

ANDEX



INTERNATIONAL

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INTERNATIONAL DXER OF THE YEAR



Dave Browne presenting Award to Clayton Howard

He grew up in China, fell from a radio tower, studied nuclear physics, was married in HCJB's radio studios, and was just awarded ANARC's INTERNATIONAL DX-ER OF THE YEAR AWARD.

It all began near Canton, China when he was six or seven years of age. His father was a professor in a Christian University in China. Sometime around 1925 or 1926 a man came through demonstrating the marvel of radio. He spent the whole day stringing an antenna from house to house and tree to tree. A large crowd of people gathered that night to listen to the radio—static, blasting noises, blub—but no program. That was his first experience at DX-ing.

Nearly fifty years later ANARC Convention awarded Clayton Howard its INTERNATIONAL DX-ER OF THE YEAR AWARD.

Clayton does his DX-ing on a Drake 2-C and a newly purchased Yaesu FRG-7. His antenna is a Mosley SWL-7, with a SWL-TG Antenna Tuner.

He arrived at HCJB during World War II. He was corresponding with a lovely young lady back in Chicago named Helen. One night his mother gathered a group of friends, including Helen, around a shortwave radio in her Chicago home. He gave Helen her engagement ring by radio. At the precise moment his mother reached over and placed an engagement ring on Helen's finger as Clayt, while speaking over the shortwave radio, asked her to be his bride. Because of travel conditions during WW II it was almost impossible to travel over a long distance, so the young couple had their wedding in the radio studios of HCJB, Quito, Ecuador. A crowd of about fifty people were jammed into the small record library and studio on September 12, 1942. Helen had the ceremony pre-recorded on a "disc" before she left Chicago. There were no tape recorders in those days! The War Department, in the process of censoring the recording, scratched the home-made disc recording. During the wedding ceremony the recording stuck and kept repeating "cherish," cherish," "cherish." The Howards celebrated their 35th Wedding Anniversary on September the 12th.

The mail response was excellent from all parts of the world! HCJB, in commemoration of that great event, sent out souvenirs of an Indian ring and a picture of the wedding cake.

A few months later Helen was walking by a sixty foot wooden tower which was located on the studio grounds of HCJB. She thought to herself, "What if Clayt fell from that thing?" The next morning she prayed for the Lord's protection. Sure enough that very morning something gave way in the tower and the wooden tower fell down with Clayt standing inside working on it. He stayed in it. God spared his life that day for greater things.

Continued on pg. 3

IONOSPHERIC RADIO PROPAGATION

Part III

by Jim Heck

HCJB Engineer, Pifo

In previous ANDEX issues the subjects of ionospheric radio propagation and the normal structure of the ionosphere were introduced. In this issue we would like to suggest two methods by which you can predict your own radio condition data from your location to any station in the world.

During World War Two the Allied Forces found it necessary to develop methods of predicting the expected radio propagation between worldwide transmitting locations. To develop such a predicting system many ionospheric sounder stations were established to gather data describing the ionosphere. After WW II this network of sounding stations was increased. During the International Geophysical Year (1957) still more stations were added. Today, there are nearly 150 such stations. From this worldwide data network it has been possible to develop a picture of the ionosphere as it changes from hour to hour, month to month, sunspot number to sunspot number.

This "picture" is very complicated, and the data representing it requires the application of high speed electronic computers. The U. S. Department of Commerce, Office of Telecommunication in Boulder, Colorado, U.S.A., has developed the computer techniques which allow very accurate prediction of radio propagation conditions between any two points on this earth. This data can be purchased, but is beyond the budget of the average DX'er. The Office of Telecommunications, however has, produced four books which allow a simplified hand calculation of radio conditions. The library of every serious DX'er and "ham" should contain these books. They are called **Telecommunications Research and Engineering Report #13, Ionospheric Predictions, Volumes 1, 2, 3, and 4.** Volume 1 gives the explanations necessary to carry out the graphical calculations of the Maximum Usable Frequency between any two points on the earth's surface. The cost of it is thirty (30) cents in U. S. currency. Volumes 2, 3, and 4 give graphical data over world maps for low, medium, and high sunspot numbers. They cost \$3.00 U.S. each. These volumes can be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington,

D.C. 20402. Ask for Vol. I, catalogue #0300-0318; Vol. II, cat. # 0300-0318; Vol. III, cat. #0300-0320; Vol. IV, cat. #0300-0321.

Stated briefly here, the DX'er determines his location and the DX station's location on the world maps in the books. After drawing on paper the radio signal path between these locations, he locates the ionospheric reflection points along the path. The radio path drawing with ionospheric control points is then laid over the world maps containing the data related to the conditions of the ionosphere. He then compiles data for the hour of the day, month of the year, and for high and low sunspot conditions. With this data in hand, the Maximum Usable Frequency for the present sunspot number can be calculated by a simple linear interpolation between the high and low sunspot data. Page 5 of Volume I gives the formula to use to carry out this interpolation. If you own a HP25 programable calculator, the program on page 84 in the **Applications Programs** handbook can be used to carry out this calculation in seconds. The data developed by the graphical method can be retained and reused over and over again to calculate the new radio conditions as the solar conditions change. Accurate sunspot number data can be received from WWV at 18 minutes after the hour, twenty-four hours a day on 2.5, 5, 10, 15, and 20 mHz. At these times the 10.7 cm solar flux is given. The sunspot number can be calculated by using the formula on page 2 of Volume I or by reading the value directly from figure 2 on page 7 of the same book.

Using the graphical data for "Ionospheric Predictions" the following data was developed.

QUITO-LONDON, ENGLAND. Sunspot number 21 for Sept. 1977.

1800 GMT	MUF=20.0mHz
2000 GMT	MUF=18.8 mHz
2200 GMT	MUF=12.9 mHz

HCJB used 19 and 16 meters for this transmission until 2100 GMT so that both bands should be usable until that hour.

To be continued

PLAINS GIRL

IN THE ANDES

by Holly G. Schmiess

Coming from the plains state of North Dakota where, as one friend said, "you must tilt your camera to create hills on your photo", I am fascinated with the Andes Mountains of Ecuador.

In a cloudy view from the plane window, they first appeared as green velvet wrinkles. Then patchworks of farmland came into focus. Soon Quito emerged, tucked between the folds like a sleeping child—an illusion, for Quito teems with motion.

Only the surrounding mountains are still: Pichincha on the west, Antisana east, Cotopaxi south, and Cayambe northeast. All are extinct volcanoes, all but Pichincha are snow-capped.

But the peaks have been more to me than compass points. Each one has a unique character:

Pichincha is like a good friend, hovering protectively over Quito. Almost anyone can climb it.

Cotopaxi is more distant, proud and formidable. It's a lonely, perfect, white cone on the horizon.

Cayambe is a stern, irregular peak glaring across Quito at Cotopaxi.

But most mysterious and illusive are the three heads of Antisana. Like veiled ladies, they don't often flaunt their beauty. When they do appear, I feel as if I've discovered an awesome secret.

It was a clear warm evening when my hosts and I walked up a knoll near Pichincha. From there we could see the other peaks unusually arrayed. Recent rains had become mounds of fresh snow on each height. The setting sun was a blazing orange. Cotopaxi, Cayambe, and even Antisana lit up like brilliant torches against the paling purple sky. We stood transfixed until they were mere outlines in the dusk.

I'll leave behind a lot of friends in Ecuador, and these silent peaks will be among them.

YEAR AWARD



Clayt was first licensed a "ham" in 1932 and has held the same call, W9KJZ, ever since. He graduated from Wheaton College in 1939 with a major in physics. He then did a year of graduate study in nuclear physics at the University of Chicago. He arrived at HCJB in May 1941 and served on the engineering staff until January 1974, at which time he was given the assignment of bringing the ANDEX club to a reality. Longtime friends of HCJB know that Clayt is no newcomer to THE DX PARTY LINE. He and Helen have been the hosts for 14 of the 16 years of this most popular program on HCJB.

Clayton and Helen have three married children. Ruth and her family serve as missionaries in Japan. Their son "Chuck" (Charles) serves with his family at HCJB's jungle hospital in Shell Mera, Ecuador. Their son "Lee" (Leland) and his family serve with the Inter-Varsity Christian Fellowship in the U.S.

The big highlight in the life of the Howards has been seeing ANDEX get off the ground and then having the opportunity of seeing and meeting DX-ers in various radio clubs. Their favorite verse of Scripture expresses their purpose of being here at HCJB. "My purpose is to give life in all its fullness" (John 10:10 Living Bible).

"WHAT IS YOUR BEST QSO?"

A few days ago I worked fifty-six Japanese ham operators from Quito! Yes, the conditions were great. My heart still thrills at working those rare DX stations: VR6TC, 9M6DQ, ZB6DN, 9H1ET, CT3AF, A4XVG, etc.

However, my best QSO was the night I tuned my shortwave radio and picked up HCJB, "The Voice of the Andes." The program was "The Auca Story." It was a dramatic presentation of the life and martyrdom of five missionaries in Ecuador. As I listened I could not get away from the claims of Jesus Christ. I thought, "Why would anyone be so stupid to go to the jungles and preach the Gospel to savages?" I kept on listening to the series over the weeks and months. Then it occurred to me, "Wil, you do not have anything worth giving away. You do not know Jesus Christ as your own personal Saviour." When the program went off the air I got down on my knees and asked God to forgive me of my sins and I asked Jesus to come into my heart and save me.

Have you had a QSO with God?

That may sound strange. But you can have a daily "Sked" with Him. First you have to establish the time and frequency. Why not begin right now? Here's how you can meet Him.

Conditions are not too good between man and God. In fact, they are terrible. There's weak propagation, QRN, QRM, splatter! The band is dead. The fact is "all have sinned and fall short of the glory of God." NO one is omitted. We have all sinned.

There is a penalty for sin. "The wages of sin is death" (Romans 6:23). The penalty must be paid. Everyone who sins must either pay the penalty or find someone who will pay it for him.

God tells us in His Word that the penalty has been paid. "God demonstrates His own love toward us, in that while we were yet sinners, Christ died for us" (Romans 5:8). Jesus paid our death penalty. Christ died in our place on the Cross.

Because He died for you, God can now offer to you eternal life freely. "For by grace you are

saved through faith; and that not of yourselves, it is the gift of God; not as a result of works, that no one should boast" (Ephesians 2:8,9). There is nothing that you can do to merit salvation. Christ did it all for you. Thus, God saves you by grace. Eternal life is His free gift.

To establish your QSO you must receive Jesus Christ into your heart as your own personal Saviour. "If you confess with your mouth Jesus as Lord, and believe in your heart that God raised Him from the dead, you shall be saved; for with the heart man believes, resulting in righteousness, and with the mouth he confesses, resulting in salvation . . . for whoever will call upon the name of the Lord will be saved" (Romans 10:0, 10, 13).

Just as our best QSO's are personal, our relationship with God must be personal. Take a few moments right now and put your trust in Jesus. Form your own thoughts and words. You may want to say something like this:

I realize that I have sinned against the LORD God. But I believe that He loved me and sent the Lord Jesus Christ to die for my sins, and bring me to God. I believe that Christ died for my sins and that He rose from the dead and lives today. I want Jesus Christ to come into my heart and save me. I now surrender my all to Him and receive the free gift of eternal life.

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