Radio Shack®

TWO DOLLARS AND
TWENTY-FIVE CENTS

62-2032

SHORT-WAVE LISTENER'S GUIDE

Shortwave Listener's Guide

by

H. Charles Woodruff

Howard W. Sams & Co., Inc.
4300 WEST 62ND ST. INDIANAPOLIS, INDIANA 46268 USA

EIGHTH EDITION
FIRST PRINTING—1980

International Standard Book Number: 0-672-21655-8
Library of Congress Catalog Card Number: 79-67132

Printed in the United States of America.

Preface

Every owner of a shortwave receiving set is familiar with the thrill that comes from hearing a distant station broadcasting from a foreign country. To hundreds of thousands of people the world over, shortwave listening (often referred to as swl) represents the most satisfying, the most worthwhile of all hobbies.

It has been estimated that more than 25 million shortwave receivers are in the hands of the American public, with the number increasing daily. To explore the international shortwave broadcasting bands in a knowledgeable manner, the shortwave listener must have available a list of shortwave stations, their frequencies, and their times of transmission. To keep abreast of the ever-increasing public interest in music, news, and the exchange of cultural ideas from foreign lands, the eighth edition of this book has been completely revised to include the most recent changes in broadcasting schedules. A new format has been adopted in order to present the shortwave schedules and frequency information in a more comprehensive style and in a manner that can be utilized by shortwave enthusiasts the world over. The listings presented in this edition are arranged conveniently in five sections as follows:

Section 1 contains a brief explanation of shortwave propagation in easy-to-understand language, along with forecast tables that the swl'er can use as a guide to the best wavelength bands to be used for listening to stations in various geographic locations. These tables cover from late 1979 through August 1981. Section 1 also contains a do-it-yourself method that will enable the nontechnical swl enthusiast to predict daily ionospheric conditions with a high degree of accuracy.

Section 2 contains an explanation of the receiver characteristics the shortwave enthusiast may experience while tuning the high frequency radio bands. A brief discussion on noise, both atmospheric

and man-made, and what can be done to eliminate or reduce it, is also presented. A few easy-to-build shortwave antennas that the swl'er can erect, and also the receiving characteristics that can be expected from each are illustrated and discussed.

Section 3 consists of worldwide shortwave broadcasting stations listed alphabetically according to country and city within the country. Important particulars such as geographic location, rf carrier output in kilowatts (kW), interval signal (Int), announcement (Ann), frequency in kilohertz (kHz), and hours of transmission in Coordinated Universal Time (UTC) for each station are given.

Section 4 contains a listing of shortwave broadcasting stations, including the country and city, in numerical order by frequency.

Section 5 contains a listing of shortwave news broadcasts that are transmitted in English and other principal languages. The tabulation is arranged by UTC (Coordinated Universal Time) and alphabetically by country.

Section 6 includes the official names and business addresses of the shortwave stations so that the shortwave listener can send verification reports of transmissions heard. QSL-ing, as it is called, is explained in this section.

The tabulations in this book by no means represent all of the shortwave broadcasting stations in the world. Only those transmitting in English and a few of the other major languages of the world are included. Every effort has been expended to make this edition as useful and up to date as possible. However, the accuracy cannot be guaranteed; carrier frequencies and program scheduling may change without notice. All swl'ers are cordially invited to comment on any additions, deletions, or changes that may be noted, so that these can be incorporated in future editions.

H. Charles Woodruff

Contents

Introduction

To pursue the very interesting and stimulating hobby of shortwave listening in an informed manner, the hobbyist must be aware of a few salient facts. These important items are discussed in the following paragraphs. Every effort has been made to simplify the data. If detailed information on a particular subject is desired, it is suggested that a textbook be consulted.

FREQUENCY

All transmission frequencies in this book are expressed in kilohert (kHz). Receiver dials are often calibrated in megahertz (MHz). To convert kilohertz to megahertz, simply divide by 1000; conversely, to convert megahertz to kilohertz, multiply by 1000. For example, 9100 kHz is 9.1 MHz, and 5 MHz is 5000 kHz. The tuning dials of most shortwave receivers omit fractional numbers. For example, the numerals 9, 10, 15, 20, etc., appearing on the tuning dial stand for 9 MHz, 10 MHz, 15 MHz, and 20 MHz. To determine the location of a station broadcasting on 9.100 megahertz, the operator needs only to mentally divide the space between 9 MHz and 10 MHz, and position the receiver tuning-dial marker one-tenth of that spacing beyond 9 MHz. Some receivers have precision dial calibrations that are expressed directly in kilohertz.

Some receivers may use the terms kilocycles (kc) or megacycles (mc) instead of kilohertz and megahertz. The terms have the same significance; that is, "kilocycles" is the same as "kilohertz" and "megacycles" is the same as "megahertz." Formerly, the term "cycles per second" was used to designate frequencies. The terms kilocycles and megacycles (actually kilocycles per second and megacycles per second) were used to designate 1000 and 1,000,000 cycles per second. The newer term, hertz, was adopted partially because

of the fact that the "per second" portion of the previous designation was often omitted (though without the time element the term is meaningless) and partially to honor Heinrich Hertz, considered by many as the father of radio. The term hertz (Hz) means cycles per second; thus, the time is included as part of the term. Likewise, kilohertz means 1000 cycles per second (1000 Hz) and megahertz means 1,000,000 cycles per second (1,000,000 Hz or 1000 kHz).

By international regulations, entered into by most countries, certain groups, or "bands," of radio frequencies have been set aside in the high-frequency radio spectrum for international shortwave broadcasting (Table 1). Most of the world's shortwave broadcasting stations operate within these bands; some, however, operate outside the band limits, usually adjacent to a particular band within 100 or 200 kHz. Occasionally you might hear that a particular station is operating in the "16-meter band," or the "41-meter band," etc. Table 1 lists these designations for the various bands.

Table 1. International Shortwave Broadcasting Bands

Frequency (kHz)	Band (Meters)
2300–2495	120
3200–3400	90
3900–4000	75
4750–5060	60
5950–6200	49
7100–7300	41
9500–9775	31
11,700–11,975	25
15,100–15,450	19
17,700–17,900	16
21,450–21,750	13
25,600–26,100	11

CALL LETTERS

Any listener to conventional radio and television is aware of the call letters assigned to transmitting stations, for example, KFI, Los Angeles; KOA, Denver; WLS, Chicago; WNBC, New York; etc. Some countries have assigned call letters to their high-frequency stations; however, the call letters are rarely used for station identification. Usually the announcer of a shortwave station will merely say, "This is Radio Japan," "This is RSA, Radio South Africa," or "This is the Voice of America."

POWER

The transmitting power listed in Section 3 of this book is expressed in kilowatts (kW). Most international shortwave stations use transmitting equipment with a power of 50 kW or more to ride through the

interference and atmospheric noise. This high power does not mean that stations of 5 kW or less cannot be heard. Quite the contrary—amateur shortwave operators have repeatedly disproved this by conversing with fellow "hams" all over the world using considerably less than 1 kW of power. The unpredictability of shortwave listening is what makes the hobby interesting and the end result more rewarding.

PROGRAM TARGET AREAS

Most international shortwave broadcasting stations employ directional antenna arrays to beam radio transmissions to a specific geographical area, such as Europe, North America, Africa, Asia, etc. These programmed areas are indicated in the Section 3 station listings.

In most instances, due to overlap of target areas and because of the nature of shortwave radio wave propagation, you may hear broadcasts that are not specifically beamed to your area. For example, BBC transmissions directed to Africa can often be received in Southeast Asia. However, for best reception and maximum signal strength, choose a transmission that is beamed to your geographical location. Those transmissions not indicated as beamed to a specific area can be assumed to be omnidirectional.

All broadcasts listed in *Shortwave Listener's Guide* are daily transmissions unless otherwise noted.

MULTIPLE-FREQUENCY TRANSMISSIONS

To compensate for adverse ionospheric conditions, interference from other radio stations, jamming, and technical malfunctions, stations may use several frequencies beamed to the same general geographical area. When radio interference or low received signal strength is encountered, the listener should try a different listed frequency or tune to the station at another time.

TIME ZONES AND LOCAL TIME

The United States is divided into seven standard time zones, designated as Eastern, Central, Mountain, Pacific, Yukon, Alaska/Hawaii, and Bering. The Canadian provinces are in the first five of these seven zones, plus the Atlantic time zone on the east. In addition, Newfoundland and Labrador advance the clock one-half hour ahead of Atlantic time. The various time zones are shown in Fig. 1. Each time zone is approximately 15 degrees of longitude in width, and all places within a given zone use the time reckoned from the transit of the sun across the standard time meridian of that zone. The time for each zone, starting with the Atlantic time zone and moving westward, is basically reckoned from the 60th, 75th, 90th, 105th, 120th, 135th, 150th, and 160th meridians west of Greenwich, England (prime meridian). The actual division lines separating the various time zones

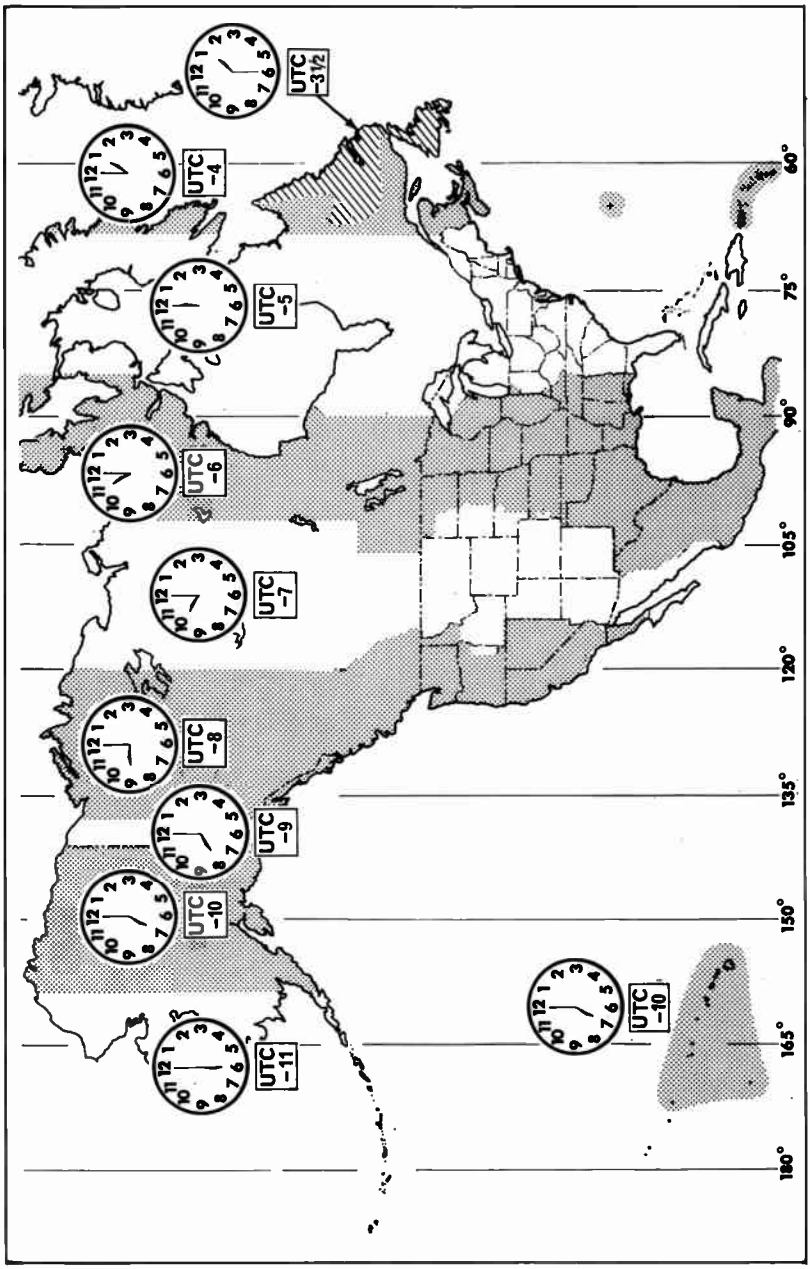

Fig. 1. North American time zones.

wander somewhat to conform with local geographic areas and local convenience.

The times of all events listed in *Shortwave Listener's Guide* are given in Coordinated Universal Time (UTC), which is coordinated through international agreements by the International Time Bureau (BIH, which stands for *B*ureau *I*nternational d l'*H*eure, located in Paris, France) so that time signals broadcast from standard frequency and time stations throughout the world (such as WWV in Fort Collins, Colorado) will be in close agreement. The specific hour and minute listed is actually the time in the reference time zone centered around Greenwich, England, and is generally equivalent to the more familiar "Greenwich Mean Time" (GMT). To obtain the local time of the event, it is necessary to add or subtract a given number of hours from the UTC. For example, to obtain the local time in the Eastern time zone, five hours must be subtracted from the time shown; for the Pacific time zone, eight hours must be subtracted.

The standard time differences for principal cities of the United States and Canada are indicated in Table 2. Standard time differences for cities throughout the rest of the world are indicated in Table 3.

Table 2. Standard Time Differences, US and Canadian Cities*

City	Time	City	Time
Akron, OH	1200	Edmonton, Alta	1000
Albuquerque, NM	1000	El Paso, TX	1000
Anchorage, AK	0700	Erie, PA	1200
Atlanta, GA	1200	Evansville, IN	1100
Austin, TX	1100	Fairbanks, AK	0700
Baltimore, MD	1200	Flint, MI	1200
Birmingham, AL	1100	Fort Wayne, IN	1200
Bismarck, ND	1100	Fort Worth, TX	1100
Boise, ID	1000	Frankfort, KY	1200
Boston, MA	1200	Galveston, TX	1100
Buffalo, NY	1200	Gander, Nfld	1330
Butte, MT	1000	Grand Rapids, MI	1200
Charleston, SC	1200	Halifax, N.S.	1300
Charlotte, NC	1200	Hartford, CT	1200
Chattanooga, TN	1200	Helena, MT	1000
Cheyenne, WY	1000	Hilo, HI	0700
Chicago, IL	1100	Honolulu, HI	0700
Cincinnati, OH	1200	Houston, TX	1100
Cleveland, OH	1200	Indianapolis, IN	1200
Colorado Sprs., CO	1000	Jacksonville, FL	1200
Columbus, OH	1200	Juneau, AK	0900
Dallas, TX	1100	Kansas City, MO	1100
Dayton, OH	1200	Knoxville, TN	1200
Denver, CO	1000	Las Vegas, NV	0900
Des Moines, IA	1100	Lexington, KY	1200
Detroit, MI	1200	Lincoln, NE	1100
Duluth, MN	1100	Little Rock, AR	1100
Dutch Harbor, AK	0600	Los Angeles, CA	0900

Table 2 cont'd. Standard Time Differences, US and Canadian

City	Time	City	Time
Louisville, KY	1200	Richmond, VA	1200
Memphis, TN	1100	Rochester, NY	1200
Miami, FL	1200	Sacramento, CA	0900
Milwaukee, WI	1100	St. Louis, MO	1100
Minneapolis, MN	1100	St. Paul, MN	1100
Mobile, AL	1100	Salt Lake City, UT	1000
Montreal, Que	1200	San Antonio, TX	1100
Nashville, TN	1100	San Diego, CA	0900
Newark, NJ	1200	San Francisco, CA	0900
New Haven, CT	1200	Santa Fe, NM	1000
New Orleans, LA	1100	Savannah, GA	1200
New York, NY	1200	Seattle, WA	0900
Nome, AK	0600	Shreveport, LA	1100
Norfolk, VA	1200	Sioux Falls, SD	1100
Oklahoma City, OK	1100	Spokane, WA	0900
Omaha, NE	1100	Tacoma, WA	0900
Ottawa, Ont	1200	Tampa, FL	1200
Peoria, IL	1100	Toledo, OH	1200
Philadelphia, PA	1200	Topeka, KS	1100
Phoenix, AZ	1000	Toronto, Ont	1200
Pierre, SD	1100	Tucson, AZ	1000
Pittsburgh, PA	1200	Tulsa, OK	1100
Portland, ME	1200	Vancouver, B.C.	0900
Portland, OR	0900	Washington, DC	1200
Providence, RI	1200	Wichita, KS	1100
Quebec, Que	1200	Wilmington, DE	1200
Reno, NV	0900	Winnipeg, Man	1100

* At 1700 hours UTC, the standard time in US and Canadian cities is as listed.

By Federal law, daylight saving time (DST) is observed in the United States from 2:00 a.m. on the last Sunday in April to 2:00 a.m. on the last Sunday in October. (A few states have elected to exempt themselves from the observance of daylight saving time.) Daylight saving time is achieved by advancing the clocks one hour. For example, an event listed for 9:00 p.m. EST would take place at 10:00 p.m. EDT.

Table 3. Standard Time Differences, World Cities*

City	Time	City	Time
Abidjan, Ivory Coast	1700	Bangkok, Thailand	0000
Addis Ababa, Ethiopia	2000	Belfast, Northern Ireland	1800
Adelaide, Australia	0230†	Berlin, Germany	1800
Alexandria, Egypt	1900	Bern, Switzerland	1800
Amsterdam, Netherlands	1800	Bogota, Colombia	1200
Athens, Greece	1900	Bombay, India	2230
Auckland, New Zealand	0500†	Brazzaville, Congo	1800
Baghdad, Iraq	2000	Bremen, Germany	1800

Table 3 cont'd. Standard Time Differences, World

City	Time	City	Time
Brussels, Belgium	1800	Oslo, Norway	1800
Bucharest, Romania	1900	Panama, Panama	1200
Budapest, Hungary	*1800	Paris, France	1800
Buenos Aires, Argentina	1400	Peking, China	0100†
Calcutta, India	2230	Perth, Australia	0100†
Cape Town, So. Africa	1900	Port Moresby, Papua	0300†
Caracas, Venezuela	1300	Prague, Czechoslovakia	1800
Colombo, Sri Lanka	2230	Quito, Equador	1200
Copenhagen, Denmark	1800	Rangoon, Burma	2330
Djakarta, Indonesia	0000	Reykjavik, Iceland	1700
Dublin, Ireland	1800	Rio de Janeiro, Brazil	1400
Geneva, Switzerland	1800	Rome, Italy	1800
Godthab, Greenland	1400	Saigon, Vietnam	0100†
Guam Island (US)	0300†	Salisbury, Rhodesia	1900
Havana, Cuba	1300	Santiago, Chile	1300
Helsinki, Finland	1900	Seoul, Korea	0200†
Hong Kong	0100†	Shanghai, China	0100†
Istanbul, Turkey	1900	Singapore, Singapore	0030†
Johannesburg, So. Africa	1900	Sofia, Bulgaria	1900
Karachi, Pakistan	2200	Stockholm, Sweden	1800
Kiev, USSR	2000	Sydney, Australia	0300†
Le Havre, France	1800	Tahiti, Fr. Polynesia	0700†
Leningrad, USSR	2000	Tashkent, USSR	2300
Lima, Peru	1200	Tehran, Iran	2030
Lisbon, Portugal	1800	Tel Aviv, Israel	1900
Liverpool, England	1800	Taiwan (Nationalist China)	0100†
London, England	1800	Tokyo, Japan	0200†
Madrid, Spain	1800	Ulan Bator, Mongolia	0100†
Managua, Nicaragua	1100	Valparaiso, Chile	1300
Manila, Philippines	0100†	Vienna, Austria	1800
Mandalay, Burma	2330	Vientiane, Laos	0000
Melbourne, Australia	0300†	Vladivostok, USSR	0300†
Mexico City, Mexico	1100	Warsaw, Poland	1800
Montevideo, Uruguay	1400	Wellington, New Zealand	0500†
Moscow, USSR	2000	Yokohama, Japan	0200†
Omdurman, Sudan	1900	Zurich, Switzerland	1800

* At 1700 hours UTC, the standard time in world cities is as listed.
† Next day.

Notice that in this book times are given in the 24-hour system. In this system, time is expressed by a four-digit number in which the first two digits indicate the hour and the last two digits indicate the minute. The hours are numbered starting with midnight as zero. For example, 12:30 a.m. is 0030, 10:30 a.m. is 1030, 1:00 p.m. is 1300, 6:25 p.m. is 1825, etc. Usually, midnight is written 0000, but occasionally it may appear as 2400.

1

Ionospheric Propagation and Predictions

Two types of radio-frequency waves are emitted from a shortwave transmitting antenna—the ground wave and the sky wave. The ground wave is of no significance for shortwave reception. The sky wave, however, upon leaving the transmitting antenna travels upward at various angles above the surface of the earth. It would simply continue out into space were it not bent sufficiently to bring it back to the earth. The medium that causes such bending is the ionosphere, a region in the upper atmosphere where free ions and electrons exist in sufficient quantity to cause a change in the refractive index. Ultraviolet radiation from the sun is considered to be responsible for the ionization. For a given intensity of ionization, the amount of refraction becomes less as the frequency of the wave becomes higher. The bending is smaller, therefore, at high frequencies than it is at low frequencies. If the frequency is raised to a high enough value, the bending eventually will become too slight to bring the wave back to earth. At frequencies beyond this point, long-distance shortwave communication becomes impossible.

Because an increase in ionization causes an increase in the maximum frequency of waves that can be bent sufficiently for long-distance communication, it can be seen that slight variations in sun radiation caused by sunspots, solar flares, and other solar disturbances can affect shortwave signal reception.

The amount of ultraviolet radiation reaching the earth varies considerably during a 24-hour period due to the rotation of the earth and because of sunspots and solar flares. Furthermore, the average sunspot number varies over an approximate 11-year cycle. At the time of maximum sunspots, station reception on the 11-meter band is possible over great distances. However, at the time of low sunspot

number the 11- and 13-meter bands are virtually useless. Solar activity reached a maximum in 1969 and then declined slowly, reaching a low in the latter part of 1974. It remained at this low ebb until approximately mid 1978, at which time it rose rapidly in its present cycle, which is expected to reach its peak during the spring of 1980. (The present cycle was more than one year late in starting). To illustrate the sometimes uncertainty of sunspot cycles, almost no spots appeared on the sun for 70 years in the 17th and 18th centuries, during the Little Ice Age, and no one knows why such quiet intervals occur or when the next one will be. Judging from the robust sunspot activity during 1979, scientists believe the present cycle will likely be one of the four highest maxima since the beginning of the 19th century.

During the past several years, communications engineers and scientists have conducted a concentrated worldwide effort to learn more about the mysteries of the ionosphere, its makeup, and its effect on radio transmission and reception. Many satellites and space laboratories have been launched and more than 100 ground stations have been established to study the phenomenon. The results of this continuing study have produced a much greater understanding of electromagnetic wave propagation, and the mass of data compiled by these satellites and ground stations is constantly being fed into computers and data processing machines and used for predicting future propagation conditions. Tables 1-1 through 1-7 have been compiled from such computer programs, and are based on the latest propagation data available. The tables are simple to use. First, locate the chart containing the current month. Second, find your geographic location in the left-hand column titled "Listener's Area," and in the appropriate Coordinated Universal Time (UTC) horizontal line, move to the right to the desired "Broadcasting Station Location" vertical column. Use the following legend to identify your listening area and the areas of the world in which the broadcasting stations are located:

Legend:
I—North America (East)
II—North America (West)
III—Central and South America
IV—Europe and North Africa
V—Central and South Africa
VI—Middle East and South Asia
VII—East Asia and Far East
VIII—Australia and New Zealand

The tables show the wavelength band (in meters) that should provide optimum reception in the listener's area for the month and time listed. In some instances, because of slight daily variations in ionospheric density, it may be possible to receive broadcasting stations in the next higher or next lower wavelength bands; however, best reception can be expected on the bands listed.

Table 1-1. Favorable Shortwave Broadcast Bands (Nov 1979-Feb 1980)

Listener's Area*	Time UTC	Broadcasting Station Location*							
		I	II	III	IV	V	VI	VII	VIII
I	00–04	49	25	49	49	31	31	19	19
	04–08	49	31	49	49	31	31	25	25
	08–12	49	31	31	31	25	31	31	31
	12–16	19	31	31	19	16	19	31	31
	16–20	19	25	16	16	13	19	25	25
	20–24	25	19	19	25	25	19	31	25
II	00–04	25	19	25	31	25	19	16	16
	04–08	31	31	49	49	31	25	19	19
	08–12	31	49	49	49	25	31	31	25
	12–16	19	31	31	25	25	25	31	25
	16–20	16	31	19	19	16	19	25	25
	20–24	19	19	19	25	16	19	19	16
III	00–04	25	19	31	31	25	25	19	16
	04–08	31	25	49	31	31	31	25	19
	08–12	31	31	31	31	19	25	31	25
	12–16	16	25	25	16	16	19	25	25
	16–20	16	19	19	16	19	19	25	25
	20–24	19	16	19	19	19	19	19	16
IV	00–04	49	31	49	49	31	31	31	31
	04–08	49	31	49	49	31	41	31	31
	08–12	49	31	31	25	16	19	16	31
	12–16	19	31	19	25	16	19	19	19
	16–20	16	31	19	25	16	19	25	31
	20–24	25	25	25	49	25	41	31	31
V	00–04	25	19	25	31	41	31	25	19
	04–08	31	31	31	31	31	25	25	16
	08–12	31	25	25	19	25	19	19	19
	12–16	19	25	19	16	25	19	19	25
	16–20	13	19	19	13	25	19	19	31
	20–24	25	31	19	25	25	25	25	19
VI	00–04	41	25	25	31	25	31	19	19
	04–08	31	31	25	25	19	25	16	16
	08–12	31	31	25	16	16	19	19	25
	12–16	16	25	19	16	16	25	25	31
	16–20	19	25	19	31	19	31	25	31
	20–24	31	25	25	31	25	31	31	31
VII	00–04	19	16	19	31	19	19	19	16
	04–08	31	25	25	25	19	16	19	16
	08–12	31	31	25	16	19	16	25	15
	12–16	19	31	19	19	19	19	31	25
	16–20	25	31	31	31	31	31	49	25
	20–24	25	19	25	31	25	25	41	19
VIII	00–04	19	13	19	19	25	19	19	25
	04–08	25	19	25	25	19	19	19	19
	08–12	31	25	19	31	16	19	19	25
	12–16	31	31	25	16	25	25	19	31
	16–20	19	31	25	19	25	31	25	31
	20–24	19	25	25	31	25	31	25	31

* See legend on page 16.

Table 1-2. Favorable Shortwave Broadcast Bands (March-April 1980)

Listener's Area*	Time UTC	Broadcasting Station Location*							
		I	II	III	IV	V	VI	VII	VIII
I	00–04	41	16	49	31	31	31	16	16
	04–08	49	25	31	31	31	31	25	25
	08–12	49	31	49	25	31	31	25	25
	12–16	19	31	25	19	16	19	25	31
	16–20	19	25	16	16	13	19	31	19
	20–24	25	19	19	19	19	19	31	25
II	00–04	19	19	25	31	31	19	16	16
	04–08	31	31	31	31	31	25	19	19
	08–12	31	49	49	31	25	31	31	25
	12–16	25	49	31	25	19	25	31	25
	16–20	16	31	19	19	16	19	25	25
	20–24	19	19	19	25	16	19	19	16
III	00–04	25	19	49	25	25	25	16	16
	04–08	25	25	49	31	31	31	25	19
	08–12	25	25	31	25	25	25	25	25
	12–16	16	25	25	16	16	16	25	25
	16–20	16	19	19	16	19	19	19	25
	20–24	19	16	19	19	25	19	19	16
IV	00–04	31	31	25	49	31	31	31	31
	04–08	31	31	25	49	25	31	25	25
	08–12	31	31	25	25	16	19	16	25
	12–16	19	25	19	25	13	19	19	19
	16–20	16	25	19	19	13	19	25	25
	20–24	19	19	19	31	25	31	31	31
V	00–04	25	19	25	25	31	31	25	19
	04–08	31	25	31	31	31	25	25	16
	08–12	31	25	25	16	26	19	19	19
	12–16	19	25	16	16	19	19	19	19
	16–20	16	19	19	16	25	19	19	31
	20–24	16	19	19	25	25	25	19	19
VI	00–04	31	25	25	31	31	31	19	19
	04–08	31	25	19	25	19	19	16	16
	08–12	25	31	25	16	16	19	19	25
	12–16	16	25	19	16	16	25	25	31
	16–20	19	25	19	19	19	31	25	31
	20–24	31	25	25	31	25	31	31	25
VII	00–04	19	16	19	25	25	19	19	16
	04–08	25	19	25	25	19	16	19	16
	08–12	31	25	25	16	16	16	25	25
	12–16	19	31	19	16	19	19	31	25
	16–20	19	31	25	25	31	31	31	19
	20–24	19	19	19	25	25	25	31	19
VIII	00–04	16	13	19	19	25	19	19	19
	04–08	25	19	19	25	19	19	16	19
	08–12	25	25	19	25	16	19	19	25
	12–16	31	31	25	16	19	25	25	31
	16–20	19	31	25	19	25	31	25	31
	20–24	19	25	25	31	25	31	25	31

* See legend on page 16.

Table 1-3. Favorable Shortwave Broadacst Bands (May-August 1980)

Listener's Area*	Time UTC	Broadcasting Station Location*							
		I	II	III	IV	V	VI	VII	VIII
I	00–04	31	19	31	25	25	25	16	16
	04–08	31	25	31	31	31	25	19	
	08–12	49	31	31	25	25	25	25	25
	12–16	19	31	31	19	16	19	25	31
	16–20	19	19	19	19	16	19	19	25
	20–24	19	19	19	19	19	19	19	19
II	00–04	19	19	25	25	25	19	19	16
	04–08	31	25	31	25	31	25	19	19
	08–12	31	49	49	31	25	25	31	25
	12–16	25	49	25	25	25	25	25	25
	16–20	19	31	19	19	16	19	19	25
	20–24	19	19	19	19	16	19	19	16
III	00–04	19	19	49	25	25	19	19	16
	04–08	25	25	49	25	31	25	25	19
	08–12	31	31	31	25	25	25	25	16
	12–16	19	25	25	16	19	16	25	25
	16–20	16	19	19	16	16	19	19	25
	20–24	19	19	16	19	19	19	19	16
IV	00–04	25	25	31	31	31	19	19	25
	04–08	25	25	25	31	25	25	19	31
	08–12	19	25	25	25	16	16	19	19
	12–16	19	25	19	25	16	19	19	19
	16–20	19	25	19	25	16	19	19	31
	20–24	19	19	19	31	19	31	25	31
V	00–04	19	19	25	25	31	25	25	19
	04–08	31	19	31	25	31	25	25	16
	08–12	16	25	25	16	25	19	19	19
	12–16	19	25	16	16	25	19	19	16
	16–20	16	19	19	16	25	19	19	25
	20–24	16	19	19	19	25	19	19	19
VI	00–04	25	25	25	25	31	31	19	19
	04–08	25	25	25	19	19	25	16	19
	08–12	19	31	25	16	16	19	19	25
	12–16	19	25	19	16	19	25	25	31
	16–20	19	25	19	19	19	25	25	31
	20–24	25	25	25	25	25	25	25	25
VII	00–04	19	19	19	25	25	19	19	16
	04–08	25	19	25	19	19	16	19	16
	08–12	25	25	25	16	19	16	25	19
	12–16	19	31	19	16	19	19	31	31
	16–20	19	19	19	19	25	25	31	25
	20–24	19	19	19	25	25	31	31	19
VIII	00–04	16	16	19	19	25	19	19	19
	04–08	19	19	19	25	19	19	16	19
	08–12	25	25	19	19	16	19	19	25
	12–16	19	19	19	16	25	25	25	31
	16–20	19	25	25	19	25	31	25	31
	20–24	19	25	25	25	25	25	25	31

* See legend on page 16.

Table 1-4. Favorable Shortwave Broadcast Bands (Sept-Oct 1980)

Listener's Area*	Time UTC	Broadcasting Station Location*							
		I	II	III	IV	V	VI	VII	VIII
I	00–04	41	16	49	31	31	31	16	16
	04–08	49	25	31	31	31	31	25	25
	08–12	49	31	49	25	31	31	25	25
	12–16	19	31	25	19	16	19	25	31
	16–20	19	25	16	16	13	19	31	19
	20–24	25	19	19	19	19	19	31	25
II	00–04	19	19	25	31	31	19	16	16
	04–08	31	31	31	31	31	25	19	19
	08–12	31	49	49	31	25	31	31	25
	12–16	25	49	31	25	19	25	31	25
	16–20	16	31	19	19	16	19	25	25
	20–24	19	19	19	25	16	19	19	16
III	00–04	25	19	49	25	25	25	16	16
	04–08	25	25	49	31	31	31	25	19
	08–12	25	25	31	25	25	25	25	25
	12–16	16	25	25	16	16	16	25	25
	16–20	16	19	19	16	19	19	19	25
	20–24	19	16	19	19	25	19	19	16
IV	00–04	31	31	25	49	31	31	31	31
	04–08	31	31	25	49	25	31	25	25
	08–12	31	31	25	25	16	19	16	25
	12–16	19	25	19	25	13	19	19	19
	16–20	16	25	19	19	13	19	25	25
	20–24	19	19	19	31	25	31	31	31
V	00–04	25	19	25	25	31	31	25	19
	04–08	31	25	31	31	31	25	25	16
	08–12	31	25	25	16	26	19	19	19
	12–16	19	25	16	16	19	19	19	19
	16–20	16	19	19	16	25	19	19	31
	20–24	16	19	19	25	25	25	19	19
VI	00–04	31	25	25	31	31	31	19	19
	04–08	31	25	19	25	19	19	16	16
	08–12	25	31	25	16	16	19	19	25
	12–16	16	25	19	16	16	25	25	31
	16–20	19	25	19	19	19	31	25	31
	20–24	31	25	25	31	25	31	31	25
VII	00–04	19	16	19	25	25	19	19	16
	04–08	25	19	25	25	19	16	19	16
	08–12	31	25	25	16	16	16	25	16
	12–16	19	31	19	16	19	19	31	25
	16–20	19	31	25	25	31	31	31	25
	20–24	19	19	19	25	25	25	31	19
VIII	00–04	16	13	19	19	25	19	19	19
	04–08	25	19	19	25	19	19	16	19
	08–12	25	25	19	25	16	19	19	25
	12–16	31	31	25	16	19	25	25	31
	16–20	19	31	25	19	25	31	25	31
	20–24	19	25	25	31	25	31	25	31

* See legend on page 16.

Table 1-5. Favorable Shortwave Broadcast Bands (Nov 1980-Feb 1981)

Listener's Area*	Time UTC	Broadcasting Station Location*							
		I	II	III	IV	V	VI	VII	VIII
I	00–04	49	25	49	49	31	31	19	19
	04–08	49	31	49	49	31	31	25	25
	08–12	49	31	31	31	25	31	31	31
	12–16	19	31	31	19	16	19	31	31
	16–20	19	25	16	16	13	19	25	25
	20–24	25	19	19	25	25	19	31	25
II	00–04	25	19	25	31	25	19	16	16
	04–08	31	31	49	49	31	25	19	19
	08–12	31	49	49	49	25	31	31	25
	12–16	19	31	31	25	25	25	31	25
	16–20	16	31	19	19	16	19	25	25
	20–24	19	19	19	25	16	19	19	16
III	00–04	25	19	31	31	25	25	19	16
	04–08	31	25	49	31	31	31	25	19
	08–12	31	31	31	31	19	25	31	25
	12–16	16	25	25	16	16	19	25	25
	16–20	16	19	19	16	19	19	25	25
	20–24	19	16	19	19	19	19	19	16
IV	00–04	49	31	49	49	31	31	31	31
	04–08	49	31	49	49	31	41	31	31
	08–12	49	31	31	25	16	19	16	31
	12–16	19	31	19	25	16	19	19	19
	16–20	16	31	19	25	16	19	25	31
	20–24	25	25	25	49	25	41	31	31
V	00–04	25	19	25	31	41	31	25	19
	04–08	31	31	31	31	31	25	25	16
	08–12	31	25	25	19	25	19	19	19
	12–16	19	25	19	16	25	19	19	25
	16–20	13	19	19	13	25	19	19	31
	20–24	25	31	19	25	25	25	25	19
VI	00–04	41	25	25	31	25	31	19	19
	04–08	31	31	25	25	19	25	16	16
	08–12	31	31	25	16	16	19	19	25
	12–16	16	25	19	16	16	25	25	31
	16–20	19	25	19	31	19	31	25	31
	20–24	31	25	25	31	25	31	31	31
VII	00–04	19	16	19	31	19	19	19	16
	04–08	31	25	25	25	19	16	19	16
	08–12	31	31	25	16	19	16	25	15
	12–16	19	31	19	19	19	19	31	25
	16–20	25	31	31	31	31	31	49	25
	20–24	25	19	25	31	25	25	41	19
VIII	00–04	19	13	19	19	25	19	19	25
	04–08	25	19	25	25	19	19	19	19
	08–12	31	25	19	31	16	19	19	25
	12–16	31	31	25	16	25	25	19	31
	16–20	19	31	25	19	25	31	25	31
	20–24	19	25	25	31	25	31	25	31

* See legend on page 16.

Table 1-6. Favorable Shortwave Broadcast Bands (March-April 1981)

Listener's Area*	Time UTC	Broadcasting Station Location*							
		I	II	III	IV	V	VI	VII	VIII
I	00–04	41	16	49	31	31	31	16	16
	04–08	49	25	31	31	31	31	25	25
	08–12	49	31	49	25	31	31	25	25
	12–16	19	31	25	19	16	19	25	31
	16–20	19	25	16	16	13	19	31	19
	20–24	25	19	19	19	19	19	31	25
II	00–04	19	19	25	31	31	19	16	16
	04–08	31	31	31	31	31	25	19	19
	08–12	31	49	49	31	25	31	31	25
	12–16	25	49	31	25	19	25	31	25
	16–20	16	31	19	19	16	19	25	25
	20–24	19	19	19	25	16	19	19	16
III	00–04	25	19	49	25	25	25	16	16
	04–08	25	25	49	31	31	31	25	19
	08–12	25	25	31	25	25	25	25	25
	12–16	16	25	25	16	16	16	25	25
	16–20	16	19	19	16	19	19	19	25
	20–24	19	16	19	19	25	19	19	16
IV	00–04	31	31	25	49	31	31	31	31
	04–08	31	31	25	49	25	31	25	25
	08–12	31	31	25	25	16	19	16	25
	12–16	19	25	19	25	13	19	19	19
	16–20	16	25	19	19	13	19	25	25
	20–24	19	19	19	31	25	31	31	31
V	00–04	25	19	25	25	31	31	25	19
	04–08	31	25	31	31	31	25	25	16
	08–12	31	25	25	16	26	19	19	19
	12–16	19	25	16	16	19	19	19	19
	16–20	16	19	19	16	25	19	19	31
	20–24	16	19	19	25	25	25	19	19
VI	00–04	31	25	25	31	31	31	19	19
	04–08	31	25	19	25	19	19	16	16
	08–12	25	31	25	16	16	19	19	25
	12–16	16	25	19	16	16	25	25	31
	16–20	19	25	19	19	19	31	25	31
	20–24	31	25	25	31	25	31	31	25
VII	00–04	19	16	19	25	25	19	19	16
	04–08	25	19	25	25	19	16	19	16
	08–12	31	25	25	16	16	16	25	16
	12–16	19	31	19	16	19	19	31	25
	16–20	19	31	25	25	31	31	31	25
	20–24	19	19	19	25	25	25	31	19
VIII	00–04	16	13	19	19	25	19	19	19
	04–08	25	19	19	25	19	19	16	19
	08–12	25	25	19	25	16	19	19	25
	12–16	31	31	25	16	19	25	25	31
	16–20	19	31	25	19	25	31	25	31
	20–24	19	25	25	31	25	31	25	31

* See legend on page 16.

Table 1-7. Favorable Shortwave Broadcast Bands (May-August 1981)

Listener's Area*	Time UTC	Broadcasting Station Location*							
		I	II	III	IV	V	VI	VII	VIII
I	00–04	31	19	31	25	25	25	16	16
	04–08	31	25	31	31	31	25	19	19
	08–12	49	31	31	25	25	25	25	25
	12–16	19	31	31	19	16	19	25	31
	16–20	19	19	19	19	16	19	19	25
	20–24	19	19	19	19	19	19	19	19
II	00–04	19	19	25	25	25	19	19	16
	04–08	31	25	31	25	31	25	19	19
	08–12	31	49	49	31	25	25	31	25
	12–16	25	49	25	25	25	25	25	25
	16–20	19	31	19	19	16	19	19	25
	20–24	19	19	19	19	16	19	19	16
III	00–04	19	19	49	25	25	19	19	16
	04–08	25	25	49	25	31	25	25	19
	08–12	31	31	31	25	25	25	25	16
	12–16	19	25	25	16	19	16	25	25
	16–20	16	19	19	16	16	19	19	25
	20–24	19	19	16	19	19	19	19	16
IV	00–04	25	25	31	31	31	19	19	25
	04–08	25	25	25	31	25	25	19	31
	08–12	19	25	25	25	16	16	19	19
	12–16	19	25	19	25	16	19	19	19
	16–20	19	25	19	25	16	19	19	31
	20–24	19	19	19	31	19	31	25	31
V	00–04	19	19	25	25	31	25	25	19
	04–08	31	19	31	25	31	25	25	16
	08–12	16	25	25	16	25	19	19	19
	12–16	19	25	16	16	25	19	19	16
	16–20	16	19	19	16	25	19	19	25
	20–24	16	19	19	19	25	19	19	19
VI	00–04	25	25	25	25	31	31	19	19
	04–08	25	25	25	19	19	25	16	19
	08–12	19	31	25	16	16	19	19	25
	12–16	19	25	19	16	19	25	25	31
	16–20	19	25	19	19	19	25	25	31
	20–24	25	25	25	25	25	25	25	25
VII	00–04	19	19	19	25	25	19	19	16
	04–08	25	19	25	19	19	16	19	16
	08–12	25	25	25	16	19	16	25	19
	12–16	19	31	19	16	19	19	31	31
	16–20	19	19	19	19	25	25	31	25
	20–24	19	19	19	25	25	31	31	19
VIII	00–04	16	16	19	19	25	19	19	19
	04–08	19	19	19	25	19	19	16	19
	08–12	25	25	19	19	16	19	19	25
	12–16	19	19	19	16	25	25	25	31
	16–20	19	25	25	19	25	31	25	31
	20–24	19	25	25	25	25	25	25	31

* See legend on page 16.

These tables show the *predicted* wavelength bands that will provide the listener with optimum reception. However, these are long-range predictions and can be subjected to daily fluctuations. The following paragraphs will describe a daily, do-it-yourself method that the average nontechnical shortwave listener can use, and, with a little practice, will be able to perform short-term ionospheric predictions with a high degree of accuracy.

As stated earlier, the ionosphere is formed by ultraviolet radiation from the sun. The stronger the radiation, the more dense the ionosphere will be; the weaker the radiation, the less dense the ionosphere will be. Thus the stronger the radiation layer, the better will be the shortwave propagation. Solar flux is a measure of the level of solar radiation and is thus an indication of the general state of the ionosphere. The use of solar flux as a measure of daily solar activity is now preferred rather than the daily sunspot count because solar flux has been found to be more direct and objective. It is also much more sensitive to change than the sunspot count. During the present solar activity, daily solar flux levels will generally range between 180 and 290. The solar flux level is monitored at numerous observatories throughout the world.

While ultraviolet solar radiation produces the ionosphere, another type of solar radiation, called *solar particle radiation,* tends to weaken or deteriorate the ionosphere, or in some instances make it disappear completely. Because solar particle radiation also affects the earth's magnetic field, its level can be determined with the use of certain electronic instruments.

The earth's magnetic field is also monitored by several observatories throughout the world, and is reported as a worldwide planetary *A* index (A_p), which is the daily *average* measured by *all* stations. Since one full day is required to determine the A_p, it is not a real-time index.

Recently, the National Bureau of Standards radio station WWV began broadcasting both the A_p index (for the previous day) and a *real-time* three-hourly *K* index at eighteen minutes past each hour. The *K* and *A* indices are related approximately as follows:

$K =$	0	1	2	3	4	5	6	7	8	9
$A_p =$	0	4	7	15	27	48	80	140	240	400

The *K* index varies over a scale of 0 to 9. The higher the *K* value, the greater is the influx of solar particles, which in turn causes weaker signals and increased noise and fading conditions. Solar flux indicates the degree of ionization in the earth's atmosphere, and the *A* or *K* index measures the activity of the earth's magnetic field. Both taken together give a relatively accurate picture of overall ionospheric propagation conditions.

Fig. 1-1 can be used to determine the high-frequency ionospheric propagation conditions. For example, if the solar flux level is 240 and the geomagnetic index *K* is 3 (or an A_p index of 11), one can expect high "high normal" conditions.

With few exceptions, the *higher* the value of solar flux and the *lower* the value of magnetic activity, the better will be the ionospheric propagation. Conversely, the *lower* the solar flux and the *higher* the magnetic activity, the poorer will be the receiving conditions.

A typical WWV radio broadcast is as follows: "Solar terrestrial indices for 20 December follow: solar flux 240; A index 11. Repeat; solar flux 240; A index 11. The K index at 1800 UTC 21 December

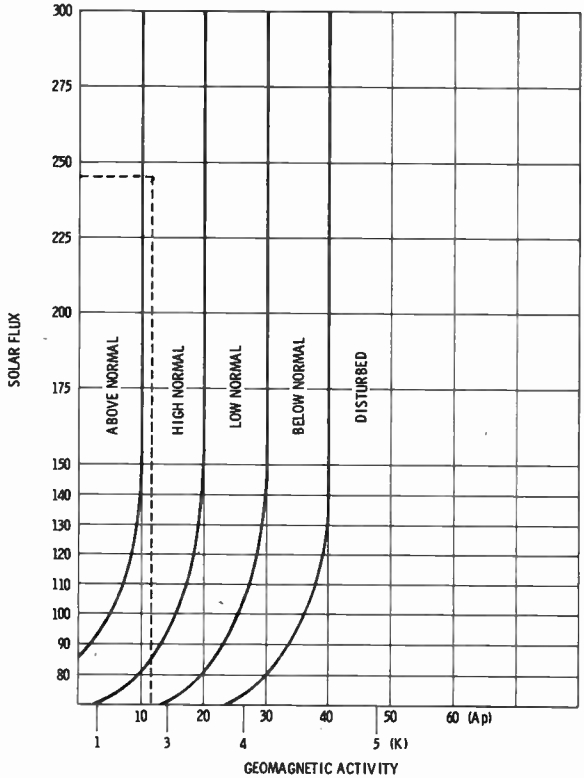

Fig. 1-1. Solar flux index versus geomagnetic activity.

was 3; repeat 3. Solar terrestrial conditions for the last 24 hours follow: Solar activity was moderate; the geomagnetic field was quiet. The forecast for the next 24 hours follows: solar activity will be moderate; the geomagnetic field will be unsettled."

The preceding typical WWV broadcast can be translated as follows: Since the broadcast was received on 21 December UTC, the solar flux reading of 240 and a A_p index of 11 was for the PREVIOUS day. The current or real-time observation of the K index was taken at Boulder, Colorado on the current date at 1800 hours UTC. Using Fig. 1-1, both the previous day's reading and the present observation

indicates a "high normal" condition, or good radio reception, especially on the higher frequencies. However, a slight deterioration can be expected in the next 24 to 36 hours.

If the shortwave radio enthusiast maintains a daily log of WWV broadcasts and simultaneously makes observations of receiving conditions in his location, he will soon be able to make short-term ionospheric predictions with a high degree of accuracy. These observations are not only of great use to the swl'er, but can add to the enjoyment of his chosen hobby as well.

Due to the many variables involved and solar uncertainties, it is extremely difficult to predict shortwave propagation conditions beyond 18 months. For example, the present sunspot cycle was one year late in starting. Since solar activity is responsible for the ionospheric changes, the reader can appreciate the complexities involved.

2

Hints for Better Shortwave Listening

On the following pages the swl'er will find a few hints and suggestions that he can apply at his receiving site to improve reception in his area and thus improve the enjoyment of his hobby. The reader should not restrict himself to these suggestions as a cure-all for his problems, but rather only as suggestions. If more detailed information is desired on any subject, numerous text books are available at most well-stocked radio stores.

TYPES OF RECEIVER NOISE

Most of the noise interference experienced while receiving shortwave broadcasting stations is caused by domestic or industrial electrical equipment and by atmospheric static discharges. The first is the "hiss" or "frying eggs" type, consisting of overlapping noise pulses. The second is the pistol shot or "machine gun" type, consisting of separate pulses of high amplitude. The hiss type is usually caused by dc motors, electric shavers, food mixers, snow or sand blowing on the antenna, leakage from a nearby commercial power line, etc. The pistol shot type results from separate spark discharges such as car ignition systems, lightning flashes, etc.

The pistol shot noise, because of its short duration, has a high amount of energy, much higher than the signal being received. Most modern shortwave receivers suppress this type of noise with the use of "noise suppressor" circuitry that silences the receiver during the pulse. The listener will not hear these "holes" because of their short duration. Such electronic devices are very efficient and are used in most modern receivers.

The hiss type of noise is not quite so easy to silence and hence is much more bothersome. The best way to take care of this noise is to locate its source and use corrective measures at that point. This can best be accomplished as follows. Turn off the various branches of the household ac voltage one circuit at a time. If the noise is eliminated when a particular circuit is turned off, try to find whatever is connected to that circuit that could be causing the interference. To check the circuit the receiver is powered from, the radio must be operated from another circuit while making the check.

If it is determined that the noise is not being generated by any electrical device in your own home, further investigation can be accomplished with the use of a portable battery-operated shortwave receiver. Select a clear, signal-free frequency in the vicinity of 7 to 10 megahertz; investigating the area of greatest noise intensity heard in the receiver.

RECEIVER IMAGE RESPONSE

The receiver high-frequency oscillator will cause rf responses at *two* signal frequencies; one higher and one lower than the oscillator frequency. If the oscillator is set at 7455 kHz to tune to a 7000 kHz broadcast signal, for example, the receiver will also respond to a signal on 7910 kHz, which likewise gives a 455 kHz beat into the intermediate frequency amplifier network. This undesired signal is called the *image* and can cause unnecessary interference if it is not eliminated. The radio frequency circuits of the receiver (those used before the signal is heterodyned to the if) normally are tuned to the desired signal, so that the selectivity of these circuits reduces or eliminates the response to the image signal. The ratio of the receiver voltage output from the desired signal to that from the image is known as the *signal-to-image ratio,* or *image ratio.*

As mentioned, the image ratio depends upon the selectivity of the rf tuned circuits preceding the mixer circuit. Also, the higher the intermediate frequency, the higher the image ratio, since raising the rf increases the frequency separation between the signal and the image, and places the later frequency further away from the resonance peak of the signal-input circuits. Most of the modern and sophisticated shortwave receivers now use the double conversion circuitry, where the incoming signal is first converted to a rather high (5000 kHz) intermediate frequency, and then further converted to a lower if, where greater amplification and higher adjacent-channel selectivity can be obtained.

OTHER SPURIOUS RECEIVER RESPONSES

In addition to images, other signals to which the receiver is not purposely tuned may be heard. Harmonics of the high frequency oscillator (in the more modern and higher priced receivers a crystal is used and the circuits tuned to 500-kHz segments of the shortwave

spectrum) beat with signals far removed from the desired frequency to produce outputs at the intermediate frequency. Such spurious responses are usually eliminated or reduced by using shielding around the high frequency oscillator to prevent signal pick-up by any means other than that from the antenna.

All radio transmitters (shortwave or otherwise) will produce harmonics. A harmonic is a multiple of the principal output frequency. For example, a shortwave transmitter whose output frequency is 6150 kHz also generates an output signal on 12300 kHz. In a well engineered and designed transmitter, the harmonic signal strength is greatly reduced by use of filters and traps. However, in some instances the harmonic-eliminating circuitry can be maladjusted or malfunctioning, and the harmonic signal of the broadcasting station can be heard over a great distance.

There is nothing the shortwave listener can do to eliminate this spurious radiation other than inform the station engineer in charge of the problem.

ANTENNAS

A good antenna is equally as important to shortwave reception as is a good receiver. Keep in mind that if the expected transmitted signal is not picked up by the antenna, it is not fed to the receiver; and, if it is not fed to the receiver, it is not possible for you to hear it.

The simplest receiving antenna is a horizontal length of wire from 25 to 75 feet in length, erected as high as possible above ground (20 to 50 feet high). A vertical length of wire is then soldered to the horizontal wire and lead down to the receiver. Because of the high sensitivity of modern receivers, sometimes only a short length of wire strung around the room can serve as a receiving antenna. However, such an antenna cannot be expected to give as good a performance, although it may be adequate for strong signals

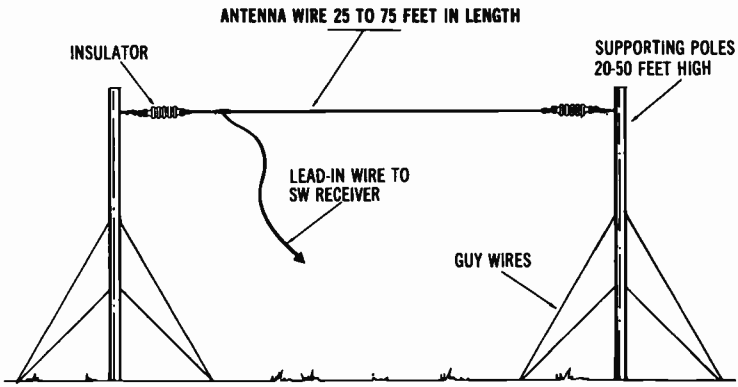

Fig. 2-1. A random-length antenna.

Table 2-1. Length of Half-Wave Antennas for International Shortwave Bands

Radio Frequency Band	Length of Half-Wave Antenna
49 Meter	76 Feet, 6 Inches
41 Meter	65 Feet
31 Meter	48 Feet, 6 Inches
25 Meter	39 Feet, 6 Inches
19 Meter	30 Feet, 6 Inches
16 Meter	26 Feet, 3 Inches
13 Meter	21 Feet, 9 Inches
11 Meter	18 Feet

in the 49-meter and 41-meter bands. It will serve in emergencies, but a longer wire is always better. An adequate random-length antenna is illustrated in Fig. 2-1.

A more sophisticated and efficient antenna than the previously illustrated "skywire" is the half-wave doublet. This antenna is cut to a specific length, dependent on the frequency band to be received, and coupled at the center with a length of RG58/U coaxial cable, which can be obtained from any well-stocked radio parts supplier. The coax cable is then coupled to the antenna terminals on the receiver. The antenna halyards should be made so that the antenna can be easily raised and lowered to change antenna lengths when changing broadcasting bands because, unfortunately, to maintain proper impedance matching, a different wire length must be erected for each operating band used. The antenna lengths for each

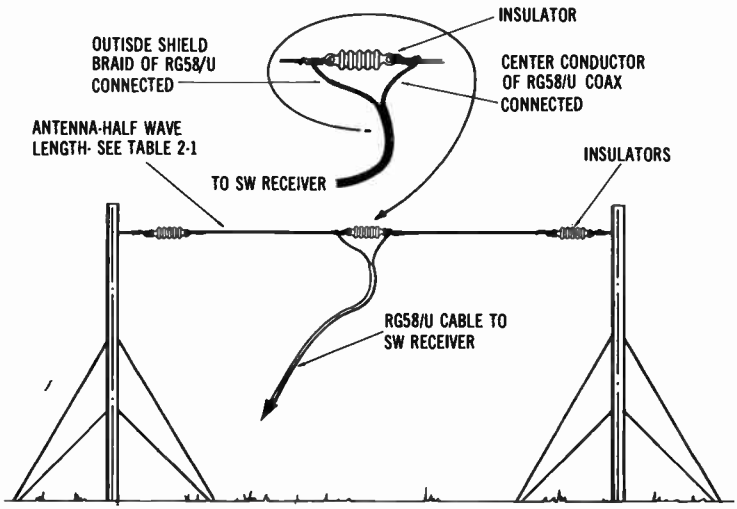

Fig. 2-2. Half-wave doublet antenna.

shortwave broadcasting band are listed in Table 2-1, and construction of the antenna is illustrated in Fig. 2-2.

An adaptation of the aforementioned half-wave doublet is the inverted-V antenna, illustrated in Fig. 2-3. This type of antenna utilizes a center pole of sufficient height with the antenna ends brought down to form an inverted V. This type of receiving antenna can be used when space does not permit the horizontal half-wave doublet. The antenna wire lengths for the various bands are the same as those of the horizontal antenna, and can be obtained from Table 2-1.

The proper use of coax cable line requires that the impedance of the cable match closely that of the center of the antenna. Since impedance of the center-fed antenna will match that of the coax cable and receiver input terminals only on the band that it is cut for, it is not possible to use a simple center-fed antenna on a number of bands without variations of some kind. The simple solution to this is the "all-band" antenna shown in Fig. 2-4. This type of antenna can be easily assembled by joining several half-wave antennas of different lengths at their centers and running a coax cable at that point to the receiver. The shorter antenna (or higher frequency antenna) can be suspended a foot or so below the longest one and fanned out as illustrated. Too many antennas strung in this manner can cause interaction problems and are not recommended. However antennas cut to bands 49 through 25 meters may be mounted in one antenna system, and bands 19 through 11 meters in another. When receiving broadcasting stations in the 90 through 60-meter

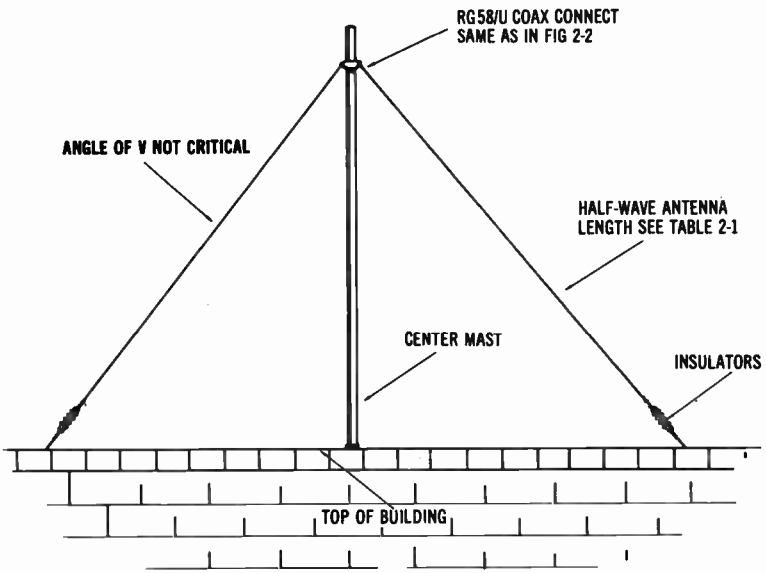

Fig. 2-3. An inverted-V antenna.

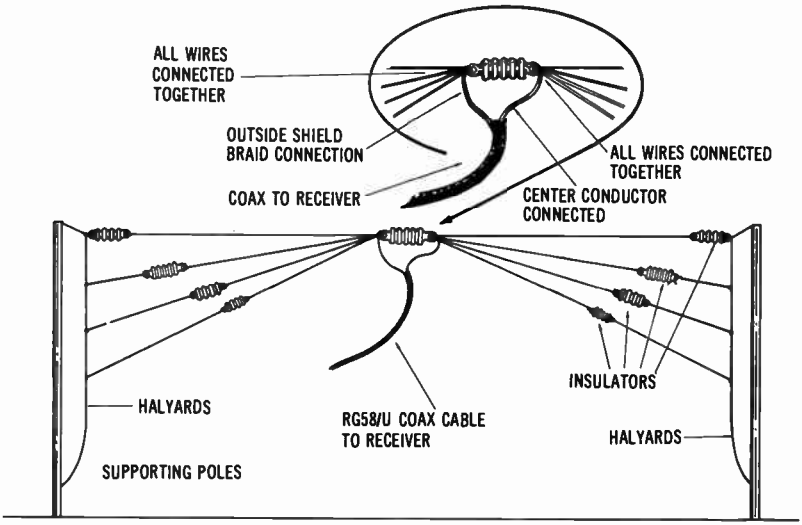

Fig. 2-4. An "all-band" receiving antenna.

bands, little if any difference in reception can be detected when using this type of antenna; therefore, the longer of the two systems can be used with no detriment. In some instances the two halves can be joined together at the receiver and used as a simple random length antenna with its lead-in at the center.

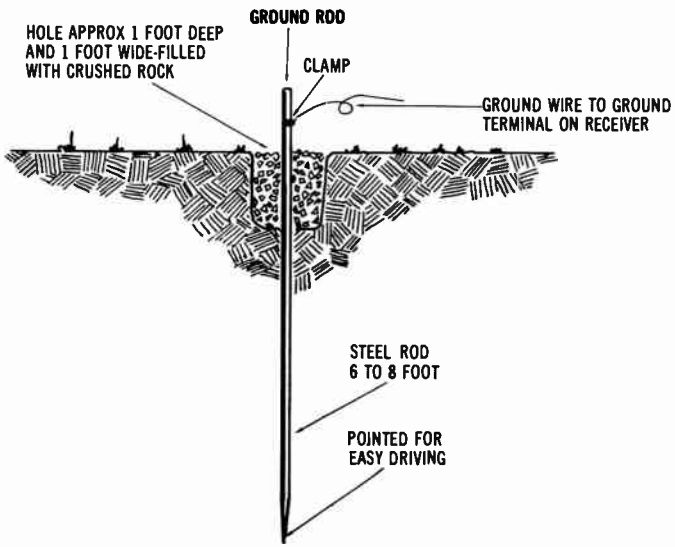

Fig. 2-5. Shortwave receiver grounding system.

GROUNDING SYSTEMS

Most of the modern shortwave receivers are "grounded" through the primary ac house wiring circuits. However, an improvement of signal strength and noise reduction can sometimes be obtained by use of an "outside" ground. If the soil is good (not rocky or sandy) and generally moist, a good connection to the cold water pipe system in the home will serve as an adequate ground system. The connection should be made close to where the pipe enters the ground, and the surface of the pipe scraped clean before tightening the ground clamp around the pipe.

A 6- to 8-foot length of steel rod (construction steel sharpened at one end) driven into the soil at a point where there is natural moisture is very good. Three or four rods driven into the ground 8 to 10 feet apart and joined together at the top with heavy wire are more efficient than a single one.

In the event that the soil is sandy and dry, an efficient ground can be obtained by scooping out the soil from around the rod for about one foot in diameter and one foot deep, and filling in with crushed rock; dumping a gallon or so of water into the rock about once every two weeks to keep the soil moist will be sufficient. Such a ground system is illustrated in Fig. 2-5.

3

Stations by Country and City

AFGHANISTAN

Kabul (35°00'N, 69°00'E)

Ann: "Da Radio Afghanistan Kabul Dai."
Int: A folk song played on a flute.

Stations:

4775 kHz, 100 kW
15195 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1130–1200	15195
1400–1430	4775

ALBANIA

Tirana (41°00'N, 20°00'E)

Ann: "This is Tirana calling."
Int: A few musical notes played on two trumpets.

Stations:

6200 kHz, 120 kW
7065 kHz, 120 kW
7075 kHz, 100 kW
7080 kHz, 100 kW
7120 kHz, 100 kW
7300 kHz, 100 kW
9480 kHz, 120 kW
9500 kHz, 500 kW
9515 kHz, 500 kW
9750 kHz, 100 kW
11965 kHz, 100 kW
11985 kHz, 100 kW

Broadcasts:

Beamed to Europe

Time (UTC)	*Freq (kHz)*
0630–0700	7080, 9500
1630–1700	7065, 9480
1830–1900	7065, 9480
2030–2100	7065, 9480

Beamed to Africa

0430–0500	7300, 9480
1730–1800	7075, 9500
1930–2000	7075, 9500

Beamed to Southeast Asia

1230–1300	9515, 11965
1400–1430	9500, 11985

Beamed to Australia and New Zealand

0700–0730	9500, 11985
0930–1000	9500, 11985

Beamed to North America

0000–0030	7065, 9750
0130–0200	7120, 9750
0230–0300	7120, 9750
0330–0400	6200, 7300

ALGERIA (Democratic and Popular Republic of)

Algiers: (36°42′N, 3°11′E)

Ann: "Ici Alger Radiodiffusion Television de la Republique Algerienne Democratique et Populaire."

Station:

7245 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1900–2000	7245

ANGOLA

Luanda (9°00′S, 12°00′E)

Ann: "This is the national radio station of Angola."
Int: A few bars of the national anthem.

Stations:

7245 kHz, 100 kW
9660 kHz, 100 kW
11955 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1130–1200	(a) 7245, 9660, 11955

Legend:

(a) Weekdays only

ARGENTINA

Buenos Aires (34°36′S, 58°22′W)

Ann: "This is R.A.E. calling."

Stations:

9690 kHz, 100 kW
11710 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0300–0400	(I) 9690
0600–0700	(II) 9690
2300–2400	(III) 11710

Legend:

(I) Beamed to North America (East)
(II) Beamed to North America (West)
(III) Beamed to Europe, North Africa, and Middle East

AUSTRALIA

Melbourne (38°00′S, 145°00′E)

Ann: "This is Radio Australia, transmitting the overseas service from the Melbourne studios of the Australian Broadcasting Commission. You are tuned to Radio Australia, the overseas service of the A.B.C."

Int: "Waltzing Matilda" played on a celesta.

Stations:

5995 kHz, 100 kW
6005 kHz, 100 kW
6035 kHz, 100 kW
6060 kHz, 100 kW
6080 kHz, 100 kW
9505 kHz, 100 kW
9570 kHz, 50 kW
9580 kHz, 50 kW
9670 kHz, 100 kW
9770 kHz, 50 kW
11705 kHz, 100 kW
11720 kHz, 100 kW
11740 kHz, 100 kW
11790 kHz, 100 kW
11820 kHz, 100 kW
11870 kHz, 100 kW
11880 kHz, 100 kW
15160 kHz, 100 kW
15240 kHz, 20 kW
15310 kHz, 20 kW
15320 kHz, 50 kW
17725 kHz, 100 kW
17755 kHz, 100 kW
17795 kHz, 50 kW

17870 kHz, 100 kW
17890 kHz, 100 kW
21525 kHz, 100 kW
21570 kHz, 100 kW
21680 kHz, 100 kW
21740 kHz, 100 kW

Broadcasts:

Beamed to Pacific Islands

Time (UTC)	*Freq (kHz)*
0000–0600	17890
0000–0730	15240
0100–0330	21740
0100–0500	15160
0100–0500	17795
0400–0500	15320
0600–0700	15160
0600–0930	15320
0630–1030	9670
0700–0900	9570
0800–2000	6045
1000–2000	5995
1330–2030	6060
1800–2030	9505
1900–2130	11720
2100–2400	15160
2100–2400	15240
2200–2400	17795
2200–2400	17890

Beamed to South and Southeast Asia

0000–0300	15310
0000–0930	21680
0130–1000	17870
0800–1000	21570
1000–1500	11705
1000–1730	9770
1500–1730	11870
1530–1730	6005
2100–2230	6035
2100–2330	11820
2230–2400	15310

Beamed to New Guinea and Northwest Pacific

0130–1000	17725
0600–0700	11790
1000–1200	11790
1100–1300	11880
1130–1300	9570
1230–2030	6080
1400–1730	9570
1400–1730	11880

Beamed to Africa

0400–0500	17755, 21525
0600–0630	17755, 21525

Beamed to Europe

0700–0900	9570, 11740

Beamed to North America

0100–0300	17795, 21740
1100–1300	9580

AUSTRIA

Vienna (48°00′N, 16°28′E)

Ann: "Osterreich auf Kurzwelle."
Int: First few bars of the "Blue Danube" waltz.

Stations:

5945 kHz, 100 kW	15560 kHz, 100 kW
6155 kHz, 100 kW	17860 kHz, 100 kW
9770 kHz, 100 kW	21575 kHz, 100 kW
15360 kHz, 100 kW	21610 kHz, 100 kW
15410 kHz, 100 kW	21740 kHz, 100 kW

Broadcasts:

Beamed to Europe

Time (UTC)	*Freq (kHz)*
0830–1230	6155, 15410
1230–2400	6155

Beamed to Africa, Australia, and New Zealand

1830–1930	15560

Beamed to Asia

0430–0530	21575, 21740

Beamed to South America

1230–2200	21610

Beamed to North America

0130–1330	5945, 9770
0430–0630	15260
1230–1430	17860

BANGLADESH

Dacca (23°27′N, 90°12′E)

Ann: "This is the general overseas service of Radio Bangladesh."
Int: A portion of a folk song played on a violin and ta-npura.

Stations:

11765 kHz, 100 kW
15285 kHz, 100 kW
15375 kHz, 100 kW
15400 kHz, 100 kW
17890 kHz, 100 kW
21670 kHz, 100 kW
21685 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0445–0515	(a) 15400, 17890, 21685
1230–1300	(b) 15375, 21670
1815–1915	(b) 11765, 15285

Legend:

(a) Beamed to Mid East, India, Pakistan
(b) Beamed to Europe

BELGIUM

Brussels (50°44′N, 4°34′E)

Ann: "This is Brussels, the Belgian Radio and Television Overseas Service."
Int: A few bars of the national anthem.

Stations:

11705 kHz, 100 kW
15190 kHz, 100 kW
17740 kHz, 250 kW
21475 kHz, 250 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0015–0100	(I) 11705; (II) 15190
1610–1700	(III) 17740, 21475

Legend:

(I) Beamed to North America
(II) Beamed to South America
(III) Beamed to Africa and Europe

BELIZE

Belize (17°30′N, 88°30′W)

Ann: "This is Radio Belize, the voice of the new Central American nation of Belize in the heart of the Caribbean basin."

Station:

3300 kHz, 1 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0030–0500	3300
1100–1600	3300
1700–2200	3300

BENIN (People's Republic of; formerly Dahomey)

Cotonou (6°21′N, 2°35′E)

Ann: Ici la Voix de la Revolution de Benin de Cotonou.
Int: Music played on a Tam-tam.

Station:

4870 kHz, 50 kW

Broadcasts: (Broadcasting Schedule Erratic)

Time (UTC)	*Freq (kHz)*
1940–2000	4870
2100–2115	4870

BOLIVIA

La Paz (16°45′S, 68°00′W)

Ann: "This is Radio Bolivia, La Paz, CP-75."

Station:

4875 kHz, 10 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0130–0200	4875

BOTSWANA

Gaborone (24°42′S, 25°58′E)

Ann: "This is Radio Botswana, broadcasting from Gaborone."
Int: National anthem.

Stations:

3356 kHz, 10 kW
4845 kHz, 10 kW
5965 kHz, 10 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0400–0630	3356, 4845
0900–1300	5965
1500–2100	3356, 4845

BRAZIL

Brasilia (16°00′S, 47°30′W)

Ann: "This is International Service of Radio Brazil."
Int: Orchestral music.

Stations:

15270 kHz, 50 kW
15280 kHz, 50 kW
15290 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0300–0330	(I) 15290
2000–2030	(II) 15270
2100–2130	(III) 15280

Legend:

(I) Beamed to North America
(II) Beamed to Europe
(III) Beamed to Africa

BRUNEI

Bandar Seri Begawan (05°00′N, 115°00′E)

Ann: "This is Radio Television Brunei."
Int: Sound of a native drum.

Station:

7215 kHz, 10 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
2000–2230	7215
0700–0830	7215
1100–1800	7215

BULGARIA

Sofia (42°00′N, 23°00′E)

Ann: "This is Sofia, Bulgaria calling."
Int: A march played on an organ.

Stations:

9700 kHz, 120 kW
9705 kHz, 50 kW
11720 kHz, 50 kW
11735 kHz, 50 kW
11750 kHz, 50 kW
11765 kHz, 50 kW
15135 kHz, 50 kW
15310 kHz, 50 kW
15330 kHz, 50 kW
17825 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0000–0100	(I) 9705, 15330
0430–0500	(I) 11750
1830–1900	(II) 15310, 17825
1930–2000	(III) 9700, 11720
2030–2100	(IV) 11735, 11765, 15310
2130–2200	(V) 11750, 15135

Legend:

(I) Beamed to North America
(II) Beamed to East Africa
(III) Beamed to Europe
(IV) Beamed to West Africa
(V) Beamed to Europe and North America

BURMA

Rangoon (16°52′N, 96°10′E)

Ann: "This is the Burma Broadcasting Service."
Int: Orchestral music.

Stations:

5985 kHz, 50 kW
7185 kHz, 50 kW
9730 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0200–0230	7185
0700–0730	9730
1430–1600	5985

CAMEROON

Buea (4°09′N, 0°14′E)

Ann: "This is Buea, the provincial station of Radio Cameroon."
Int: Music played on a balaphon.

Station:

9745 kHz, 8 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0630–1030	9745
1400–1600	9745
1800–1945	9745

CANADA

Montreal (45°52′N, 64°19′W)

Ann: "This is Radio Canada International."
Int: Four musical notes played on an electric organ.

Stations:

5960 kHz, 250 kW
5965 kHz, 250 kW
6045 kHz, 250 kW
6140 kHz, 250 kW
6195 kHz, 250 kW
7155 kHz, 250 kW
7235 kHz, 250 kW
9535 kHz, 250 kW
9555 kHz, 250 kW
9605 kHz, 250 kW
9655 kHz, 250 kW
9715 kHz, 250 kW
9730 kHz, 250 kW
9755 kHz, 250 kW
11735 kHz, 250 kW
11775 kHz, 250 kW
11825 kHz, 250 kW
11845 kHz, 250 kW
11855 kHz, 250 kW
11905 kHz, 250 kW
11915 kHz, 250 kW
11935 kHz, 250 kW
11940 kHz, 250 kW
11945 kHz, 250 kW
15265 kHz, 250 kW
15325 kHz, 250 kW
15355 kHz, 250 kW
17820 kHz, 250 kW
17860 kHz, 250 kW
17865 kHz, 250 kW
17875 kHz, 250 kW

Broadcasts:

Beamed to Western Europe

Time (UTC)	*Freq (kHz)*
0615–0630	(a) 6140, 7155, 9655, 11735
0645–0700	(a) 6140, 7155, 9655, 11735
1400–1500	(b) 6195
1645–1700	15325, 17820
1900–1930	5995, 11905, 15325, 17820
2000–2030	5995, 11855, 11905, 11945, 15325, 17820, 19875

Beamed to Eastern Europe

1545–1600	7235, 9555, 11915, 11935, 15315, 15325, 17820

Beamed to North America

0000–0100	5960
0100–0130	5960, 9535
0300–0330	5960, 9535, 9605, 9755, 11845
0400–0430	5960, 9535
2300–2400	5960

Beamed to Caribbean

0100–0130	11940, 17865

Beamed to South America

0100–0130	5960, 9535, 11940, 17865
0200–0230	5960, 9535, 11845
0300–0330	5960, 9535, 9605, 9755, 11845
0400–0430	5960, 9535

Beamed to Africa

0615–0630	(a) 6045, 9635, 9715, 9730, 11825, 11775, 11845
0645–0700	(a) 6045, 9635, 9715, 9730, 11775, 11825, 11845

Beamed to Mid East

0615–0630	15265, 15355, 17860
0645–0700	15265, 15355, 17860

Legend:

(a) Monday through Friday
(b) Sunday only

CENTRAL AFRICAN EMPIRE

Bangui (4°21′N, 18°35′E)

Ann: "Ici la Radiodiffusion Nationale Centrafricaine qui emet de Bangui."
Int: National Anthem.

Stations:

5035 kHz, 100 kW
7220 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0430–0700	(a) 5035, 7220
0730–1630	(a) 5035, 7220
1630–2300	(a) 5035, 7220

Legend:

(a) French language only.

CHAD

Ndjamena (Fort-Lamy) (12°08′N, 15°03′E)

Ann: "Ici Ndjamena Radiodiffusion Nationale Tchadienne emettant dans les bandes."
Int: Music on balaphon.

Stations:

4904 kHz, 30 kW
7120 kHz, 30 kW
9615 kHz, 4 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0430–0600	(a) 4904
0430–0800	(a) (b) 4904
1230–1610	(a) 7120, 9615
0800–1610	(a) (b) 7120, 9615
1610–2130	(a) 4904
1610–2300	(a) (c) 4904

Legend:

(a) French language only
(b) Sundays only
(c) Saturdays only

CHILE

Santiago (33°00′S, 71°00′W)

Ann: "Radio Nacional, La Voz de Chile"

Station:

9565 kHz, 10 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0100–0130	9565
0210–0230	9565
0310–0350	9565
1050–1110	9565
1210–1230	9565
1330–1350	9565
2250–2310	9565

CHINA (People's Republic of; Mainland)

Peking (40°00′N, 116°30′E)

Ann: "This is Radio Peking."
Int: The first few bars of "The East is Red"; sign off with "The Internationale."

Stations:

6810 kHz, 120 kW
6995 kHz, 120 kW
8300 kHz, 120 kW
8425 kHz, 120 kW
9290 kHz, 120 kW
9820 kHz, 120 kW
9860 kHz, 120 kW
9880 flHz, 120 kW

11455 kHz, 120 kW
11500 kHz, 120 kW
11600 kHz, 120 kW
11650 kHz, 120 kW
11685 kHz, 120 kW
11695 kHz, 120 kW
11725 kHz, 120 kW
11845 kHz, 120 kW
12055 kHz, 120 kW
12450 kHz, 120 kW
15060 kHz, 120 kW
15095 kHz, 120 kW
15125 kHz, 120 kW
15230 kHz, 120 kW
15270 kHz, 120 kW
15285 kHz, 120 kW
15315 kHz, 120 kW
15520 kHz, 120 kW
17530 kHz, 120 kW
17635 kHz, 120 kW
17680 kHz, 120 kW
17810 kHz, 120 kW
17855 kHz, 120 kW

Broadcasts:

Beamed to North America (East)

Time (UTC)	*Freq (kHz)*
0000–0100	11845, 15060, 15520, 17680
0100–0200	17680, 17855
1200–1300	6995, 8425, 9820, 11685

Beamed to North America (West)

0300–0500 11685, 12055, 15230, 15285, 17530, 17680

Beamed to Australia and New Zealand

0830–1030 11600, 11725, 12450, 15125, 17635

Beamed to Southeast Asia

1200–1400 9290, 11650, 12450, 15270, 17810

Beamed to South Asia

1400–1600 6810, 8300, 9860, 11650, 15315
1800–1900 12450

Beamed to East and South Africa

1600–1800 6810, 8300, 9860, 15315

Beamed to North and West Africa

1930–2130 9880, 11455, 11695, 15095

Beamed to Europe

2030–2230 11500, 12450

COMORO STATE

Moroni (11°42′S, 43°15′E)

Ann: "Comores-Internationale ORTF."
Int: Folk song.

Stations:

3331 kHz, 4 kW — 7260 kHz, 4 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0400–0430	(a) 3331, 7260
0900–1030	(a) 3331, 7260
0500–1030	(a) (b) 3331, 7260
1500–1730	(a) 3331, 7260

Legend:

(a) French language
(b) Sunday only

CONGO (People's Republic)

Brazzaville (4°15′S, 15°18′E)

Ann: "This is Brazzaville, the voice of the Congolese Revolution."
Int: Zanai solo.

Stations:

3232 kHz, 4 kW — 15210 kHz, 4 kW
4765 kHz, 4 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
2130–2145	3232, 4765, 15210

COSTA RICA

San Jose (TIFC) (10°00′N, 85°00′W)

Ann: "This is San Jose, Costa Rica, TIFC."

Stations:

5055 kHz, 5 kW — 9645 kHz, 1 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0200–0505	(a) 5055, 9645
1840–2055	(b) 5055, 9645
0135–0305	(c) 5055, 9645

Legend:

(a) Sunday only
(b) Weekdays only
(c) Saturday only

CUBA

Havana (23°00′N, 82°30′W)

Ann: "This is Radio Havana, Cuba."
Int: National anthem.

Stations:

9525 kHz, 50 kW	11760 kHz, 100 kW
9770 kHz, 100 kW	17750 kHz, 50 kW
11725 kHz, 100 kW	17885 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0100–0600	(I) 11725, 11760, 11930
0630–0800	(I) 9525
2010–2140	(II) 17885
2050–2140	(I) 9770, 17750

Legend:

(I) Beamed to North, Central, and South America
(II) Beamed to Europe

CZECHOSLOVAKIA

Prague: (50°09′N, 15°09′E)

Ann: "This is Prague, Czechoslovakia."
Int: A few bars of the song "Forward Left."

Stations:

5930 kHz, 120 kW	11855 kHz, 200 kW
6055 kHz, 120 kW	11990 kHz, 200 kW
7245 kHz, 120 kW	15110 kHz, 120 kW
7345 kHz, 200 kW	17705 kHz, 120 kW
9540 kHz, 200 kW	17775 kHz, 120 kW
9605 kHz, 200 kW	17840 kHz, 120 kW
9630 kHz, 200 kW	21700 kHz, 120 kW

Broadcasts:

Beamed to North America

Time (UTC)	*Freq (kHz)*
0100–0200	5930, 7345, 9540, 9630
0300–0400	5930, 7345, 9540, 9630

Beamed to Europe

1630–1700	5930, 7345
1900–1930	5930, 7245, 7345
2000–2030	5930, 7345
2130–2200	6055

Beamed to Asia and Pacific Area

0730–0800	11855, 17775, 21700
0830–0900	11855, 17775, 21700
1430–1500	7345, 9605, 11990, 15110, 17705, 17840

Beamed to Africa

1530–1630	6055, 7345, 9605, 11990, 15110, 17705, 17840
1730–1830	5930, 7345, 9605, 11990, 17840

DOMINICAN REPUBLIC

Santo Domingo (18°45′N, 70°00′W)

Ann: "This is Radio Santo Domingo, HISD"

Stations:

5965 kHz, 50 kW
9505 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0215–0230	5965, 9505

ECUADOR

Quito (0°14′S, 78°20′W)

Ann: "This is the voice of the Andes, Quito Ecuador."
Int: The first few bars of a folk song.

Stations:

6095 kHz, 100 kW
6130 kHz, 100 kW
9560 kHz, 100 kW
9635 kHz, 100 kW
9745 kHz, 100 kW
11820 kHz, 100 kW
11900 kHz, 100 kW
11915 kHz, 100 kW
15115 kHz, 50 kW
15380 kHz, 50 kW
17865 kHz, 50 kW
17890 kHz, 50 kW
21480 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0300–0700	(I) 9560, 11915
0500–0700	(I) 6095
0700–0830	(II) 9635, 11820
0600–1130	(III) 6130, 11900
0700–1030	(III) 9745
1200–1600	(IV) 15115
1200–1600	(I) 17890
1700–1800	(II) 15380, 17865, 21480
1900–2030	(I) 9560, 11915

Legend:

(I) Beamed to North and Central America
(II) Beamed to Europe
(III) Beamed to South Pacific
(IV) Beamed to North/Central America and South America

EGYPT

Cairo (30°16'N, 31°22'E)

Ann: "The Voice of the Arabs."

Stations:

6230 kHz, 100 kW	15235 kHz, 100 kW
9475 kHz, 100 kW	15255 kHz, 100 kW
9805 kHz, 100 kW	17920 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0200–0330	(I) 6230, 9475
1315–1430	(II) 17920
1630–1830	(III) 15255
2030–2200	(IV) 15375
2215–2345	(V) 9805

Legend:

(I) Beamed to North and South America
(II) Beamed to Central Africa
(III) Beamed to South Africa
(IV) Beamed to Europe and North America
(V) Beamed to Europe

ETHIOPIA

Addis Ababa (8°58'N, 38°43'E)

Ann: "This is the external service of Voice of Revolutionary Ethiopia."
Int: Folk song played on a native flute.

Stations:

5990 kHz, 100 kW	7165 kHz, 100 kW
7110 kHz, 100 kW	9615 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1500–1600	(I) 7165, 9615
1600–1700	(I) 5990, 7110
2100–2200	(I) 7165, 9615

Legend:

(I) Beamed to East Africa

FINLAND

Helsinki (61°28′N, 21°52′E)

Ann: "This is the Finnish Broadcasting Company."
Int: Finnish folk song.

Stations:

6120 kHz, 250 kW	11910 kHz, 250 kW
9565 kHz, 100 kW	15210 kHz, 100 kW
9585 kHz, 100 kW	15265 kHz, 250 kW
11735 kHz, 100 kW	15270 kHz, 100 kW
11755 kHz, 250 kW	21495 kHz, 250 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0930–1000	(I) 11755, 15270, 21495
1300–1330	(I) 11755, 15210, 15265
1330–1430	(I) 15265, 15210
1430–1500	(I) 6120, 11755, 15210, 15265
1930–2000	(I) 6120, 9585, 11755
2130–2200	(I) 9585, 11910
2330–2400	(II) 9565, 11735, 11755, 15270

(I) Beamed to Europe
(II) Beamed to North America

FRANCE

Paris (47°00′N, 2°00′E)

Ann: "Ici Paris, Radio France International, Cooperation Radiophonique."
Int: French song, "Nous n'irons plus au bois."

Stations:

7135 kHz, 500 kW	15360 kHz, 100 kW
9595 kHz, 100 kW	15425 kHz, 500 kW
11745 kHz, 100 kW	17720 kHz, 500 kW
11845 kHz, 500 kW	17795 kHz, 100 kW
11930 kHz, 500 kW	17850 kHz, 500 kW
15200 kHz, 100 kW	17860 kHz, 100 kW
15210 kHz, 100 kW	21580 kHz, 500 kW
15300 kHz, 500 kW	21675 kHz, 500 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1600–1800	(l) 7135, 9595, 11745, 11845, 11930, 15200, 15210, 15300, 15360, 15425, 17720, 17795, 17850, 17860, 21580, 21675

Legend:

(l) Beamed to Africa

GABON

Libreville (0°25′N, 9°28′E)

Ann: "Ici Libreville, Radiodiffusion Television Gabonaise la voix de la Renovation chaine Nationale."

Stations:

3330 kHz, 100 kW
4777 kHz, 20 kW
7270 kHz, 20 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0430–0630	(a) 3330, 4777
0630–1630	(a) 3330, 7270
1630–2300	(a) 3330, 4777

Legend:

(a) French language only

GERMANY (Democratic Republic; East)

Berlin (52°18′N, 13°37′E)

Ann: "This is Radio Berlin International, the Voice of the German Democratic Republic."
Int: National Anthem.

Stations:

6080 kHz, 100 kW
6115 kHz, 100 kW
7185 kHz, 100 kW
7260 kHz, 100 kW
7300 kHz, 100 kW
9665 kHz, 100 kW
9730 kHz, 100 kW
11720 kHz, 100 kW
11795 kHz, 100 kW
11840 kHz, 100 kW
11890 kHz, 100 kW
11970 kHz, 100 kW
15145 kHz, 100 kW
15165 kHz, 100 kW
15170 kHz, 100 kW
15390 kHz, 100 kW
17700 kHz, 100 kW
21465 kHz, 100 kW
21485 kHz, 100 kW
21540 kHz, 100 kW

Broadcasts:

Beamed to USA and Canada (East Coast)

Time (UTC)	*Freq (kHz)*
0100–0145	9730, 11970
0230–0315	9730, 11970

Beamed to USA and Canada (West Coast)

0330–0415	11840, 11890, 11970

Beamed to Europe

1800–1900	6080, 7185
1900–2015	7260
2015–2145	6080, 6115, 7185
2145–2230	6080, 6115, 7185, 7300, 9730

Beamed to Southeast Asia

0645–0730	17700, 21465, 21540
1200–1245	15165, 17700, 21465, 21540
1400–1445	17700, 21465, 21540
1530–1615	17700, 21540

Beamed to West Africa

0445–0530	11795
1800–1845	11970

Beamed to East Africa

0445–0530	11720
1800–1845	15145, 15170

Beamed to Central Africa

1315–1400	21485
2000–2045	9665, 15390

GERMANY (Federal Republic; West)

Cologne (50°57′N, 6°22′E)

Ann: "This is Radio Deutsche Welle, the voice of Germany."
Int: Two bars from "Fidelio," played on a celesta.

Stations:

5960 kHz, 100 kW	7130 kHz, 100 kW
6040 kHz, 100 kW	7150 kHz, 100 kW
6075 kHz, 100 kW	7210 kHz, 100 kW
6085 kHz, 100 kW	7225 kHz, 100 kW
6100 kHz, 100 kW	7285 kHz, 100 kW
6185 kHz, 100 kW	9545 kHz, 100 kW

9565 kHz, 100 kW
9650 kHz, 100 kW
9690 kHz, 100 kW
9700 kHz, 100 kW
9735 kHz, 100 kW
9765 kHz, 100 kW
11765 kHz, 100 kW
11785 kHz, 100 kW
11850 kHz, 100 kW
11905 kHz, 100 kW
11945 kHz, 100 kW
11965 kHz, 100 kW
15125 kHz, 100 kW
15135 kHz, 100 kW
15150 kHz, 100 kW
15165 kHz, 100 kW
15240 kHz, 100 kW
15275 kHz, 100 kW
15410 kHz, 100 kW
17730 kHz, 100 kW
17765 kHz, 100 kW
17780 kHz, 100 kW
17795 kHz, 100 kW
17800 kHz, 100 kW
17875 kHz, 100 kW
21500 kHz, 100 kW
21540 kHz, 100 kW
21600 kHz, 100 kW
21640 kHz, 100 kW

Broadcasts:

Beamed to North America (East Coast)

Time (UTC)	*Freq (kHz)*
0130–0150	6040, 6075, 6085, 6100

Beamed to North America (West Coast)

0530–0550	5960, 6185, 9545, 11785, 11905

Beamed to Europe

0430–0515	7150, 7225, 9565, 9765, 11765
1045–1115	11785, 15410, 17765, 17875, 21500, 21600
1715–1745	9735, 11965, 15135, 21600
1745–1805	15135, 17730

Beamed to South Asia

0120–0220	7210, 7285, 9690, 11945, 15240
1045–1115	11785, 15410, 17765, 17875, 21500, 21600
1715–1745	9735, 11965, 15135, 21600
1745–1805	15135, 17730

Beamed to West Africa

0600–0630	9700, 11765, 11905, 15275, 17875
1200–1245	15410, 17765, 17875, 21600
1930–2000	11905, 15150, 17795

Beamed to East Asia, Australia and New Zealand

0930–1030	9650, 11850, 15275, 17780, 17800, 21540, 21680
2100–2200	7130, 9765

GHANA

Accra (5°31'N, 0°10'E)

Ann: "This is the external service of Radio Ghana."
Int: First bars of the national anthem played on a guitar.

Station:

6130 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0700–0900	6150
1600–2300	(I) 6150

Legend:

(I) Beamed to West Africa

GREAT BRITAIN

London (52°19'N, 00°00')

Ann: "This is the World Service of the BBC."
Int: Musical selection "Oranges and Lemons"; time signal every hour, Big Ben every quarter hour.

Stations:

Some stations listed below are located in London; others are located in various countries throughout the world, relaying BBC transmissions.

5975 kHz, 250 kW
6005 kHz, 250 kW
6050 kHz, 250 kW
6120 kHz, 250 kW
6175 kHz, 250 kW
6180 kHz, 250 kW
6195 kHz, 250 kW
7120 kHz, 250 kW
7130 kHz, 250 kW
7140 kHz, 250 kW
7150 kHz, 250 kW
7180 kHz, 250 kW
7185 kHz, 250 kW
7230 kHz, 250 kW
7325 kHz, 250 kW
9410 kHz, 250 kW
9510 kHz, 250 kW
9570 kHz, 250 kW
9580 kHz, 250 kW
9590 kHz, 250 kW
9640 kHz, 250 kW
9740 kHz, 250 kW
9760 kHz, 250 kW
9915 kHz, 250 kW
11750 kHz, 250 kW
11760 kHz, 250 kW
11775 kHz, 250 kW
11910 kHz, 250 kW
11955 kHz, 250 kW
12090 kHz, 250 kW
12095 kHz, 250 kW
15070 kHz, 250 kW
15105 kHz, 250 kW
15215 kHz, 250 kW
15260 kHz, 250 kW
15280 kHz, 250 kW
15310 kHz, 250 kW
15380 kHz, 250 kW
15400 kHz, 250 kW
15420 kHz, 250 kW

15435 kHz, 250 kW
17705 kHz, 250 kW
17770 kHz, 250 kW
17790 kHz, 250 kW
17830 kHz, 250 kW
17840 kHz, 250 kW
17885 kHz, 250 kW
21470 kHz, 250 kW
21550 kHz, 250 kW
21555 kHz, 250 kW
21660 kHz, 250 kW
21710 kHz, 250 kW
25650 kHz, 250 kW

Broadcasts:

Beamed to North America, Central America and Caribbean

Time (UTC)	*Freq (kHz)*
0000–0730	5975
0530–0900	15070
0545–0900	11955
1100–1315	9510
1100–1330	6195, 15215, 21555
1330–1600	11750, 21710
1500–1730	11775, 17830
2000–2100	17840
2000–2245	21710
2000–0230	15260
2000–0330	15070
2000–0715	6175
2100–0030	15420
2200–0015	9590
2200–0330	6120, 11750
2245–0900	9510
2300–0315	7325, 9580
2300–0430	11910

Beamed to South America

0000–0315	6005
2000–2100	17840
2000–0230	15260
2100–0315	11750
2230–0315	9915
2300–0315	9580

Beamed to Western Europe

0400–0530	15420
0400–2100	12095, 15070
0400–0730	6050, 7185, 9410, 11750
0400–2300	5975
0430–0730	9580
0430–0900	11955
0500–0730	17885
0600–0730	6195, 7230
0900–1600	9750, 17790

0900–2030	17705
1700–2100	11750
2000–2330	7120
2100–2315	6195

Beamed to Northern Europe

0400–2100	9410
0400–0530	6050
0500–0730	17885
0530–2030	15070
0900–1600	17790
1800–2100	5975

Beamed to Southwestern Europe

0400–0030	12095
0400–0730	7185
0430–0730	9580
0500–0030	15070
0530–0900	11955
0600–2030	17705
0630–2030	21730
0900–1430	9760
1730–0030	9410
2100–0030	5975
2230–0030	7130

Beamed to Central and Southeastern Europe

0300–0630	6050, 7185
0300–0730	9410, 12095
0300–2100	15070
0400–0630	5975
0430–0730	9580
0600–0730	15420
0600–1430	17790
0600–1830	21710
0900–2300	12095
1700–2100	11750
1700–2300	6180
1730–2300	9410
2000–2300	6195, 7120

Beamed to Eastern Europe and U.S.S.R.

0300–0530	9410, 15420
0500–0730	17885
0530–2030	15070
0900–1600	17790, 21550, 25650
1600–2100	12090
1800–2100	9410

Beamed to North and Northwest Africa

0400–0630	11750, 12095
0430–0600	9580
0500–2330	15070
0600–2030	17705
0700–2030	21710
0900–1600	25650
0900–1830	21470
1800–2100	11750
1800–2400	12095
2000–2300	7120
2000–0030	9410
2300–0300	7130

Beamed to West and Central Africa

0400–0530	12095
0400–0600	6005
0400–0730	15070
0600–1130	15400
0600–0730	17705
0700–2030	21710
0730–1600	21660
0900–1600	25650
0900–2030	17705
1430–1800	15105
1430–2030	15400
1730–2230	15070
2000–2100	12095
2000–2230	6005, 9410

Beamed to Eastern Africa

0300–0630	15070
0300–0730	15420
0330–0430	11750
0430–1430	17885
0530–0630	21660
0600–1830	21710
0900–1630	25650
0900–1730	15420
0900–1830	21470
1700–2100	15070
1800–2100	11750

Beamed to South Africa

0400–0530	6005
0400–0730	15070
0430–1430	17885
0530–1600	21660

0600–0730	17750
0600–0900	15400
0700–2030	21710
0900–1600	25650
0900–2030	17750
1430–2030	15400
1730–2230	15070
2000–2230	6005

Beamed to Middle East

0300–0530	9410
0300–0700	12095
0300–0900	15070
0530–0730	7140
0600–1330	11760
0600–1430	17790
0600–1830	21710
0900–1200	7140
0900–1600	25650
1300–2100	15070
1600–2100	12095
1800–2300	9410

Beamed to India and South Asia

0000–0330	9410
0000–0430	11955
0030–0330	15380
0600–1330	11760
0900–1300	17770
0900–1600	21550
0900–1600	25650
0900–1830	15310
1130–1600	11750
1300–1600	17790
1330–1830	9740
1400–2100	15070
1600–1830	11955
1630–1830	7180
1730–2100	9410

Beamed to East and Southeast Asia

0900–1100	15280
0900–1600	11750, 21550, 25650
0900–1830	6195, 9740
1300–1600	17790
1400–1830	15070
1600–1830	11955
2200–2330	11955
2200–0030	9570, 15070, 15435

Beamed to Australia and New Zealand

0530–0730	7150
0530–0900	9510, 9640, 11955, 15070
0900–1600	11750, 21550, 25650
2000–2230	15070, 21710

GREECE

Athens (38°20′N, 23°30′E)

Ann: "This is Athens, the voice of Greece."
Int: Greek folk song played on a flute and sheep bells.

Stations:

6140 kHz, 250 kW	11845 kHz, 100 kW
7125 kHz, 100 kW	11925 kHz, 250 kW
7205 kHz, 100 kW	15160 kHz, 100 kW
9515 kHz, 100 kW	15325 kHz, 100 kW
9530 kHz, 100 kW	17785 kHz, 100 kW
9640 kHz, 100 kW	17840 kHz, 100 kW
9655 kHz, 250 kW	21455 kHz, 100 kW
9760 kHz, 250 kW	21655 kHz, 100 kW
11730 kHz, 250 kW	

Broadcasts:

Time (UTC)	*Freq (kHz)*
0000–0100	(I) 9515, 9655, 11730
0215–0230	(II) 9515, 9655, 11730
0900–0930	(III) 9655, 15160
1000–1030	(IV) 11845, 15325
1215–1230	(I) 11730, 17785, 21655
1530–1600	(II) 11730, 17830, 21455
1815–1830	(V) 11925, 15345, 17830
1915–1930	(VI) 7125, 7205, 9530
2115–2130	(III) 6140, 9640, 9760
2245–2300	(VI) 6140, 9760

Legend:

(I) Beamed to North America (East)
(II) Beamed to North America (West)
(III) Beamed to Australia
(IV) Beamed to Japan
(V) Beamed to South Africa
(VI) Beamed to Europe
(VI) Beamed to South America

GUAM

Agana (14°00′N, 145°00′E)

Ann: "This is Radio Guam, KUAM."

Stations:

11730 kHz, 50 kW	15225 kHz, 50 kW
11840 kHz, 50 kW	17855 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0000–0130	(I) 17855
0815–0930	(II) 11840
1430–1500	(I) 11730
1430–1500	(III) 15225

Legend:

(I) Beamed to India
(II) Beamed to Japan
(III) Beamed to China

GUIANA (French)

Cayenne (5°00'N, 52°00'W)

Ann: "Ici Cayenne, Office de Radiodiffusion Television Francaise."
Int: Folk song played on a guitar.

Stations:

3395 kHz, 4 kW	6170 kHz, 4 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0900–1200	(a) 3395
1200–2000	(a) 6170
2000–0145	(a) 3395

Legend:

(a) French language only

GUINEA (Republic of)

Conakry (9°32'N, 13°40'W)

Ann: "Ici la voix de la Revolution."
Int: A few bars of the national anthem played on a guitar.

Stations:

4910 kHz, 18 kW	9650 kHz, 100 kW
6155 kHz, 18 kW	15310 kHz, 100 kW
7125 kHz, 100 kW	

Broadcasts:

Time (UTC)	*Freq (kHz)*
1230–0830	(a) 4910, 6511, 9650, 15310
1600–0830	(a) 7125

Legend:

(a) French language only

GUYANA (Republic)

Georgetown (6°49′N, 58°05′W)

Ann: "This is Action Radio; Guyana Broadcasting Service."

Station:

5950 kHz, 10 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0800–0300	5950

Georgetown (6°49′N, 58°05′W)

Ann: "This is Radio Demerara, the voice of Guyana."

Stations:

3265 kHz, 2 kW

5980 kHz, 2 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0815–0200	3265, 5980

HAITI

Cap Haitien (19°00′N, 73°00′W)

Ann: "This is Radio Station 4VEH, Cap Haitien."

Stations:

9770 kHz, 2 kW

11835 kHz, 2 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1100–1400	9770, 11835
2330–0030	9770, 11835

HONDURAS (Republic of)

Tegucigalpa (14°00′N, 87°00′W)

Ann: "This is the Baptist Home Mission Society."
Int: Hymn.

Station:

4820 kHz, 5 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0300–0600	4820

HUNGARY

Budapest (47°00′N, 19°00′E)

Ann: "This is Budapest, Hungary."
Int: A few bars of the musical selection "1848."

Stations:

6025 kHz, 100 kW	9835 kHz, 100 kW
6105 kHz, 100 kW	11910 kHz, 100 kW
6110 kHz, 100 kW	15160 kHz, 100 kW
7155 kHz, 100 kW	15220 kHz, 100 kW
7200 kHz, 100 kW	15225 kHz, 100 kW
9585 kHz, 100 kW	17710 kHz, 100 kW
9655 kHz, 100 kW	17785 kHz, 100 kW
9833 kHz, 100 kW	21525 kHz, 100 kW

Broadcasts:

Beamed to North America

Time (UTC)	*Freq (kHz)*
0300–0330	(a) 6105, 9585, 9835, 11910, 15225, 17710
0400–0415	(b) 6105, 9585, 9835, 11910, 15225, 17710
0200–0230	(c) 6105, 9585, 9835, 11910, 15225, 17710

Beamed to Australia and New Zealand

1030–1100	(a) 9585, 9835, 11910, 15160, 17785, 21525

Beamed to Europe

1200–1230	(d) 7155, 9585, 9655, 9833, 11910, 15160
2100–2130	(a) 6025, 7200, 9655, 9835, 11910, 15220

Beamed to Asia

1430–1500	(d) 6110, 9585, 9835, 11910, 15160, 17785

Legend:

(a) Daily
(b) Wednesday and Saturdays only
(c) Tuesdays to Sunday only
(d) Monday to Friday only

INDIA

New Delhi (28°43′N, 77°12′E)

Ann: "This is All India Radio, General Overseas Service."
Int: Folk song played on a violin, cello, and tampura.

Stations:

7215 kHz, 100 kW	15110 kHz, 100 kW
9535 kHz, 100 kW	15165 kHz, 100 kW
9715 kHz, 100 kW	15190 kHz, 100 kW
9755 kHz, 100 kW	15205 kHz, 100 kW
9912 kHz, 100 kW	15235 kHz, 100 kW
11620 kHz, 100 kW	15335 kHz, 100 kW
11770 kHz, 100 kW	15387 kHz, 100 kW
11810 kHz, 100 kW	17705 kHz, 100 kW
11875 kHz, 100 kW	17875 kHz, 100 kW
11925 kHz, 100 kW	21695 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1000–1100	(I) 11770, 15190, 15205, 17387, 17705
1000–1100	(VI) 11925, 15190, 15205, 17387, 17875, 21695
1330–1500	(II) 11810, 15335
1745–1945	(III) 9715, 11620, 15165, 15190
1945–2045	(IV) 9755, 9912, 11620, 11875, 15165
2045–2230	(V) 9535, 9912, 11620, 11740, 15165
2245–0115	(VI) 7215, 9535, 11770, 15110, 15235

Legend:

(I) Beamed to Northeast Asia and Australia
(II) Beamed to Southeast Asia
(III) Beamed to East Africa and West Europe
(IV) Beamed to Northwest Africa and West Europe
(V) Beamed to West Europe, Australia and New Zealand
(VI) General Service

INDONESIA

Djakarta (6°12′S, 106°50′E)

Ann: "This is the Voice of Indonesia, broadcasting from Djakarta."
Int: Musical selection "Love Ambon" played on an electric organ.

Stations:

11790 kHz, 120 kW	15200 kHz, 120 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0100–0200	11790, 15200
0800–0900	11790, 15200
1400–1500	11790, 15200

IRAN

Tehran (35°41′N, 51°27′E)

Ann: "This is Tehran, the Voice of Iran."
Int: A folk song played on a vibraphone.

Station:

9022 kHz, 250 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1900–1930	9022

IRAQ

Baghdad (33°09′N, 44°35′E)

Ann: "This is Radio Baghdad."
Int: The sounds of a nightingale.

Stations:

9745 kHz, 500 kW

11935 kHz, 250 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0300–0400	(I) 11935
2130–2230	(II) 9745

Legend:

(I) Beamed to North America
(II) Beamed to Europe

ISRAEL

Jerusalem (31°45′N, 35°15′E)

Ann: "This is Israel, broadcasting from Jerusalem."
Int: National anthem.

Stations:

9009 kHz, 50 kW	15485 kHz, 100 kW
9425 kHz, 50 kW	17645 kHz, 100 kW
9815 kHz, 50 kW	17685 kHz, 100 kW
11655 kHz, 50 kW	21495 kHz, 100 kW
15105 kHz, 100 kW	21625 kHz, 100 kW
15330 kHz, 100 kW	25640 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0500–0515	(I) 11655, 15105, 15485, 17815
1200–1230	(I) 17685 (II) 15330
2000–2030	(I) 11655, 17645, 21625; (III) 9009, 9425; (IV) 17685
2230–2300	(I) 9815, 11655, 15485, 17645, 21625

Legend:

(I) Beamed to Europe, Middle East and North America
(II) Beamed to Southeast Asia and Australia/New Zealand
(III) Beamed to West Africa
(IV) Beamed to South Africa

ITALY

Rome (41°48′N, 12°31′E)

Ann: "This is the Italian Radio and Television Service broadcasting from Rome."
Int: Birds chirping and chimes.

Stations:

5990 kHz, 100 kW	11800 kHz, 100 kW
7235 kHz, 100 kW	11905 kHz, 100 kW
7275 kHz, 100 kW	15315 kHz, 100 kW
9575 kHz, 100 kW	15330 kHz, 100 kW
9710 kHz, 100 kW	17795 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0100–0120	(I) 11800, 15315
0350–0410	(II) 11905, 15330, 17795
0425–0440	(III) 5990, 7275
1935–1955	(IV) 7275, 9710, 11800
2025–2045	(V) 7235, 9575, 11800
2200–2225	(VI) 9710, 11905, 15315

Legend:

(I) Beamed to North America
(II) Beamed to South Asia and Australia/New Zealand
(III) Beamed to Mediterranean Area
(IV) Beamed to Europe
(V) Beamed to Near East
(VI) Beamed to Japan

IVORY COAST

Abidjan (5°21′N, 3°75′W)

Ann: "This is the external service of Radio Abidjan."
Int: Clock chimes and the national anthem.

Stations:

7215 kHz, 100 kW
11920 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1845–2000	7215, 11920

JAPAN

Tokyo (36°10′N, 139°50′E)

Ann: "This is Radio Japan, the overseas broadcasting service of NHK."
Int: Musical notes played on a celesta, followed by "Kazoe Uta."

Stations:

9505 kHz, 100 kW
9585 kHz, 100 kW
9675 kHz, 100 kW
11705 kHz, 100 kW
11815 kHz, 100 kW
11855 kHz, 100 kW
11875 kHz, 100 kW
15135 kHz, 100 kW
15195 kHz, 100 kW
15235 kHz, 100 kW
15270 kHz, 100 kW
15310 kHz, 100 kW
17725 kHz, 200 kW
17755 kHz, 200 kW
17810 kHz, 200 kW
17825 kHz, 200 kW
17855 kHz, 200 kW
17880 kHz, 100 kW
21610 kHz, 100 kW
21640 kHz, 100 kW

Broadcasts:

0000–0015	(I) 17755; (II) 9585; (III) 15195
0100–0115	(I) 17755; (II) 9585; (III) 17880
0200–0215	(I) 17755; (II) 9585; (III) 17880
0300–0315	(I) 17755; (II) 9585; (III) 17880
0400–0415	(I) 17755; (II) 9585; (III) 17880
0500–0515	(I) 15270; (II) 9585; (III) 17880
0600–0615	(I) 15270; (II) 17810; (III) 17880

0700–0715	(I) 15270; (II) 17810; (III) 17880
0800–0815	(I) 9505; (II) 17810; (III) 15195
0900–0915	(I) 9505; (II) 17810; (III) 15195
1000–1030	(I) 9505; (II) 17810; (III) 15195
1100–1115	(I) 9505; (II) 17810; (III) 15195
1200–1215	(I) 9505; (II) 15310; (III) 11815
1300–1315	(I) 9505; (II) 15310; (III) 11815
1400–1430	(I) 9505; (II) 15310; (III) 11815
1500–1515	(I) 9505; (II) 15310; (III) 11815
1600–1615	(I) 9505; (II) 15310; (III) 11815
1700–1715	(I) 9505; (II) 15310; (III) 11815
1800–1815	(I) 9505; (II) 15310; (III) 11815
1900–1915	(I) 15270; (II) 15310; (III) 11815
2000–2015	(I) 15270; (II) 15310; (III) 11815
2100–2115	(I) 15270; (II) 15310; (III) 11815
2200–2215	(I) 17755; (II) 9585; (III) 15195
2300–2330	(I) 17755; (II) 9585; (III) 15195

Regional Service

2345–0045	(I) 15270, 17825
0130–0230	(IV) 15270, 17725, 17825, 21640
0800–0830	(II) 17855, 21610
0930–1030	(VIII) 11875, 15235
1115–1145	(VI) 9675, 11875
1630–1700	(VII) 11705, 15235
1830–1900	(II) 11855, 15135
2015–2045	(V) 11815, 15135

Legend:

(I) Beamed to North America
(II) Beamed to Europe
(III) Beamed to Asia
(IV) Beamed to North and South America and Hawaii
(V) Beamed to Middle East and North Africa
(VI) Beamed to Southeast Asia
(VII) Beamed to South Asia and Africa
(VIII) Beamed to Australia and New Zealand

JORDAN

Amman (31°57′N, 35°56′E)

Ann: "This is Radio Jordan, broadcasting from Amman."
Int: Musical notes played on clarinet and piano.

Stations:

7155 kHz, 7.5 kW
9560 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1000–1300	7155
1500–1730	9560

KAMPUCHEA (Cambodia)

Phnom Penh (11°34′N, 104°51′E)

Ann: "Thini Phnom-Penh, Sathani Withayu Phsay Somleng Ronnacse Roup Roum Cheat Kampuchea."

Stations:

6095 kHz, 50 kW

9695 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
2330–0030	6093, 9695
1130–1230	6093, 9695

KENYA

Nairobi (1°30′S, 36°30′E)

Ann: "This is the voice of Kenya."

Stations:

4805 kHz, 5 kW

7120 kHz, 5 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0255–0630	4805
0355–0630	(a) 4805
0645–1245	(c) 7120
0900–1100	7120
1300–2010	4805
1300–2110	(b) 4805

Legend:

(a) Sunday only
(b) Saturday only
(c) Saturday and Sunday only

KOREA (Democratic People's Republic; North)

Pyongyang (39°00′N, 126°00′E)

Ann: "This is Radio Pyongyang."

Stations:

3560 kHz, 50 kW	9975 kHz, 50 kW
3890 kHz, 50 kW	11780 kHz, 50 kW
6575 kHz, 50 kW	11885 kHz, 50 kW
9420 kHz, 50 kW	11905 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0600–0800	(I) 9420, 11905
0800–1000	(II) 9977, 11780
1100–1300	(III) (IV) 3890, 9975, 11530
1300–1500	(V) 3890, 9975, 11530
1500–1900	(II) 3840, 9975, 11885
2000–2200	(I) 3560, 6575, 9420
2300–0100	(III) (IV) 9975

Legend:

(I) Beamed to Europe
(II) Beamed to Near East and Africa
(III) Beamed to South America
(IV) Beamed to North America
(V) Beamed to Southeast Asia

KOREA (Republic of; South)

Seoul (37°33′N, 126°55′E)

Ann: "This is Radio Korea, the overseas service of the Korean Broadcasting Corp., transmitting from Seoul."
Int: Korean folk song.

Stations:

7275 kHz, 50 kW	9640 kHz, 50 kW
7550 kHz, 50 kW	9720 kHz, 50 kW
9525 kHz, 50 kW	9870 kHz, 50 kW
9570 kHz, 50 kW	11860 kHz, 50 kW
9580 kHz, 50 kW	11965 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0530–0600	(I) 9870
0630–0700	(I) 9640
0830–0900	(I) 9525
1000–1030	(II) 9580
1130–1200	(III) 7275
1330–1400	(III) 9870, 11965
1511–1530	(II) 7275
1600–1630	(I) 9640, 9720; (II) 7275, 7550
1800–1830	(I) 9720

2000–2030	(II) 7550, 11860
2300–2330	(I) (II) 7550, 9640

Legend:

(I) Beamed to North America
(II) General Service
(III) Beamed to Europe

KUWAIT

Kuwait (29°16′N, 47°53′E)

Ann: "This is Radio Kuwait."
Int: Kuwaiti folk song played on a clarinet

Stations:

9575 kHz, 50 kW 17850 kHz, 250 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0500–0800	(I) 9575, 17820
1700–2000	(I) 9575, 17820

Legend:

(I) Beamed to Europe and India

LESOTHO

Maseru (20°30′S, 27°30′E)

Ann: "This is Radio Lesotho."
Int: National Anthem.

Station:

4800 kHz, 10 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0500–0530	4800
0730–0830	(a) 4800
1130–1300	4800
1500–1600	4800
1400–1630	(b) 4800

Legend:

(a) Weekdays only
(b) Sunday only

LIBERIA

Monrovia (6°14′N, 10°42′W)

Ann: "This is ELWA, broadcasting from Monrovia, Liberia."
Int: Tune played on Vibraharp.

Station:

6090 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0600–1000	(1) 6090
1200–1830	(1) 6090

Legend:

(1) Beamed to West and Central Africa

LUXEMBOURG

Luxembourg (49°45′N, 6°30′E)

Ann: "This is Radio Luxembourg."
Int: A popular Luxembourg song played on a piano.

Station:

6090 kHz, 500 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0000–0250	6090

MALAYSIA

Kuala Lumpur (3°01′N, 101°46′E)

Ann: "This is the voice of Malaysia."
Int: National anthem.

Stations:

6175 kHz, 100 kW
9750 kHz, 100 kW
15295 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0625–0855	6175, 9750, 15295

MALDIVES

Male (4°00′N, 74°00′E)

Ann: "This is the overseas service of Radio Maldives, broadcasting from Male."

Station:

4740 kHz, 30 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1500–1730	4740

MARTINIQUE

Fort-de-France (14°30′N, 61°00′W)

Ann: "Ici Office de Radiodiffusion Television, Fort-de-France."
Int: A few bars of the selection "Adieu Foulards, Adieu Madras."

Station:

3315 kHz, 4 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1000–0300	(a) 3315

Legend:

(a) French language only

MAURITANIA

Nouakchott (18°08′N, 16°00′W)

Ann: "Ici Nouakchott, Radiodiffusion Nationale de la Republique Islamique de Mauritanie."
Int: Musical notes played on a guitar.

Station:

4845 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1900–1930	4845

MAURITIUS

Port Louis (20°19′S, 57°31′E)

Ann: "This is the Mauritius Broadcasting Corporation."
Int: Musical selection "Extended Close."

Stations:

4850 kHz, 10 kW

9710 kHz, 10 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0400–1300	9710
1300–1830	4850

MONACO

Monte Carlo (43°44′N, 7°26′E)

Ann: "This is Monte Carlo."
Int: Notes played on a music box.

Stations:

7105 kHz, 100 kW
7245 kHz, 100 kW
9525 kHz, 100 kW
9640 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0725–0900	(a) 7105
0900–1100	(b) 9525
0940–0955	(c) 9640
1030–1100	(d) 9525
1500–1515	(c) 7245

Legend:

(a) Daily
(b) Sunday only
(c) Special
(d) Monday through Thursday

MONGOLIAN PEOPLE'S REPUBLIC

Ulan Bator (48°00′N, 107°00′E)

Ann: "Ankarari Ulanbatras Jarsj Baina."

Stations:

5960 kHz, 50 kW
6385 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1220–1250	(I) 5960, 6385
1715–1745	(I) (II) (a) 6385

Legend:

(I) Beamed to Southeast Asia
(II) Far East

MOZAMBIQUE

Lourenco Marques (25°59′S, 32°22′E)

Ann: "This is Radio Mozambique."
Int: Drum beat.

Stations:

3265 kHz, 25 kW
4855 kHz, 25 kW
6005 kHz, 25 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1800–1845	3265, 4955, 6005

NEPAL

Kathmandu (27°45′N, 85°20′E)

Ann: "This is Radio Nepal."
Int: Musical notes played on a conch shell, violin, piano, jal-tarang.

Stations:

3425 kHz, 100 kW
5005 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1435–1520	3425, 5005

NETHERLANDS

Hilversum (52°01′N, 5°02′E)

Ann: "This is Radio Nederland, the Dutch World Broadcasting System, in Hilversum."
Int: Dutch folk song played on a celesta.

Stations:

5055 kHz, 300 kW
6020 kHz, 300 kW
6045 kHz, 100 kW
6165 kHz, 300 kW
7240 kHz, 100 kW
9590 kHz, 100 kW
9715 kHz, 100 kW
9770 kHz, 100 kW
9895 kHz, 100 kW
11720 kHz, 300 kW
11730 kHz, 300 kW
11740 kHz, 300 kW
11930 kHz, 300 kW
15220 kHz, 100 kW
15235 kHz, 100 kW
17700 kHz, 100 kW
17810 kHz, 100 kW
17855 kHz, 100 kW
26140 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0230–0330	(I) 6165, 9590
0530–0630	(II) 6165, 9715
0700–0730	(III) 11720, 15235, 17700
0730–0830	(IV) 9715, 9770
0830–0930	(V) 9715
0930–1030	(VI) 5955, 6045, 7240, 9895, 11930
1330–1430	(VI) 5955, 6020, 6045, 9895, 11930
1430–1530	(VII) 11740, 17855
1830–1930	(VIII) 6020, 11730, 17700
2030–2130	(IX) 11730, 1740, 15220, 17810, 26140

Legend:

(I) Beamed to North America (East)
(II) Beamed to North America (West)
(III) Beamed to West Africa
(IV) Beamed to Australia, New Zealand and Pacific Area
(V) Beamed to Australia
(VI) Beamed to Europe
(VII) Beamed to South and East Asia
(VIII) Beamed to Central and East and South Africa
(IX) Beamed to West and Central Africa

NEW HEBRIDES

Vila (17°44′S, 168°33′E)
Ann: "This is the New Hebrides."
Int: Native drums.

Stations:

3945 kHz, 2 kW 7260 kHz, 2 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0030–0200	(a) 7260
0600–0900	(a) 3945

Legend:

(a) English and French languages

NEW ZEALAND

Wellington (41°05′S, 174°50′E)

Ann: "This is the external service of Radio New Zealand."
Int: The call of the New Zealand bellbird.

Stations:

6105 kHz, 7.5 kW
11945 kHz, 7.5 kW
11960 kHz, 7.5 kW
15280 kHz, 7.5 kW
17770 kHz, 7.5 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0300–0515	(I) 15280
0530–1045	(I) 6105
0640–0815	(I) 11945
0830–1200	(II) 6105
1800–2105	(I) 11960
2115–0630	(I) 17770

Legend:

(I) Beamed to Pacific Area
(II) Beamed to Australia

NIGERIA

Lagos (7°23'N, 3°55'E)

Ann: "This is the Western Nigeria Broadcasting Service."
Int: Two chimes.

Stations:

7255 kHz, 100 kW
11770 kHz, 100 kW
15120 kHz, 100 kW
15185 kHz, 100 kW

Broadcasts:

Beamed to West Africa

Time (UTC)	*Freq (kHz)*
0455–0600	7255
0800–0900	7255
1600–1700	7255
1900–2030	7255

Beamed to North Africa, Europe and Mediterranean Area

0455–0630	15120, 15185
0830–1000	15120, 15185
1800–1900	15120, 15185
2100–2200	15120, 15185

Beamed to Central Africa and South Africa

1755–1930	11770
2030–2200	11770

NORWAY

Oslo (59°11′N, 10°58′E)

Ann: "This is the overseas service of Radio Norway."
Int: Ancient folk song.

Stations:

6015 kHz, 100 kW	15135 kHz, 100 kW
9590 kHz, 250 kW	15170 kHz, 100 kW
9605 kHz, 100 kW	15175 kHz, 250 kW
9610 kHz, 250 kW	15345 kHz, 250 kW
9645 kHz, 100 kW	17755 kHz, 100 kW
11850 kHz, 100 kW	17795 kHz, 100 kW
11860 kHz, 250 kW	17840 kHz, 100 kW
11870 kHz, 100 kW	21655 kHz, 250 kW
11895 kHz, 250 kW	21730 kHz, 250 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0000–0030	(I) (a) 9605, 11860, 15345
0200–0230	(II) (a) 9610, 11860, 11870
0400–0430	(III) (a) 9645, 11860, 11895
0600–0630	(IV) (a) 11860, 15170, 21655
0800–0830	(V) (b) 9590, 15135, 21655
1200–1230	(VI) (b) 6015, 15345, 21730
1400–1430	(VII) (b) 9590, 17840, 21730
1600–1630	(VIII) (b) 15175, 17755, 21730
1800–1830	(IX) (b) 15175, 15345, 21730
2000–2030	(X) (b) 11850, 15345, 15175
2200–2230	(XI) (b) 15175, 15345, 17795

Legend:

(a) Monday only
(b) Sunday only
(I) Beamed to North America (East), Central America, and South America and West Africa
(II) Beamed to North America and Central America
(III) Beamed to North America and Pacific Area
(IV) Beamed to North America, Middle East and East Africa
(V) Beamed to Australia, New Zealand, Far East and Pacific Area
(VI) Beamed to Europe, Far East, Middle East and Australia
(VII) Beamed to Europe, North and East Africa, North and Central America
(VIII) Beamed to North America (West), West Africa and South America
(IX) Beamed to North America (West), West Africa, Middle East, East and South Africa

(X) Beamed to Europe, Africa and Pacific Area
(XI) Beamed to North America (East), Central and South America, and West Africa

PAKISTAN

Karachi (24°55′N, 67°00′E)

Ann: "This is Radio Pakistan."
Int: Folk song.

Stations:

11675 kHz, 50 kW
15470 kHz, 50 kW
17640 kHz, 50 kW
17662 kHz, 50 kW
17665 kHz, 50 kW
17830 kHz, 50 kW
21450 kHz, 50 kW
21485 kHz, 50 kW
21545 kHz, 50 kW
21590 kHz, 50 kW
21605 kHz, 50 kW
21655 kHz, 50 kW
21755 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0230–0245	17830, 21590
0900–0905	17640
1000–1010	17662, 21655
1040–1045	17640, 21450
1100–1115	17662, 21655
1600–1615	17640, 17665, 21485, 21545, 21755
1645–1650	17640, 21605
1700–1730	11675, 15470

PAPUA NEW GUINEA

Port Moresby (9°30′S, 147°30′E)

Ann: "This is Radio Port Moresby."

Stations:

4890 kHz, 10 kW
9520 kHz, 10 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0730–1400	4890
2000–2230	4890
2100–0800	9520

PHILIPPINES

Manila (14°48′N, 120°55′E)

Ann: "This is the English service of the Far East Broadcasting Company, transmitting from the Philippines."
Int: Musical selection "We have heard the Joyful Sound."

Stations:

11765 kHz, 50 kW	15440 kHz, 50 kW
11855 kHz, 50 kW	15450 kHz, 50 kW
11890 kHz, 50 kW	21515 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0000–0100	(I) 11855, 21515
0000–0100	(II) 17810, 21515
0100–0500	(I) 17810, 21515
0800–1000	(III) 11765
1245–1600	(I) 15440
2300–0400	(I) 11890
2300–2400	(IV) 11890, 15450
2300–0500	(III) 21515

(I) Beamed to Southeast Asia and India
(II) Beamed to South Asia and Japan
(III) Beamed to Australia, New Zealand and New Guinea
(IV) Beamed to India

Manila

Ann: "Radio Philippines, Voice of the Philippines, National Media Production Center."

Stations:

9580 kHz, 50 kW	11950 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0700–1000	(I) 9580, 11950
1000–1200	(II) 9580, 11950
1200–1400	(III) 9580, 11950
1400–1700	(I) 9580, 11950
1700–1900	(IV) 9580, 11950

Legend:

(I) Beamed to North America
(II) Beamed to South Asia
(III) Beamed to Southeast Asia
(IV) Beamed to Europe

Manila

Ann: "This is Radio Veritas Asia, Quezon City."

Stations:

9590 kHz, 50 kW	15215 kHz, 50 kW
11805 kHz, 50 kW	15280 kHz, 50 kW
11955 kHz, 50 kW	15320 kHz, 50 kW
15135 kHz, 50 kW	17790 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0030–0100	15135, 15280, 17790
0300–0330	15280, 15320, 17790
1130–1200	9590, 11805, 15215
1300–1330	9590, 11955, 15215

POLAND

Warsaw (52°04′N, 20°52′E)

Ann: "This is Polskie Radio Warsaw."
Int: National anthem.

Stations:

5995 kHz, 100 kW	9525 kHz, 100 kW
6095 kHz, 100 kW	9540 kHz, 40 kW
6135 kHz, 100 kW	9675 kHz, 100 kW
7125 kHz, 100 kW	11815 kHz, 100 kW
7145 kHz, 100 kW	11840 kHz, 100 kW
7270 kHz, 40 kW	15120 kHz, 100 kW
7285 kHz, 40 kW	

Broadcasts:

Time (UTC)	*Freq (kHz)*
0200–0400	(I) 6095, 6135, 7145, 7270, 9525, 11815, 15120
0630–0700	(II) 6135, 7270, 9675
1200–1230	(II) 6095, 7285
1230–1300	(III) 9525, 9675, 11840, 15120
1600–1630	(II) 6135, 9540
1530–1730	(III) 7125, 9525, 9675, 11840
1700–1730	(III) 6095, 7125, 9675
1830–1900	(II) 6095, 7285
2000–2030	(III) 7125, 7145, 9525, 9675
2030–2100	(II) 6095, 7285
2230–2300	(II) 5995, 6135, 7125, 7270

Legend:

(I) Beamed to North America
(II) Beamed to Europe
(III) Beamed to Africa

PORTUGAL

Lisbon (38°45′N, 8°40′W)

Ann: "This is Radio Portugal, speaking to you from Lisbon."
Int: A few bars from the selection "Fadango."

Stations:

6025 kHz, 100 kW
9740 kHz, 100 kW
11935 kHz, 100 kW
15340 kHz, 100 kW
17880 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0300–0330	(I) 6025
0500–0530	(II) 11935
1400–1430	(III) (a) 17880
1600–1630	(IV) (a) 17880
1700–1730	(V) (b) 9740, 15340, 17880
1800–1830	(V) (a) 15340, 17880
2030–2100	(V) 6025, 9740

Legend:

(a) Daily except Sunday
(b) Sunday only
(I) Beamed to North America (East)
(II) Beamed to North America (West)
(III) Beamed to India
(IV) Beamed to Mediterranean Area
(V) Beamed to Africa

RHODESIA

Salisbury (18°00′S, 31°30′E)

Ann: "This is the Rhodesia Broadcasting Corp."
Int: Church bells.

Station:

7285 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0545–1545	7285

ROMANIA

Bucharest (44°25′N, 26°06′E)

Ann: "You are tuned to Radio Bucharest."
Int: Folk song.

Stations:

5990 kHz, 120 kW
7195 kHz, 120 kW
9570 kHz, 120 kW
9690 kHz, 120 kW
11735 kHz, 120 kW
11790 kHz, 240 kW
11830 kHz, 240 kW
11840 kHz, 240 kW
11940 kHz, 240 kW
15250 kHz, 240 kW
15255 kHz, 120 kW
15335 kHz, 120 kW
15345 kHz, 120 kW
15365 kHz, 120 kW
15380 kHz, 120 kW
17720 kHz, 120 kW
17745 kHz, 120 kW
17805 kHz, 120 kW
17850 kHz, 120 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0130–0230	(I) 5990, 9570, 9690, 11735, 11840, 11940, 15380
0400–0430	(II) 5990, 9570, 9690, 11735, 11840, 11940, 15380
0530–0600	(III) 11830, 15250, 17745
0645–0715	(IV) 11940, 15255, 15335, 17805
1200–1230	(V) 15345, 17830
1300–1330	(VI) 11940, 15250, 17850
1500–1530	(V) 11840, 15250, 17805
1730–1800	(III) 11790, 15365, 17720
1930–2030	(VI) 9690, 11940
2300–2330	(VI) 9690, 7195

Legend:

(I) Beamed to North America (East)
(II) Beamed to North America (West)
(III) Beamed to Africa
(IV) Beamed to Pacific Area
(V) Beamed to Asia
(VI) Beamed to Europe

SAO TOME AND PRINCIPE

Sao Tome (0°00′, 6°30′E)

Ann: "Aqui Republica Democratica de Sao Tome e Principe, falavos Radio Nacional."

Station:

4807 kHz, 1 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0530–2300	(a) 4807

Legend:

(a) Portuguese language only

SARAWAK

Kuching (1°33′N, 110°20′E)

Ann: "Inilah Radio Malaysia, Sarawak."
Int: Folk song.

Stations:

4950 kHz, 10 kW
7160 kHz, 10 kW
9605 kHz, 10 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0800–1600	4950
0900–1600	9605
2200–0100	4950
2200–0730	9605
2300–1445	7160

SAUDI ARABIA

Riyadh (24°30′N, 46°23′E)

Ann: "This is the broadcasting service of the Kingdom of Saudi Arabia."
Int: Call to prayer played on a flute.

Station:

11855 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1000–1300	(l) 11855
1900–2200	(l) 11855

Legend:

(l) Beamed to Europe, North Africa, and North America

SENEGAL

Dakar (14°39′N, 17°26′W)

Ann: "This is the English program of the international service of the Senegalese Broadcasting System."
Int: Music played on a harp.

Stations:

4890 kHz, 25 kW
11895 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1840–1900	4890, 11895

SEYCHELLES

Victoria (4°36′S, 55°28′E)

Ann: "This is the FEBA, Seychelles."

Stations:

11805 kHz, 100 kW
11855 kHz, 100 kW
15160 kHz, 100 kW
15325 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0400–0445	(I) 11805
0700–0800	(II) 15160
1530–1630	(II) 11855, 15325

Legend:

(I) Beamed to East Africa
(II) Beamed to South Asia

SIERRA LEONE

Freetown (8°30′N, 13°14′W)

Ann: "This is the Sierra Leone Broadcasting Service."
Int: Military tune.

Station:

3316 kHz, 10 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0600–1015	3316

SINGAPORE

Singapore (1°20′N, 103°42′E)

Ann: "This is Radio Singapore."

Stations:

5010 kHz, 20 kW
11940 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0000–1630	5010, 11940
2230–1630	5010, 11940

SOLOMON ISLANDS

Honiara (9°35′S, 160°03′E)

Ann: "This is the Solomons Radio."
Int: Drums and bamboo pipes.

Stations:

5015 kHz, 5 kW
9545 kHz, 5 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0600–1130	5015
1900–2200	5015
2130–0300	9545

SOMALIA

Mogadiscio (2°06′N, 45°06′E)

Ann: "This is the voice of the Somali Democratic Republic."
Int: Musical notes played on a guitar.

Station:

9585 kHz, 25 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1100–1130	9585

SOUTH AFRICA

Johannesburg (26°35′S, 28°08′E)

Ann: "This is Radio RSA, the oVice of South Africa, calling from Johannesburg."
Int: The call of the bokmakierie bird.

Stations:

3995 kHz, 100 kW
4990 kHz, 100 kW
5980 kHz, 500 kW
7270 kHz, 500 kW
9585 kHz, 500 kW
9610 kHz, 500 kW
11900 kHz, 100 kW
15125 kHz, 100 kW
15155 kHz, 100 kW
15220 kHz, 100 kW
17780 kHz, 500 kW
21535 kHz, 100 kW
25790 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0200–0300	(I) 5980, 9585, 9610, 11900
0300–0430	(II) 3995, 4990, 5980, 7270, 9585
0600–0700	(III) 15220, 17780, 21535
1100–1200	(IV) (a) 15125, 25790
1300–1600	(V) (a) 15220, 21535, 25790
1500–1600	(V) (b) 15220, 21535, 25790
2100–2200	(VI) 9585, 11900, 15155, 17780

Legend:

(I) Beamed to North America
(II) Beamed to East Africa
(III) Beamed to West Africa
(IV) Beamed to Central and East Africa and Europe
(V) Beamed to Central and East Africa, Europe, and Mediterranean Area
(VI) Beamed to West Africa and Europe
(a) Monday through Saturday
(b) Sunday only

SPAIN

Madrid (40°18′N, 3°31′W)

Ann: "This is the voice of Spain, broadcasting from the Spanish National Radio."
Int: Ringing of a gong.

Stations:

6065 kHz, 350 kW
6100 kHz, 350 kW
7275 kHz, 350 kW
9630 kHz, 100 kW
9685 kHz, 100 kW
11840 kHz, 100 kW
11880 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0000–0200	(I) 9630, 11880
0515–0615	(I) 6065, 9630
2030–2230	(II) 6100, 7275, 9685, 11840

Legend:

(I) Beamed to North, Central and South America
(II) Beamed to Europe

SRI LANKA

Colombo (7°06′N, 79°54′E)

Ann: "This is the Sri Lanka Broadcasting Corp."
Int: Oriental folk song.

Stations:

6005 kHz, 10 kW	15115 kHz, 10 kW
6075 kHz, 10 kW	15120 kHz, 10 kW
9720 kHz, 10 kW	15425 kHz, 10 kW
11835 kHz, 10 kW	17850 kHz, 10 kW
11870 kHz, 10 kW	

Broadcasts:

Time (UTC)	*Freq (kHz)*
0030–0230	(I) 6005, 9720, 15425
0230–0400	(I) 9720, 15425
1030–1130	(II) 11835, 15120, 17850
1230–1730	(I) 6075, 9720, 15425
1800–1945	(III) 11870, 15115, 17850

Legend:

(I) Beamed to Asia
(II) Beamed to Japan, Southeast Asia, Australia and New Zealand
(III) Beamed to Middle East

SWEDEN

Stockholm (59°30′N, 18°00′E)

Ann: "This is Radio Sweden."
Int: The first few bars of "Storm och boljor tystna re'n."

Stations:

6065 kHz, 100 kW	15240 kHz, 100 kW
9630 kHz, 100 kW	15275 kHz, 100 kW
9695 kHz, 100 kW	21615 kHz, 100 kW
11705 kHz, 100 kW	21690 kHz, 100 kW
11905 kHz, 100 kW	21700 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0030–0100	(I) 11905
0230–0300	(I) 9695, 11705
1100–1130	(II) 9630, 21690
1230–1300	(III) 15240, 21690
1400–1430	(IV) 21615, 21700
1600–1630	(V) 6065, 15240
1830–1900	(VI) 6065, 15240

2100–2130	(VII) 11905, 15240
2300–2330	(VIII) 11705, 15275

Legend:

(I) Beamed to North America
(II) Beamed to Europe and Australia and New Zealand
(III) Beamed to East Asia and Africa
(IV) Beamed to South Asia and North America
(V) Beamed to Europe and Mid East
(VI) Beamed to Europe and Africa
(VII) Beamed to Mid East and Africa
(VIII) Beamed to Europe and North America

SWITZERLAND

Bern 46°49′N, 7°24′E)

Ann: "This is Radio Switzerland."
Int: A Swiss folk song played on a music box.

Stations:

6135 kHz, 100 kW	17735 kHz, 100 kW
9560 kHz, 100 kW	17795 kHz, 100 kW
9725 kHz, 100 kW	17830 kHz, 100 kW
11715 kHz, 100 kW	17850 kHz, 100 kW
15125 kHz, 100 kW	21520 kHz, 100 kW
15130 kHz, 100 kW	21545 kHz, 100 kW
15305 kHz, 100 kW	21570 kHz, 100 kW
15430 kHz, 100 kW	21630 kHz, 100 kW
17730 kHz, 100 kW	21695 kHz, 100 kW

Broadcasts:

Beamed to North America, and Central America

Time (UTC)	*Freq (kHz)*
0145–0215	6135, 9725, 11715, 15130, 15305
0430–0500	9725, 11715, 15305
1315–1345	15305, 17735, 17850, 21520, 21545, 21570

Beamed to East Asia, Far East, India, Southeast Asia, Australia, New Zealand

0700–0730	9560, 15305, 21520, 21695
0900–0930	9560, 15305, 21520, 21695
1315–1345	15305, 17735, 17850, 21520, 21545, 21570

Beamed to Middle East

1530–1600	15125, 17830, 21570

Beamed to Africa

1100–1130	15430, 17795, 21520, 21630

Beamed to Africa and South America

1815–1845 15125, 17730, 17830

TAIWAN (Formosa; Nationalist China)

Taipei (25°09′N, 121°24′E)

Ann: "This is the voice of Free China."

Stations:

9600 kHz, 100 kW
9685 kHz, 100 kW
9765 kHz, 100 kW
11725 kHz, 100 kW
11745 kHz, 100 kW
11825 kHz, 100 kW
11860 kHz, 100 kW
15225 kHz, 100 kW
17890 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
2130–2230	(a) 9600, 9765, 11725, 11860, 15225
2140–2240	(b) 11825
2140–2240	(c) 9685, 11745, 17890

Legend:

(a) Beamed to Africa, Europe
(b) Beamed to Australia and New Zealand
(c) Beamed to North America

TANZANIA

Dar es Salaam (6°50′S, 39°14′E)

Ann: "This is the external service of Radio Tanzania, Dar es Salaam."
Int: Song played on a celesta.

Stations:

6105 kHz, 50 kW
9750 kHz, 50 kW
15435 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0330–0430	(I) 6105
0900–1030	(I) 9750
0900–1530	(I) (a) 9750
1530–1830	(I) (a) 6105, 15435

Legend:

(I) Beamed to East Africa
(a) Saturday and Sunday only

THAILAND

Bangkok (14°00′N, 100°30′E)

Ann: "This is Radio Thailand, Bangkok."

Stations:

9655 kHz, 100 kW
11905 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
2330–0155	(I) 9655, 11905
0415–0515	(I) 9655, 11905
1055–1155	(II) 9655, 11905

Legend:

(I) Beamed to North America
(II) Beamed to Southeast Asia

TOGO

Lome (6°16′N, 1°12′E)

Ann: "Ici Lome, Radiodiffusion du Togo."
Int: The hymn "Togolais."

Stations:

3222 kHz, 100 kW
5047 kHz, 100 kW
7265 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1030–1100	7265
1600–1630	7265
2000–2030	3222, 5047

TURKEY

Ankara (39°54′N, 30°42′E)

Ann: "This is the Voice of Turkey."
Int: Folk song.

Stations:

6185 kHz, 100 kW
7170 kHz, 100 kW
9515 kHz, 100 kW
11955 kHz, 100 kW
15135 kHz, 100 kW
17775 kHz, 100 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1200–1300	(I) 15135, 17775
2130–2300	(II) 6185, 7170, 9515, 11955

Legend:

(I) Beamed to Southwest Asia
(II) Beamed to Europe

UGANDA

Kampala (0°20′N, 32°36′E)

Ann: "This is Uganda Broadcasting Corp., Kampala."
Int: African drums.

Stations:

6030 kHz, 250 kW	9730 kHz, 250 kW
9515 kHz, 250 kW	15325 kHz, 250 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0300–0400	(I) 15325
1100–1130	(I) 15325
1445–1530	(II) 6030
1615–1730	(III) 9515
1800–1830	(IV) 15325
2030–2100	(V) 9730, 15325

Legend:

(I) Beamed to North America and Australia and New Zealand
(II) Beamed to East and Central Africa
(III) Beamed to South Africa
(IV) Beamed to West Africa
(V) Beamed to North Africa, Mid East, South Europe

UNITED NATIONS

New York, N.Y., USA (40°45′N, 74°00′W)

Ann: "This is the United Nations."
Int: Musical chimes.

Stations:

6055 kHz, 250 kW	15225 kHz, 250 kW
6135 kHz, 250 kW	15235 kHz, 250 kW
9540 kHz, 250 kW	15250 kHz, 250 kW
9600 kHz, 250 kW	15305 kHz, 250 kW
9605 kHz, 250 kW	15350 kHz, 250 kW
9620 kHz, 250 kW	15410 kHz, 250 kW
11770 kHz, 250 kW	15415 kHz, 250 kW
11830 kHz, 250 kW	17860 kHz, 250 kW
11900 kHz, 250 kW	19505 kHz, 250 kW
11905 kHz, 250 kW	21670 kHz, 250 kW
15120 kHz, 250 kW	

Broadcasts:

Time (UTC)	*Freq (kHz)*
1830–1835	(I) (a) 11900, 15305, 15410, 19505
2245–2300	(II) (a) 11830, 15225
0545–0600	(III) (b) 6055, 9620
0652–0700	(IV) (b) 9605, 11770
0555–0600	(V) (b) 6055, 9620
0707–0715	(III) (b) 6055, 9540
0800–0815	(VI) (b) 15235, 17860
0725–0730	(III) (b) 6055, 9540
1000–1005	(VII) (b) 15250

Broadcasts of Security Council Meetings When in Session (MORNING SESSION)

1430–1900	(VIII) (c) 21670
1430–1500	(VIII) (c) 15120
1500–1900	(VIII) (c) 15350
1530–1900	(IX) (c) 15410

Broadcasts of Security Council Meetings (AFTERNOON SESSIONS)

1900–2200	(VIII) (c) 15410
2200–2400	(VIII) (c) 15415
0000–0500	(VIII) (c) 11905
0000–0600	(VIII) (c) 9620
0500–1200	(VIII) (c) 9540
0600–1000	(VIII) (c) 6135
1000–1430	(VIII) (c) 15120
1200–1430	(VIII) (c) 21670
1900–2345	(IX) (c) 15350
2345–0900	(IX) (c) 6055
0900–1200	(IX) (c) 9600
1200–1400	(IX) (c) 15415
1400–1430	(IX) (c) 15410
1900–2400	(IX) (c) 11900

Legend:

(I) Beamed to North, West and Central Africa
(II) Beamed to Caribbean and Brazil
(III) Beamed to West and Central Africa
(IV) Beamed to South Europe
(V) Beamed to North Europe
(VI) Beamed to Central, East and South Africa
(VII) Beamed to Philippines
(VIII) Beamed to Africa
(IX) Beamed to Middle East
(a) Friday only
(b) Saturday only
(c) English and French language

Scituate, MA (42°13′N, 70°44′W) (Studios in Oakland, CA)
(Formerly Radio New York Worldwide)

Ann: "This is WYFR, Oakland, CA Family Radio Network."

Stations:

11855 kHz, 100 kW	17870 kHz, 100 kW
15440 kHz, 100 kW	17875 kHz, 100 kW
17785 kHz, 100 kW	21525 kHz, 100 kW
17845 kHz, 100 kW	21615 kHz, 100 kW

Broadcasts:

Beamed to Central and South America (Daily)

Time (UTC)	*Freq (kHz)*
0100–0500	9715

Beamed to Europe and Africa (Monday through Friday)

1700–2300 11855, 15440, 17845, 17870, 21525, 21615

Beamed to Europe and Africa (Saturday and Sunday)

1230–2300 15440, 17785, 17845, 17870, 21525, 21615

Red Lion, PA (39°50′N, 76°34′W)

Ann: "You are listening to World International Broadcasters, WINB, Red Lion."

Stations:

15185 kHz, 50 kW	17720 kHz, 50 kW

Broadcasts:

Beamed to Western Europe, Mediterranean, North Africa

Time (UTC)	*Freq (kHz)*
1700–2000	17720
2000–2245	15185

Washington, DC (38°50′N, 77°00′W)
(AFRTS)

Ann: "This is the American Forces Radio and Television Service."

Stations:

Some of the stations listed below are located in the USA; others are located in various countries throughout the world, relaying broadcasts from Washington.

6030 kHz, 100 kW	11805 kHz, 100 kW
9685 kHz, 100 kW	15330 kHz, 100 kW
9700 kHz, 100 kW	15425 kHz, 100 kW
11790 kHz, 100 kW	15430 kHz, 100 kW

17765 kHz, 100 kW
21570 kHz, 100 kW
25620 kHz, 100 kW

Broadcasts:

Beamed to Far East and Pacific Area

Time (UTC)	*Freq (kHz)*
0400–0700	17765
0430–0700	15330
1100–1600	9700
1100–1800	11805
1600–2200	17765
1800–0430	21570
2200–0400	25620

Beamed to Europe

0100–0700	6030
1100–1400	15430
1400–1600	15425
1800–0100	11790

Beamed to Southern Europe and North Africa

1100–1600	15330
1600–0100	15430

Beamed to Caribbean and Antarctica

0100–0700	9685
1000–1100	6030
1100–0100	15330

Washington, DC
(VOA)

Ann: "This is the Voice of America."
Int: Musical selection "Yankee Doodle."

Stations:

Transmitting and relay stations are located in Greenville, North Carolina; Bethany, Ohio; Delano, California; Dixon, California; Marathon, Florida; and various countries throughout the world.

3980 kHz, 25 kW
5955 kHz, 25 kW
5995 kHz, 25 kW
6040 kHz, 50 kW
6045 kHz, 50 kW
6060 kHz, 50 kW
6110 kHz, 50 kW
6130 kHz, 50 kW
6170 kHz, 50 kW
6185 kHz, 50 kW
7105 kHz, 50 kW
7110 kHz, 50 kW
7170 kHz, 50 kW
7190 kHz, 50 kW
7195 kHz, 50 kW
7200 kHz, 50 kW
7230 kHz, 50 kW
7235 kHz, 50 kW

7270 kHz, 50 kW
7295 kHz, 50 kW
7325 kHz, 50 kW
9545 kHz, 100 kW
9565 kHz, 100 kW
9640 kHz, 100 kW
9670 kHz, 100 kW
9700 kHz, 100 kW
9730 kHz, 100 kW
9760 kHz, 100 kW
9770 kHz, 100 kW
11710 kHz, 100 kW
11715 kHz, 100 kW
11740 kHz, 100 kW
11745 kHz, 100 kW
11760 kHz, 100 kW
11915 kHz, 100 kW
11925 kHz, 100 kW
11935 kHz, 100 kW
12010 kHz, 100 kW
15140 kHz, 100 kW
15155 kHz, 100 kW
15160 kHz, 250 kW
15185 kHz, 250 kW
15195 kHz, 250 kW
15205 kHz, 250 kW
15215 kHz, 500 kW
15260 kHz, 500 kW
15290 kHz, 250 kW
15330 kHz, 250 kW
15395 kHz, 250 kW
15400 kHz, 250 kW
15445 kHz, 250 kW
17710 kHz, 250 kW
17740 kHz, 250 kW
17785 kHz, 250 kW
17790 kHz, 250 kW
17820 kHz, 100 kW
17870 kHz, 100 kW
17895 kHz, 250 kW
21460 kHz, 100 kW
21610 kHz, 100 kW
25990 kHz, 100 kW
26040 kHz, 100 kW
26095 kHz, 100 kW

Broadcasts:

Beamed to Europe

Time (UTC)	*Freq (kHz)*
0300–0400	7200
0300–0500	7295
0400–0430	5995
0400–0600	9670, 7325
0430–0500	6060
0500–0700	3980, 7230, 11715
0600–0700	9770, 6040
1711–1730	11760
1711–1830	7170
1800–1930	9760
1800–2200	17785
1830–2200	6040
2100–2200	15205

Beamed to North Africa

0500–0700	5995, 6040, 7200, 9670, 11715
1700–1830	15195
1700–2100	17785
1830–2200	15140
1900–2200	6040

Beamed to East, South and West Africa

0300–0400	11925
0300–0530	15400
0300–0600	9700, 11710, 11915
0400–0600	15160
0600–0730	15330
1600–2200	15250
1600–2000	26040
1800–2300	17710
2200–2300	15445

Beamed to Middle East

0300–0400	7270
0300–0500	9770
0600–0630	7200
1700–1800	9760
1800–2200	9700
2100–2200	7170, 6040, 7170

Beamed to South Asia

0100–0330	7105, 11745, 15185, 15215, 17740, 17790
1300–1600	6110, 7110, 7235, 9760, 11935, 15155, 15395
1600–1800	7110, 9700, 11935, 15260, 15395, 17785

Beamed to Northeast Asia

1100–1500	6185, 7190, 9565, 11715, 15425
2200–0100	11760, 15290, 17895, 21460, 25990

Beamed to Southeast Asia

1100–1500	6110, 7235, 9760
2200–0100	9545, 15185

Beamed to Indonesia

1100–1500	15155
2200–0100	11760

Beamed to Pacific Area

1100–1400	5955, 9730
2200–2400	17820, 21610, 26095

Beamed to South America

0000–0200	6130, 9640, 11740, 15205

USSR

Kiev (50°20′N, 30°30′E)

Ann: "This is Radio Kiev."
Int: Musical tones played on a celesta.

Stations:

5950 kHz, 120 kW
5970 kHz, 120 kW
6020 kHz, 120 kW
7125 kHz, 120 kW
7150 kHz, 120 kW
7175 kHz, 120 kW
7215 kHz, 120 kW
7260 kHz, 120 kW
7320 kHz, 120 kW
9580 kHz, 120 kW
9635 kHz, 120 kW
9800 kHz, 120 kW
11600 kHz, 120 kW
12000 kHz, 120 kW
15100 kHz, 120 kW
15240 kHz, 120 kW
15265 kHz, 120 kW
15780 kHz, 120 kW
16190 kHz, 120 kW
17870 kHz, 120 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0030–0100	(I) 6020, 7150, 7215, 9800, 15100, 15240, 17870
0300–0330	(I) 5950, 7125, 7175, 7215, 7260, 7320, 9580, 9635, 11600, 12000, 15265, 15780, 16190
2030–2100	(II) 5970, 6020, 7260

Legend:

(I) Beamed to North America
(II) Beamed to Europe

Moscow (55°45′N, 37°30′E)

Ann: "This is Radio Moscow."
Int: Musical notes played on a celesta.

Stations:

4860 kHz, 120 kW
5900 kHz, 120 kW
5920 kHz, 120 kW
5940 kHz, 120 kW
5980 kHz, 120 kW
6010 kHz, 120 kW
6020 kHz, 120 kW
6080 kHz, 120 kW
6130 kHz, 120 kW
6150 kHz, 120 kW
6175 kHz, 120 kW
7105 kHz, 120 kW
7115 kHz, 120 kW
7125 kHz, 120 kW
7150 kHz, 120 kW
7165 kHz, 120 kW
7175 kHz, 120 kW
7195 kHz, 120 kW
7200 kHz, 120 kW
7205 kHz, 120 kW
7210 kHz, 120 kW
7260 kHz, 120 kW
7270 kHz, 120 kW
7300 kHz, 120 kW
7330 kHz, 120 kW
7400 kHz, 120 kW
7420 kHz, 120 kW
7440 kHz, 120 kW
7490 kHz, 120 kW
7925 kHz, 120 kW
8125 kHz, 120 kW
9450 kHz, 120 kW
9500 kHz, 120 kW
9560 kHz, 120 kW
9565 kHz, 120 kW
9575 kHz, 120 kW
9580 kHz, 120 kW
9590 kHz, 120 kW

9610 kHz, 120 kW
9620 kHz, 120 kW
9635 kHz, 120 kW
9645 kHz, 120 kW
9655 kHz, 120 kW
9675 kHz, 120 kW
9720 kHz, 120 kW
9725 kHz, 120 kW
9745 kHz, 120 kW
9795 kHz, 120 kW
11600 kHz, 120 kW
11630 kHz, 120 kW
11715 kHz, 120 kW
11770 kHz, 120 kW
11820 kHz, 120 kW
11860 kHz, 120 kW
12030 kHz, 120 kW
12050 kHz, 120 kW
12055 kHz, 120 kW
12075 kHz, 120 kW
15140 kHz, 120 kW
15150 kHz, 120 kW
15180 kHz, 120 kW
15260 kHz, 120 kW
15265 kHz, 120 kW
15450 kHz, 120 kW
15455 kHz, 120 kW
15520 kHz, 120 kW
15540 kHz, 120 kW
16190 kHz, 120 kW
17720 kHz, 120 kW
17765 kHz, 120 kW

Broadcasts:

Beamed to South and Southeast Asia and Australia and New Zealand

Time (UTC)	*Freq (kHz)*
1500–1530	6080, 7115, 7205, 7270, 7330, 9565, 11820, 12075
1600–1630	7150, 7165, 9565, 9655, 9645, 9675, 9745 11820, 11860, 12075

Beamed to Africa

1630–1700	7210, 9620, 9720, 12055, 15520, 15540, 17765
1700–1800	5900, 5920, 5940, 6010, 6020, 6130, 7150, 7175, 7210, 7300, 7424, 7440, 7490, 9580, 9590, 9795, 11630, 11715, 11770, 12055
2000–2100	7200, 7400, 9450, 9500, 9560, 9575, 9620, 9635, 9720, 11630

Beamed to Europe:

1900–2000	5980, 6010, 7150

Beamed to North America (West Coast)

0330–0730	5900, 6150, 7125, 7175, 7260, 9580, 9610, 9635, 11600, 15265, 15780, 16190

Beamed to North America (East Coast)

2300–2400	4860, 5940, 6175, 7105, 7115, 7125, 7165, 7195, 7205, 7300, 7440, 7925, 8125, 9635, 11600, 12130, 15140, 15180, 15450, 15455
0000–0400	4860, 5940, 6175, 7125, 7165, 7195, 7205, 7260, 7440, 7925, 9635, 11600, 12050, 15140, 15150, 15180, 15265, 15450, 15455, 16190, 17720

Moscow (55°45′N, 37°30′E)

Ann: "This is Radio Station Peace and Progress."

Stations:

9675 kHz, 120 kW
9695 kHz, 120 kW
9730 kHz, 120 kW
9775 kHz, 120 kW
11720 kHz, 120 kW
11755 kHz, 120 kW
11765 kHz, 120 kW
11785 kHz, 120 kW
11800 kHz, 120 kW
11920 kHz, 120 kW
12075 kHz, 120 kW
15170 kHz, 120 kW
15175 kHz, 120 kW
15205 kHz, 120 kW
15330 kHz, 120 kW
15440 kHz, 120 kW
15460 kHz, 120 kW
17710 kHz, 120 kW
17765 kHz, 120 kW

Broadcasts:

Beamed to Africa

Time (UTC)	*Freq (kHz)*
1511–1530	11895, 15170, 15205, 15440, 17765

Beamed to South and Southeast Asia and Far East

1300–1330	17720, 11785, 15175, 15330, 17710, 21575
1330–1400	9695, 9775, 11720, 12075, 15460
1430–1500	9675, 9730, 11755, 11765, 11800, 11820, 12075, 15460

Vilnius (Lithuania) (54°30′N, 25°20′E)

Ann: "This is Radio Vilnius."

Stations:

11735 kHz, 120 kW
11790 kHz, 120 kW
15180 kHz, 120 kW
15405 kHz, 120 kW
15525 kHz, 120 kW
17870 kHz, 120 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
2300–2330	11735, 11790, 15180, 15405, 15525, 17870

VATICAN CITY

Vatican City (41°50′N, 12°28′E)

Ann: "Laudetur Jesus Christus. Praised be Jesus Christ. This is Vatican Radio."

Int: Bells of St. Paul's Cathedral; "Christus Vincit" played on a celesta.

Stations:

6015 kHz, 100 kW
6190 kHz, 100 kW
7250 kHz, 100 kW
9605 kHz, 100 kW
9615 kHz, 100 kW
9625 kHz, 100 kW
9645 kHz, 100 kW
11705 kHz, 100 kW
11715 kHz, 100 kW
11740 kHz, 100 kW
11745 kHz, 100 kW
11810 kHz, 100 kW
11830 kHz, 100 kW
11845 kHz, 100 kW
15120 kHz, 100 kW
17840 kHz, 100 kW
17900 kHz, 100 kW

Broadcasts:

Beamed to Europe

Time (UTC)	*Freq (kHz)*
0200–0215	(a) 6190, 7250, 9625, 11715, 15120
1445–1500	(a) 6190, 7250, 9645, 11740
0630–0700	(a) (b) 6190, 7250
0830–0900	(c) (d) 6190, 7250
1630–1700	(e) (f) 6190, 7250, 9645, 11740

Beamed to North America

0200–0215	(a) 6015, 9605, 11845

Beamed to Africa

1215–1230	(g) 17840, 21485
1300–1315	(g) 17900
1800–1815	(a) 11830, 15120, 17900
2145–2200	(a) 9625, 11705, 15120
2215–2245	(a) 9625, 11705, 15120

Beamed to Asia, Australia and New Zealand

1600–1615	(g) 11810, 15120, 17825
2310–2330	(a) 9615, 11745, 15120

Legend:

(a) Broadcasts Daily
(b) Mass in Latin
(c) Broadcast on Holidays
(d) Mass in Italian
(e) Broadcasts Sunday and Holidays
(f) Mass in Polish
(g) Broadcast Weekdays

VIETNAM (Democratic Republic of)

Hanoi (21°30′N, 106°00′E)

Ann: "This is the Voice of Vietnam from Hanoi, capital of the Democratic Republic of Vietnam."
Int: National anthem.

Stations:

9840 kHz, 50 kW	12035 kHz, 50 kW
10040 kHz, 50 kW	15012 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0900–0930	9840, 10040, 12035
1000–1030	9840, 10040, 12035
1530–1630	9840, 10040, 12035
1800–1900	10040, 15012
2030–2130	10040, 15012

YEMEN ARAB REPUBLIC

San'a (15°30′N, 44°30′E)

Ann: "Idha' at al Jimhuriyah al Arabiyah al Yamaniyah."

Stations:

4853 kHz, 5 kW	9780 kHz, 25 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
0300–0700	(a) 4853, 9780
1100–2200	(a) 4853, 9780

Legend:

(a) Arabic language only

YUGOSLAVIA

Belgrade (44°30′N, 20°09′E)

Ann: "This is Yugoslavia, Radio Belgrade calling."
Int: "Internationale."

6100 kHz, 100 kW	11735 kHz, 100 kW
7240 kHz, 10 kW	15240 kHz, 100 kW
9620 kHz, 10 kW	

Broadcasts:

Time (UTC)	*Freq (kHz)*
1530–1600	9620, 11735, 15240
1830–1900	6100, 7240, 9620
2000–2030	6100, 7240, 9620
2200–2215	6100, 7240, 9620

ZAMBIA

Lusaka (15°30′S, 28°15′E)

Ann: "You are tuned to the general service of Radio Zambia."
Int: Music, "Call of the Fish Eagle."

Stations:

6060 kHz, 20 kW	9580 kHz, 50 kW
6165 kHz, 50 kW	11880 kHz, 50 kW

Broadcasts:

Time (UTC)	*Freq (kHz)*
1050–1215	9580, 11880
1550–2115	6060, 6165, 9580

4

Stations by Frequency

Freq.	Location
3222	Togo, Lome
3232	Congo (People's Rep.) Brazzaville
3265	Guyana (Republic), Georgetown
3265	Mozambique, Lourenco Marques
3300	Belize, Belize
3315	Martinique, Fort-de-France
3316	Sierra Leone, Freetown
3330	Gabon, Libreville
3331	Comoro State, Moroni
3356	Botswana, Gaborone
3395	Guiana (French), Cayenne
3425	Nepal, Kathmandu
3560	Korea (North), Pyongyang
3890	Korea (North), Pyongyang
3945	New Hebrides, Vile
3980	USA, Washington, DC
3995	South Africa, Johannesburg
4740	Maldives, Male
4765	Congo (People's Rep.), Brazzaville
4775	Afghanistan, Kabul
4777	Gabon, Libreville
4800	Lesotho, Maseru
4805	Kenya, Nairobi
4807	Sao Tome and Principe, Sao Tome
4820	Honduras (Rep.), Tegucigalpa
4845	Botswana, Gaborone
4845	Mauritania, Nouakchott
4850	Mauritius, Port Louis
4853	Yemen Arab Republic, San'a
4855	Mozambique, Lourenco Marques
4860	USSR, Moscow
4870	Benin, (People's Rep.) Cotonou
4875	Bolivia, La Paz
4890	Papua, New Guinea, Port Moresby
4890	Senegal, Dakar
4904	Chad, Ndjamena
4910	Guinea (Rep.), Conakry
4950	Sarawak, Kuching
4990	South Africa, Johannesburg
5005	Nepal, Kathmandu
5010	Singapore, Singapore
5015	Solomon Islands, Honiara
5035	Central African Empire, Bangui
5047	Togo, Lome

Freq.	Location
5055	Costa Rica, San Jose
5900	USSR, Moscow
5920	USSR, Moscow
5930	Czechoslovakia, Prague
5940	USSR, Moscow
5945	Austria, Vienna
5950	USSR, Kiev
5950	Guyana (Rep.), Georgetown
5955	Netherlands, Hilversum
5955	USA, Washington, DC
5960	Canada, Montreal
5960	Germany (West), Cologne
5960	Mongolian Peoples Rep., Ulan Bator
5965	Botswana, Gaborone
5965	Canada, Montreal
5965	Dominican Republic, Santo Domingo
5970	USSR, Kiev
5975	Great Britain, London
5980	Guyana (Republic), Georgetown
5980	South Africa, Johannesburg
5980	USSR, Moscow
5985	Burma, Rangoon
5990	Ethiopia, Addis Ababa
5990	Italy, Rome
5990	Romania, Bucharest
5995	Australia, Melbourne
5995	Poland, Warsaw
5995	USA, Washington, DC
6005	Australia, Melbourne
6005	Great Britain, London
6005	Mozambique, Lourenco Marques
6005	Sri Lanka, Colombo
6010	USSR, Moscow
6015	Norway, Oslo
6015	Vatican City
6020	Netherlands, Hilversum
6020	USSR, Kiev
6020	USSR, Moscow
6025	Hungary, Budapest
6025	Portugal, Lisbon
6030	Uganda, Kampala
6030	USA, Washington, DC
6035	Australia, Melbourne
6040	Germany (West), Cologne
6040	USA, Washington, DC
6045	Canada, Montreal
6045	Netherlands, Hilversum
6045	USA, Washington, DC
6050	Great Britain, London
6055	Czechoslovakia, Prague
6055	United Nations
6060	Australia; Melbourne
6060	USA, Washington, DC
6060	Zambia, Lusaka
6065	Spain, Madrid
6065	Sweden, Stockholm
6075	Germany (West), Cologne
6075	Sri Lanka, Colombo
6080	Australia, Melbourne
6080	Germany (East), Berlin
6080	USSR, Moscow
6085	Germany (West), Cologne
6090	Liberia, Monrovia
6090	Luxembourg, Luxembourg
6095	Ecuador, Quito
6095	Kampuchea (Cambodia), Phnom-Penh
6095	Poland, Warsaw
6100	Germany (West), Cologne
6100	Spain, Madrid
6100	Yugoslavia, Belgrade
6105	Hungary, Budapest
6105	New Zealand, Wellington
6105	Tanzania, Dar es Salaam
6110	Hungary, Budapest
6110	USA, Washington, DC
6115	Germany (East), Berlin
6120	Finland, Helsinki
6120	Great Britain, London
6130	Ecuador, Quito
6130	Ghana, Accra
6130	USA, Washington, DC

Freq.	Location
6130	USSR, Moscow
6135	Poland, Warsaw
6135	Switzerland, Bern
6135	United Nations
6140	Canada, Montreal
6140	Greece, Athens
6150	USSR, Moscow
6155	Austria, Vienna
6155	Guinea (Rep.), Conakry
6165	Netherlands, Hilversum
6165	Zambia, Lusaka
6170	Guiana (French), Cayenne
6170	USA, Washington, DC
6175	Great Britain, London
6175	Malaysia, Kuala Lumpur
6175	USSR, Moscow
6180	Great Britain, London
6185	Germany (West), Cologne
6185	Turkey, Ankara
6185	USA, Washington, DC
6190	Vatican City
6195	Canada, Montreal
6195	Great Britain, London
6200	Albania, Tirana
6230	Egypt, Cairo
6385	Mongolian People's Rep., Ulan Bator
6575	Korea (North), Pyongyang
6810	China, Peking
6995	China, Peking
7065	Albania, Tirana
7075	Albania, Tirana
7080	Albania, Tirana
7105	Monaco, Monte Carlo
7105	USA, Washington, DC
7105	USSR, Moscow
7110	Ethiopia, Addis Ababa
7110	USA, Washington, DC
7115	USSR, Moscow
7120	Albania, Tirana
7120	Chad, Ndjamena
7120	Great Britain, London
7120	Kenya, Nairobi
7125	Greece, Athens
7125	Guinea (Rep.), Conakry
7125	Poland, Warsaw
7125	USSR, Kiev
7125	USSR, Moscow
7130	Germany (West), Cologne
7130	Great Britain, London
7135	France, Paris
7140	Great Britain, London
7145	Poland, Warsaw
7150	Germany (West), Cologne
7150	Great Britain, London
7150	USSR, Kiev
7150	USSR, Moscow
7155	Canada, Montreal
7155	Hungary, Budapest
7155	Jordan, Amman
7160	Sarawak, Kuching
7165	Ethiopia, Addis Ababa
7165	USSR, Moscow
7170	Turkey, Ankara
7170	USA, Washington, DC
7175	USSR, Kiev
7175	USSR, Moscow
7180	Great Britain, London
7185	Germany (East), Berlin
7185	Burma, Rangoon
7185	Great Britain, London
7190	USA, Washington, DC
7195	Romania, Bucharest
7195	USA, Washington, DC
7195	USSR, Moscow
7200	Hungary, Budapest
7200	USA, Washington, DC
7200	USSR, Moscow
7205	Greece, Athens
7205	USSR, Moscow
7210	Germany (West), Cologne
7210	USSR, Moscow
7215	Brunei, Bandar Seri Begawan
7215	India, New Delhi
7215	Ivory Coast, Abidjan
7215	USSR, Kiev
7220	Central African Empire, Bangui

Freq.	Location
7225	Germany (West), Cologne
7230	Great Britain, London
7230	USA, Washington, DC
7235	Canada, Montreal
7235	Italy, Rome
7235	USA, Washington, DC
7240	Netherlands, Hilversum
7240	Yugoslavia, Belgrade
7245	Algeria, Algiers
7245	Angola, Luanda
7245	Czechoslovakia, Prague
7245	Monaco, Monte Carlo
7250	Vatican City
7255	Nigeria, Lagos
7260	Comoro State, Moroni
7260	Germany (East), Berlin
7260	New Hebrides, Vila
7260	USSR, Kiev
7260	USSR, Moscow
7265	Togo, Lome
7270	Gabon, Libreville
7270	Poland, Warsaw
7270	South Africa, Johannesburg
7270	USA, Washington, DC
7270	USSR, Moscow
7275	Italy, Rome
7275	Korea (South), Seoul
7275	Spain, Madrid
7285	Germany (West), Cologne
7285	Poland, Warsaw
7285	Rhodesia, Salisbury
7295	USA, Washington, DC
7300	Albania, Tirana
7300	Germany (East), Berlin
7300	USSR, Moscow
7320	USSR, Kiev
7325	Great Britain, London
7325	USA, Washington, DC
7330	USSR, Moscow
7345	Czechoslovakia, Prague
7400	USSR, Moscow
7420	USSR, Moscow
7440	USSR, Moscow
7490	USSR, Moscow

Freq.	Location
7550	Korea (South), Seoul
7925	USSR, Moscow
8125	USSR, Moscow
8300	China, Peking
8425	China, Peking
9009	Israel, Jerusalem
9022	Iran, Tehran
9290	China, Peking
9410	Great Britain, London
9420	Korea (North), Pyongyang
9425	Israel, Jerusalem
9450	USSR, Moscow
9475	Egypt, Cairo
9480	Albania, Tirana
9500	Albania, Tirana
9500	USSR, Moscow
9505	Australia, Melbourne
9505	Dominican Republic, Santo Domingo
9505	Japan, Tokyo
9510	Great Britain, London
9515	Albania, Tirana
9515	Greece, Athens
9515	Turkey, Ankara
9515	Uganda, Kampala
9520	Papua New Guinea, Port Moresby
9525	Cuba, Havana
9525	Korea (South), Seoul
9525	Monaco, Monte Carlo
9525	Poland, Warsaw
9530	Greece, Athens
9535	Canada, Montreal
9535	India, New Delhi
9540	Czechoslovakia, Prague
9540	Poland, Warsaw
9540	United Nations
9545	Germany (West), Cologne
9545	Solomon Islands, Honiara
9545	USA, Washington, DC
9555	Canada, Montreal
9560	Ecuador, Quito
9560	Jordan, Amman
9560	Switzerland, Bern
9560	USSR, Moscow

Freq.	Location
9565	Chile, Santiago
9565	Finland, Helsinki
9565	Germany (West), Cologne
9565	USA, Washington, DC
9565	USSR, Moscow
9570	Australia, Melbourne
9570	Great Britain, London
9570	Korea (South), Seoul
9570	Romania, Bucharest
9575	Italy, Rome
9575	Kuwait, Kuwait
9575	USSR, Moscow
9580	Australia, Melbourne
9580	Great Britain, London
9580	Korea (South), Seoul
9580	Philippines, Manila
9580	USSR, Kiev
9580	USSR, Moscow
9580	Zambia, Lusaka
9585	Finland, Helsinki
9585	Hungary, Budapest
9585	Japan, Tokyo
9585	Somalia, Mogadicio
9585	South Africa, Johannesburg
9590	Great Britain, London
9590	Netherlands, Hilversum
9590	Norway, Oslo
9590	Philippines, Manila
9590	USSR, Moscow
9595	France, Paris
9600	Taiwan, Taipei
9600	United Nations
9605	Canada, Montreal
9605	Czechoslovakia, Prague
9605	Norway, Oslo
9605	Sarawak, Kuching
9605	United Nations
9605	Vatican City
9610	Norway, Oslo
9610	South Africa, Johannesburg
9610	USSR, Moscow
9615	Chad, Ndjamena
9615	Ethiopia, Addis Ababa
9615	Vatican City
9620	United Nations
9620	Yugoslavia, Belgrade
9625	Vatican City
9630	Czechslovakia, Prague
9630	Spain, Madrid
9630	Sweden, Stockholm
9635	Ecuador, Quito
9635	USSR, Kiev
9635	USSR, Moscow
9640	Great Britain, London
9640	Greece, Athens
9640	Korea (South), Seoul
9640	Monaco, Monte Carlo
9640	USA, Washington, DC
9645	Costa Rica, San Jose
9645	Norway, Oslo
9645	USSR, Moscow
9645	Vatican City
9650	Germany (West), Cologne
9650	Guinea (Rep.), Conakry
9655	Canada, Montreal
9655	Greece, Athens
9655	Hungary, Budapest
9655	Thailand, Bangkok
9655	USSR, Moscow
9660	Angola, Luanda
9665	Germany (East), Berlin
9670	Australia, Melbourne
9670	USA, Washington, DC
9675	Japan, Tokyo
9675	Poland, Warsaw
9675	USSR, Moscow
9685	Spain, Madrid
9685	Taiwan, Taipei
9685	USA, Washington, DC
9690	Argentina, Buenos Aires
9690	Germany (West), Cologne
9690	Romania, Bucharest
9695	Kampuchea, Phnom-Penh
9695	Sweden, Stockholm
9695	USSR, Moscow
9700	Bulgaria, Sofia
9700	Germany (West), Cologne

Freq.	Location
9700	USA, Washington, DC
9700	USA, Washington, DC (AFRTS)
9705	Bulgaria, Sofia
9710	Italy, Rome
9710	Mauritius, Port Louis
9715	Canada, Montreal
9715	India, New Delhi
9715	Netherlands, Hilversum
9720	Korea (South), Seoul
9720	Sri Lanka, Colombo
9720	USSR, Moscow
9725	Switzerland, Bern
9725	USSR, Moscow
9730	Burma, Rangoon
9730	Canada, Montreal
9730	Germany (East), Berlin
9730	Uganda, Kampala
9730	USA, Washington, DC
9730	USSR, Moscow
9735	Germany (West), Cologne
9740	Great Britain, London
9740	Portugal, Lisbon
9745	Cameroon, Buea
9745	Ecuador, Quito
9745	Iraq, Baghdad
9745	USSR, Moscow
9750	Albania, Tirana
9750	Malaysia, Kuala Lumpur
9750	Tanzania, Dar es Salaam
9755	Canada, Montreal
9755	India, New Delhi
9760	Great Britain, London
9760	Greece, Athens
9760	USA, Washington, DC
9765	Germany (West), Cologne
9765	Taiwan, Taipei
9770	Australia, Melbourne
9770	Austria, Vienna
9770	Cuba, Havana
9770	Haiti, Cape Haitien
9770	Netherlands, Hilversum
9770	USA, Washington, DC
9775	USSR, Moscow
9780	Yemen Arab Republic, San'a
9795	USSR, Moscow
9800	USSR, Kiev
9805	Egypt, Cairo
9815	Israel, Jerusalem
9820	China, Peking
9833	Hungary, Budapest
9835	Hungary, Budapest
9840	Vietnam, Hanoi
9860	China, Peking
9870	Korea (South), Seoul
9880	China, Peking
9895	Netherlands, Hilversum
9912	India, New Delhi
9915	Great Britain, London
9975	Korea (North), Pyongyang
10040	Vietnam, Hanoi
11455	China, Peking
11500	China, Peking
11600	China, Peking
11600	USSR, Kiev
11600	USSR, Moscow
11620	India, New Delhi
11630	USSR, Moscow
11650	China, Peking
11655	Israel, Jerusalem
11675	Pakistan, Karachi
11685	China, Peking
11695	China, Peking
11705	Australia, Melbourne
11705	Belgium, Brussels
11705	Japan, Tokyo
11705	Sweden, Stockholm
11705	Vatican City
11710	Argentina, Buenos Aires
11710	USA, Washington, DC
11715	Switzerland, Bern
11715	USA, Washington, DC
11715	USSR, Moscow
11715	Vatican City
11720	Australia, Melbourne
11720	Bulgaria, Sofia
11720	Germany (East), Berlin
11720	Netherlands, Hilversum
11720	USSR, Moscow
11725	Cuba, Havana
11725	China, Peking
11725	Taiwan, Taipei
11730	Greece, Athens

Freq.	Location
11730	Guam, Agana
11730	Netherlands, Hilversum
11735	Bulgaria, Sofia
11735	Canada, Montreal
11735	Finland, Helsinki
11735	Romania, Bucharest
11735	USSR, Vilnius
11735	Yugoslavia, Belgrade
11740	Australia, Melbourne
11740	Netherlands, Hilversum
11740	USA, Washington, DC
11740	Vatican City
11745	Taiwan, Taipei
11745	France, Paris
11745	USA, Washington, DC
11745	Vatican City
11750	Bulgaria, Sofia
11750	Great Britain, London
11755	Finland, Helsinki
11755	USSR, Moscow
11760	Cuba, Havana
11760	Great Britain, London
11760	USA, Washington, DC
11765	Bangladesh, Dacca
11765	Bulgaria, Sofia
11765	Germany (West), Cologne
11765	Philippines, Manila
11765	USSR, Moscow
11770	India, New Delhi
11770	Nigeria, Lagos
11770	United Nations
11770	USSR, Moscow
11775	Canada, Montreal
11775	Great Britain, London
11780	Korea (North), Pyongyang
11785	Germany (West), Cologne
11785	USSR, Moscow
11790	Australia, Melbourne
11790	USSR, Vilnius
11790	Romania, Bucharest
11790	Indonesia, Djakarta
11790	USA, Washington, DC
11795	Germany (East), Berlin
11800	Italy, Rome
11800	USSR, Moscow

Freq.	Location
11805	Philippines, Manila
11805	Seychelles, Victoria
11805	USA, Washington, DC
11810	India, New Delhi
11810	Vatican City
11815	Japan, Tokyo
11815	Poland, Warsaw
11820	Australia, Melbourne
11820	Ecuador, Quito
11820	USSR, Moscow
11825	Canada, Montreal
11825	Taiwan, Taipei
11830	Romania, Bucharest
11830	United Nations
11830	Vatican City
11835	Haiti, Cape Haitien
11835	Sri Lanka, Colombo
11840	Germany (East), Berlin
11840	Guam, Agana
11840	Poland, Warsaw
11840	Romania, Bucharest
11840	Spain, Madrid
11845	Canada, Montreal
11845	China, Peking
11845	France, Paris
11845	Greece, Athens
11845	Vatican City
11850	Germany (West), Cologne
11850	Norway, Oslo
11855	Canada, Montreal
11855	Czechoslovakia, Prague
11855	Japan, Tokyo
11855	Philippines, Manila
11855	Saudi Arabia, Riyadh
11855	Seychelles, Victoria
11855	USA, Oakland, CA
11860	Korea (South), Seoul
11860	Norway, Oslo
11860	Taiwan, Taipei
11860	USSR, Moscow
11870	Australia, Melbourne
11870	Norway, Oslo
11870	Sri Lanka, Colombo
11875	India, New Delhi
11875	Japan, Tokyo
11880	Australia, Melbourne

Freq.	Location
11880	Spain, Madrid
11880	Zambia, Lusaka
11885	Korea (North), Pyongyang
11890	Germany (East), Berlin
11890	Philippines, Manila
11895	Norway, Oslo
11895	Senegal, Dakar
11900	Ecuador, Quito
11900	South Africa, Johannesburg
11900	United Nations
11905	Canada, Montreal
11905	Germany (West), Cologne
11905	Italy, Rome
11905	Korea (North), Pyongyang
11905	Thailand, Bangkok
11905	United Nations
11905	Sweden, Stockholm
11910	Finland, Helsinki
11910	Great Britain
11910	Hungary, Budapest
11915	Canada, Montreal
11915	Ecuador, Quito
11915	USA, Washington, DC
11920	Ivory Coast, Abidjan
11920	USSR, Moscow
11925	Greece, Athens
11925	India, New Delhi
11925	USA, Washington, DC
11930	France, Paris
11930	Netherlands, Hilversum
11935	Canada, Montreal
11935	Iraq, Baghdad
11935	Portugal, Lisbon
11935	USA, Washington, DC
11940	Canada, Montreal
11940	Romania, Bucharest
11940	Singapore, Singapore
11945	Canada, Montreal
11945	Germany (West), Cologne
11945	New Zealand, Wellington
11950	Philippines, Manila
11955	Angola, Luanda
11955	Great Britain, London
11955	Philippines, Manila
11955	Turkey, Ankara
11960	New Zealand, Wellington
11965	Albania, Tirana
11965	Germany (West), Cologne
11965	Korea (South), Seoul
11970	Germany (East), Berlin
11985	Albania, Tirana
11990	Czechoslovakia, Prague
12000	USSR, Kiev
12010	USA, Washington, DC
12030	USSR, Moscow
12035	Vietnam, Hanoi
12050	USSR, Moscow
12055	China, Peking
12055	USSR, Moscow
12075	USSR, Moscow
12090	Great Britain, London
12095	Great Britain, London
12450	China, Peking
15012	Vietnam, Hanoi
15060	China, Peking
15070	Great Britain, London
15095	China, Peking
15100	USSR, Kiev
15105	Great Britain, London
15105	Israel, Jerusalem
15110	Czechoslovakia, Prague
15110	India, New Delhi
15115	Ecuador, Quito
15115	Sri Lanka, Colombo
15120	Nigeria, Ibadan
15120	Poland, Warsaw
15120	Sri Lanka, Colombo
15120	United Nations
15120	Vatican City
15125	China, Peking
15125	Germany (West), Cologne
15125	South Africa, Johannesburg
15125	Switzerland, Bern
15130	Switzerland, Bern
15135	Bulgaria, Sofia
15135	Germany (West), Cologne
15135	Japan, Tokyo

Freq.	Location
15135	Norway, Oslo
15135	Philippines, Manila
15135	Turkey, Ankara
15140	USA, Washington, DC
15140	USSR, Moscow
15145	Germany (East), Berlin
15150	Germany (West), Cologne
15150	USSR, Moscow
15155	South Africa, Johannesburg
15155	USA, Washington, DC
15160	Australia, Melbourne
15160	Greece, Athens
15160	Hungary, Budapest
15160	Seychelles, Victoria
15160	USA, Washington, DC
15165	Germany (East), Berlin
15165	Germany (West), Cologne
15165	India, New Delhi
15170	Germany (East), Berlin
15170	Norway, Oslo
15170	USSR, Moscow
15175	Norway, Oslo
15175	USSR, Moscow
15180	USSR, Moscow
15180	USSR, Vilnius
15185	Nigeria, Lagos
15185	USA, Red Lion, PA
15185	USA, Washington, DC
15190	India, New Delhi
15195	Afghanistan, Kabul
15195	Japan, Tokyo
15195	USA, Washington, DC
15200	Indonesia, Djakarta
15200	France, Paris
15205	India, New Delhi
15205	USA, Washington, DC
15205	USSR, Moscow
15210	Congo (People's Rep.), Brazzaville
15210	Finland, Helsinki
15210	France, Paris
15215	Great Britain, London
15215	Philippines, Manila
15215	USA, Washington, DC
15220	Hungary, Budapest
15220	Netherlands, Hilversum
15220	South Africa, Johannesburg
15225	Guam, Agana
15225	Hungary, Budapest
15225	Taiwan, Taipei
15225	United Nations
15230	China, Peking
15235	Egypt, Cairo
15235	India, New Delhi
15235	Japan, Tokyo
15235	Netherlands, Hilversum
15235	United Nations
15240	Australia, Melbourne
15240	Germany (West), Cologne
15240	Sweden, Stockholm
15240	USSR, Kiev
15240	Yugoslavia, Belgrade
15250	Romania, Bucharest
15250	United Nations
15255	Egypt, Cairo
15255	Romania, Bucharest
15260	Great Britain, London
15260	USA, Washington, DC
15260	USSR, Moscow
15265	Canada, Montreal
15265	Finland, Hensinki
15265	USSR, Kiev
15265	USSR, Moscow
15270	China, Peking
15270	Brazil, Brasilia
15270	Finland, Helsinki
15270	Japan, Tokyo
15275	Germany (West), Cologne
15275	Sweden, Stockholm
15280	Brazil, Brasilia
15280	Great Britain, London
15280	New Zealand, Wellington
15280	Philippines, Manila
15285	Bangladesh, Dacca
15285	China, Peking
15290	Brazil, Brasilia
15290	USA, Washington, DC
15295	Malaysia, Kuala Lumpur

Freq.	Location
15300	France, Paris
15305	Switzerland, Bern
15305	United Nations
15310	Australia, Melbourne
15310	Bulgaria, Sofia
15310	Great Britain, London
15310	Guinea (Rep.), Conakry
15310	Japan, Tokyo
15315	Italy, Rome
15315	China, Peking
15320	Australia, Melbourne
15320	Philippines, Manila
15325	Canada, Montreal
15325	Greece, Athens
15325	Seychelles, Victoria
15325	Uganda, Kampala
15330	Italy, Rome
15330	Bulgaria, Sofia
15330	Israel, Jerusalem
15330	USA, Washington, DC
15330	USSR, Moscow
15335	India, New Delhi
15335	Romania, Bucharest
15340	Portugal, Lisbon
15345	Norway, Oslo
15345	Romania, Bucharest
15350	United Nations
15355	Canada, Montreal
15360	Austria, Vienna
15360	France, Paris
15365	Romania, Bucharest
15375	Bangladesh, Dacca
15380	Great Britain, London
15380	Ecuador, Quito
15380	Romania, Bucharest
15387	India, New Delhi
15390	Germany (East), Berlin
15395	USA, Washington, DC
15400	Bangladesh, Dacca
15400	Great Britain, London
15400	USA, Washington, DC
15405	USSR, Vilnius
15410	Austria, Vienna
15410	Germany (West), Cologne
15410	United Nations
15415	United Nations
15420	Great Britain, London
15425	France, Paris
15425	Sri Lanka, Colombo
15425	USA, Washington, DC
15430	Switzerland, Bern
15430	USA, Washington, DC
15435	Great Britain, London
15435	Tanzania, Dar es Salaam
15440	Philippines, Manila
15440	USA, Oakland, CA
15440	USSR, Moscow
15445	USA, Washington, DC
15450	Philippines, Manila
15450	USSR, Moscow
15455	USSR, Moscow
15460	USSR, Moscow
15470	Pakistan, Karachi
15485	Israel, Jerusalem
15520	China, Peking
15520	USSR, Moscow
15525	USSR, Vilnius
15540	USSR, Moscow
15560	Austria, Vienna
15780	USSR, Kiev
16190	USSR, Kiev
16190	USSR, Moscow
17530	China, Peking
17635	China, Peking
17640	Pakistan, Karachi
17645	Israel, Jerusalem
17662	Pakistan, Karachi
17665	Pakistan, Karachi
17680	China, Peking
17685	Israel, Jerusalem
17700	Germany (East), Berlin
17700	Netherlands, Hilversum
17705	Czechoslovakia, Prague
17705	Great Britain, London
17705	India, New Delhi
17710	Hungary, Budapest
17710	USA, Washington, DC
17710	USSR, Moscow
17720	France, Paris
17720	Romania, Bucharest
17720	USA, Red Lion, PA
17720	USSR, Moscow
17725	Australia, Melbourne

Freq.	Location
17725	Japan, Tokyo
17730	Germany (West), Cologne
17730	Switzerland, Bern
17735	Switzerland, Bern
17740	USA, Washington, DC
17740	Belgium, Brussels
17745	Romania, Bucharest
17750	Cuba, Havana
17755	Australia, Melbourne
17755	Japan, Tokyo
17755	Norway, Oslo
17765	Germany (West), Cologne
17765	USA, Washington, DC
17765	USSR, Moscow
17770	Great Britain, London
17770	New Zealand, Wellington
17775	Czechoslovakia, Prague
17775	Turkey, Ankara
17780	Germany (West), Cologne
17780	South Africa, Johannesburg
17785	Hungary, Budapest
17785	USA, Washington, DC
17785	Greece, Athens
17785	USA, Oakland, CA
17790	Great Britain, London
17790	Philippines, Manila
17790	USA, Washington, DC
17795	Australia, Melbourne
17795	France, Paris
17795	Germany (West), Cologne
17795	Italy, Rome
17795	Norway, Oslo
17795	Switzerland, Bern
17800	Germany (West), Cologne
17805	Romania, Bucharest
17810	China, Peking
17810	Japan, Tokyo
17810	Netherlands, Hilversum
17820	Canada, Montreal
17820	Kuwait, Kuwait
17820	USA, Washington, DC
17825	Bulgaria, Sofia
17825	Japan, Tokyo
17830	Great Britain, London
17830	Pakistan, Karachi
17830	Switzerland, Bern
17840	Czechoslovakia, Prague
17840	Great Britain, London
17840	Greece, Athens
17840	Norway, Oslo
17840	Vatican City
17845	USA, Oakland, CA
17850	France, Paris
17850	Romania, Bucharest
17850	Sri Lanka, Colombo
17850	Switzerland, Bern
17855	China, Peking
17855	Guam, Agana
17855	Japan, Tokyo
17855	Netherlands, Hilversum
17860	Austria, Vienna
17860	Canada, Montreal
17860	France, Paris
17860	United Nations
17865	Canada, Montreal
17865	Ecuador, Quito
17870	Australia, Melbourne
17870	USA, Oakland, CA
17870	USA, Washington, DC
17870	USSR, Vilnius
17875	Canada, Montreal
17875	Germany (West), Cologne
17875	India, New Delhi
17875	USA, Oakland, CA
17878	USSR, Kiev
17880	Japan, Tokyo
17880	Portugal, Lisbon
17885	Cuba, Havana
17885	Great Britain, London
17890	Australia, Melbourne
17890	Bangladesh, Dacca
17890	Ecuador, Quito
17890	Taiwan, Taipei
17895	USA, Washington, DC
17900	Vatican City
17920	Egypt, Cairo
19140	Singapore, Singapore

Freq.	Location
19505	United Nations
21450	Pakistan, Karachi
21455	Greece, Athens
21460	USA, Washington, DC
21465	Germany (East), Berlin
21470	Great Britain, London
21475	Belgium, Brussels
21480	Ecuador, Quito
21485	Germany (East), Berlin
21485	Pakistan, Karachi
21495	Finland, Helsinki
21495	Israel, Jerusalem
21500	Germany (West), Cologne
21515	Philippines, Manila
21520	Switzerland, Bern
21525	Australia, Melbourne
21525	Hungary, Budapest
21525	USA, Oakland, CA
21535	South Africa, Johannesburg
21540	Germany (East), Berlin
21540	Germany (West), Cologne
21545	Pakistan, Karachi
21545	Switzerland, Bern
21550	Great Britain, London
21555	Great Britain, London
21570	Australia, Melbourne
21570	Switzerland, Bern
21570	USA, Washington, DC
21575	Austria, Vienna
21580	France, Paris
21590	Pakistan, Karachi
21600	Germany (West), Cologne
21605	Pakistan, Karachi
21610	Austria, Vienna
21610	Japan, Tokyo
21610	USA, Washington, DC
21615	Sweden, Stockholm
21615	USA, Oakland, CA
21625	Israel, Jerusalem
21630	Switzerland, Bern
21640	Germany (West), Cologne
21640	Japan, Tokyo
21655	Greece, Athens
21655	Norway, Oslo
21655	Pakistan, Karachi
21660	Great Britain, London
21670	Bangladesh, Dacca
21670	United Nations
21675	France, Paris
21680	Australia, Melbourne
21685	Bangladesh, Dacca
21690	Sweden, Stockholm
21695	India, New Delhi
21695	Switzerland, Bern
21700	Czechoslovakia, Prague
21700	Sweden, Stockholm
21710	Great Britain, London
21730	Norway, Oslo
21740	Australia, Melbourne
21755	Pakistan, Karachi
25620	USA, Washington, DC
25640	Israel, Jerusalem
25650	Great Britain, London
25790	South Africa, Johannesburg
25990	USA, Washington, DC
26040	USA, Washington, DC
26095	USA, Washington, DC
26140	Netherlands, Hilversum

5

International Shortwave News Broadcasts

International shortwave radio broadcasting provides a means by which the people of other nations may learn the history, culture, and folklore of the originating country. But more important, it is a dynamic medium by which national and international news and commentaries can be broadcast to the ears of millions of listeners outside the borders of a country.

The purpose of this section is to provide the enthusiast with a convenient listing of all English-language news broadcasts transmitted from the capitals of the world. When, in some instances, a specific country does not broadcast in English, the country and the language used for the news broadcast are listed in Section 3.

To use this section, note the time a specific country broadcasts the news, then refer to Section 3 for further details of the transmission. All time indications are in UTC.

0000

Albania
Australia
Korea (North)
Bulgaria
Canada
China
Great Britain
Greece
Guam
Guyana (Rep.)
Haiti
Japan
Kampuchea (Cambodia)
Luxembourg
Norway
Thailand
United Nations
USA (Washington, AFRTS)
USSR (Moscow)

0030

Philippines (FEBC)
Philippines (Rdo. Veritas)
Singapore

Spain
Sri Lanka
Sweden
USA (Washington, AFRTS)
USSR (Kiev)
USSR (Moscow)

0100

Australia
Belize
Canada
China
Chile
Cuba
Czechoslovakia
Germany (East)
Indonesia
Italy
Japan
Luxembourg
New Zealand
Thailand
United Nations
USA (Washington, VOA)
USA (Oakland, WYFR)
USA (Washington, AFRTS)
USSR (Moscow)

0130

Albania
Bolivia
Germany (West)
Philippines (FEBC)
Spain
USA (Washington, AFRTS)
USSR (Moscow)

0140

Solomon Islands

0145

Switzerland

0200

Belize
Burma
Canada
Costa Rica
Cuba
Egypt
Great Britain
Greece
Hungary
Japan
New Zealand
Norway
Poland
Romania
South Africa
United Nations
USA (Oakland, WYFR)
USA (Washington, AFRTS)
USA (Washington, VOA)
USSR (Moscow)
Vatican City

0210

Chile

0215

Dominican Republic

0230

Albania
Pakistan
Papua New Guinea
Philippines (FEBC)
Sri Lanka
Sweden
USA (Washington, AFRTS)
USSR (Moscow)

0300

Albania
Argentina
Belize
Brazil
Canada
China
Costa Rica
Cuba
Czechoslovakia
Ecuador
Egypt
Germany (East)
Great Britain

Honduras
Hungary
Iraq
Japan
Philippines (Rdo. Veritas)
Portugal
South Africa
Uganda
United Nations
USA (Oakland, WYFR)
USA (Washington, AFRTS)
USA (Washington, VOA)
USSR (Kiev)
USSR (Moscow)

0310

Chile

0330

Germany (East)
Philippines (FEBC)
USA (Washington, AFRTS)
USSR (Moscow)

0350

Italy

0400

Australia
Belize
Canada
China
Comoro
Costa Rica
Cuba
Great Britain
Honduras
Hungary
Japan
Kenya
Mauritius
New Zealand
Norway
Romania
South Africa
Tanzania
United Nations
USA (Oakland, WYFR)
USA (Washington, AFRTS)
USA (Washington, VOA)
USSR (Moscow)

0415

Seychelles

0425

Italy

0430

Albania
Bulgaria
Germany (West)
Switzerland
Philippines (FEBC)
Thailand
USA (Washington, AFRTS)
USSR (Moscow)
Yemen Arab Rep.

0500

Chad
Comoro
Cuba
Ecuador
Gabon
Germany (East)
Germany (West)
Great Britain
Honduras
Israel
Japan
Lesotho
New Zealand
Portugal
United Nations
USA (Washington, AFRTS)
USA (Washington, VOA)
USSR (Moscow)

0530

Central African Empire
Kuwait
Romania
USA (Washington, AFRTS)
USSR (Moscow)

0545

Spain

0600

Argentina
Australia
Comoro
Gabon
Great Britain
Japan
Kenya
Korea (North)
Liberia
Netherlands
New Zealand
Norway
Papua New Guinea
Rhodesia
Singapore
United Nations
USA (Washington, AFRTS)
USA (Washington, VOA)
USSR (Moscow)

0615

South Africa

0630

Albania
Korea (South)
Sierra Leone
Malaysia
Poland
USA (Washington, AFRTS)
USSR (Moscow)
Vatican City

0655

Yemen Arab Rep.

0700

Albania
Australia
Burma
Cameroon
Cuba
Ecuador
Gabon
Germany (East)
Ghana
Great Britain
Japan
Korea (North)
Liberia
Malaysia
Netherlands
Romania
Seychelles
Sierra Leone
Switzerland
United Nations
USA (Washington, AFRTS)
USSR (Moscow)

0730

Czechoslovakia
Netherlands
Seychelles

0800

Australia
Cameroon
Ecuador
Gabon
Ghana
Great Britain
Indonesia
Japan
Korea (North)
Malaysia
Monaco
Norway
Netherlands
Papua New Guinea
Philippines (VOP)
United Nations
USA (Washington, AFRTS)

0830

Czechoslovakia
New Hebrides
Philippines (FEBC)
Vatican City

0900

Australia
Austria
Cameroon
China
Comoro

Ecuador
Gabon
Great Britain
Guyana (Rep.)
Greece
Guam
Japan
Korea (North)
Liberia
Monaco
Pakistan
Switzerland
United Nations
USA (Washington, AFRTS)
Vietnam

0930

Albania
Finland
Netherlands
Philippines (FEBC)
Singapore

1000

Australia
Cameroon
China
Comoro
Gabon
Greece
Guyana (Rep.)
India
Japan
Kenya
Korea (South)
Martinique
Netherlands
Pakistan
Rhodesia
Saudi Arabia
Tanzania
Vietnam

1030

Guiana (French)
Hungary
Monaco
Singapore
Sri Lanka
Togo
United Nations
USA (Washington, AFRTS)

1055

India

1100

Australia
Austria
Chad
Chile
Germany (West)
Great Britain
Haiti
Japan
Korea (North)
Pakistan
Somalia
South Africa
Sweden
Uganda
United Nations
USA (Washington, AFRTS)
USA (Washington, VOA)

1110

Solomon Islands

1115

Zambia

1130

Afghanistan
Algeria
Kampuchea (Cambodia)
Korea (South)
Lesotho
Philippines (Rdo. Veritas)
Singapore
Switzerland
Thailand
USA (Washington, AFRTS)

1200

Australia
Brunei

Central African Empire
Chad
China
Ecuador
Gabon
Germany (East)
Haiti
Hungary
Israel
Japan
Jordan
Cambodia
Korea (North)
Liberia
Martinique
Norway
Philippines (VOP)
Poland
Rhodesia
Romania
Saudi Arabia
Turkey
United Nations
USA (Washington, AFRTS)
USA (Washington, VOA)
Yemen Arab Rep.

1210

Chile

1215

Vatican City

1220

Mongolia

1230

Albania
Austria
Sri Lanka
Sweden
USA (Washington, AFRTS)

1245

Belize

1300

Australia
Belize
Chad
Finland
Great Britain
Guyana (Rep.)
Haiti
Japan
Korea (North)
Liberia
Philippines (Rdo. Veritas)
Romania
Tanzania
United Nations
USA (Washington, AFRTS)
USA (Washington, VOA)
USSR (Moscow, Peace & Progress)
Vatican City

1315

Switzerland

1330

Chile
India
Korea (South)
Philippines (FEBC)
Singapore
USA (Washington, AFRTS)
USSR (Moscow, Peace & Progress)

1400

Afghanistan
Albania
Australia
Belize
Cameroon
Canada
Chad
China
Egypt
Finland
Gabon
Germany (East)
Indonesia
Japan
Kenya

Korea (North)
Liberia
Martinique
Norway
Philippines (VOP)
Portugal
Rhodesia
Sweden
United Nations
USA (Washington, AFRTS)
USA (Oakland, WYFR)
Yemen Arab Rep.

1430

Czechoslovakia
Guyana (Rep.)
Hungary
Netherlands
Philippines (FEBC)
USA (Washington, AFRTS)
USSR (Moscow, Peace & Progress

1445

Burma
Nepal
South Africa
Uganda
Vatican City

1455

India

1500

Australia
Belize
Cameroon
China
Comoro
Ethiopia
Egypt
Gabon
Guyana (Rep.)
Japan
Jordan
Kenya
Korea (North)
Maldives
Monaco
Romania
United Nations
USA (Washington, AFRTS)
USA (Washington, VOA)
USSR (Moscow)

1510

USSR (Moscow, Peace & Progress)

1530

Czechoslovakia
Philippines (FEBC)
Seychelles
Singapore
Switzerland
USA (Washington, AFRTS)
USSR (Moscow)
Vietnam
Yugoslavia

1600

Australia
China
Comoro
Ethiopia
France
Gabon
Germany (East)
Great Britain
Jordan
Kenya
Korea (South)
Japan
Lesotho
Liberia
Maldives
Norway
Pakistan
Poland
Portugal
Sweden
Tanzania
Togo
United Nations
USA (Oakland, WYFR)
USA (Washington, AFRTS)

USA (Washington, VOA)
USSR (Moscow)
Vatican City
Zambia

1610

Belgium

1630

Albania
Czechoslovakia
Guiana (French)
Nigeria
USA (Washington, AFRTS)
USSR (Moscow)
Vatican City

1700

Australia
Austria
Belize
China
Ecuador
Egypt
France
Gabon
Great Britain
Japan
Liberia
Martinique
Pakistan
Philippines (VOP)
Poland
Portugal
Uganda
United Nations
USA (Oakland, WYFR)
USA (Red Lion, WINB)
USA (Washington, AFRTS)
USA (Washington, VOA)
USSR (Moscow)
Yemen Arab Rep.

1705

Bangladesh

1715

Mongolian People's Rep.

1725

Guyana (Rep.)

1730

Albania
Czechoslovakia
Romania
USA (Washington, AFRTS)
USA (Washington, VOA)
USSR (Moscow)

1800

Australia
Austria
Cameroon
China
Germany (East)
Ghana
Great Britain
India
Japan
Kenya
Korea (South)
Liberia
Mauritius
Mozambique
New Zealand
Norway
Philippines (VOP)
Portugal
Sri Lanka
Tanzania
Uganda
United Nations
USA (Oakland, WYFR)
USA (Red Lion, WINB)
USA (Washington, AFRTS)
Vatican City
Vietnam
Zambia

1815

Switzerland

1830

Albania
Belize

Bulgaria
Cameroon
Central African Empire
Gabon
Kuwait
Nigeria
Netherlands
USA (Washington, AFRTS)
Yemen Arab Rep.
Yugoslavia

1840

Senegal

1900

Australia
Austria
India
Iran
Japan
Mauritania
New Zealand
Saudi Arabia
United Nations
USA (Oakland, WYFR)
USA (Red Lion, WINB)
USA (Washington, AFRTS)
USA (Washington, VOA)
USSR (Moscow)

1925

Guyana (Rep.)

1930

Albania
Bulgaria
Cameroon
Canada
Chad
Costa Rica
Czechoslovakia
Ecuador
Germany (East)
New Zealand

1935

Italy

1940

Benin

2000

Australia
Austria
Belize
Brazil
Canada
Chad
China
Costa Rica
Czechoslovakia
Gabon
Germany (East)
Ghana
Great Britain
Guinea (Rep.)
India
Israel
Japan
Kenya
Korea (North)
Martinique
New Zealand
Norway
Papua New Guinea
Poland
Romania
Saudi Arabia
Togo
United Nations
USA (Oakland, WYFR)
USA (Red Lion, WINB)
USA (Washington, AFRTS)
USA (Washington, VOA)
USSR (Moscow)
Yemen Arab Rep.
Yugoslavia
Zambia

2010

Cuba
Solomon Islands

2025

Italy

2030

Albania
Bulgaria
Portugal
Spain
Uganda
USA (Washington, AFRTS)
USSR (Kiev)
Vietnam

2045

Papua New Guinea

2100

Australia
Belize
Brazil
China
Cuba
Ethiopia
Egypt
Gabon
Germany (East)
Hungary
India
Japan
Kenya
Nigeria
South Africa
Sweden
United Nations
USA (Oakland, WYFR)
USA (Red Lion, WINB)
USA (Washington, AFRTS)

2130

Bulgaria
Chad
Congo
Czechoslovakia
Finland
Iraq
Spain
Taiwan
USA (Washington, AFRTS)

2140

Taiwan

2145

Papua New Guinea
Vatican City
Yemen Arab Rep.

2155

Guyana (Rep.)

2200

Australia
Austria
Central African Empire
China
Gabon
Germany (East)
Great Britain
Guinea (Rep.)
India
Italy
Japan
New Zealand
Norway
Turkey
United Nations
USA (Oakland, WYFR)
USA (Washington, AFRTS)
Yugoslavia

2215

Vatican City

2230

Guiana (French)
Israel
Poland
USA (Washington, AFRTS)

2245

Ghana
Greece

2300

Argentina
Canada
Chile
Egypt
Great Britain
Guyana (Rep.)

Japan
Korea (South)
Martinique
New Zealand
Romania
Sweden
United Nations
USA (Washington, AFRTS)
USSR (Moscow)
USSR (Vilnius)

2310

Vatican City

2330

Finland
Kampuchea (Cambodia)
Philippines (FEBC)
Singapore
USA (Washington, AFRTS)
USSR (Moscow)

2355

Guinea (Rep.)

1182

6

Verification Reports [QSL-ing]

Most international shortwave broadcasting stations are interested in knowing how well their transmissions are being received by listeners in other countries, particularly in those areas to which the signals are beamed. Listener reports are useful to the station engineering staff in selecting frequencies to avoid interference or atmosphreric disturbances. They are also useful to the program manager in determining listener reactions to the program. In return for these reception reports, a station will usually mail to the sender a verification card (QSL card).

To make your report as brief but as useful as possible, the following items must be included (preferably typewritten).

1. Date and time (UTC) the transmission was heard and the length of time you listened, such as "0700–0800 hours UTC, July 10, 1978."
2. Reception report using SINPO code (Chart 1).

Chart 1. SINPO Code

S (Signal Strength)		I (Interference)		N (Noise)		P (Propagation Disturbance)		O (Overall Merit)	
5	Excellent	5	Nil	5	Nil	5	Nil	5	Excellent
4	Good	4	Slight	4	Slight	4	Slight	4	Good
3	Fair	3	Moderate	3	Moderate	3	Moderate	3	Fair
2	Poor	2	Severe	2	Severe	2	Severe	2	Poor
1	Barely audible	1	Extreme	1	Extreme	1	Extreme	1	Unusable

3. Make, type, and model of receiver used.
4. Type of antenna used (height, length, whether it is erected in the clear, etc.).
5. A brief description of what the program contained, such as the musical selections played, subject material of the commentary, or any other program data. The station staff uses this information to identify the program as positively being theirs and to verify that you did, indeed, hear it.
6. Comments regarding reception (unusual interference, fading characteristics, modulation quality, and any other transmission irregularities).
7. Program comments and suggestions.
8. Your name and complete mailing address.

Allow seven to ten weeks for receipt of your QSL card. It is advisable to send your report via air mail. Consult your local postal authorities for postal rates. Mail your report to the address given in the following list.

AFGHANISTAN

Radio Afghanistan
P.O. Box 544
Kabul, Afghanistan

ALBANIA

Radio & Television Albania
Rue Ismail Quemal
Tirana, Albania

ALGERIA

Radio Algeria
21, Boulevard des Martyrs
Algiers, Algeria

ANGOLA

Director of Telegraph & Telephone
Luanda, Angola

ARGENTINA

Radio R.A.E.
Sarmiento 151
Buenos Aires, Argentina

AUSTRALIA

Radio Australia
P. O. 428 G
G.P.O.
Melbourne 3001, Australia

AUSTRIA

Radio Austria (ORF)
Shortwave Service
A-1136
Vienna, Austria

BANGLADESH

Radio Bangladesh
External Service
145/A, Rd. No. 2
Dhanmondi R/A
Dacca 2, People's Republic of Bangladesh

BELGIUM

Belgium Radio & Television Service
Station ORU
P.O. Box 26, B-1000
Brussels, Belgium

BELIZE

Radio Belize
P.O. Box 89
Belize City
Belize

BRAZIL

Radio Brazil
International Service
P.O. Box 0340
Brasilia, Brazil

BRUNEI

Radio Brunei
Dept. of Broadcasting & Information
Bandar Seri Begawan, Brunei

BULGARIA

Radio Sofia
Committee of Radio & Television
Culture & Art
4 Bd. Dragan Tsankov
Sofia, Bulgaria

BURMA

Burma Broadcasting Service
Prome Rd. Kamayut P.O.
Rangoon, Burma

CAMEROON

Radio Buea
P.O. 86
Buea, Cameroon

CANADA

Radio Canada International
P.O. Box 6000
Montreal, Canada H3C 3A8

CENTRAL AFRICAN REPUBLIC

National Central African Radio
B.P. 940
Bangui, Central African Republic

CHAD

National Tchadienne Radio
B.P. 892
Ndjamena, Republic of Chad

CHILE

Radio Nacional del Chile
Casilla 244V
Santiago, Chile

CHINA (Peoples' Republic of; Mainland)

Radio Peking
Broadcasting Administration
Fu Hsin Men, Peking
People's Rep. of China

COMORO ISLANDS

Comoro International Radio
B.P. 250
Moroni
Comoro Islands

CONGO (People's Rep. of the)

Congo Radio & Television
B.P. 2241
Brazzaville, People's Rep. of the Congo

COSTA RICA

Radio Station TIFC
Ap. 2710
San Jose, Costa Rica

CUBA

Radio Havana
P.O. Box 6240
Havana, Cuba

CZECHOSLOVAKIA

Radio Prague
Czechoslovakia Radio
Prague 2, Czechoslovakia

DOMINICAN REPUBLIC

Radio; T-V Dominicana, HISD
Santo Domingo,
Dominican Republic

ECUADOR

The Voice of the Andes, HCJB
Casilla 691
Quito, Ecuador

EGYPT

Radio Cairo
Radio & TV Building
P.O. Box 1186, Kornish Road
Cairo, Egypt

ETHIOPIA

Voice of Revolutionary Ethiopia
Addis Ababa, Ethiopia

FINLAND

Finnish Broadcasting Co.
Kesakatu 2, 00260
Helsinki 26, Finland

FRANCE

Radio France International
B.P. 9516, F-75016
Paris, France

GABON

Radiodiff. Television Gabonaise
La Voix de la Renovation
P.B. 10150
Libreville, Gabon

GERMANY (Democratic Republic; East)

Radio Berlin International
116 Berlin, Nalepastrasse 18-50
German Democratic Republic

GERMANY (Federal Republic; West)

Deutsche Welle
The Voice of Germany
P.O. Box 10 04 44
5 Cologne 1
Federal Republic of Germany

GHANA

Ghana Broadcasting Corp.
P.O. Box 1633
Accra, Ghana

GREAT BRITAIN

BBC London
British Broadcasting Corp.
Broadcasting House
London W1A 1AA,
Great Britain

GREECE

Voice of Greece
P.O. Box 19
Aghia Paraskevi, Attikis,
Athens, Greece

GUAM

Radio Station, KUAM
P.O. 368
Agana, Guam

GUIANA (French)

France Region 3
Office of Radiodiff. and Television
B.P. 336
Cayenne, French Guiana

GUINEA (Republic of)

La Voix de la Revolution
Radiodiff. Nationale
B.P. 617
Conakry, Republic of Guinea

GUYANA (Republic)

Action Radio, GBS
Guyana Broadcasting Service
P.O. Box 560
Georgetown, Republic of Guyana

Radio Demerara
Guyana Broadcasting Co., Ltd.
P.O. Box 561
Georgetown, Republic of Guyana

HAITI

Radio Station 4VEH
Box 1
Cap Haitien, Haiti

HONDURAS (Republic of)

Baptist Home Mission Society
Radio
Ap. 145-C
Tegucigalpa, Republic of
Honduras

HUNGARY

Radio Budapest
Brody Sandor 5-7
H–1800
Budapest, Hungary

INDIA

All India Radio
P.O. Box 500
New Delhi, India

INDONESIA

The Voice of Indonesia
P.O. Box 157
Djakarta, Indonesia

IRAN

Radio Iran
External Broadcasting
P.O. Box 33-200
Tehran, Iran

IRAQ

Radio Baghdad
Iraqi Broadcasting & TV
Establishment
Salihiya
Baghdad, Iraq

ISRAEL

Israel Broadcasting Authority
Overseas Service
P.O. Box 1082
Jerusalem, Israel

ITALY

Italian Radio & Television
Service
Viale Mazzini 14,
00195 Rome, Italy

IVORY COAST

Ivory Coast Broadcasting
System
Radio Abidjan
B.P. 2261
Abidjan, Ivory Coast

JAPAN

Radio Japan, NHK
2-2-1 Jinnan
Shibuya-ku
Tokyo, Japan

JORDAN

Radio Jordan
Hashemite Kingdom
Broadcasting Service
P.O. Box 909
Amman, Jordan

KAMPUCHEA (Cambodia)

Voice of the National United
Front of Kampuchea
28, Ave. Sandech Choun Nath
Phnom-Penh, Democratic
Kampuchea

KENYA

Voice of Kenya
Box 30456
Nairobi, Kenya

KOREA (Democratic People's Republic; North)

Radio Pyongyang
Korean Central Broadcasting
Committee
Pyongyang, Democratic
People's Republic of Korea

KOREA (Republic; South)

Radio Korea
Korean Broadcasting Corp.
8, Yejang-Dong
Joong-gu
Seoul, Republic of Korea

KUWAIT

Radio Kuwait
P.O. Box 397
Kuwait

LESOTHO

Radio Lesotho
P.O. Box 552
Maseru, Lesotho

LIBERIA

Radio Station ELWA
Box 192
Monrovia, Liberia

LUXEMBOURG

Radio Luxembourg
Compagnie Luxembourgeoise
de Telediffusion
Villa Louvigny
Luxembourg

MALAYSIA

Radio Malaysia
Department of Broadcasting
Angkasapuri
Kuala Lumpur, Malaysia

MALDIVES

Radio Maldives
Department of Information &
Broadcasting
Male, Republic of the
Maldives

MARTINIQUE

France Region 3
Office of Radiodiff. and
Television
B.P. 662
Fort-de-France, Martinique

MAURITANIA

National Radio of Mauritania
B.P. 200
Nouakchott, Republic of
Mauritania

MAURITIUS

Mauritius Broadcasting
Corporation
Broadcasting House
Port Louis, Mauritius

MONACO

Trans World Radio
P.O. Box 141
Monte Carlo, Monaco

MONGOLIAN PEOPLE'S REPUBLIC

Ulan Bator Radio
CPO Box 365
Ulan Bator
People's Republic of Mongolia

MOZAMBIQUE

Radio Club of Mozambique
P.O. Box 594
Lourenco Marques,
Mozambique

NEPAL

Radio Nepal
P.O. Box 634, Singha Durbar
Department of Broadcasting
Kathmandu, Nepal

NETHERLANDS

Radio Nederland
P.O. Box 222
Hilversum, Holland

NEW HEBRIDES

Radio Vila
New Hebrides Broadcasting
Service
P.O. Box 110
Vila, New Hebrides

NEW ZEALAND

Radio New Zealand
External Services Division
P.O. Box 2092
Wellington, New Zealand

NIGERIA

Western Nigeria Broadcasting Service
P.O. Box 1460
Ibadan, Nigeria

NORWAY

Radio Norway
Oslo, Norway

PAKISTAN

Radio Pakistan
82-A, Satellite Town
Rawalpindi, Pakistan

PAPUA NEW GUINEA

Radio Port Moresby
P.O. Box 1359, Boroko
Port Moresby, Papua

PHILIPPINES

Far East Broadcasting Company
Box 2041
Manila, Philippines

Voice of the Philippines
National Media Production Center
Solana Street Intramuros
Manila, Philippines

Radio Veritas
P.O. Box 939
Manila, Philippines

POLAND

Polskie Radio & Television
Woronicza 17
Warsaw, Poland

PORTUGAL

Portugal National Radio
Rua do Quelhas 21
Lisbon 2, Portugal

RHODESIA

Radio Rhodesia
Rhodesia Broadcasting Corp.
P.O. Box HG444

Highlands, Salisbury, Rhodesia

ROMANIA

Radio Bucharest
P.O. Box 111
Bucharest, Romania

SAO TOME AND PRINCIPE

Radio Sao Tome
Caixa Postal 44
Sao Tome E Principe

SARAWAK

Radio Malaysia, Sarawak
Broadcasting House
Kuching, Malaysia

SAUDI ARABIA

Broadcasting Service of Kingdom of Saudi Arabia
Ministry of Information
Riyadh, Saudi Arabia

SENEGAL

Senegalese Broadcasting System
International Service
B.P. 1765
Dakar, Republic of Senegal

SEYCHELLES

Far East Broadcasting Association
Box 234
Mahe, Seychelles

SIERRA LEONE

Sierra Leone Broadcasting Service
New England,
Freetown, Sierra Leone

SINGAPORE

Radio Singapore
Department of Broadcasting
Ministry of Culture
P.O. Box 1902, Singapore

SOLOMON ISLANDS

Solomon Islands
Broadcasting Service
P.O. Box 1
Honiara, Solomon Islands

SOMALIA

Radio Mogadiscio
Ministry of Information
& National Guidance
Private Postbag
Mogadiscio, Dem. Rep. of
Somalia

SOUTH AFRICA

Radio RSA
The Voice of South Africa
P.O. Box 4559
Johannesburg, South Africa

SPAIN

Radio Nacional de Espana
Foreign Service
Casa de la Radio
Prado del Rey
Madrid 24, Spain

SRI LANKA

Sri Lanka Broadcasting
Corporation
P.O. Box 574
Colombo 7, Republic of
Sri Lanka

SWEDEN

Radio Sweden
S-10510
Stockholm, Sweden

SWITZERLAND

Radio Switzerland
SBC Overseas Service
Giacomettistrasse 1
Bern 16, Switzerland

TAIWAN

Voice of Free China
Broadcasting Corp. of China

53 Jen Ai Road, Sec. 3
Taipei, Taiwan

TANZANIA

Radio Tanzania
External Service
P.O. Box 9191
Dar es Salaam, Tanzania

THAILAND

Radio Thailand
Government Public Relations
Department
Bangkok, Thailand

TOGO

Radio Togo
B.P. 434
Lome, Republic of Togo

TURKEY

Turkish Radio-Television Corp.
Nevzat Tandogan Caddesi 2
Kavaklidere
Ankara, Turkey

UGANDA

Uganda Broadcasting Corp.
Ministry of Information &
Broadcasting
P.O. Box 2038
Kampala, Uganda

UNITED NATIONS

United Nations Radio Service
New York, New York, USA

USA

Family Radio Network, Inc.
290 Hegenberger Rd.
Oakland, CA 94621, USA

World International
Broadcasters
P.O. Box 88
Red Lion, PA 17356, USA

American Forces Radio &
Television Service
Washington, DC 20305, USA

Voice of America
US Information Agency
Washington, DC 20547, USA

USSR

Radio Kiev
Kiev, USSR

Radio Moscow
Moscow, USSR

Radio Station
Peace and Progress
Moscow, USSR

Radio Vilnius
Vilnius, USSR

VATICAN CITY

Vatican Radio
Vatican City, Vatican

VIETNAM (Democratic Republic of)

The Voice of Vietnam
58 Quan-Su Street
Hanoi, Democratic Republic
of Vietnam

YEMEN ARAB REPUBLIC

Radio San'a
Ministry of Information
San'a, Yemen Arab Republic

YUGOSLAVIA

Radio Belgrade
Chief Editor of External
Broadcasting
2 Hilendarska
Belgrade, Yugoslavia

ZAMBIA

Zambia Broadcasting
Services
Broadcasting House
P.O. Box RW-15
Lusaka, Zambia

7

Station Log

STATION LOG

LOCATION	FREQ	TIME	REMARKS

STATION LOG

LOCATION	FREQ	TIME	REMARKS

STATION LOG

LOCATION	FREQ	TIME	REMARKS

STATION LOG

LOCATION	FREQ	TIME	REMARKS

STATION LOG

LOCATION	FREQ	TIME	REMARKS

Radio Shack®

A TANDY CORPORATION COMPANY