

## Inside:

What is Shortwave? . . . . .	1
Two simple antennas . . . . .	4
QSLs . . . . .	5
Shortwave Publications . . . . .	7
Shortwave Supply Companies . . . . .	8
DX Clubs . . . . .	9
What is ANDEX? . . . . .	10

# ANDEX INTERNATIONAL SPECIAL ISSUE

Vol. 21 No. 3  
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## An Introduction to Shortwave Radio

Welcome to this special shortwave introductory edition of ANDEX International. The purpose of this bulletin is to answer the most commonly asked questions that listeners pose.

### WHAT EXACTLY IS SHORTWAVE?

The term "shortwave" refers to a range of radio frequencies.



### WHAT IS A FREQUENCY?

A proper explanation of the term "frequency" is beyond the scope of this introduction. For now, let's just say that frequencies are the numbers on your radio dial. They are measured in kilohertz (kHz) or megahertz (MHz). One MHz is the same as 1,000 kHz.

### GETTING BACK TO WHAT SHORTWAVE IS...

You're already familiar with the "mediumwave" band (called the "AM" band in North America). You'll note that the numbers of your MW (AM) dial go from 540 kHz up to 1,600 kHz. Perhaps your favourite station is on 920 or 1270. Shortwave basically begins just beyond the high end of the mediumwave scale.

Shortwave extends roughly from 2,000 kHz all the way up to 30,000 kHz (2 through 30 MHz).

We call the waves "short," "medium," etc. because we are referring to the actual physical length of the radio waves that go from the radio station to your receiver's antenna. By using various electrical formulas, one is able to determine the length of the radio wave for any particular frequency. The lower in frequency one goes, the longer the length of the radio wave. For example, at 540 kHz, the wave is quite long: 555.5 meters (1,822 feet, 6 inches). At 2,000 kHz, the bottom of the shortwave range of frequencies, the wavelength is quite a bit shorter, 150 meters (492 feet). Up at 30,000 kHz, the wavelength is again much shorter, only 10 meters (just under 33 feet).

As you could guess, at frequencies lower than mediumwave (below 540 kHz) there is a frequency range called "longwave," and below that "very long wave." There's no such thing as "very shortwave;" It's called "very high frequency," or VHF instead, and you might now recognize that term from your TV channel dial. Above that is ultra high frequency (UHF), extremely high frequency (EHF) and then "microwave," a term which again refers to the actual length of the radio wave. Your microwave oven is actually emitting radio frequency energy.

### USES OF THE SHORTWAVE RANGE OF FREQUENCIES

The term "shortwave" (SW) is often incorrectly used synonymously with "ham radio," or "foreign stations." Ham (amateur) radio and shortwave broadcasting (SWBC) stations are only two types of radio services to be found on the shortwave range of frequencies. One can find

ship-to-shore communications, weather services, airplanes, embassies and many strange, coded messages as well on the frequencies between 2,000 and 30,000 kHz. Even CB (citizens' band) radio is technically shortwave as it uses frequencies around 27,000 kHz (27 MHz), near the high end of the SW range.

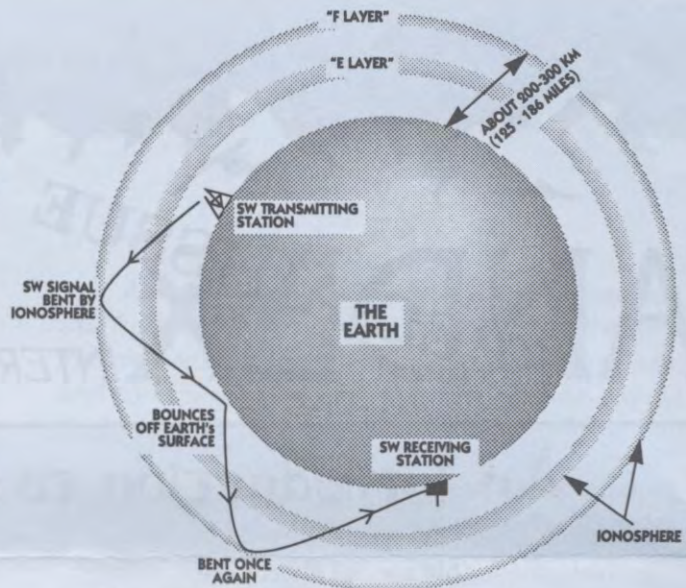
### WHAT ABOUT SSB (SINGLE SIDEBAND)?

SSB is a type of *modulation*, a means of putting music, voice, or whatever type of information you're broadcasting, onto a radio signal. Any radio station has a choice of what type of modulation it can use. The most common types of modulation used by radio stations are AM (amplitude modulation) and FM (frequency modulation). HCJB uses AM on most of its frequencies. However, we also use SSB on two frequencies at the time of this writing. Amateur radio operators on the 10 meter ham band sometimes use FM in their transmissions. Any type of modulation can be used on any frequency. In fact, as you've just learned, AM, FM and SSB are all used on shortwave frequencies. We won't be getting into the theoretical differences between AM, FM and SSB right here.

### WHAT MAKES SHORTWAVE DIFFERENT?

The main attraction of the SW range of frequencies is its characteristic of long-distance transmission. With a SW radio, one can easily tune in hams, SW stations and other services from the other side of the world.

High above the earth's surface, between about 40 miles and 300 miles (65-480 km), the Lord has provided a layer of ions, electrified atoms and molecules. That layer is called the ionosphere. Most radio signals are either absorbed into the ionosphere, or pass right through it and go into outer space. Shortwave signals, however, act differently. They are bent by the ionosphere. In fact, they are bent to the extent that they come back down to earth, perhaps thousands of miles or kilometers away from where they started. Upon reaching the ground, the radio waves often bounce back up to the sky and are then bent back down a second time. This can happen three, four or more times, taking a signal all the way around the world under the right conditions.



Here we have an example of a signal that has been bent by the ionosphere twice before reaching its destination. This is known as "Double Hop" propagation.

### SOME TUNING HINTS

As you become familiar with the SW range of frequencies on your receiver, you'll notice that parts of the dial are more crowded than others. Rather than have different types of radio services (For example, shortwave broadcasting stations such as HCJB and ship-to-shore telephone calls) mixed together all across the dial, different types of radio services are assigned certain segments of frequencies in the SW range.

The segments that we are concerned with—those that contain the broadcasting stations—are called *meter bands*, that term having to do with the length of the radio wave. Here is a list of the SW broadcasting meter bands, assigned by the International Telecommunications Union (ITU), the international communications regulatory body based in Geneva. Most SW stations will be found operating within these assigned bands:

- 11 meter band: 25600-26100 kHz
- 13 meter band: 21450-21750 kHz
- \*15 meter band: 18900-19020 kHz
- 16 meter band: 17550-17900 kHz
- \*(17480-17550 to be added)
- 19 meter band: 15100-15600 kHz

\*(15600-15800 to be added)  
22 meter band: 13600-13800 kHz  
\*(13800-13870 to be added)  
\*(13570-13600 to be added)  
25 meter band: 11650-12050 kHz  
\*(12050-12100 to be added)  
\*(11600-11650 to be added)  
31 meter band: 9500-9990 kHz  
\*(9400-9500 to be added)  
41 meter band: 7100-7300 kHz  
\*(7300-7350 to be added)  
49 meter band: 5950-6200 kHz  
\*(5900-5950 to be added)  
60 meter band: 4750-5060 kHz  
75 meter band: 3900-4000 kHz  
90 meter band: 3200-3400 kHz  
120 meter band: 2300-2495 kHz

\*These expanded frequencies will be officially added to those assigned to SW broadcasting at the beginning of the next decade. However, look for more and more stations appearing in these areas before then.

#### **WHAT IS THE BEST TIME OF DAY TO LISTEN?**

That depends on what frequency you're tuned to. The higher frequencies (15000 kHz and above) are generally best during the daytime while the lower frequencies (below 15000 kHz) come alive at night.

#### **IN MY BOOK I SEE RADIO TAJIKISTAN LISTED ON 4635 kHz. WHY CAN'T I HEAR IT AT 9 P.M.?**

What you hear on any particular day depends on a number of constantly changing factors that make up what radio types call "propagation conditions." Propagation is how a radio signal travels, bends, bounces and eventually arrives at its destination. The state of the ionosphere is the most important factor. One day the ionosphere can be full of noise, caused by things the sun is up to. The next day, the ionosphere might be beautifully "quiet," allowing weak signals to be heard clearly.

Another major factor concerns what areas of the earth are in darkness and which are in daylight. For example, even if it's completely dark at your location, you won't hear a station on 3,300 kHz that is coming from a country which is in

total daylight at the time. On that frequency, you would need a path of darkness or twilight between the two points for the signal to be able to travel. Incidentally, except for lightning creating annoyingly loud "crashes" on your receiver, the weather has nothing whatsoever to do with shortwave reception. Clouds do not block or hinder shortwave radio signals in any way.

Propagation is a fascinating study and you just might get hooked on this facet of the shortwave listening hobby.

#### **INTERNATIONAL AND TROPICAL BROADCASTING**

Generally speaking (there are always exceptions,) radio stations using 49 through 11 meters (6 through 25 MHz) are very much interested in reaching listeners in far away places. These broadcasters are termed International. They use high-power transmitters (100 to 500 kw typically) to provide listeners on other continents with good solid signals.

Broadcasters on the 120, 90, 75 and 60 meter bands (2 through 6 mHz) are targeting listeners who live much closer. The radio station in question is interested in reaching a local area, whether that be surrounding counties or provinces, the entire country, or countries bordering on its own nation or a combination of all three. These stations are not purposely transmitting their programs to listeners on other continents, even though it is often possible for a listener thousands of miles away to hear to such broadcasts. Most of the stations using these domestic broadcasting bands are located in the tropics. Thus, these meter bands are called the Tropical Bands.

The 49 meter band is unique in that it contains a significant number of both tropical and international broadcasters.

A great number of helpful books have been written about shortwave radio and the "DXing" hobby. (DX, by the way, is an old telegraph abbreviation for "distance." It means "distant station(s)". A DXer is one who tries to pick up such distant stations on his receiver.) Refer to the publication and SW supply company lists in this bulletin for more reading material. Joining a SW/DX club will also be of immense help. Have fun with the hobby. It's one of the best around!

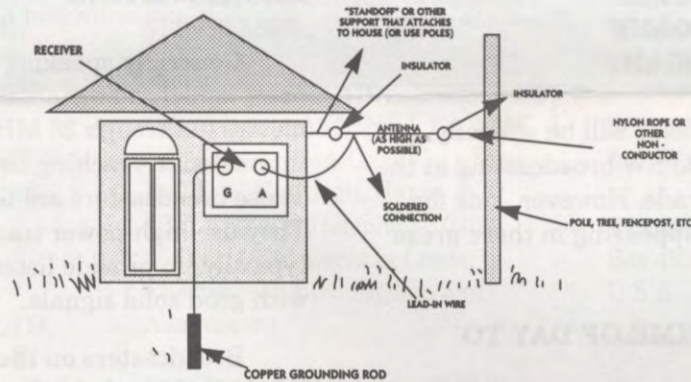
# Two Simple Outdoor Antennas

It is quite possible that the "whip" antenna on top of your receiver (if it has one) will be all of the antenna you want. However, like many HCJB listeners, you might be interested in putting up something that will pick up a few of the harder-to-hear stations. The best antennas are those which will give the listener the most signal strength from various radio stations with the least noise. ("Noise" meaning static, buzzes, hums, pops, etc. from nearby interference-causing devices such as sewing machines,

pool heaters and dimmer switches...to name a very few of many.)

There are many excellent books on constructing antennas for both the shortwave station listener and ham radio operator. We've listed a number of them in the Shortwave Publications list in this bulletin. However, you might wish to experiment with two very simple antennas that we could describe right here—the Horizontal or Random-Wire antenna, and the Vertical antenna.

## 1) The horizontal random-wire antenna:

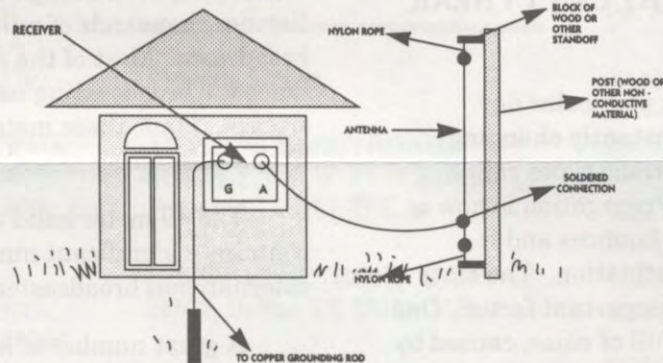


### Notes:

A horizontal wire less than several hundred feet in length will favour shortwave signals arriving from its sides. For example, a wire running north-south will favour signals coming from the west and east.

Try to get your antenna as high as possible, but be careful of power lines and local antenna height regulations.

## 2) The vertical:



The Vertical can be advantageous in that it is omnidirectional--it favours signals coming from all directions. Its disadvantage is that it is susceptible to picking up local electric noise, more so than a horizontal antenna.

After you become more familiar with the shortwave bands, you may want to concentrate your listening on one or two specific bands. (This is especially the case with listeners who eventually specialize in tuning in lower-powered stations on 120, 90 and 60 meters.) Antennas will work best for specific frequencies when they are a certain length. Again, refer to any number of antenna books for more information on building specific types and lengths of antennas. Antenna experimentation is one of the most fun parts of the hobby.

# QSLs — What they are and how to write for one

The letters "QSL" do not stand for anything. QSL is one of many "Q-codes" used by both amateur and professional communications people. It means "I acknowledge receipt." When followed by a question mark, it means, "Can you acknowledge receipt?" Hams often say "QSL?" when they are asking, "Did you understand all that I just said." "QSL" as a reply would mean "Yes, I did." Other Q-codes include QTH (location), QSB (fading), QRM (man-made interference) and QRN (atmospheric interference). There are many more.



A QSL is also an actual thing you can mount up on the wall, in an album or put in a box. It's a written statement from a station (whether ham, broadcasting or otherwise) which states that the listener did, indeed, hear that particular station. The idea is that a QSL is meant to prove one's reception of a particular station. Most QSLs from shortwave stations take the form of postcard-like cards. On one side one might find an attractive photo of the city the station is located in. On the back is the verification statement...something like,

*This confirms your reception of Radio Shangrila on August 15, 1994 at 0500 UTC on a frequency of 15250 kHz.*

Gerald Monk, Manager.

To acquire a QSL card, one must send the radio station a reception report. Here is what a good reception report should contain:

- 1) The **frequency** you heard the station on. (If your radio is such that you can't tell exactly what frequency you are on, wait until the program is over. The announcer may very well tell you the frequencies during station identification.) Most of the newer radios on

the market offer digital frequency readout, where the listener immediately knows exactly where he or she is tuned.

- 2) The **time** you are listening. Put this in UTC (Coordinated Universal Time). UTC time is the same as Greenwich Mean Time, based on the time at 0° Longitude which runs through Greenwich, England. To find out how many hours your own time zone is ahead of or behind UTC time, wait for station identification. The announcer will probably give the time in UTC and from that point on, you'll know. (Time stations such as WWV and WWVH on 2.5, 5, 10, 15 and 20 MHz also give the time every minute in UTC time.) UTC time is always written in "24-hour" time. For example, "1 p.m." is written "1300."
- 3) The **date** of your listening. (Remember that the date must also correspond to UTC time. For example, it is 9 p.m., Jan. 5 in New York City. New York, during the winter, is five hours behind UTC. Therefore, it is 0200 UTC, Jan. 6.)
- 4) **Program details.** Here at HCJB, we require the name of the program you were listening to along with a couple of lines describing what you heard over a minimum 15-minute period. This is the part of the a reception report that really proves (or doesn't prove) that you were listening to a particular station. Useful items to include would be the name of an announcer, what he or she spoke about, the names of songs played, news items and so on. When deciding what to include, ask yourself, "If I were the person reading this report, would this item convince me that this

ONDA CORTA



**RADIO NACIONAL DE VENEZUELA**  
Banda de 31 mt. frecuencia de 9.540 Khz.

person heard my radio station?" Faked reports containing items simply copied out of a program schedule are easily detectable.

On the other end of the scale, once you have a couple of convincing items in your report, leave it at that. You don't need to write pages of word-for-word copy of what the station aired. It's a waste of time, especially for the listener, as no one at any station is going to carefully read all of that.

The above points are absolutely necessary in any reception report seeking a QSL. However, the following items are also very useful to a station:

- 5) **Signal quality.** Was the signal strong, weak, interfered with, distorted? Broadcasters want to know how well or how poorly their signals are reaching your area. When reporting to a large, international station such as the BBC, VOA, or Deutsche Welle, a shortwave listener can use the SIO code. (Refer to the HCJB reception report forms for the SIO code explanation.)

When writing to smaller broadcasters whose audience is primarily local, it's best not to use any reception reporting code such as the SIO code. Write your signal description in words.

- 6) Your **comments** on the programming you heard. What did you like/not like about it? What would you like to hear more of/less of? Be honest. Many broadcasters look to you to help them decide what to do on their programs.
- 7) Mention what kind of **receiver** and **antenna** you are using.

## RETURN POSTAGE

On HCJB, you often hear us requesting listeners to send one IRC (International Reply Coupon) to help with return postage costs. IRCs are issued by post



offices in many (but by no means all) countries around the world. When you send an IRC to someone in another country, (a country where IRCs are recognized,) that person can take your IRC to his post office and exchange it for postage stamps. Some countries require only one IRC for the equivalent in airmail postage. Other countries ask for as many as five!

HCJB exchanges its IRCs in the United States where only 1 IRC is needed for airmail postage. Because we have offices in the U.S. and Canada, we will also accept the first-class amount in unused postage stamps from either of those countries in place of an IRC.

As mentioned above, however, IRCs are not recognized by personnel in a great many post offices around the world, even if their country officially recognizes them. This is the case in most Latin American countries. To supply a station in such a country with return postage, one must send them unused postage stamps of that particular country. Where does one get such stamps? At a number of DX stamps services. Several are listed in the Shortwave Supply Companies list in this bulletin. Many reporters forget about IRCs and stamps and put a U.S. dollar bill in with their reception report. If the money isn't stolen by someone along the mail route, this can work fine. It's convenient, cheaper than IRCs or unused postage stamps and usually the recipient can exchange the bill in his country, perhaps being able to buy himself lunch along with the stamps to answer your report. On the negative side, if a station comes to *expect* money with a reception report, it makes everything more difficult and expensive for QSL-seekers everywhere. The debate continues.



Radio hobbyists have been collecting QSL cards and letters ever since radio began. It's one of the most exciting, challenging and rewarding aspects of the radio hobby. To motivate listeners to write with reports, HCJB offers a different series of six cards each year.

# SHORTWAVE PUBLICATIONS

Here is a small sampling of what is available. Refer to the Shortwave Supply Companies list for addresses of dealers that sell these books.

**WORLD RADIO TV HANDBOOK** The most complete directory of shortwave stations that you will find. It also includes station addresses, maps of main transmitter sites and receiver test reports.

**PASSPORT TO WORLD BAND RADIO** The WRTH's main rival. Stations are listed by frequency, time and language, conveniently all in one graph. Program reviews. One of its main strengths is its comprehensive receiver reviews.

**MONITORING TIMES** magazine. Covers interests in shortwave broadcasting, ham radio, receiver reviews, mediumwave, clandestine stations, scanning, workshop projects and satellite TV. Subscription information at: Monitoring Times, P.O. Box 98, Brasstown, NC 28902, U.S.A.

**POPULAR COMMUNICATIONS** Shortwave and mediumwave DXing, pirate stations, scanning VHF and UHF, CB scene, emergency broadcasts and RTTY. "POPCOM" is available at many newsstands around the globe. Subscription information at: Popular Communications, 76 North Broadway, Hicksville, NY 11801-9962, U.S.A.

**SHORTWAVE MAGAZINE** Much of the same kind of material as Popcom and Monitoring Times, but perhaps with a few more workshop-type columns as well as a TV DXing feature each month. Subscription information at: Shortwave Magazine, c/o PW Publishing Ltd., FREEPOST, Subscriptions Dept., Enefco House, The Quay, Poole, Dorset BH15 1PP, England.

**TROPICAL BANDS SURVEY** Stations between 2,000 and 5,900 kHz are listed

in order of frequency with power, operating schedule and programming information. Available for 7 IRCs (seamail) or 9 IRCs (airmail) from DSWCI, c/o Bent Nielsen, Betty Nansens Alle 49, 1 tv., DK-2000 Frederiksberg, Denmark.

**CLANDESTINE STATIONS LIST** A comprehensive listing of all known political clandestine stations worldwide. Edited by Finn Krone. Available for 6 IRCs (seamail) or 7 IRCs (airmail) from the above address in Frederiksberg, Denmark.

**LA DXING** The May 1992 edition contains articles on Radio in the Galapagos Islands, pirate broadcasting in Colombia, visits to Ecuadorian and Peruvian stations and on DXing Andean countries. There is also a listing by frequency of Latin American stations. The address is: Tetsuya Hirahara, 5-6-6 Nukui-kita, Koganei-shi, Tokyo 184, Japan.

**PROCEEDINGS** series from Fine Tuning (1988, 1989, 1990, 1991, 1992/93, (1994/95 available in Sept/94). For the serious DXer. Exhaustive articles on such topics as computer use in QSLing and propagation, DXing New Guinea, antennas, receiver reviews, DXing specific areas of the world, synchronous detection, DXpeditions and tropical band propagation. Each book costs U.S. \$19.50 plus \$2 postage in the U.S.A. Outside of North America, postal costs are U.S. \$3 surface, or \$15 airmail. Orders to: Fine Tuning Special Publications, c/o John Bryant, RRT # 5, Box 14, Stillwater, OK 74074, U.S.A. (They request U.S. funds on a U.S. bank.)

**ARTHUR CUSHENS RADIO LISTENERS GUIDE** Written by veteran DXer Arthur T. Cushen, M.B.E. The 1990 edition contains *Secrets of Wartime Listening*, a fascinating new section dealing with Arthur's experiences

at listening during World War II. Available through: Arthur Cushen, 212 Earn St., Enwood, Invercargill, New Zealand. (NZ \$24.75, including GST, postage and packing).

**LATIN AMERICA BY RADIO**; Henrik Klemetz. To "unveil some lesser known aspects of Latin American broadcasting." Topics include Useful Hints for Identification, Latin American Music, Newscasts, Commercials and Advertising Formats and QSLing Techniques. There is also a huge appendix which features samples of everything from want-ads to weather reports and sign off announcements. Available through Tietoteos Publishing Company, P.O.B. 40, Ylaportti 1 A, SF-02211 Espoo, Finland.

**SECRETS OF SUCCESSFUL QSLING**; Gerry Dexter. An entertaining and extremely useful book on how to build-up your QSL collection. Write to Tiare Publications (address in SW companies list) for their catalogue.

**THE SHORTWAVE RADIOGUIDE**; By John A. Figliozzi—Thousands of listings of programs broadcast to North America on shortwave. Very easy-to-use. Send SASE for the price to: John Figliozzi, 45 Algonquin Road, Clifton Park, NY 12065, U.S.A.

This Shortwave Publications list is by no means complete, and HCJB cannot accept responsibility for instances where the publication may not be delivered or meet the DXers expectations. This is only to "whet your appetite" for the huge amount of helpful books, magazines and bulletins now available to help make our hobby more enjoyable.

May we recommend *The Booklist*, published by Radio Netherlands, which is a more complete guide to what is available. It's free from Radio Netherlands, English Section, P.O. Box 222, 1200 JG Hilversum, Holland.

# SHORTWAVE SUPPLY COMPANIES

Below is a partial list of companies who deal in supplies for the shortwave hobbyist. Write to them for their catalogues.

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## Receiving equipment and accessories (and often books)

**AOR (UK) LTD.** Room 2, Adam Bede High Tech Centre, Derby Road, Wirksworth, Derbys DE4 4BG, England (telephone: 0629-825926)

**ASK ELECTRONICS LIMITED** 248-250, Tottenham Court Road, London W1P 9AD, England (telephone: 071-637-0353)

**ATLANTIC HAM RADIO LTD.** 368 Wilson Ave., Downsview, ON M3H 1S9, Canada (telephone: 416-636-3636)

**COM-CENTRE** 175 New Windsor Road, P.O. Box 19-558, Auckland 7, New Zealand (telephone: 09 626-3213)

**ELECTRONIC EQUIPMENT BANK (EEB)**, 323 Mill Street N.E., Vienna, VA 22180, U.S.A. (telephone orders: 800-368-3270)

**GILFER SHORTWAVE**, 52 Park Avenue, Park Ridge, NJ 07656, U.S.A. (telephone for orders: 800-445-3371)

**GROVE ENTERPRISES, INC.** P.O. Box 98, Brasstown, NC 28902, U.S.A. (telephone: 704-837-9200)

**MARTIN ELECTRICAL SALES & SERVICE** 26 Dundee Place, Blockhouse Bay, Auckland, New Zealand (telephone: 09-677-239)

**NEVADA COMMUNICATIONS** 189 London Road, North End,

Portsmouth PO2 9AE, England (telephone: 0705-662145)

**NORHAM RADIO SUPPLY INC.** 4767 Steeles Ave. West, North York, ON M9L 2W1, Canada (telephone: 416-745-1000)

**SEAWAY COMMUNICATIONS CO.** 3481 Rosedale Ave., Cornwall, ON K6K 1V5, Canada (telephone: 613-938-3896)

**SOUTH MIDLANDS COMMUNICATIONS LTD.** SMC HQ, School Close, Chandlers Ford Ind. Est., Eastliegh, Hants, SO5 3BY, England (telephone: 0703-255111) (Also stores in Leeds, Chesterfield, Birmingham and Axminster.)

**STRAIT COMMUNICATIONS LTD.** P.O. Box 11-160, Wellington, New Zealand (telephone: 0 4 801 5027)

**UNIVERSAL RADIO, INC.** 6830 Americana Pkwy., Reynoldsburg, OH 43068, U.S.A. (telephone orders: 800-431-3939)

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## Vintage Radio

**ANTIQUÉ ELECTRONIC SUPPLY**, 688 W. First Street, Tempe, AZ 85281, U.S.A.

**PUETT ELECTRONICS**, Box 28572, Dallas, TX 75228, U.S.A.

**FAIR RADIO SALES COMPANY**, P.O. Box 1105, 1016 E. Eureka St., Lima, OH 45802, U.S.A.

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## Companies specializing in antennas

**ATN ANTENNAS**, P.O. Box 80, Birchip, Victoria, 3483, Australia.

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## Companies specializing in books

**CHEVET BOOKS**, 157 Dickson Road, Blackpool, Lancashire, FY1 2EU, England (telephone: 0253-751858). Write for their Vintage Wireless & Broadcasting Book and Valve List.

**DX RADIO SUPPLY**, P.O. Box 360, Wagontown, PA 19376, U.S.A.

**TIARE PUBLICATIONS**, P.O. Box 493, Lake Geneva, WI 53147, U.S.A.

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## Stamp companies for DXers

**DX QSL ASSOCIATES** 434 Blair Rd. NW, Vienna, VA 22180, U.S.A.

**DX STAMP SERVICE** c/o G.N. Robertson, 7661 Roder Parkway, Ontario, NY 14519, U.S.A. (A self-addressed-stamped-envelope will get you the latest price list.)

**JAMES E. MACKEY** P.O. Box 270569, West Hartford, CT 06127-0569, U.S.A.

**WILLIAM J. PLUM**, 12 Glenn Road, Flemington, NJ 08822, U.S.A. (Send a self-addressed-stamped-envelope for a price list.)

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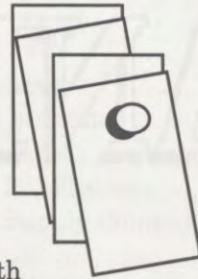
**DX Edge** (sliderule map device to help determine times of sunrise/sunset terminator; dark/light areas of earth, etc.)

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**XANTEK, INC.**, P.O. Box 834, Madison Square Station, New York, NY 10159, U.S.A.



# DX CLUB LIST



Sample bulletins are gladly sent by these clubs, but they would appreciate help with the postage costs. Unless otherwise stated, it would be a good idea to enclose several IRCs or one to two U.S. dollars.

**AMERICAN SHORTWAVE LISTENERS CLUB (ASWLC)**, 16182 Ballard Lane, Huntington Beach, CA 92649-2204, U.S.A.

**BENELUX DX CLUB (BDXC)**, Postbus 150, NL 5270 AD, Sint-Michielsgestel, Holland. Bulletin is in Dutch and English.

**BRITISH DX CLUB**, 54 Birkhall Road, Catford, London, England, SE6 1TE.

**CANADIAN INTERNATIONAL DX CLUB**, 79 Kipps St., Greenfield Park, PQ J4V 3B1, Canada. Sample copies of their bulletin are \$2 (Canadian) each in Canada and the U.S. and \$3 elsewhere, or IRCs at the rate of 50 cents each.

**DANISH SHORTWAVE CLUBS INTERNATIONAL**, Tavleager 31, DK-2670 Greve, Denmark.

**DX AUSTRALIA**, P.O. Box 285, Mt. Waverley, Victoria 3149, Australia. A sample bulletin costs 4 IRCs, U.S. \$2 or \$1.50 in unused Australian stamps.

**FINE TUNING**, A newsletter specializing in rare DX. Sample issues are available for \$1 or 2 IRCs from Fine Tuning, 779 Galilea Court, Blue Springs, MO 64014, U.S.A.

**FINNISH DX ASSOCIATION**, Tiedotussihteeri, PL 454, 00101 Helsinki 10, Finland.

**INTERNATIONAL SHORT WAVE LEAGUE**, 10 Clyde Cres., Wharton, Winsford, Cheshire, CW7 3LA, Great Britain. ISWL is both an amateur radio and SWBC club.

**MICHIGAN AREA RADIO ENTHUSIASTS, INC.(MARE)**, P.O. Box 81621, Rochester, MI 48303, U.S.A. Sample copies of their bulletin are U.S. \$1 each.

**MINNESOTA DX CLUB**, P.O. Box 3164, Burnsville, MN 55337, U.S.A.

**NEW ZEALAND DX RADIO ASSOCIATION**, c/o Mr. A.J. MacArthur, Long Beach, RD 1, Port Chalmers, New Zealand.

**NORTH AMERICAN SHORTWAVE ASSOCIATION (NASWA)**, 45 Wildflower Road, Levittown, PA, 19057, U.S.A. A sample copy of their bulletin is \$2 in North America and \$3 overseas.

**ONTARIO DX ASSOCIATION (ODXA)**, P.O. Box 161, Station 'A', Willowdale, ON M2N 5S8, Canada. A sample bulletin is \$3 in U.S. or Canadian funds.

**SANDY RIVER SHORTWAVE RADIO DXERS ASSOCIATION**, c/o Duncan & Brenda Steele, RR # 1, Box 1560, Norridgewock, ME 04957, U.S.A. An informal club with an occasional bulletin.

**SOCIETY TO PRESERVE THE ENGROSSING ENJOYMENT OF DXING (SPEEDX)**, P.O. Box 196, DuBois, PA 15801-0196, U.S.A.

**SOUTHERN CROSS DX CLUB**, G.P.O. Box 1487, Adelaide 5001, Australia.

# ANDEX

We hope that this introduction to shortwave has been of help to you. (Incidentally, you may come across the term *World Band Radio*. It is a new term which denotes shortwave broadcasting.) Here at the Voice of the Andes, we realize that the first station a great number of people pick up is HCJB. We invite your questions on SW listening.

In January 1974, HCJB was happy to inaugurate a listeners' club called Andes DXers International, abbreviated to ANDEX.

It's a club to give HCJB listeners an opportunity to become more familiar with the station as well as with other club members. Every two months, ANDEX sends out ANDEX International, which contains articles on HCJB programs, other Ecuadorian broadcasters and Ecuadorian culture. There is also the *DXer of the Month*, featuring a particular ANDEX member, and *My Favourite QSL*, where ANDEX members explain why their most prized QSL is just that. We plan to incorporate more articles on the shortwave listening hobby itself to give members tips on hearing some of the more exotic countries around the world.

ANDEX members are sent an attractive wall certificate as well as a wallet-sized membership card.

If you are not already an ANDEX member and are interested in joining, fill out the enclosed application form and send it to the office most convenient for you.

Most of all, we invite your questions on Jesus Christ. This special edition of ANDEX International was prepared especially for those who are asking the same types of questions about shortwave. We want to introduce you to One who invites questions on eternal matters, Jesus Christ, the Son of God. Jesus tells us,

*Ask and it will be given to you; seek and you will find; knock and the door will be opened to you. For everyone who asks receives; he who seeks finds; and to him who knocks, the door will be opened (Luke 11:9,10 NIV).*

Take good care and God bless.

Richard McVicar  
ANDEX Director



*Rich & Lisa McVicar host the DX Partyline program, broadcast Saturdays. DX Partyline contains all kinds of information on how to tune in exotic shortwave stations.*



**ANDEX INTERNATIONAL**



is the official bimonthly publication of *Andes DXers International*, a listeners' club operated in conjunction with DX Partyline broadcast on HCJB.

**ANDEX Director** Richard McVicar