
| 0800-0900 |        | KHBN Palau                | 9985.0as  |           |           |           |           |           |  |
| 0800-0900 |        | Voice of Russia           | 9905.0au  | 15470.0au | 15525.0au | 17495.0au | 21790.0au |           |  |
| 0800-0900 |        | Merlin Network One        | 9915.0eu  | 13720.0as | 17630.0eu | 21550.0af |           |           |  |
| 0800-0900 |        | WSHB Cypress Creek SC     | 7535.0eu  | 9835.0af  | 9845.0au  |           |           |           |  |
| 0800-0915 |        | KTWR Guam                 | 15200.0as | 15330.0as |           |           |           |           |  |
| 0800-1430 |        | SIBC Solomon Islands      | 5020.0do  |           |           |           |           |           |  |
| 0800-1600 |        | KWHR Naalehu HI           | 9930.0as  | 11565.0pa |           |           |           |           |  |
| 0804-0820 |        | Radio Pakistan            | 15530.1eu | 17835.1eu |           |           |           |           |  |
| 0805-0810 | s      | Croatian Radio, Zagreb    | 6165.0eu  | 7185.0eu  | 9830.0eu  | 13820.0af |           |           |  |
| 0810-0900 |        | BBC World Service         | 6190.0af  | 7325.0eu  | 9410.0eu  | 9740.0as  | 11940.0af | 11955.0pa |  |
|           |        |                           | 12095.0eu | 15310.0as | 15360.0as | 15400.0af | 15485.0eu | 15565.0eu |  |
|           |        |                           | 17640.0eu | 17760.0as | 17830.0af | 21660.0as |           |           |  |
| 0810-0900 | s      | a BBC World Service       | 15575.0as | 17885.0af |           |           |           |           |  |
| 0815-0900 | f      | FEBa Seychelles           | 15540.0as |           |           |           |           |           |  |
| 0830-0856 |        | R. Vlaanderen Int'l       | 9925.0eu  | 9940.0va  |           |           |           |           |  |
| 0830-0900 |        | ORF Vienna                | 6155.0eu  | 13730.0eu | 17615.0as | 21765.0au |           |           |  |
| 0830-0900 | s      | Amateur Radio League, SAF | 7205.0af  |           |           |           |           |           |  |
| 0830-0900 |        | Swiss Radio Int'l         | 9885.0as  | 13685.0as |           |           |           |           |  |
| 0830-2130 |        | ABC Alice Springs         | 2310.0do  |           |           |           |           |           |  |

|           |        |                           |   |
|-----------|--------|---------------------------|---|
| 0830-2130 |        | ABC Katherine             | 2485.0do  |
| 0830-2130 |        | ABC Tennant Creek         | 2325.0do  |
| 0900-0915 |        | Radio Voice of Lebanon    | 6549.6me  |
| 0900-0915 |        | BBC World Service         | 6065.0as 6190.0af 6195.0as 9410.0eu 9580.0as 9740.0as<br>11760.0me 11765.0pa 11940.0af 11945.0as 11955.0as 12095.0eu<br>15190.0sa 15310.0as 15360.0as 15400.0af 15485.0eu 15565.0eu<br>15575.0as 17640.0eu 17705.0eu 17760.0as 17790.0as 17830.0af<br>17885.0af 21660.0as |
| 0900-0930 | w      | Malawi B'casting Corp.    | 5995.0do  |
| 0900-0930 | hf     | Amateur Radio League, SA  | 7205.0af  |
| 0900-0950 |        | Deutsche Welle            | 6160.0pa 9565.0af 11775.0as 12055.0as 15145.0af 15410.0af<br>15470.0as 17800.0af 17820.0as 21600.0af  |
| 0900-0956 |        | China Radio Int'l         | 15210.0pa 17755.0pa   |
| 0900-1000 |        | Radio Kiribati            | 9809.9do  |
| 0900-1000 |        | KHBI Saipan, Marianas     | 9355.0as 13840.0af 15665.0as  |
| 0900-1000 |        | Voice of Russia           | 9905.0au 15470.0au 15525.0au 17495.0au  |
| 0900-1000 |        | WSHB Cypress Creek SC     | 7395.0sa 9455.0eu 9835.0af  |
| 0900-1030 | s      | V. of the Mediterranean   | 11830.0eu   |
| 0900-1030 |        | Radio Tanzania            | 5050.0af  |
| 0900-1100 |        | Radio Australia           | 6080.0as 9580.0va 11880.0as 17750.0as   |
| 0900-1100 |        | HCJB Quito Ecuador        | 9640.0pa 21455.0uf  |
| 0900-1200 |        | Merlin Network One        | 9915.0eu 17630.0eu 21550.0af  |
| 0900-1300 |        | KFBS Saipan, Marianas     | 9495.0as 11650.0as 15380.0as  |
| 0900-1400 |        | Overcomer Ministries      | 5965.0eu  |
| 0900-1900 |        | Kenya BC Corp             | 4935.0do  |
| 0905-0910 | mtwhfa | Croatian Radio, Zagreb    | 6165.0eu 7185.0eu 9830.0eu 13820.0af  |
| 0915-0930 |        | KTWR Guam                 | 15330.0as   |
| 0915-0930 |        | BBC English Teaching      | 6065.0as 9580.0as 11680.0eu 11945.0as 11955.0as 13745.0eu<br>15280.0as 15325.0eu 15340.0eu 17695.0eu  |
| 0915-0945 | mtwhf  | BBC English Teaching      | 6195.0as 9740.0as 11765.0pa 15360.0pa 17760.0as 21660.0as<br>6190.0af 9410.0eu 11760.0me 11940.0af 12095.0eu 15190.0sa<br>15310.0as 15400.0af 15485.0eu 15565.0eu 15575.0as 17640.0eu<br>17705.0eu 17790.0as 17830.0af 17885.0af  |
| 0915-0945 |        | BBC World Service         | 6195.0as 9740.0as 11765.0pa 15360.0pa 17760.0as 21660.0as   |
| 0920-0930 | t      | BBC World Service         | 4010.0do 4050.0do   |
| 0920-0935 | s      | Kyrgyz Radio, Bishkek     | 9685.0eu  |
| 0920-0935 | s      | TWR Tirana                | 9870.0eu  |
| 0920-0950 | s      | TWR Monte Carlo           | 6065.0as 9580.0as 11945.0as 11955.0as 15280.0as   |
| 0930-0945 |        | BBC English Teaching      | 17615.0as 21765.0au   |
| 0930-1000 |        | ORF Vienna                | 11910.0eu   |
| 0930-1000 |        | Georgian Radio, Tbilisi   | 7230.0eu  |
| 0930-1000 |        | AWR Europe, Forl          | 9865.0as  |
| 0930-1100 |        | KTWR Guam                 | 11635.0as   |
| 0930-1100 |        | FEBC Manila               | 7260.0as 9820.0au 12065.0as   |
| 0930-1125 |        | Radio Netherlands         | 9685.0eu  |
| 0935-0950 | s      | TWR Tirana                | 7265.0af  |
| 0940-0945 |        | RTV Togo                  | 6065.0as 9580.0as 11945.0as 11955.0as 15280.0as   |
| 0945-1000 | smtwhf | BBC Slow Speed News       | 6190.0af 6195.0as 9410.0eu 9740.0as 11760.0me 11765.0pa<br>11940.0af 12095.0eu 15190.0sa 15310.0as 15360.0pa 15400.0af<br>15485.0eu 15565.0eu 15575.0as 17640.0eu 17705.0eu 17760.0as<br>17790.0as 17830.0af 17885.0af 21660.0as  |
| 0945-1000 |        | BBC World Service         | 6065.0as 9580.0as 11945.0as 11955.0as 15280.0as<br>5940.0as 7270.0as 7400.0as 9839.9as 12019.5as  |
| 1000-1025 |        | BBC World Service         | 4810.0eu 15270.0eu  |
| 1000-1030 | s      | Voice of Vietnam          | 17485.0af 21745.0as   |
| 1000-1030 |        | Voice of Armenia, Yerevan | 11660.0as   |
| 1000-1030 |        | Radio Prague Int'l        | 11740.0as   |
| 1000-1030 |        | KSDA Guam                 | 5070.0am  |
| 1000-1030 | mtwhf  | Radio Telefis Eireann     | 3970.0do 4770.0do 4990.0do 6025.0do 6050.0do 7285.0do   |
| 1000-1030 |        | Radio Telefis Eireann     | 9570.0do  |
| 1000-1030 |        | Radio Nigeria             | 6190.0af 6195.0va 9410.0eu 9740.0as 11760.0me 11765.0pa<br>11940.0af 12095.0eu 15310.0as 15360.0pa 15485.0eu 15565.0eu<br>15575.0as 17640.0eu 17705.0eu 17760.0as 17790.0as 17885.0af<br>21660.0as  |
| 1000-1030 | s      | BBC World Service         | 15190.0sa 15400.0af 17830.0af   |
| 1000-1056 |        | China Radio Int'l         | 15210.0pa 17755.0pa   |
| 1000-1100 |        | Good News World Radio     | 5910.0va  |
| 1000-1100 |        | All India Radio, Delhi    | 11585.0as 11735.0au 13700.0as 15040.0as 17387.0au 17840.0as   |
| 1000-1100 |        | Radio Japan               | 9695.0as 11850.0pa 15590.0as  |
| 1000-1100 |        | KHBI Saipan, Marianas     | 9355.0as 15665.0as 15725.0af  |
| 1000-1100 |        | Voice of Nigeria          | 7255.0af 15120.0af  |
| 1000-1100 |        | VOA                       | 5985.0pa 6165.0ca 7405.0ca 9590.0ca 11720.0as 15425.0as   |
| 1000-1100 |        | WYFR Okeechobee FL        | 5950.0na  |
| 1000-1200 |        | WEWN Birmingham AL        | 5825.0na 7465.0eu   |
| 1000-1300 |        | WHRI Noblesville IN       | 6040.0eu 9495.0am   |
| 1000-1300 |        | WSHB Cypress Creek SC     | 6095.0am 9455.0am   |
| 1000-1500 |        | WRMI Miami FL             | 9955.0am  |
| 1000-1800 |        | Radio Liberia Int'l       | 6100.0do  |
| 1000-2200 |        | Caribbean Beacon          | 11775.0am   |
| 1000-2200 |        | Voice of Guyana           | 5949.4do  |
| 1000-2200 |        | WGTV McCaysville GA       | 9400.0am  |
| 1005-1010 | s      | Croatian Radio, Zagreb    | 6165.0eu 7185.0eu 9830.0eu  |
| 1030-1045 | mtwhf  | Radio Ethiopia            | 5990.0do 7110.0do 9705.0do  |
| 1030-1100 |        | Georgian Radio, Tbilisi   | 11910.0me   |
| 1030-1100 |        | KSDA Guam                 | 11660.0as 11795.0as   |
| 1030-1100 |        | Radio Korea               | 11715.0sa   |
| 1030-1100 |        | Radio Vilnius, Lithuania  | 9710.0eu  |
| 1030-1100 | mtwhf  | Malawi B'casting Corp.    | 5995.0do  |
| 1030-1100 |        | Radio Dubai, UAE          | 13675.0eu 15370.0eu 15395.0eu 21605.0eu   |
| 1030-1100 |        | BBC World Service         | 6190.0af 6195.0va 9410.0eu 9740.0as 11760.0me 11765.0pa   |

|           |        |                              |           |           |           |           |           |           |
|-----------|--------|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
|           |        |                              | 11940.0af | 12095.0eu | 15310.0as | 15485.0eu | 15565.0eu | 15575.0as |
|           |        |                              | 17640.0eu | 17705.0eu | 17790.0as | 17885.0af |           |           |
| 1030-1100 | s      | a BBC World Service          | 15190.0sa | 15400.0af | 17830.0af |           |           |           |
| 1030-1130 |        | Sri Lanka B'casting Corp.    | 11835.0as | 15150.0as | 17850.0as |           |           |           |
| 1030-1445 |        | Radio Nigeria                | 4770.0do  | 4990.0do  | 6025.0do  | 6050.0do  | 7285.0do  | 9570.0do  |
| 1030-1530 | s      | a Radio Tanzania             | 5050.0af  |           |           |           |           |           |
| 1100-1110 |        | fa Kyrgyz Radio, Bishkek     | 4010.0do  | 4050.0do  |           |           |           |           |
| 1100-1125 |        | Voice of Vietnam             | 7285.0as  | 9730.0as  |           |           |           |           |
| 1100-1130 | s      | a Radio Telefis Eireann      | 5070.0am  |           |           |           |           |           |
| 1100-1130 | s      | a Malawi B'casting Corp.     | 5995.0do  |           |           |           |           |           |
| 1100-1130 |        | KHBN Palau                   | 9965.0as  |           |           |           |           |           |
| 1100-1130 |        | Swiss Radio Int'l            | 9535.0eu  | 9540.0as  | 17815.0as |           |           |           |
| 1100-1130 | mtwhf  | BBC Caribbean Report         | 6195.0ca  | 15220.0ca |           |           |           |           |
| 1100-1130 |        | BBC World Service            | 5965.0na  | 6190.0af  | 6195.0va  | 9410.0eu  | 9580.0as  | 9740.0as  |
|           |        |                              | 11760.0me | 11940.0af | 11955.0as | 12095.0eu | 15280.0as | 15310.0as |
|           |        |                              | 15400.0af | 15485.0eu | 15565.0eu | 15575.0as | 17640.0eu | 17705.0eu |
|           |        |                              | 17785.0as | 17790.0sa | 17830.0af | 17885.0af | 21660.0af |           |
| 1100-1130 | s      | a BBC World Service          | 15190.0sa | 15220.0am |           |           |           |           |
| 1100-1130 |        | VOA                          | 5985.0pa  | 6110.0as  | 9645.0as  | 9760.0as  | 11705.0as | 11720.0as |
|           |        |                              | 15425.0as |           |           |           |           |           |
| 1100-1130 | mtwhf  | VOA                          | 13675.0af | 15510.0af | 17650.0af | 17750.0af | 21705.0af |           |
| 1100-1135 |        | Radio Maputo, Mozambique     | 11818.0af | 11835.0af |           |           |           |           |
| 1100-1150 |        | Deutsche Welle               | 15370.0af | 15410.0af | 17780.0af | 17800.0af |           |           |
| 1100-1156 |        | Radio Pyongyang              | 3560.0af  | 9640.0af  | 9975.0af  | 11335.0af | 13650.0va | 15230.2af |
| 1100-1200 |        | Radio Australia              | 6080.0as  | 9580.0va  |           |           |           |           |
| 1100-1200 |        | Radio Japan                  | 6120.0na  | 9695.0as  | 15590.0as |           |           |           |
| 1100-1200 |        | Voice of Asia, Taiwan        | 7445.0as  |           |           |           |           |           |
| 1100-1200 |        | WWCR Nashville TN            | 2390.0na  | 5070.0na  | 5935.0na  |           |           |           |
| 1100-1200 | mtwhf  | WWCR Nashville TN            | 3210.0na  |           |           |           |           |           |
| 1100-1200 | s      | a WWCR Nashville TN          | 15685.0na |           |           |           |           |           |
| 1100-1200 |        | WYFR Okeechobee FL           | 5950.0na  | 7355.0na  |           |           |           |           |
| 1100-1215 | s      | Radio Vanuatu                | 3945.0do  | 4960.0do  | 7260.0do  |           |           |           |
| 1100-1230 |        | VOIRI Teheran                | 9585.0as  | 11830.0me | 11875.0as | 13605.0va | 15260.0as | 17560.0as |
| 1100-1230 |        | Radio Korea                  | 7275.0as  |           |           |           |           |           |
| 1100-1400 |        | KHBI Salpan, Marianas        | 9355.0as  | 9385.0pa  |           |           |           |           |
| 1100-1400 |        | Radio Singapore Int'l        | 6015.0as  | 6150.0as  |           |           |           |           |
| 1100-1600 |        | HCJB Quito Ecuador           | 12005.0ca | 15115.0am | 21455.0uf |           |           |           |
| 1100-1730 |        | Radio Jordan                 | 11690.0va |           |           |           |           |           |
| 1104-1120 |        | Radio Pakistan               | 15530.1eu | 17835.1eu |           |           |           |           |
| 1115-1130 |        | BRT Int'l, Cyprus            | 6159.0do  |           |           |           |           |           |
| 1115-1130 |        | BBC English Teaching         | 11805.0eu | 13685.0eu | 15325.0eu | 15340.0eu | 17695.0eu |           |
| 1115-1130 | mtwh   | BBC English Teaching         | 9745.0eu  | 11970.0eu |           |           |           |           |
| 1115-1130 | mtwhf  | BBC English Teaching         | 5875.0eu  | 9815.0eu  |           |           |           |           |
| 1115-1130 | mtwhfa | Vatican Radio                | 5883.0eu  | 9645.0eu  | 11740.0eu | 15595.0eu | 21850.0eu |           |
| 1115-1145 |        | Radio Nepal, Katmandu        | 3230.0as  | 5005.0as  |           |           |           |           |
| 1130-1135 |        | Kol Israel                   | 15640.0af | 17535.0va |           |           |           |           |
| 1130-1145 |        | Radio Burundi                | 6140.0do  |           |           |           |           |           |
| 1130-1156 |        | R. Vlaanderen Int'l          | 9925.0eu  | 13745.0eu |           |           |           |           |
| 1130-1157 |        | Radio Prague Int'l           | 11640.0eu | 21745.0af |           |           |           |           |
| 1130-1200 |        | Swiss Radio Int'l            | 9540.0as  | 17815.0as |           |           |           |           |
| 1130-1200 | mtwhf  | BBC English Teaching         | 15310.0as | 17785.0as |           |           |           |           |
| 1130-1200 |        | BBC World Service            | 5965.0na  | 6190.0af  | 6195.0va  | 9410.0eu  | 11760.0me | 11940.0af |
|           |        |                              | 12095.0eu | 15220.0am | 15485.0eu | 15565.0eu | 15575.0as | 17640.0eu |
|           |        |                              | 17705.0eu | 17830.0af | 17885.0af | 21660.0af |           |           |
| 1130-1200 | mtwhfa | BBC World Service            | 9580.0as  | 9740.0as  | 11955.0as | 15280.0as |           |           |
| 1130-1200 | s      | a BBC World Service          | 15310.0as | 17785.0as |           |           |           |           |
| 1130-1200 |        | VOA                          | 5985.0pa  | 6110.0as  | 9645.0as  | 9760.0as  | 11705.0as | 11720.0as |
|           |        |                              | 15425.0as |           |           |           |           |           |
| 1130-1200 |        | f Vatican Radio              | 15595.0va | 17550.0va |           |           |           |           |
| 1130-1300 | s      | BBC Asian Service            | 6195.0as  | 9580.0as  | 9740.0as  | 11955.0as | 15280.0as |           |
| 1130-1325 |        | Radio Netherlands            | 6045.0eu  | 9855.0eu  |           |           |           |           |
| 1200-1209 |        | BBC World Service            | 5965.0na  | 6190.0af  | 6195.0va  | 9410.0eu  | 9515.0na  | 11760.0me |
|           |        |                              | 11940.0af | 12095.0eu | 15220.0am | 15310.0as | 15485.0eu | 15565.0eu |
|           |        |                              | 15575.0as | 17640.0eu | 17705.0eu | 17785.0as | 17830.0af | 17885.0af |
|           |        |                              | 21660.0af |           |           |           |           |           |
| 1200-1209 | mtwhfa | BBC World Service            | 9580.0as  | 9740.0as  | 11955.0as | 15280.0as |           |           |
| 1200-1215 |        | V. of Cambodia               | 11940.3as |           |           |           |           |           |
| 1200-1215 | s      | Kyrgyz Radio, Bishkek        | 4010.0do  | 4050.0do  |           |           |           |           |
| 1200-1215 |        | Radio Voice of Lebanon       | 6549.6me  |           |           |           |           |           |
| 1200-1215 |        | BBC English Teaching         | 7135.0as  | 9605.0as  | 11920.0as |           |           |           |
| 1200-1220 |        | fa Radio Almaty, Khazakhstan | 9620.0eu  | 11840.0eu |           |           |           |           |
| 1200-1229 |        | Radio Canada Int'l           | 6150.0as  | 11730.0as |           |           |           |           |
| 1200-1230 | mtwhf  | Malawi B'casting Corp.       | 5995.0do  |           |           |           |           |           |
| 1200-1230 |        | Radio Tashkent               | 5060.0as  | 5975.0as  | 6025.0as  | 9715.0as  |           |           |
| 1200-1245 |        | WYFR Okeechobee FL           | 5950.0na  | 7355.0na  | 11830.0na | 11970.0na |           |           |
| 1200-1256 |        | China Radio Int'l            | 6950.0pa  | 7385.0pa  | 9715.0as  | 9945.0pa  | 11660.0as | 11675.0pa |
|           |        |                              | 11980.0as | 15180.0as |           |           |           |           |
| 1200-1300 |        | Radio Bulgaria               | 15700.0eu | 17500.0eu |           |           |           |           |
| 1200-1300 |        | Radio France Int'l           | 9805.0eu  | 11600.0as | 13625.0ca | 15155.0eu | 15195.0eu | 15540.0af |
|           |        |                              | 17575.0ca |           |           |           |           |           |
| 1200-1300 |        | KHBN Palau                   | 9965.0as  |           |           |           |           |           |
| 1200-1300 |        | Radio Taipei Int'l           | 7130.0as  | 9610.0au  |           |           |           |           |
| 1200-1300 |        | Radio Ukraine Int'l          | 7380.0na  | 21510.0au |           |           |           |           |
| 1200-1300 |        | WEWN Birmingham AL           | 5825.0na  | 15745.0eu |           |           |           |           |
| 1200-1300 |        | WWCR Nashville TN            | 5070.0na  | 5935.0na  | 7435.0na  | 15685.0na |           |           |
| 1200-1320 |        | Radiobras, Brasilia          | 15445.0am |           |           |           |           |           |
| 1200-1330 |        | VOA                          | 6110.0as  | 9645.0as  | 9760.0as  | 11705.0as | 11715.0as | 15425.0as |
| 1200-1400 |        | Radio Australia              | 6080.0as  | 9580.0va  | 9660.0va  |           |           |           |
| 1200-1600 |        | Merlin Network One           | 9915.0eu  | 13645.0eu | 17630.0eu | 21550.0af |           |           |
| 1200-1700 |        | Ghana Broadcasting Corp.     | 4915.0do  | 6130.0do  |           |           |           |           |

|           |        |                                  |           |           |           |           |           |           |           |
|-----------|--------|----------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1200-2400 |        | <b>CBC Northern Service</b>      | 9625.0do  |           |           |           |           |           |           |
| 1206-1650 |        | <b>Radio New Zealand Int'l</b>   | 6105.0oc  |           |           |           |           |           |           |
| 1209-1215 | mtwhf  | <b>BBC Caribbean Report</b>      | 6195.0ca  | 15220.0ca |           |           |           |           |           |
| 1209-1215 |        | <b>BBC World Service</b>         | 5965.0na  | 6190.0af  | 6195.0va  | 9410.0eu  | 9515.0na  | 11760.0me |           |
|           |        |                                  | 11940.0af | 12095.0eu | 15310.0as | 15485.0eu | 15565.0eu | 15575.0as |           |
|           |        |                                  | 17640.0eu | 17705.0eu | 17785.0as | 17830.0af | 17885.0af | 21660.0af |           |
|           |        |                                  | 9580.0as  | 9740.0as  | 11955.0as | 15280.0as |           |           |           |
| 1209-1215 | mtwhfa | <b>BBC World Service</b>         | 15220.0am |           |           |           |           |           |           |
| 1209-1215 | s      | <b>BBC World Service</b>         | 5875.0eu  | 9635.0eu  |           |           |           |           |           |
| 1215-1230 | s      | <b>BBC English Teaching</b>      | 5965.0na  | 6190.0af  | 6195.0va  | 9410.0eu  | 9515.0na  | 11760.0me |           |
| 1215-1300 |        | <b>BBC World Service</b>         | 11940.0af | 12095.0eu | 15220.0am | 15310.0as | 15485.0eu | 15565.0eu | 15575.0as |
|           |        |                                  | 15575.0as | 17640.0eu | 17705.0eu | 17785.0as | 17830.0af | 17885.0af |           |
|           |        |                                  | 21660.0af |           |           |           |           |           |           |
| 1215-1300 | mtwhfa | <b>BBC World Service</b>         | 9580.0as  | 9740.0as  | 11955.0as | 15280.0as |           |           |           |
| 1215-1330 |        | <b>Radio Cairo</b>               | 17595.0as |           |           |           |           |           |           |
| 1220-1240 | w      | <b>Radio Almaty, Kazakhstan</b>  | 9620.0eu  | 11840.0eu |           |           |           |           |           |
| 1230-1240 |        | <b>Radio Mogadishu</b>           | 6870.0af  |           |           |           |           |           |           |
| 1230-1245 |        | <b>BBC English Teaching</b>      | 5875.0eu  | 9635.0eu  | 9745.0eu  | 11680.0eu | 11895.0eu | 13670.0eu |           |
|           |        |                                  | 15105.0af | 15260.0eu | 15325.0eu | 17555.0af | 17610.0eu | 21640.0af |           |
| 1230-1245 | smtwh  | <b>BBC English Teaching</b>      | 7140.0me  | 11820.0me | 13660.0af | 15180.0af | 15555.0me | 17585.0af |           |
| 1230-1255 |        | <b>Voice of Vietnam</b>          | 5940.0as  | 7270.0as  | 7400.0as  | 9839.9as  | 12019.5as |           |           |
| 1230-1257 |        | <b>Radio Prague Int'l</b>        | 6055.0eu  | 21745.0as |           |           |           |           |           |
| 1230-1300 |        | <b>Radio Bangladesh</b>          | 7185.0as  | 9548.0as  |           |           |           |           |           |
| 1230-1300 |        | <b>KSDA Guam</b>                 | 15225.0as |           |           |           |           |           |           |
| 1230-1300 |        | <b>AWR Europe, Forli</b>         | 7230.0eu  |           |           |           |           |           |           |
| 1230-1300 |        | <b>Radio Korea</b>               | 6055.0as  | 7285.0as  | 9570.0as  | 9640.0om  | 13670.0as |           |           |
| 1230-1300 |        | <b>Voice of Mongolia</b>         | 12085.0au |           |           |           |           |           |           |
| 1230-1300 |        | <b>Radio Sweden</b>              | 15240.0af | 17870.0na | 21810.0na |           |           |           |           |
| 1230-1300 |        | <b>Radio Thailand</b>            | 9655.0as  | 9810.0as  | 11905.0as |           |           |           |           |
| 1230-1300 |        | <b>Sri Lanka B'casting Corp.</b> | 9730.0as  | 15425.0as |           |           |           |           |           |
| 1240-1255 |        | <b>Voice of Greece</b>           | 9420.0eu  | 9690.0na  | 12105.0eu | 15175.0eu | 15630.0af |           |           |
| 1240-1255 | smtwh  | <b>BBC Slow Speed News</b>       | 7140.0me  | 11820.0me | 13660.0af | 15180.0af | 15555.0me | 17585.0af |           |
| 1240-1300 | t      | <b>Radio Almaty, Kazakhstan</b>  | 9620.0eu  | 11840.0eu |           |           |           |           |           |
| 1245-1300 |        | <b>BBC English Teaching</b>      | 5875.0eu  | 9635.0eu  | 9745.0eu  | 11680.0eu | 11895.0eu | 13670.0eu |           |
|           |        |                                  | 15260.0eu | 15325.0eu | 17610.0eu |           |           |           |           |
|           |        |                                  | 5950.0na  | 11830.0na | 11970.0na |           |           |           |           |
| 1245-1300 |        | <b>WYFR Okeechobee FL</b>        | 4850.0va  |           |           |           |           |           |           |
| 1300-1315 |        | <b>Cameroon Radio-TV</b>         | 9640.0na  | 13650.0na | 17715.0na |           |           |           |           |
| 1300-1330 |        | <b>Radio Canada Int'l</b>        | 15190.0as |           |           |           |           |           |           |
| 1300-1330 | s      | <b>Universal Life, Germany</b>   | 9535.0eu  |           |           |           |           |           |           |
| 1300-1330 |        | <b>Swiss Radio Int'l</b>         | 5950.0na  | 11550.0as | 11830.0na | 11970.0na | 13695.0na |           |           |
| 1300-1345 |        | <b>WYFR Okeechobee FL</b>        | 6095.0eu  | 7270.0eu  | 9525.0eu  | 11830.0eu |           |           |           |
| 1300-1355 |        | <b>Polish Radio, Warsaw</b>      | 9945.0na  | 11660.0as | 11675.0na | 11715.0na | 11980.0as | 15180.0as |           |
| 1300-1356 |        | <b>China Radio Int'l</b>         | 15335.0na | 15390.0eu | 17735.0eu | 17745.0na | 17805.0eu |           |           |
| 1300-1356 |        | <b>Radio Romania Int'l</b>       | 7365.0as  |           |           |           |           |           |           |
| 1300-1400 |        | <b>KNLS Anchor Point AK</b>      | 15190.0va |           |           |           |           |           |           |
| 1300-1400 | a      | <b>Good News World Radio</b>     | 9495.0as  | 9670.0as  | 11650.0as |           |           |           |           |
| 1300-1400 |        | <b>KFBS Salpan, Marianas</b>     | 5965.0na  | 5990.0as  | 6190.0af  | 6195.0va  | 9410.0eu  | 9515.0na  |           |
| 1300-1400 |        | <b>BBC World Service</b>         | 9590.0na  | 9740.0as  | 11750.0as | 11760.0me | 11940.0af | 12095.0eu |           |
|           |        |                                  | 15220.0am | 15310.0as | 15420.0af | 15485.0eu | 15565.0eu | 15575.0as |           |
|           |        |                                  | 17640.0eu | 17705.0eu | 17785.0as | 17830.0af | 17885.0af | 21660.0af |           |
|           |        |                                  | 9430.0na  | 9455.0am  |           |           |           |           |           |
|           |        |                                  | 5070.0na  | 7435.0na  | 13845.0na | 15685.0na |           |           |           |
| 1300-1400 |        | <b>WSHB Cypress Creek SC</b>     | 11900.0af | 17895.0af | 21530.0af |           |           |           |           |
| 1300-1400 |        | <b>WCCR Nashville TN</b>         | 11995.0as |           |           |           |           |           |           |
| 1300-1455 | s      | <b>Channel Africa, S. Africa</b> | 9985.0as  |           |           |           |           |           |           |
| 1300-1500 |        | <b>FEBC Manila</b>               | 11875.0na | 15745.0eu |           |           |           |           |           |
| 1300-1530 |        | <b>KHBN Palau</b>                | 6040.0eu  | 15105.0am |           |           |           |           |           |
| 1300-1600 |        | <b>WEWN Birmingham AL</b>        | 6165.0eu  | 7185.0eu  | 9830.0eu  |           |           |           |           |
| 1300-1600 |        | <b>WHRI Noblesville IN</b>       | 5030.0do  | 6035.0do  | 9615.0do  |           |           |           |           |
| 1305-1310 |        | <b>Croatian Radio, Zagreb</b>    | 15715.0as |           |           |           |           |           |           |
| 1315-1330 | w      | <b>BBS, Bhutan</b>               | 5030.0do  | 6035.0do  | 9615.0do  |           |           |           |           |
| 1325-1530 |        | <b>Voice of Hope, Germany</b>    | 15105.0af | 17810.0af | 21640.0af |           |           |           |           |
| 1330-1345 | m wh   | <b>BBS, Bhutan</b>               | 5940.0eu  | 7270.0eu  | 7400.0eu  | 9839.9eu  | 12019.5eu |           |           |
| 1330-1345 |        | <b>BBC English Teaching</b>      | 6150.0as  | 9535.0as  | 9640.0na  | 13650.0na | 17715.0na |           |           |
| 1330-1355 |        | <b>Voice of Vietnam</b>          | 6155.0eu  | 13730.0va |           |           |           |           |           |
| 1330-1359 |        | <b>Radio Canada Int'l</b>        | 15400.0na | 17660.0na |           |           |           |           |           |
| 1330-1400 |        | <b>ORF Vienna</b>                | 11660.0as |           |           |           |           |           |           |
| 1330-1400 |        | <b>Radio Finland</b>             | 9425.0as  | 13740.0as | 15240.0as |           |           |           |           |
| 1330-1400 |        | <b>KSDA Guam</b>                 | 13630.0eu | 13675.0eu | 15395.0eu | 21605.0eu |           |           |           |
| 1330-1400 |        | <b>Radio Sweden</b>              | 6110.0as  | 9645.0as  | 9760.0as  | 11705.0as | 15425.0as |           |           |
| 1330-1400 |        | <b>VOA</b>                       | 5060.0as  | 5975.0as  | 6025.0as  | 9715.0as  | 11905.0as | 15295.0as |           |
| 1330-1400 |        | <b>Radio Tashkent</b>            | 17775.0as |           |           |           |           |           |           |
|           |        |                                  | 11835.0au |           |           |           |           |           |           |
| 1330-1400 |        | <b>Radio Yugoslavia</b>          | 15295.0as | 17815.0eu |           |           |           |           |           |
| 1330-1430 |        | <b>Voice of Turkey</b>           | 9545.0as  | 11620.0as | 13710.0as |           |           |           |           |
| 1330-1500 |        | <b>All India Radio, Delhi</b>    | 9420.0eu  | 9690.0na  | 12105.0eu | 15175.0eu |           |           |           |
| 1340-1350 |        | <b>Voice of Greece</b>           | 5030.0do  | 6035.0do  | 9615.0do  |           |           |           |           |
| 1345-1400 | w      | <b>BBS, Bhutan</b>               | 5950.0na  | 11550.0as | 11830.0na | 13695.0na |           |           |           |
| 1345-1400 |        | <b>WYFR Okeechobee FL</b>        | 13765.0au | 15500.0au |           |           |           |           |           |
| 1345-1405 |        | <b>Vatican Radio</b>             | 11570.0af | 15169.1af | 15465.1af |           |           |           |           |
| 1400-1414 |        | <b>Radio Pakistan</b>            | 11860.0af | 15420.0af | 17880.0af | 21490.0af |           |           |           |
| 1400-1415 | smtwhf | <b>BBC English Teaching</b>      | 5995.0va  | 6080.0as  | 9580.0va  | 9660.0va  |           |           |           |
| 1400-1430 |        | <b>Radio Australia</b>           | 9640.0na  | 13650.0na | 17715.0na |           |           |           |           |
| 1400-1430 | smtwhf | <b>Radio Canada Int'l</b>        | 21745.0va |           |           |           |           |           |           |
| 1400-1430 |        | <b>Radio Prague Int'l</b>        | 9710.0eu  | 9955.0am  |           |           |           |           |           |
| 1400-1430 | s      | <b>Universal Life, Germany</b>   | 3380.0do  |           |           |           |           |           |           |
| 1400-1430 | mtwhf  | <b>Malawi B'casting Corp.</b>    | 5985.0na  | 9705.0na  |           |           |           |           |           |
| 1400-1430 |        | <b>Radio Mexico Int'l</b>        | 9530.0as  | 9655.0as  | 11905.0as |           |           |           |           |
| 1400-1430 |        | <b>Radio Thailand</b>            | 5990.0as  | 6190.0af  | 6195.0as  | 9410.0eu  | 9515.0na  | 9590.0na  |           |
| 1400-1430 |        | <b>BBC World Service</b>         |           |           |           |           |           |           |           |

|             |         |                           |           |           |           |           |           |           |  |
|-------------|---------|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--|
|             |         |                           | 9740.0as  | 11750.0as | 11940.0af | 12095.0eu | 15220.0na | 15310.0as |  |
|             |         |                           | 15485.0eu | 15565.0eu | 15575.0as | 17640.0eu | 17705.0eu | 17830.0af |  |
|             |         |                           | 17840.0am | 21470.0af | 21660.0af |           |           |           |  |
| 1400-1456   |         | China Radio Int'l         | 7405.0na  | 9535.0as  | 9700.0as  | 11675.0as | 11825.0as | 13685.0af |  |
|             |         |                           | 15125.0af |           |           |           |           |           |  |
| 1400-1500   |         | Radio France Int'l        | 7110.0as  | 11910.0as | 12030.0as | 15405.0as | 17560.0af |           |  |
| 1400-1500   |         | Radio Japan               | 9505.0na  | 11730.0as | 11880.0af |           |           |           |  |
| 1400-1500   |         | KHBI Saipan, Marianas     | 9355.0as  |           |           |           |           |           |  |
| 1400-1500   |         | Swiss Radio Int'l         | 9575.0as  | 15185.0as |           |           |           |           |  |
| 1400-1500   |         | Overcomer Ministries      | 5965.0eu  | 13810.0me |           |           |           |           |  |
| 1400-1500   |         | VOA                       | 6110.0as  | 7125.0as  | 7215.0as  | 9645.0as  | 9760.0as  | 11705.0as |  |
|             |         |                           | 15205.0me | 15395.0as | 15425.0as |           |           |           |  |
| 1400-1500   |         | WYFR Okeechobee FL        | 5950.0na  | 11550.0as | 11830.0na | 17760.0na |           |           |  |
| 1400-1600   |         | KFBS Saipan, Marianas     | 9465.0as  | 9495.0as  | 9670.0as  |           |           |           |  |
| 1400-1600   |         | SBC Radio 1, Singapore    | 6150.0do  |           |           |           |           |           |  |
| 1400-1600   |         | KJES Vado NM              | 11715.0na |           |           |           |           |           |  |
| 1400-2200   |         | WWCR Nashville TN         | 9475.0na  | 12160.0na | 13845.0na | 15685.0na |           |           |  |
| 1400-2400   |         | KAIJ Dallas TX            | 13815.0va |           |           |           |           |           |  |
| 1415-1420   |         | Radio Nepal, Katmandu     | 3230.0as  | 5005.0as  |           |           |           |           |  |
| 1415-1430 s |         | BBC English Teaching      | 11860.0af | 15420.0af | 17880.0af | 21490.0af |           |           |  |
| 1430-1500   |         | Radio Canada Int'l        | 9555.0va  | 11915.0va | 15325.0va |           |           |           |  |
| 1430-1500   | smtwhf  | Radio Canada Int'l        | 9640.0na  | 13650.0na | 17715.0na |           |           |           |  |
| 1430-1500   |         | KSDA Guam                 | 11980.0as |           |           |           |           |           |  |
| 1430-1500 s |         | Radio Televis Eireann     | 15625.0af | 21670.0sa |           |           |           |           |  |
| 1430-1500   |         | Radio Myanmar             | 5986.0do  |           |           |           |           |           |  |
| 1430-1500   |         | Radio Sweden              | 13740.0va | 15240.0na | 17870.0al | 21810.0na |           |           |  |
| 1430-1500   |         | BBC World Service         | 6190.0af  | 9410.0eu  | 9515.0na  | 9590.0na  | 11750.0as | 11940.0af |  |
|             |         |                           | 12095.0eu | 15220.0na | 15310.0as | 15485.0eu | 15565.0eu | 15575.0as |  |
|             |         |                           | 17640.0eu | 17705.0eu | 17830.0af | 17840.0am | 21470.0af | 21660.0af |  |
| 1430-1500 s | a       | BBC World Service         | 5990.0as  | 6195.0as  | 9740.0as  |           |           |           |  |
| 1430-1600   | mtwhf   | BBC Asian Service         | 5990.0as  | 6195.0as  | 9740.0as  |           |           |           |  |
| 1430-1625   |         | Radio Netherlands         | 12090.0as | 13755.0as | 15585.0as |           |           |           |  |
| 1430-2000   |         | Radio Australia           | 5995.0va  | 6080.0as  | 9500.0as  | 9580.0va  | 9660.0va  | 11660.0as |  |
| 1430-2100   |         | Radio Uganda              | 4976.0do  |           |           |           |           |           |  |
| 1445-1600   |         | Radio Nigeria             | 3970.0do  | 4770.0do  | 4990.0do  | 6025.0do  | 6050.0do  | 7285.0do  |  |
|             |         |                           | 9570.0do  |           |           |           |           |           |  |
| 1455-1500 s |         | BBC Asian Service         | 11750.0as | 15310.0as |           |           |           |           |  |
| 1500-1505   | mtwhf   | Radio Burundi             | 6140.0do  |           |           |           |           |           |  |
| 1500-1515   |         | BBC World Service         | 6190.0af  | 9410.0eu  | 9515.0na  | 9590.0na  | 11860.0af | 11940.0af |  |
|             |         |                           | 12095.0eu | 15220.0na | 15400.0af | 15420.0af | 15485.0eu | 15565.0eu |  |
|             |         |                           | 17705.0eu | 17830.0af | 17840.0am | 21470.0af | 21490.0af | 21660.0af |  |
| 1500-1515   | mtwhfa  | BBC World Service         | 5975.0as  | 11750.0as | 15310.0as |           |           |           |  |
| 1500-1515 s | a       | BBC World Service         | 5990.0as  | 6195.0as  | 9740.0as  |           |           |           |  |
| 1500-1530   |         | Kol Israel                | 15650.0va | 17535.0va |           |           |           |           |  |
| 1500-1530   | smtw fa | Radio Mexico Int'l        | 5985.0na  | 9705.0na  |           |           |           |           |  |
| 1500-1530   |         | Voice of Mongolia         | 11790.0as | 12085.0as |           |           |           |           |  |
| 1500-1530   |         | Channel Africa, S. Africa | 17870.0af |           |           |           |           |           |  |
| 1500-1556   |         | China Radio Int'l         | 7160.0as  | 7405.0na  | 9785.0as  | 13685.0af | 15125.0af |           |  |
| 1500-1556   |         | Radio Pyongyang           | 3560.0eu  | 9640.0af  | 9975.0eu  | 11335.0va | 11735.0eu | 13650.0me |  |
| 1500-1600 s |         | Radio Canada Int'l        | 9640.0na  | 13650.0na | 17715.0na |           |           |           |  |
| 1500-1600 s |         | Radio Televis Eireann     | 15625.0af | 21670.0sa |           |           |           |           |  |
| 1500-1600   |         | Radio Japan               | 7200.0as  | 9505.0na  | 9750.0as  | 11730.0as |           |           |  |
| 1500-1600   |         | Radio Myanmar             | 5986.0do  |           |           |           |           |           |  |
| 1500-1600   |         | Voice of Russia           | 6030.0eu  | 7440.0eu  | 9775.0as  | 9800.0as  | 11500.0as |           |  |
| 1500-1600   |         | FEBA Seychelles           | 11600.0as |           |           |           |           |           |  |
| 1500-1600 s |         | BBC Asian Service         | 5975.0as  | 11750.0as | 15310.0as |           |           |           |  |
| 1500-1600 s |         | ANARC SWL Net             | 3940.0lf  | 7240.0lf  |           |           |           |           |  |
| 1500-1600   |         | VOA                       | 7125.0as  | 7215.0as  | 9575.0me  | 9645.0as  | 15205.0me | 15395.0as |  |
| 1500-1600   |         | WYFR Okeechobee FL        | 11830.0na | 17760.0na |           |           |           |           |  |
| 1500-1630   |         | KTWR Guam                 | 12015.0as |           |           |           |           |           |  |
| 1500-1700   |         | Voice of Nigeria          | 7255.0af  | 15120.0af |           |           |           |           |  |
| 1500-1700   |         | Overcomer Ministries      | 6015.0eu  | 13810.0me |           |           |           |           |  |
| 1500-2100   |         | WRMI Miami FL             | 9955.0ca  |           |           |           |           |           |  |
| 1515-1530   |         | BBC English Teaching      | 5875.0eu  | 11980.0eu |           |           |           |           |  |
| 1515-1530   |         | BBC World Service         | 6190.0af  | 9410.0eu  | 9515.0na  | 9590.0na  | 11860.0af | 11940.0af |  |
|             |         |                           | 12095.0eu | 15220.0na | 15400.0af | 15420.0af | 15485.0eu | 15565.0eu |  |
|             |         |                           | 17705.0eu | 17830.0af | 17840.0am | 21470.0af | 21490.0af | 21660.0af |  |
| 1515-1530   | mtwhfa  | BBC World Service         | 5975.0as  | 11750.0as | 15310.0as |           |           |           |  |
| 1515-1530 s | a       | BBC World Service         | 5990.0as  | 6195.0as  | 9740.0as  |           |           |           |  |
| 1530-1540   |         | Radio Bangladesh          | 4880.0as  | 15520.0as |           |           |           |           |  |
| 1530-1545   |         | BBC English Teaching      | 9595.0as  | 11685.0as |           |           |           |           |  |
| 1530-1600   |         | KSDA Guam                 | 11625.0as | 11925.0as |           |           |           |           |  |
| 1530-1600   |         | BBC World Service         | 6190.0af  | 9410.0eu  | 9515.0na  | 9590.0na  | 11940.0af | 12095.0eu |  |
|             |         |                           | 15220.0na | 15400.0af | 15485.0eu | 15565.0eu | 17830.0af | 17840.0am |  |
|             |         |                           | 21470.0af | 21660.0af |           |           |           |           |  |
| 1530-1600   | mtwhfa  | BBC World Service         | 5975.0as  | 11750.0as | 15310.0as |           |           |           |  |
| 1530-1600 s | a       | BBC World Service         | 5990.0as  | 6195.0as  | 9740.0as  |           |           |           |  |
| 1530-1630   |         | VOIRI Teheran             | 11775.0as | 13605.0as | 15130.0as |           |           |           |  |
| 1530-1800   |         | Radio Botswana            | 3356.0do  | 4820.0do  | 7255.0do  |           |           |           |  |
| 1530-1915   |         | Radio Tanzania            | 5050.0af  |           |           |           |           |           |  |
| 1545-1600 s | h       | Radio Bangladesh          | 4880.0as  | 15520.0as |           |           |           |           |  |
| 1550-1610   |         | Vatican Radio             | 13765.0va | 15500.0va |           |           |           |           |  |
| 1600-1615   |         | Swiss Radio Int'l         | 9575.0as  | 15185.0as |           |           |           |           |  |
| 1600-1615   |         | BBC World Service         | 3915.0as  | 5975.0as  | 5990.0as  | 6190.0af  | 6195.0va  | 7160.0as  |  |
|             |         |                           | 9410.0eu  | 9515.0na  | 9740.0as  | 11750.0as | 11940.0af | 12095.0eu |  |
|             |         |                           | 15310.0as | 15400.0af | 15485.0eu | 15565.0eu | 17830.0af | 17840.0am |  |
|             |         |                           | 21470.0af | 21660.0af |           |           |           |           |  |
| 1600-1625   |         | Voice of Vietnam          | 5940.0eu  | 7270.0eu  | 7400.0eu  | 9839.9eu  | 12019.5eu |           |  |
| 1600-1630 s |         | Radio Canada Int'l        | 9640.0na  | 13650.0na | 17715.0na |           |           |           |  |
| 1600-1630   |         | Malawi Broadcasting Corp. | 3380.0do  |           |           |           |           |           |  |

|                  |                           |           |           |           |           |           |           |  |  |
|------------------|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--|--|
| 1600-1630        | Radio Pakistan            | 11570.2me | 15169.1af | 15325.0   | 15465.1me | 17720.0af |           |  |  |
| 1600-1630        | Channel Africa, S. Africa | 6000.0af  |           |           |           |           |           |  |  |
| 1600-1630        | Radio Dubai, UAE          | 13630.0eu | 13675.0eu | 15395.0eu | 21605.0eu |           |           |  |  |
| 1600-1630        | VOA                       | 6035.0af  | 6110.0as  | 7125.0as  | 7215.0as  | 9575.0me  | 9645.0as  |  |  |
|                  |                           | 9760.0as  | 11920.0af | 12040.0af | 13710.0af | 15205.0me | 15225.0af |  |  |
|                  |                           | 15395.0as | 15410.0af |           |           |           |           |  |  |
| 1600-1650        | Deutsche Welle            | 6170.0as  | 7120.0va  | 7225.0as  | 7305.0as  | 9585.0as  | 9735.0va  |  |  |
|                  |                           | 11810.0va | 13790.0as | 15145.0va | 17800.0va |           |           |  |  |
|                  |                           | 7190.0af  | 9565.0af  |           |           |           |           |  |  |
| 1600-1656        | China Radio Int'l         | 6160.0eu  | 11715.1va | 11749.9va | 15160.0va |           |           |  |  |
| 1600-1700        | Radio Algiers             | 5990.0af  | 7110.0af  | 7165.0af  | 9560.0af  | 9705.0af  | 11800.0af |  |  |
| 1600-1700        | Radio Ethiopia            | 9485.0af  | 11615.0af | 11700.0af | 12015.0af | 15210.0af | 15530.0af |  |  |
| 1600-1700        | Radio France Int'l        | 17850.0af |           |           |           |           |           |  |  |
| 1600-1700        | a Good News World Radio   | 11840.0va |           |           |           |           |           |  |  |
| 1600-1700        | KSDA Guam                 | 11980.0as |           |           |           |           |           |  |  |
| 1600-1700        | Radio Korea               | 5975.0om  | 9515.0af  | 9870.0af  |           |           |           |  |  |
| 1600-1700        | KFBS Saipan, Marianas     | 9465.0as  | 9495.0as  |           |           |           |           |  |  |
| 1600-1700        | Radio Nigeria             | 3970.0do  | 4770.0do  | 4990.0do  | 6025.0do  | 6050.0do  | 9570.0do  |  |  |
| 1600-1700        | Voice of Russia           | 4730.0me  | 4940.0me  | 4975.0me  | 7210.0me  | 9775.0me  |           |  |  |
| 1600-1700 sm     | Voice of Russia           | 6005.0me  |           |           |           |           |           |  |  |
| 1600-1700        | Merlin Network One        | 6185.0eu  | 21550.0af |           |           |           |           |  |  |
| 1600-1700        | WYFR Okeechobee FL        | 11830.0na | 15215.0na | 15695.0eu | 17555.0eu | 17760.0na | 21525.0af |  |  |
| 1600-1745        | TWR Swaziland             | 9500.0af  |           |           |           |           |           |  |  |
| 1600-1800        | WHRI Noblesville IN       | 13760.0eu | 15105.0am |           |           |           |           |  |  |
| 1600-1800        | WSHB Cypress Creek SC     | 18910.0af |           |           |           |           |           |  |  |
| 1600-2000        | KWHR Naalehu HI           | 9930.0as  |           |           |           |           |           |  |  |
| 1600-2000        | WEWN Birmingham AL        | 11875.0na | 13615.0na | 15745.0eu |           |           |           |  |  |
| 1600-2100        | Radio Rwanda              | 6055.0do  |           |           |           |           |           |  |  |
| 1600-2100 smtwhf | WMLK Bethel PA            | 9465.0eu  |           |           |           |           |           |  |  |
| 1600-2200        | Christian Voice, Zambia   | 4965.0do  |           |           |           |           |           |  |  |
| 1600-2400        | R. for Peace Int'l        | 15049.1va | 21460.1uf |           |           |           |           |  |  |
| 1600-2400        | KTBN Salt Lake City UT    | 15590.0na |           |           |           |           |           |  |  |
| 1600-2400        | WRNO New Orleans LA       | 15420.0va |           |           |           |           |           |  |  |
| 1615-1630        | BBC English Teaching      | 6025.0eu  | 9915.0eu  |           |           |           |           |  |  |
| 1615-1630        | BBC World Service         | 3915.0as  | 5975.0as  | 6190.0af  | 6195.0va  | 7160.0as  | 9410.0eu  |  |  |
|                  |                           | 9740.0as  | 11750.0as | 11940.0af | 12095.0eu | 15310.0as | 15400.0af |  |  |
|                  |                           | 15420.0af | 15485.0eu | 15565.0eu | 17830.0af | 17840.0am | 21470.0af |  |  |
|                  |                           | 21660.0af |           |           |           |           |           |  |  |
| 1615-1630        | a BBC World Service       | 9515.0na  |           |           |           |           |           |  |  |
| 1615-1630 s      | a BBC World Service       | 11860.0af |           |           |           |           |           |  |  |
| 1630-1645        | Radio Cairo               | 11875.0af | 15255.0af |           |           |           |           |  |  |
| 1630-1645        | BBC World Service         | 3915.0as  | 5975.0as  | 6190.0af  | 6195.0va  | 7160.0as  | 9410.0eu  |  |  |
|                  |                           | 9740.0as  | 11750.0as | 11940.0af | 12095.0eu | 15310.0as | 15400.0af |  |  |
|                  |                           | 15420.0af | 15485.0eu | 15565.0eu | 17830.0af | 17840.0am | 21470.0af |  |  |
|                  |                           | 21660.0af |           |           |           |           |           |  |  |
| 1630-1645        | a BBC World Service       | 9515.0na  |           |           |           |           |           |  |  |
| 1630-1645 s      | a BBC World Service       | 11860.0af |           |           |           |           |           |  |  |
| 1630-1700        | Radio Canada Int'l        | 6140.0as  | 7150.0as  |           |           |           |           |  |  |
| 1630-1700 s      | Radio Canada Int'l        | 9640.0na  | 13650.0na | 17715.0na |           |           |           |  |  |
| 1630-1700        | BRT Int'l, Cyprus         | 6159.0do  |           |           |           |           |           |  |  |
| 1630-1700 s      | FEBa Seychelles           | 11665.0as |           |           |           |           |           |  |  |
| 1630-1700        | VOA                       | 6035.0af  | 6110.0as  | 7125.0as  | 7215.0as  | 9575.0me  | 9645.0as  |  |  |
|                  |                           | 9760.0as  | 11920.0af | 12040.0af | 13710.0af | 15205.0me | 15225.0af |  |  |
|                  |                           | 15395.0as | 15410.0af | 15445.0af | 17895.0af |           |           |  |  |
| 1630-2200        | Zimbabwe BC Corp.         | 3306.0do  | 4828.0do  |           |           |           |           |  |  |
| 1645-1700        | Kol Israel                | 9435.0va  | 11605.0eu | 15650.0va |           |           |           |  |  |
| 1645-1700        | Radio Tajikistan          | 7245.0as  |           |           |           |           |           |  |  |
| 1645-1700        | BBC World Service         | 3915.0as  | 5975.0as  | 6190.0af  | 6195.0va  | 7160.0as  | 9410.0eu  |  |  |
|                  |                           | 9740.0as  | 11750.0as | 11860.0af | 11940.0af | 12095.0eu | 15310.0as |  |  |
|                  |                           | 15400.0af | 15470.0af | 15485.0eu | 15565.0eu | 17830.0af | 17840.0am |  |  |
|                  |                           | 21470.0af | 21660.0af |           |           |           |           |  |  |
| 1645-1700        | a BBC World Service       | 9515.0na  |           |           |           |           |           |  |  |
| 1645-1830        | Radio Cairo               | 15255.0af |           |           |           |           |           |  |  |
| 1650-1750 mtwhf  | Radio New Zealand Int'l   | 6145.0va  |           |           |           |           |           |  |  |
| 1700-1715        | Radio Afghanistan         | 4775.0do  | 7200.0do  |           |           |           |           |  |  |
| 1700-1715        | Cameroon Radio-TV         | 4850.0va  |           |           |           |           |           |  |  |
| 1700-1715        | Radio Voice of Lebanon    | 6549.6me  |           |           |           |           |           |  |  |
| 1700-1727        | Radio Prague Int'l        | 5930.0eu  | 17485.0af |           |           |           |           |  |  |
| 1700-1730        | Radio France Int'l        | 11615.0af | 15210.0af |           |           |           |           |  |  |
| 1700-1730        | a Universal Life, Germany | 11745.0af |           |           |           |           |           |  |  |
| 1700-1730        | Channel Africa, S. Africa | 17860.0af |           |           |           |           |           |  |  |
| 1700-1730        | VOA                       | 6040.0af  | 6110.0as  | 7125.0as  | 7215.0as  | 9645.0as  | 9760.0me  |  |  |
|                  |                           | 11920.0af | 12040.0af | 15205.0me | 15395.0as | 15410.0af | 15445.0af |  |  |
|                  |                           | 17895.0af |           |           |           |           |           |  |  |
| 1700-1730 mtwhf  | VOA                       | 5990.0as  | 6045.0as  | 9525.0as  | 9670.0as  | 9795.0as  | 11955.0as |  |  |
|                  |                           | 12005.0as | 15255.0as |           |           |           |           |  |  |
| 1700-1745        | BBC World Service         | 3255.0af  | 3915.0as  | 3955.0eu  | 5975.0as  | 6005.0af  | 6190.0af  |  |  |
|                  |                           | 6195.0eu  | 7160.0as  | 9410.0eu  | 9510.0as  | 9630.0af  | 9740.0as  |  |  |
|                  |                           | 11980.0me | 12095.0eu | 15400.0af | 15420.0af | 15485.0eu | 17830.0af |  |  |
|                  |                           | 17840.0na |           |           |           |           |           |  |  |
| 1700-1756        | China Radio Int'l         | 7150.0af  | 7405.0af  | 9570.0af  | 9745.0af  |           |           |  |  |
| 1700-1756        | Radio Romania Int'l       | 9690.0eu  | 11740.0eu | 15365.0eu |           |           |           |  |  |
| 1700-1800        | a Good News World Radio   | 11725.0va |           |           |           |           |           |  |  |
| 1700-1800        | Radio Japan               | 6090.0as  | 7110.0eu  | 9535.0na  | 9825.0as  | 15355.0af |           |  |  |
| 1700-1800        | KHBN Palau                | 9965.0as  |           |           |           |           |           |  |  |
| 1700-1800        | Voice of Russia           | 7305.0me  | 9470.0me  |           |           |           |           |  |  |
| 1700-1800        | Overcomer Ministries      | 13810.0me |           |           |           |           |           |  |  |
| 1700-1800        | WYFR Okeechobee FL        | 15695.0eu | 17555.0eu |           |           |           |           |  |  |
| 1700-1900 s      | a Swaziland Commercial R. | 6155.0do  |           |           |           |           |           |  |  |
| 1700-1900        | Merlin Network One        | 3965.0eu  | 6185.0eu  | 21550.0af |           |           |           |  |  |

|           |                              |           |           |           |           |           |           |  |  |
|-----------|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--|--|
| 1700-2000 | KFBS Salpan, Marianas        | 9465.0as  |           |           |           |           |           |  |  |
| 1700-2030 | Radio Nigeria                | 3326.0do  | 3970.0do  | 4770.0do  | 4990.0do  | 6025.0do  | 6050.0do  |  |  |
|           |                              | 9570.0do  |           |           |           |           |           |  |  |
| 1700-2300 | Radio Africa, Eq. Guinea     | 5003.7af  | 7190.0af  | 15185.0af |           |           |           |  |  |
| 1700-2400 | Ghana Broadcasting Corp.     | 3366.0do  | 4915.0do  |           |           |           |           |  |  |
| 1715-1730 | Vatican Radio                | 4005.0eu  | 5883.0eu  | 7250.0eu  | 9645.0eu  | 15595.0eu |           |  |  |
| 1730-1745 | mtwh TWR Swaziland           | 3200.0af  |           |           |           |           |           |  |  |
| 1730-1745 | BBC English Teaching         | 3390.0af  | 5875.0eu  | 6070.0af  | 9520.0af  | 9530.0eu  |           |  |  |
| 1730-1756 | R. Vlaanderen Int'l          | 5920.0eu  | 12080.0eu | 13650.0as |           |           |           |  |  |
| 1730-1800 | ORF Vienna                   | 6155.0af  | 9655.0me  | 13710.0as | 13730.0as |           |           |  |  |
| 1730-1800 | R. MINURCA, Cen. Af. Rep.    | 9900.0    |           |           |           |           |           |  |  |
| 1730-1800 | Georgian Radio, Tbilisi      | 6180.0me  |           |           |           |           |           |  |  |
| 1730-1800 | KSDA Guam                    | 9355.0as  |           |           |           |           |           |  |  |
| 1730-1800 | Radio Telefls Eireann        | 17885.0af |           |           |           |           |           |  |  |
| 1730-1800 | Radio Slovakia Int'l         | 5915.0eu  | 6055.0eu  | 7345.0eu  |           |           |           |  |  |
| 1730-1800 | AWR Africa, Meyerton         | 12130.0af |           |           |           |           |           |  |  |
| 1730-1800 | s BBC Asian Service          | 7390.0as  | 9750.0as  | 11660.0as |           |           |           |  |  |
| 1730-1800 | VOA                          | 6040.0af  | 6110.0as  | 7125.0as  | 7215.0as  | 9645.0as  | 9760.0me  |  |  |
|           |                              | 11920.0af | 12040.0af | 15205.0me | 15395.0as | 15410.0af | 15445.0af |  |  |
|           |                              | 17895.0af |           |           |           |           |           |  |  |
| 1730-1800 | mtwhf VOA                    | 5990.0as  | 6045.0as  | 9525.0as  | 9670.0as  | 9795.0as  | 11955.0as |  |  |
|           |                              | 12005.0as | 15255.0as |           |           |           |           |  |  |
| 1730-1800 | Vatican Radio                | 13765.0af | 15570.0af | 17550.0af |           |           |           |  |  |
| 1730-1830 | Radio Netherlands            | 6020.0af  | 9605.0af  |           |           |           |           |  |  |
| 1730-1930 | Radio Pilipinas, Manila      | 11720.0pa | 11890.0pa | 15190.0pa |           |           |           |  |  |
| 1730-2310 | SLBS, Sierra Leone           | 3316.0do  |           |           |           |           |           |  |  |
| 1735-1745 | t h R. Nacional Paraguay     | 9737.5sa  |           |           |           |           |           |  |  |
| 1745-1800 | Radio Bangladesh             | 7185.0eu  | 7462.6eu  | 9548.0eu  | 15520.0eu |           |           |  |  |
| 1745-1800 | Radio Burundi                | 6140.0do  |           |           |           |           |           |  |  |
| 1745-1800 | RTV Madagascar               | 3282.0do  | 3358.9do  | 5009.5do  |           |           |           |  |  |
| 1745-1800 | BBC English Teaching         | 5875.0eu  | 9530.0eu  |           |           |           |           |  |  |
| 1745-1800 | BBC World Service            | 3255.0af  | 3915.0as  | 3955.0eu  | 5975.0as  | 6190.0af  | 6195.0eu  |  |  |
|           |                              | 7160.0as  | 9410.0eu  | 9510.0as  | 9740.0as  | 11980.0me | 12095.0eu |  |  |
|           |                              | 15400.0af | 15420.0af | 15485.0eu | 17830.0af | 17840.0na |           |  |  |
| 1745-1830 | TWR Swaziland                | 3200.0af  | 9500.0af  |           |           |           |           |  |  |
| 1745-1945 | All India Radio, Delhi       | 7410.0eu  | 9650.0af  | 9950.0eu  | 11620.0eu | 11935.0af | 13780.0af |  |  |
|           |                              | 15075.0af | 15200.0af |           |           |           |           |  |  |
| 1750-1950 | Radio New Zealand Int'l      | 11675.0va |           |           |           |           |           |  |  |
| 1800-1815 | Voice of Greece              | 7450.0eu  | 9420.0eu  | 15485.0na | 17705.0sa |           |           |  |  |
| 1800-1815 | BBC English Teaching         | 6065.0as  | 9605.0as  | 11665.0as |           |           |           |  |  |
| 1800-1825 | Voice of Vietnam             | 5940.0eu  | 7270.0eu  | 7400.0eu  | 7440.0as  | 9839.9eu  | 12019.5eu |  |  |
| 1800-1827 | Radio Prague Int'l           | 5930.0eu  | 7315.0va  |           |           |           |           |  |  |
| 1800-1830 | Voice of Azerbaijan          | 9165.0eu  |           |           |           |           |           |  |  |
| 1800-1830 | s Universal Life, Germany    | 11840.0af |           |           |           |           |           |  |  |
| 1800-1830 | Malawi B'casting Corp.       | 3380.0do  |           |           |           |           |           |  |  |
| 1800-1830 | m Amateur Radio League, SAf  | 3215.0af  |           |           |           |           |           |  |  |
| 1800-1830 | AWR Africa, Meyerton         | 5960.0af  | 6100.0af  |           |           |           |           |  |  |
| 1800-1830 | Channel Africa, S. Africa    | 17870.0af |           |           |           |           |           |  |  |
| 1800-1830 | BBC World Service            | 3255.0af  | 3955.0eu  | 5975.0as  | 6180.0eu  | 6190.0af  | 6195.0eu  |  |  |
|           |                              | 9410.0eu  | 9510.0as  | 9740.0pa  | 11980.0me | 12095.0eu | 15400.0af |  |  |
|           |                              | 15420.0af | 17830.0af | 17840.0na |           |           |           |  |  |
| 1800-1845 | WYFR Okeechobee FL           | 15695.0eu |           |           |           |           |           |  |  |
| 1800-1855 | Polish Radio, Warsaw         | 6095.0eu  | 7285.0eu  |           |           |           |           |  |  |
| 1800-1856 | Radio Pyongyang              | 4405.0eu  | 6575.0eu  | 9335.0am  | 11710.1am | 13760.0am |           |  |  |
| 1800-1900 | mtwhf RAE Buenos Aires       | 15345.0eu |           |           |           |           |           |  |  |
| 1800-1900 | Radio Bangladesh             | 7185.0eu  | 7462.6eu  | 9548.0eu  | 15520.0eu |           |           |  |  |
| 1800-1900 | R. MINURCA, Cen. Af. Rep.    | 9900.0    |           |           |           |           |           |  |  |
| 1800-1900 | RTV Morocco                  | 15345.0af | 17815.0af |           |           |           |           |  |  |
| 1800-1900 | Radio Maputo, Mozambique     | 3265.0af  | 4855.0af  |           |           |           |           |  |  |
| 1800-1900 | KHBI Salpan, Marianas        | 9355.0eu  | 9385.0af  | 13820.0as |           |           |           |  |  |
| 1800-1900 | Voice of Russia              | 5940.0eu  | 5965.0eu  | 7305.0af  | 7340.0eu  | 9480.0eu  | 9890.0eu  |  |  |
| 1800-1900 | R. Omdurman, Sudan           | 7200.0do  | 9200.0do  |           |           |           |           |  |  |
| 1800-1900 | VOA                          | 6035.0af  | 6040.0af  | 9760.0me  | 11920.0af | 11975.0af | 13710.0af |  |  |
|           |                              | 15410.0af | 15580.0af |           |           |           |           |  |  |
| 1800-1900 | WSHB Cypress Creek SC        | 13770.0af | 15665.0eu | 18910.0af |           |           |           |  |  |
| 1800-1900 | Republic of Yemen Radio      | 9780.3do  |           |           |           |           |           |  |  |
| 1800-1920 | Radiolebras, Brasilia        | 15265.0eu |           |           |           |           |           |  |  |
| 1800-2000 | WHRA Greenbush ME            | 17655.0af |           |           |           |           |           |  |  |
| 1800-2100 | Radio Kuwait                 | 11990.0na |           |           |           |           |           |  |  |
| 1800-2100 | Overcomer Ministries         | 11925.0me |           |           |           |           |           |  |  |
| 1800-2100 | WHRI Noblesville IN          | 9495.0am  | 13760.0eu |           |           |           |           |  |  |
| 1800-2200 | Radio Botswana               | 3356.0do  | 4820.0do  |           |           |           |           |  |  |
| 1800-2200 | Radio Veritas, Liberia       | 3450.0do  |           |           |           |           |           |  |  |
| 1800-2300 | Italian Radio Relay Svc      | 3985.0va  |           |           |           |           |           |  |  |
| 1800-2400 | Radio Liberia Int'l          | 5100.0do  |           |           |           |           |           |  |  |
| 1830-1840 | Radio Mogadishu              | 6870.0af  |           |           |           |           |           |  |  |
| 1830-1845 | w BBC English Teaching       | 5970.0eu  | 7325.0eu  | 9685.0eu  |           |           |           |  |  |
| 1830-1856 | R. Vlaanderen Int'l          | 13745.0af |           |           |           |           |           |  |  |
| 1830-1900 | s Universal Life, Germany    | 11735.0af |           |           |           |           |           |  |  |
| 1830-1900 | sm Amateur Radio League, SAf | 3215.0af  |           |           |           |           |           |  |  |
| 1830-1900 | mtwhfa Radio Sweden          | 6065.0va  |           |           |           |           |           |  |  |
| 1830-1900 | s Radio Sweden               | 5970.0va  |           |           |           |           |           |  |  |
| 1830-1900 | BBC World Service            | 3255.0af  | 3955.0eu  | 6005.0af  | 6180.0eu  | 6190.0af  | 6195.0eu  |  |  |
|           |                              | 9410.0eu  | 9630.0af  | 9740.0pa  | 11980.0me | 12095.0eu | 15400.0af |  |  |
|           |                              | 15420.0af | 17830.0af | 17840.0na |           |           |           |  |  |
|           |                              | 7150.0af  | 9845.0af  | 15445.0af |           |           |           |  |  |
| 1830-1900 | s a VOA                      | 11920.0af |           |           |           |           |           |  |  |
| 1830-1930 | Radio Ivory Coast, Abidjin   | 3200.0af  |           |           |           |           |           |  |  |
| 1830-2015 | TWR Swaziland                | 3200.0af  |           |           |           |           |           |  |  |
| 1830-2025 | Radio Netherlands            | 6020.0af  | 9605.0af  | 9895.0af  | 11655.0af | 15315.0af |           |  |  |
| 1830-2130 | Sri Lanka B'casting Corp.    | 6005.0as  |           |           |           |           |           |  |  |

|             |        |                             |           |           |           |           |           |           |  |
|-------------|--------|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--|
| 1840-1850   |        | Voice of Greece             | 12105.0af | 15630.0af |           |           |           |           |  |
| 1845-1900   |        | RTV Guinea                  | 6155.0af  | 7125.0af  | 9650.0af  | 15310.0af |           |           |  |
| 1845-1900   |        | Radio Mali                  | 4783.4do  | 4835.0do  | 5995.0do  |           |           |           |  |
| 1900-1910   |        | Voice of Greece             | 7500.0eu  | 9375.0eu  |           |           |           |           |  |
| 1900-1915   |        | BBC English Teaching        | 11880.0af | 15105.0af | 17885.0af |           |           |           |  |
| 1900-1925   |        | Voice of Vietnam            | 5940.0eu  | 7270.0eu  | 7400.0eu  | 9839.9eu  | 12019.5eu |           |  |
| 1900-1930   |        | Radio Mexico Int'l          | 5985.0na  | 9705.0na  |           |           |           |           |  |
| 1900-1930   |        | VOA                         | 6035.0af  | 7415.0af  | 9525.0pa  | 9760.0me  | 11870.0pa | 11920.0af |  |
|             |        |                             | 11975.0af | 13710.0af | 15180.0pa | 15410.0af | 15580.0af |           |  |
| 1900-1930   |        | a VOA                       | 4950.0af  |           |           |           |           |           |  |
| 1900-1945   |        | WYFR Okeechobee FL          | 17555.0eu |           |           |           |           |           |  |
| 1900-1950   |        | Deutsche Welle              | 9640.0af  | 9765.0af  | 11785.0af | 11810.0af | 13690.0af | 15135.0af |  |
|             |        |                             | 15275.0af |           |           |           |           |           |  |
| 1900-1956   |        | China Radio Int'l           | 6955.0af  | 9440.0af  | 9600.0af  | 11840.0af |           |           |  |
| 1900-1956   |        | Radio Pyongyang             | 6520.0af  | 9600.0af  | 9975.0af  |           |           |           |  |
| 1900-2000   |        | R. MINURCA, Cen. Af. Rep.   | 9900.0    |           |           |           |           |           |  |
| 1900-2000   |        | Radio Korea                 | 5975.0om  | 7275.0as  |           |           |           |           |  |
| 1900-2000   |        | KHBI Salpan, Marianas       | 9355.0eu  | 9385.0af  |           |           |           |           |  |
| 1900-2000   |        | Radio Kudirat, Nigeria      | 6205.0do  | 11540.0do |           |           |           |           |  |
| 1900-2000   |        | Voice of Russia             | 5920.0eu  | 5940.0eu  | 5965.0eu  | 7305.0af  | 7310.0eu  | 7340.0eu  |  |
|             |        |                             | 9480.0eu  | 9745.0af  | 9775.0af  | 9890.0eu  |           |           |  |
| 1900-2000 s |        | Amateur Radio League, SAF   | 3215.0af  |           |           |           |           |           |  |
| 1900-2000   |        | a Sri Lanka B'casting Corp. | 6010.0eu  |           |           |           |           |           |  |
| 1900-2000   |        | Radio Thailand              | 9535.0eu  | 9655.0eu  | 11905.0eu |           |           |           |  |
| 1900-2000   |        | BBC World Service           | 3255.0af  | 3955.0eu  | 6005.0af  | 6180.0eu  | 6190.0af  | 6195.0eu  |  |
|             |        |                             | 9410.0eu  | 9630.0af  | 9740.0pa  | 11980.0me | 12095.0eu | 15400.0af |  |
|             |        |                             | 17830.0af |           |           |           |           |           |  |
| 1900-2000   |        | Merlin Network One          | 6125.0eu  | 9690.0eu  |           |           |           |           |  |
| 1900-2000   |        | KJES Vado NM                | 15385.0ou |           |           |           |           |           |  |
| 1900-2000   |        | WSHB Cypress Creek SC       | 13770.0af | 15665.0eu | 17510.0af | 18910.0af |           |           |  |
| 1900-2100   |        | Voice of Hope, Germany      | 5975.0eu  |           |           |           |           |           |  |
| 1900-2100   |        | Kenya BC Corp               | 4885.0do  | 4935.0do  |           |           |           |           |  |
| 1900-2100   |        | Voice of Nigeria            | 7255.0af  | 15120.0af |           |           |           |           |  |
| 1900-2100   |        | SIBC Solomon Islands        | 5020.0do  |           |           |           |           |           |  |
| 1900-2200   |        | HCJB Quito Ecuador          | 15115.0eu | 21455.0uf |           |           |           |           |  |
| 1900-2400   |        | ZLXA New Zealand            | 3935.0do  | 7290.0do  |           |           |           |           |  |
| 1900-2400   |        | WINB Red Lion PA            | 13790.0am |           |           |           |           |           |  |
| 1905-1910   |        | Croatian Radio, Zagreb      | 6235.0eu  |           |           |           |           |           |  |
| 1930-2000   |        | Georgian Radio, Tbilisi     | 11910.0eu |           |           |           |           |           |  |
| 1930-2000   | mtwhf  | Radio Telefls Eireann       | 12160.0am |           |           |           |           |           |  |
| 1930-2000   |        | Radio Slovakia Int'l        | 5915.0eu  | 6055.0eu  | 7345.0eu  |           |           |           |  |
| 1930-2000   |        | VOA                         | 4950.0af  | 6035.0af  | 7415.0af  | 9525.0pa  | 9760.0me  | 11870.0pa |  |
|             |        |                             | 11920.0af | 11975.0af | 13710.0af | 15180.0pa | 15410.0af | 15580.0af |  |
| 1930-2000   |        | Radio Yugoslavia            | 6100.0eu  | 9720.0af  |           |           |           |           |  |
| 1930-2030   |        | VOIRI Teheran               | 7160.0eu  | 7260.0eu  | 9022.0eu  |           |           |           |  |
| 1930-2030   |        | Voice of Turkey             | 9630.0eu  | 9655.0uf  |           |           |           |           |  |
| 1935-1955   |        | RAI, Rome                   | 5970.0eu  | 7120.0eu  |           |           |           |           |  |
| 1945-1950   |        | RTV Togo                    | 5047.0af  |           |           |           |           |           |  |
| 1950-2000   | smtwh  | Radio New Zealand Int'l     | 17675.0va |           |           |           |           |           |  |
| 1950-20-0   | fa     | Radio New Zealand Int'l     | 11675.0va |           |           |           |           |           |  |
| 2000-2025   |        | Kol Israel                  | 7465.0va  | 9435.0va  | 11605.0va | 15640.0af |           |           |  |
| 2000-2030   |        | Radio Finland               | 6135.0eu  |           |           |           |           |           |  |
| 2000-2030   |        | Radio Budapest              | 3975.0eu  | 6025.0eu  |           |           |           |           |  |
| 2000-2030 s |        | a Radio Telefls Eireann     | 12160.0am |           |           |           |           |           |  |
| 2000-2030   |        | a Radio Latvia              | 5935.0eu  |           |           |           |           |           |  |
| 2000-2030   | w      | Malawi B'casting Corp.      | 3380.0do  |           |           |           |           |           |  |
| 2000-2030   | smt hf | Radio Mexico Int'l          | 5985.0na  | 9705.0na  |           |           |           |           |  |
| 2000-2030   |        | Swiss Radio Int'l           | 6165.0eu  | 9620.0af  | 9885.0af  | 11910.0af | 13700.0af |           |  |
| 2000-2030   |        | VOA                         | 4950.0af  | 6035.0af  | 6095.0me  | 7415.0af  | 9760.0me  | 11855.0af |  |
|             |        |                             | 11975.0af | 13710.0af | 15410.0af | 15580.0af | 17725.0af | 17755.0af |  |
| 2000-2030   |        | Vatican Radio               | 9660.0af  | 11625.0af | 13765.0af |           |           |           |  |
| 2000-2045   |        | WYFR Okeechobee FL          | 5810.0eu  | 7355.0eu  | 15565.0va | 21525.0af |           |           |  |
| 2000-2050   |        | Deutsche Welle              | 9725.0eu  |           |           |           |           |           |  |
| 2000-2056   |        | China Radio Int'l           | 5220.0eu  | 6950.0eu  | 7170.0af  | 9440.0af  | 9920.0eu  | 11840.0af |  |
|             |        |                             | 11975.0af | 15500.0af |           |           |           |           |  |
| 2000-2100   |        | Radio Algiers               | 11715.1va | 11749.9va | 15160.0va |           |           |           |  |
| 2000-2100   |        | R. Nacional de Angola       | 3374.9    | 9535.0    |           |           |           |           |  |
| 2000-2100   |        | Radio Australia             | 9500.0as  | 9580.0va  | 9660.0pa  | 11880.0va | 12080.0va |           |  |
| 2000-2100   |        | Radio Bulgaria              | 5850.0eu  | 7535.0eu  |           |           |           |           |  |
| 2000-2100   |        | R. MINURCA, Cen. Af. Rep.   | 9900.0    |           |           |           |           |           |  |
| 2000-2100   |        | Voice of Indonesia          | 15149.9va |           |           |           |           |           |  |
| 2000-2100   |        | V. of the Mediterranean     | 7440.0eu  |           |           |           |           |           |  |
| 2000-2100   |        | KHBI Salpan, Marianas       | 13840.0pa |           |           |           |           |           |  |
| 2000-2100   |        | Voice of Russia             | 5940.0eu  | 5965.0eu  | 7340.0eu  | 9480.0eu  | 9890.0eu  |           |  |
| 2000-2100   | mtwhf  | Radio Exterior de España    | 9595.0af  | 9680.0eu  |           |           |           |           |  |
| 2000-2100   |        | BBC World Service           | 3255.0af  | 3955.0eu  | 5975.0pa  | 6005.0af  | 6180.0eu  | 6190.0af  |  |
|             |        |                             | 6195.0eu  | 7325.0eu  | 9410.0eu  | 9630.0af  | 9740.0pa  | 11835.0af |  |
|             |        |                             | 12095.0sa | 15400.0af | 17830.0af |           |           |           |  |
| 2000-2200   |        | KWHR Naalehu HI             | 15405.0as |           |           |           |           |           |  |
| 2000-2200   |        | Merlin Network One          | 11755.0eu | 11985.0na |           |           |           |           |  |
| 2000-2200   |        | WEWN Birmingham AL          | 9385.0eu  | 11875.0na | 13615.0na |           |           |           |  |
| 2000-2200   |        | WHRA Greenbush ME           | 15460.0af |           |           |           |           |           |  |
| 2000-2200   |        | WSHB Cypress Creek SC       | 9355.0af  | 11550.0af | 13770.0eu | 15665.0eu |           |           |  |
| 2000-2400   |        | NBC Windhoek, Namibia       | 3270.1af  | 3289.9af  |           |           |           |           |  |
| 2000-2400   |        | Radio New Zealand Int'l     | 17675.0va |           |           |           |           |           |  |
| 2000-2400   |        | WBCQ Monticello ME          | 7415.0na  |           |           |           |           |           |  |
| 2000-2400   |        | Radio Vanuatu               | 3945.0do  | 4960.0do  | 7260.0do  |           |           |           |  |
| 2005-2105   |        | Radio Damascus              | 12085.0eu | 13605.0eu |           |           |           |           |  |
| 2015-2030   |        | Radio Tirana, Albania       | 7180.0eu  | 9650.0eu  |           |           |           |           |  |
| 2025-2045   |        | RAI, Rome                   | 7115.0af  | 9670.0af  | 11715.0af |           |           |           |  |

|           |        |                                   |           |           |           |           |           |           |  |  |
|-----------|--------|-----------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--|--|
| 2030-2045 |        | <b>Radio Thailand</b>             | 9535.0eu  | 9655.0eu  | 11905.0eu |           |           |           |  |  |
| 2030-2045 |        | <b>VOA</b>                        | 6035.0af  | 6095.0me  | 7415.0af  | 9760.0me  | 11975.0af | 13710.0af |  |  |
|           |        |                                   | 15410.0af | 15580.0af | 17725.0af | 17755.0af |           |           |  |  |
| 2030-2055 |        | <b>Voice of Vietnam</b>           | 5940.0eu  | 7270.0eu  | 7400.0eu  | 9839.9eu  | 12019.5eu |           |  |  |
| 2030-2100 | t h    | <b>Radio Minsk, Belarus</b>       | 7105.0eu  | 7210.0eu  |           |           |           |           |  |  |
| 2030-2100 |        | <b>Georgian Radio, Tbilisi</b>    | 11760.0eu |           |           |           |           |           |  |  |
| 2030-2100 |        | <b>AWR Europe, Germany</b>        | 9640.0af  |           |           |           |           |           |  |  |
| 2030-2100 |        | <b>Voice of Mongolia</b>          | 11790.0eu | 12085.0eu |           |           |           |           |  |  |
| 2030-2100 |        | <b>Polish Radio, Warsaw</b>       | 6035.0eu  | 6095.0eu  | 7285.0eu  | 9525.0eu  |           |           |  |  |
| 2030-2100 |        | <b>AWR Africa, Meyerton</b>       | 9745.0af  |           |           |           |           |           |  |  |
| 2030-2100 |        | <b>Radio Sweden</b>               | 6065.0va  |           |           |           |           |           |  |  |
| 2030-2100 | s      | <b>a VOA</b>                      | 4950.0af  |           |           |           |           |           |  |  |
| 2030-2100 |        | <b>Radio Tashkent</b>             | 7105.0eu  | 9540.0eu  |           |           |           |           |  |  |
| 2030-2115 |        | <b>Radio Cairo</b>                | 15375.0af |           |           |           |           |           |  |  |
| 2030-2130 |        | <b>Radio Havana Cuba</b>          | 13720.0eu | 13750.0af |           |           |           |           |  |  |
| 2030-2300 |        | <b>Radio Nigeria</b>              | 3326.0do  | 4770.0do  | 4990.0do  | 6025.0do  | 6050.0do  | 9570.0do  |  |  |
| 2045-2100 |        | <b>VOA</b>                        | 6035.0af  | 6095.0me  | 7415.0af  | 9760.0me  | 11975.0af | 13710.0af |  |  |
|           |        |                                   | 15410.0af | 15580.0af | 17725.0af | 17755.0af |           |           |  |  |
| 2045-2100 |        | <b>WYFR Okeechobee FL</b>         | 5810.0eu  | 7355.0eu  | 15565.0va |           |           |           |  |  |
| 2045-2230 |        | <b>All India Radio, Delhi</b>     | 7150.0au  | 7410.0eu  | 9650.0eu  | 9910.0au  | 9950.0eu  | 11620.0va |  |  |
|           |        |                                   | 11715.0au |           |           |           |           |           |  |  |
| 2050-2110 |        | <b>Vatican Radio</b>              | 4005.0eu  | 5883.0eu  | 7250.0eu  |           |           |           |  |  |
| 2100-2115 |        | <b>Cameroon Radio-TV</b>          | 4850.0va  |           |           |           |           |           |  |  |
| 2100-2125 |        | <b>Polish Radio, Warsaw</b>       | 6035.0eu  | 6095.0eu  | 7285.0eu  | 9525.0eu  |           |           |  |  |
| 2100-2127 |        | <b>Radio Prague Int'l</b>         | 5930.0va  | 7345.0va  |           |           |           |           |  |  |
| 2100-2130 |        | <b>Radio Australia</b>            | 7240.0pa  | 9500.0as  | 9580.0va  | 9660.0pa  | 11880.0va | 12080.0va |  |  |
|           |        |                                   | 17715.0va | 21740.0va |           |           |           |           |  |  |
| 2100-2130 |        | <b>Radio Korea</b>                | 3970.0eu  | 6480.0eu  | 15575.0eu |           |           |           |  |  |
| 2100-2130 |        | <b>Malawi B'casting Corp.</b>     | 3380.0do  |           |           |           |           |           |  |  |
| 2100-2130 |        | <b>VOA</b>                        | 6035.0af  | 6040.0me  | 6095.0me  | 7415.0af  | 11870.0pa | 11975.0af |  |  |
|           |        |                                   | 13710.0af | 15185.0pa | 15410.0af | 15580.0af | 17725.0af | 17735.0pa |  |  |
| 2100-2150 |        | <b>Deutsche Welle</b>             | 9615.0af  | 9670.0as  | 9690.0af  | 9765.0as  | 11785.0as | 11865.0af |  |  |
|           |        |                                   | 15275.0va |           |           |           |           |           |  |  |
| 2100-2156 |        | <b>China Radio Int'l</b>          | 6950.0eu  | 7170.0af  | 9440.0af  | 9920.0eu  | 11840.0af | 11975.0af |  |  |
|           |        |                                   | 15500.0af |           |           |           |           |           |  |  |
| 2100-2156 |        | <b>Radio Pyongyang</b>            | 4405.0eu  | 6575.0eu  | 9335.0am  | 11710.1am | 13760.0am |           |  |  |
| 2100-2156 |        | <b>Radio Romania Int'l</b>        | 5955.0eu  | 5990.0eu  | 7195.0eu  | 7215.0eu  |           |           |  |  |
| 2100-2159 |        | <b>Radio Canada Int'l</b>         | 5995.0va  | 7235.0va  | 9725.0va  | 9805.0va  | 11945.0va | 13650.0va |  |  |
|           |        |                                   | 13690.0va | 15150.0va | 17820.0af |           |           |           |  |  |
| 2100-2200 |        | <b>R. MINURCA, Cen. Af. Rep.</b>  | 9900.0    |           |           |           |           |           |  |  |
| 2100-2200 |        | <b>Radio Japan</b>                | 6035.0pa  | 9725.0eu  | 11850.0pa | 13630.0na |           |           |  |  |
| 2100-2200 |        | <b>Voice of Russia</b>            | 5940.0eu  | 5965.0eu  | 7300.0eu  | 7340.0eu  | 9890.0eu  |           |  |  |
| 2100-2200 |        | <b>BBC World Service</b>          | 3255.0af  | 3915.0as  | 3955.0eu  | 5965.0as  | 5975.0va  | 6005.0af  |  |  |
|           |        |                                   | 6110.0as  | 6180.0eu  | 6190.0af  | 6195.0va  | 7325.0eu  | 9410.0eu  |  |  |
|           |        |                                   | 9740.0pa  | 11835.0af | 12095.0as | 15400.0af |           |           |  |  |
| 2100-2200 |        | <b>WHRA Greenbush ME</b>          | 15460.0af |           |           |           |           |           |  |  |
| 2100-2200 |        | <b>WYFR Okeechobee FL</b>         | 7355.0eu  | 11580.0af | 15565.0va |           |           |           |  |  |
| 2100-2230 |        | <b>SIBC Solomon Islands</b>       | 5020.0do  | 9545.0do  |           |           |           |           |  |  |
| 2100-2300 |        | <b>Voice of Hope, Germany</b>     | 6000.0eu  |           |           |           |           |           |  |  |
| 2100-2400 |        | <b>Overcomer Ministries</b>       | 11840.0as |           |           |           |           |           |  |  |
| 2100-2400 |        | <b>WHRI Noblesville IN</b>        | 5755.0eu  | 9495.0am  |           |           |           |           |  |  |
| 2100-2400 |        | <b>WRMI Miami FL</b>              | 9955.0sa  |           |           |           |           |           |  |  |
| 2110-2210 |        | <b>Radio Damascus</b>             | 12085.0na | 13605.0na |           |           |           |           |  |  |
| 2115-2130 | mtwhf  | <b>BBC Caribbean Report</b>       | 5975.0ca  | 15390.0ca | 17715.0ca |           |           |           |  |  |
| 2115-2145 | mtwhfa | <b>Voice of Armenia, Yerevan</b>  | 4810.0eu  | 9965.0eu  |           |           |           |           |  |  |
| 2115-2200 |        | <b>Radio Cairo</b>                | 9990.0eu  | 15375.0af |           |           |           |           |  |  |
| 2130-2135 | mtwhf  | <b>Radio Latvia</b>               | 5935.0eu  |           |           |           |           |           |  |  |
| 2130-2145 | t f    | <b>BBC Calling Falklands</b>      | 11680.0sa |           |           |           |           |           |  |  |
| 2130-2200 |        | <b>Radio Australia</b>            | 7240.0pa  | 9660.0pa  | 11880.0va | 12080.0va | 17715.0va | 21740.0va |  |  |
| 2130-2200 | t h    | <b>Radio Minsk, Belarus</b>       | 7105.0eu  | 7210.0eu  |           |           |           |           |  |  |
| 2130-2200 |        | <b>KSDA Guam</b>                  | 15410.0as |           |           |           |           |           |  |  |
| 2130-2200 |        | <b>Radio Korea</b>                | 15575.0eu |           |           |           |           |           |  |  |
| 2130-2200 |        | <b>BBC English Teaching</b>       | 5875.0eu  | 6050.0eu  | 9635.0eu  |           |           |           |  |  |
| 2130-2200 |        | <b>VOA</b>                        | 6040.0me  | 6095.0me  | 11870.0pa | 15185.0pa | 17735.0af |           |  |  |
| 2130-2200 | smtwhf | <b>VOA</b>                        | 6035.0af  | 7415.0af  | 11975.0af | 13710.0af | 15410.0af | 15580.0af |  |  |
|           |        |                                   | 17725.0af |           |           |           |           |           |  |  |
| 2130-2225 |        | <b>VOIRI Teheran</b>              | 6025.0al  | 6165.0pa  | 6175.0pa  |           |           |           |  |  |
| 2130-2230 |        | <b>Voice of Turkey</b>            | 9525.0as  |           |           |           |           |           |  |  |
| 2130-2400 |        | <b>ABC Alice Springs</b>          | 4835.0do  |           |           |           |           |           |  |  |
| 2130-2400 |        | <b>ABC Katherine</b>              | 5025.0do  |           |           |           |           |           |  |  |
| 2130-2400 |        | <b>ABC Tennant Creek</b>          | 4910.0do  |           |           |           |           |           |  |  |
| 2200-2225 |        | <b>RAI, Rome</b>                  | 5990.0as  | 9675.0as  | 11900.0as |           |           |           |  |  |
| 2200-2225 |        | <b>Radio Moldova Int'l</b>        | 7520.0eu  |           |           |           |           |           |  |  |
| 2200-2229 |        | <b>Radio Canada Int'l</b>         | 5995.0va  | 7235.0va  | 9735.0va  | 9805.0va  | 11705.0as | 11945.0va |  |  |
|           |        |                                   | 13690.0va | 15150.0va |           |           |           |           |  |  |
| 2200-2230 |        | <b>R. MINURCA, Cen. Af. Rep.</b>  | 9900.0    |           |           |           |           |           |  |  |
| 2200-2230 |        | <b>Radio Budapest</b>             | 3975.0eu  | 7250.0eu  |           |           |           |           |  |  |
| 2200-2230 |        | <b>Malawi B'casting Corp.</b>     | 3380.0do  |           |           |           |           |           |  |  |
| 2200-2230 |        | <b>VOA</b>                        | 7215.0as  | 9770.0as  | 9890.0as  | 11760.0as | 15185.0as | 15290.0as |  |  |
|           |        |                                   | 15305.0as | 17735.0pa | 17820.0as |           |           |           |  |  |
| 2200-2230 | mtwhf  | <b>VOA</b>                        | 6035.0af  | 7415.0af  | 11975.0af | 12080.0af | 13710.0af |           |  |  |
| 2200-2230 |        | <b>Radio Yugoslavia</b>           | 6100.0eu  | 6185.0eu  |           |           |           |           |  |  |
| 2200-2245 |        | <b>Radio Cairo</b>                | 9990.0eu  |           |           |           |           |           |  |  |
| 2200-2256 |        | <b>WYFR Okeechobee FL</b>         | 11740.0na | 11580.0af | 15565.0va |           |           |           |  |  |
| 2200-2300 |        | <b>China Radio Int'l</b>          | 7170.0eu  |           |           |           |           |           |  |  |
| 2200-2300 |        | <b>Radio Australia</b>            | 17715.0va | 17795.0va | 21740.0va |           |           |           |  |  |
| 2200-2300 |        | <b>Radio Bulgaria</b>             | 7535.0eu  | 7545.0eu  |           |           |           |           |  |  |
| 2200-2300 |        | <b>Radio Iraq Int'l</b>           | 11785.0ir |           |           |           |           |           |  |  |
| 2200-2300 | s      | <b>a Radio Exterior de España</b> | 9595.0af  | 9680.0eu  |           |           |           |           |  |  |
| 2200-2300 |        | <b>Radio Taipei Int'l</b>         | 5810.0eu  | 9985.0eu  |           |           |           |           |  |  |

|             |                           |           |           |           |           |           |           |
|-------------|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 2200-2300   | Radio Ukraine Int'l       | 4820.0eu  | 5905.0eu  | 6020.0eu  | 6080.0eu  | 7150.0na  | 7205.0eu  |
|             |                           | 7380.0eu  | 7420.0eu  | 9560.0eu  | 9610.0eu  |           |           |
| 2200-2300   | BBC World Service         | 3955.0eu  | 5965.0as  | 5975.0am  | 6175.0na  | 6195.0va  | 7110.0as  |
|             |                           | 7385.0as  | 9590.0na  | 9660.0as  | 9915.0sa  | 11835.0af | 11955.0as |
|             |                           | 12080.0pa | 12095.0sa | 15400.0af |           |           |           |
| 2200-2300   | Merlin Network One        | 7120.0eu  | 7170.0as  | 9835.0na  |           |           |           |
| 2200-2300   | WGTC McCaysville GA       | 6890.0uf  | 9400.0am  |           |           |           |           |
| 2200-2400   | Caribbean Beacon          | 6090.0am  |           |           |           |           |           |
| 2200-2400   | Voice of Guyana           | 3289.8do  | 5949.4do  |           |           |           |           |
| 2200-2400   | KWHR Nazalehu HI          | 17510.0as |           |           |           |           |           |
| 2200-2400   | RTM Radio 4, Malaysia     | 7295.0do  |           |           |           |           |           |
| 2200-2400   | Nat'l BC, Papua NG        | 3925.0do  | 4890.0do  | 9520.0do  | 9675.0do  | 11880.0do |           |
| 2200-2400   | WEWN Birmingham AL        | 5825.0na  | 5850.0eu  | 13615.0na |           |           |           |
| 2200-2400   | WHRA Greenbush ME         | 13760.0af |           |           |           |           |           |
| 2200-2400   | WSHB Cypress Creek SC     | 7510.0eu  | 15285.0sa |           |           |           |           |
| 2200-2400   | WWCR Nashville TN         | 5070.0na  | 7435.0na  | 9475.0na  | 13845.0na |           |           |
| 2230-2256   | R. Vlaanderen Int'l       | 13670.0na |           |           |           |           |           |
| 2230-2257   | Radio Prague Int'l        | 7345.0na  | 9435.0na  |           |           |           |           |
| 2230-2300   | Radio Tirana, Albania     | 6025.0eu  | 7160.0eu  |           |           |           |           |
| 2230-2300   | ORF Vienna                | 5945.0eu  | 6155.0eu  | 13730.0af |           |           |           |
| 2230-2300   | Radio Sweden              | 6065.0va  | 7325.0va  |           |           |           |           |
| 2230-2300   | VOA                       | 7215.0as  | 9770.0as  | 9890.0as  | 11760.0as | 15185.0as | 15290.0as |
|             |                           | 15305.0as | 17735.0pa | 17820.0as |           |           |           |
| 2230-2330   | Radio Havana Cuba         | 9550.0am  |           |           |           |           |           |
| 2230-2400 s | a SIBC Solomon Islands    | 5020.0do  |           |           |           |           |           |
| 2230-2400   | a SIBC Solomon Islands    | 9545.0do  |           |           |           |           |           |
| 2240-2250   | Voice of Greece           | 9420.0au  | 11645.0au |           |           |           |           |
| 2245-2305   | Vatican Radio             | 7305.0au  | 9600.0au  | 11830.0au |           |           |           |
| 2245-2345   | WYFR Okeechobee FL        | 11740.0na |           |           |           |           |           |
| 2245-2400   | All India Radio, Delhi    | 7410.0as  | 9705.0as  | 9950.0as  | 11620.0as | 13625.0as |           |
| 2300-2325   | Radio Moldova Int'l       | 7520.0eu  |           |           |           |           |           |
| 2300-2329   | Radio Canada Int'l        | 5960.0na  | 6040.0am  | 9535.0am  | 9755.0na  | 11865.0am |           |
| 2300-2330   | KSDA Guam                 | 11775.0as |           |           |           |           |           |
| 2300-2330   | BBC World Service         | 3915.0as  | 3955.0eu  | 5965.0as  | 5975.0am  | 6035.0as  | 6175.0na  |
|             |                           | 6195.0va  | 7110.0as  | 9590.0na  | 9915.0sa  | 11945.0as | 11955.0as |
|             |                           | 12095.0sa | 15280.0as |           |           |           |           |
| 2300-2350   | Deutsche Welle            | 5990.0as  | 6010.0as  | 6045.0as  | 7235.0as  |           |           |
| 2300-2356   | Radio Pyongyang           | 11335.0am | 11710.1am | 13760.0am | 15130.1am |           |           |
| 2300-2356   | Radio Romania Int'l       | 5955.0eu  | 7195.0eu  | 9570.0na  | 11830.0na |           |           |
| 2300-2400   | Radio Australia           | 9660.0pa  | 12080.0va | 17715.0va | 17795.0va | 21740.0va |           |
| 2300-2400   | Radio Cairo               | 9900.0am  |           |           |           |           |           |
| 2300-2400 s | Good News World Radio     | 9405.0va  |           |           |           |           |           |
| 2300-2400   | Voice of Hope, Lebanon    | 11530.0me |           |           |           |           |           |
| 2300-2400   | SBC Radio 1, Singapore    | 6150.0do  |           |           |           |           |           |
| 2300-2400   | Voice of Turkey           | 7280.0eu  | 9655.0va  |           |           |           |           |
| 2300-2400   | Merlin Network One        | 3985.0eu  | 7170.0as  | 9835.0na  |           |           |           |
| 2300-2400   | VOA                       | 7215.0as  | 9770.0as  | 9890.0as  | 11760.0as | 15185.0as | 15290.0as |
|             |                           | 15305.0as | 17735.0pa | 17820.0as |           |           |           |
| 2300-2400   | WGTC McCaysville GA       | 5085.0am  | 6890.0uf  |           |           |           |           |
| 2300-2400   | WWBS Macon GA             | 11910.0na |           |           |           |           |           |
| 2330-2345   | BBC English Teaching      | 3915.0as  | 5875.0as  |           |           |           |           |
| 2330-2355   | Voice of Vietnam          | 5940.0af  | 7270.0af  | 7400.0af  | 9839.9af  | 12019.5af |           |
| 2330-2400   | Radio Canada Int'l        | 5960.0na  | 9755.0na  |           |           |           |           |
| 2330-2400 s | a Radio Canada Int'l      | 6040.0am  | 9535.0am  | 11865.0am |           |           |           |
| 2330-2400   | KSDA Guam                 | 11775.0as |           |           |           |           |           |
| 2330-2400   | Radio Netherlands         | 6165.0na  | 9845.0na  |           |           |           |           |
| 2330-2400   | BBC World Service         | 5965.0as  | 5975.0am  | 6035.0as  | 6175.0na  | 6195.0as  | 7110.0as  |
|             |                           | 9590.0na  | 9915.0sa  | 11945.0as | 11955.0as | 12095.0sa | 15280.0as |
| 2340-2350   | Voice of Greece           | 7450.0am  | 9400.0am  | 9420.0am  | 11645.0am |           |           |
| 2345-2400   | BBC World Service         | 3915.0as  |           |           |           |           |           |
| 24hr        | CFMX Montreal PQ          | 6005.0do  |           |           |           |           |           |
| 24hr        | CFRX Toronto ON           | 6070.0do  |           |           |           |           |           |
| 24hr        | CFVP Calgary AB           | 6030.0do  |           |           |           |           |           |
| 24hr        | CHNX Halifax NS           | 6130.0do  |           |           |           |           |           |
| 24hr        | CKZN Saint John's NL      | 6160.0do  |           |           |           |           |           |
| 24hr        | CKZU Vancouver BC         | 6160.0do  |           |           |           |           |           |
| 24hr        | United Christian BC, Ire. | 6200.0do  |           |           |           |           |           |
| 24hr        | AFRTS                     | 4278.5uf  | 6458.5uf  | 12689.5uf |           |           |           |
| 24hr        | WJCR Upton KY             | 7490.0va  | 13595.0as |           |           |           |           |

Key:

| Days:         | Target Areas:        | Other Notes:         |
|---------------|----------------------|----------------------|
| s - Sunday    | na - North America   | va - Various         |
| m - Monday    | ca - Central America | do - Domestic        |
| t - Tuesday   | sa - South America   | om - Omnidirectional |
| w - Wednesday | am - Americas        |                      |
| h - Thursday  | eu - Europe          | ir - Irregular       |
| f - Friday    | af - Africa          | oc - Occasional      |
| a - Saturday  | me - Middle East     | al - Alternate       |
|               | as - Asia            | lf - Lower Sideband  |
|               | pa - Pacific         | uf - Upper Sideband  |

(Ed. note: If you want to keep your schedules up-to-date, Mark Fine sells electronic versions of this data, updated approximately weekly and available on the Internet. Contact Mark at the addresses on the first page of the schedules.)

# 12th Annual Winter SWL Festival

March 13-15, 1999

Holiday Inn

Sunneytown Pike

Kulpsville, Pennsylvania



Last Festival before The Millennium!



Get there any way you can!

Plan to attend your favorite forums Friday and Saturday. Enjoy meeting with your friends in the Hospitality Room. Bring radio related items for the swap meet or to donate for the Silent Auction. Check out your friends receivers, bring one of your own for others to try!

No frills; just shortwave, longwave, mediumwave, pirates, and scanning. Once again you will enjoy the camaraderie of your hobby friends.



Registration Options include:

- FULL.** — Includes forums, hospitality room, lunch and banquet — \$40  
**PARTIAL.** — Includes forums, hospitality room but NO meals — \$17  
**SPOUSE.** — Includes hospitality room and meals — \$22



**GRAND PRIZE:** To be announced

**SPECIAL:** Register early to win a SW portable! One free entry for an early bird registration received by February 12, 1999.

Please bring items for the Silent Auction. Proceeds are donated to charity.

Checks should be made payable to WINTER SWL FEST. Register directly with the hotel for your rooms by calling the Holiday Inn at (215) 363-3800. For 1999, one special rate \$69 single or double! Tell the hotel staff you're with the WINTER SWL FEST to receive this special room rate. Up to the minute info. can be heard on the ANARC SWL.NET on 7240 LSB at 10 AM Sundays.

The Holiday Inn is located at EXIT 31 of the PA Turnpike Northeast Extension-Lansdale Interchange. Improved access from the south with the Blue Route—ask for details. Limo service is available from Phila. Intl Airport directly to the Holiday Inn.

Please submit the following form with your registration amount or send for more information to:



Winter SWL Festival

PO Box 591

Colmar, PA 18915



Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ E-Mail: \_\_\_\_\_

Circle: FULL PARTIAL SPOUSE (Spouse Name \_\_\_\_\_)

Banquet - Check: Roast Beef \_\_\_\_\_ Chicken \_\_\_\_\_ Registration Fee Enclosed: \$ \_\_\_\_\_

I wish to purchase \_\_\_\_\_ raffle tickets Tickets Fee Enclosed: \$ \_\_\_\_\_

(\$1 ea / 6 for \$5 / Special 13 for \$10) Total check/money order enclosed: \$ \_\_\_\_\_

Registration cancellations after 2/28/99 cannot be refunded, however we will refund raffle ticket money if you have to cancel.

Registration verifications can only be made if you supply an email address! Sorry if this is an inconvenience.

# Company Store

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Havertown, PA 19083

All s/h charges for the following items are included unless otherwise noted. Write for shipping and handling costs for orders shipped outside N. America. Please note the new proprietor and address.

## Publications

|  |                                      |
|--|--------------------------------------|
| <i>Transmitter Documentation Project (TDP)</i><br>A result of 10 years of research by DXer Ludo Maes, the TDP presents 80 pages of info listing SW broadcast tx'ers worldwide arranged by country with station name, tx'er site, geographical coordinates, callsign and more         | \$10.00 US<br>\$13.00 worldwide      |
| <i>Shortwave Listening Guidebook</i><br>by Harry Helms. Covers equipment, antennas, propagation, station profiles, utilities, clandestines, QSL'ing, etc. 315 pages.   | \$19.95<br>+2.00 s/h                 |
| <i>Secrets of Successful QSL'ing</i><br>by Gerry Dexter. The complete guide to Reception Reports and QSL collecting. Going out of print! Get it while you can. 125 pages.  | \$12.95<br>+1.00 s/h                 |
| <i>Limited Space Antenna Solutions</i><br>by Frank P. Hughes. Covers the random wire, dipole, vertical, outdoor, loft and indoor antennas, antenna tuners, and grounds.  | \$13.00<br>+1.00 s/h                 |
| <i>Inside Your Shortwave Radio</i><br>by Ted Benson. Companion to your receiver's instruction manual, filling in what your manual leaves unclear.  | \$13.95<br>+2.00 s/h                 |
| <i>NASWA Country List and Awards Program Booklet</i>   | \$3.00 PP US<br>\$5.00 elsewhere     |
| <i>The System</i><br>Masters for Log Book, QSL Reports, Program Notes, and QSL Log.  | \$2.00                               |
| <i>Propagation Predictor</i><br>Divides the year into 27-day segments for tracking solar patterns.   | \$3.00                               |
| <i>Spectrum Log</i><br>Covers Tropical and International bands.  | \$8.50                               |
| <i>NASWA Reprints Catalog</i><br>A catalog of 800+ pages of info available from past NASWA issues.   | \$3.00                               |
| <i>Joe Carr's Receiving Antenna Handbook (Currently out of stock)</i><br>A complete guide for high performance antennas from longwave all the way to the upper end of the shortwave spectrum.  | \$19.95<br>+2.00 s/h                 |
| <i>QSL Signers</i><br>by Al Quaglieri. This is the most comprehensive and up-to-date list of verification signers names, titles, and addresses available anywhere!   | \$3.00 PP NA<br>\$5.00 elsewhere     |
| <i>Language Lab</i><br>by Gerry Dexter et al. Guides to reception report writing. Editions available for French, Portuguese, and Indonesian. When these are gone, they're gone for good! Tiare Publications.   | \$12.00 Each<br>+1.00 s/h            |
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The Journal of the  
North American Shortwave Association

ISSN 0160-1989

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