

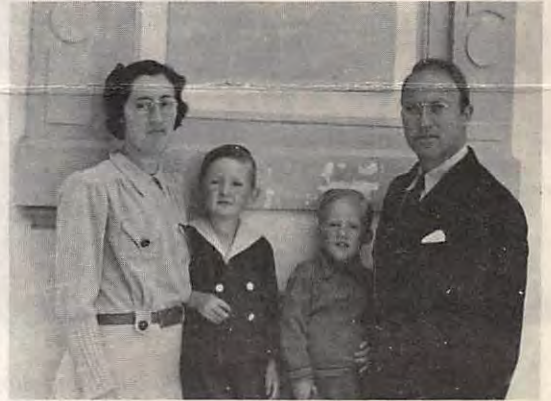


### PIONEER HCJB ENGINEER WILL BE MISSED



*First two quad antennas used by HCJB, 1943*

The year was 1938. HCJB had been on the air in Quito for seven years. From the small 200-watt transmitter used for the first broadcast on Christmas Day, 1931, the facilities had increased by the addition of two other transmitters, both of low power. It was felt that the time had come to look for the provision of a high-powered shortwave transmitter. If HCJB was to meet the opportunities, higher power was essential. Dr. Clarence W. Jones, one of HCJB's co-founders, was in the United States seeking help and had located a used 5,000-watt transmitter for sale. In a miraculous way, \$10,000 was raised to purchase this transmit-

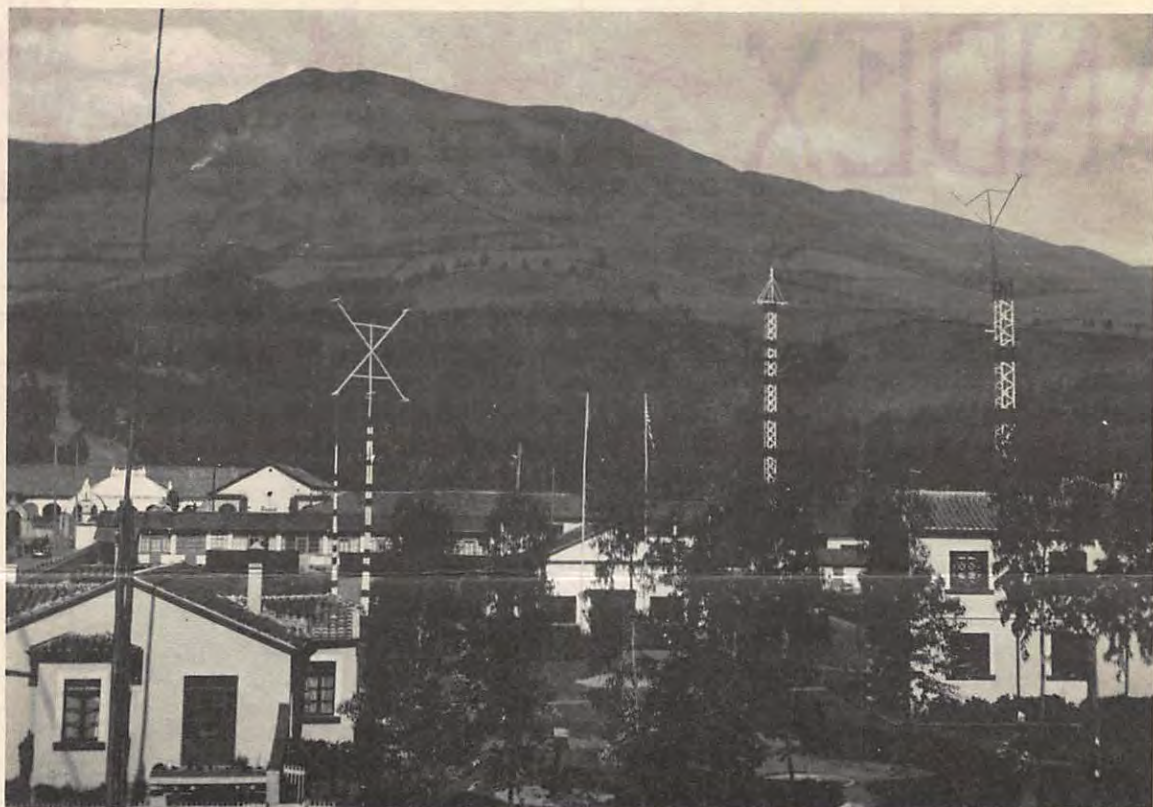


*Clarence Moore family, Quito, 1941*

ter. It seemed the Lord had answered prayer.

At this moment another man came into the picture who was to have a large influence on the technical future of HCJB. Clarence C. Moore, a Menonite minister living in Michigan, heard Dr. Jones during a broadcast over WMBI in Chicago. He heard about the planned purchase of the used transmitter. He felt the Lord wanted him to help in some way. As a result, he investigated and found that the old transmitter was obsolete and would not really do the job as required. To make a long story short, Clarence offered to construct a new 10,000-watt transmitter for about the same price as was asked for the old secondhand one. He proceeded to build the new transmitter using facilities provided for him by the R. G. LeTourneau Company in Peoria, Illinois.

Toward the end of 1939 the new transmitter was completed and Mr. Moore, along with his family, travelled to Ecuador to install the new equipment. It was on Easter Sunday, 1940, when the 10,000-watt transmitter was dedicated and placed in regular operation. The frequency used for this new



*HCJB compound showing quad antennas, 1944*

high-power service was 12,455 kHz. There was an immediate response from listeners in all parts of the world. HCJB could now rightly claim to be The Voice of the Andes!

Clarence Moore's second major contribution to HCJB was the development of the quad antenna. The original four-element beam used with the 10,000-watt transmitter gave some problems with corona effects in the nearly 10,000-foot altitude of Quito. Clarence went on a vacation to Ecua-

dor's coast in late 1942. He gave the antenna problem priority during those days and the idea of the quad was born. Upon his return to Quito, the first quad was built. Tests were made comparing the reception from the new quad and the old beam. Results were excellent and soon other quads were built for other transmitters and frequencies. The quad antenna not only solved the problems inherent with the old beam, but was compact and ideally suited to the small area available at that time for antennas. The quad is now a widely used antenna by radio amateurs the world over. HCJB continued to use several quads until the transmitters were moved to a new site some thirteen miles east of Quito. With plenty of space available, larger curtain-type antennas were then constructed. HCJB still uses one quad antenna for transmissions to Europe on the thirteen-meter band. This is a high-gain model using twenty-four quad elements.

**ANDEX International—**

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HCJB



ANDEX  
INTERNATIONAL  
HIGH FIDELITY SOUND

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The Moore family left HCJB in 1945 at which time Clarence established Crown International in Elkhart, Indiana. This company has been well known for many years in the high-fidelity field for its manufacture of tape recorders, amplifiers, and speakers. Mr. Moore also owned and operated an

AM radio station in Elkhart, WCMR. During the passing years, Clarence Moore has been instrumental in helping many Christian radio stations and recording studios get off the ground. It is at the Crown manufacturing facilities that HCJB has been constructing its new 500-kw shortwave transmitter, soon to be on the air in Ecuador.

Clarence C. Moore passed away on January 24, 1979, after suffering a heart attack in his home in Syracuse, Indiana. He is survived by his wife, Ruby, and three children, Clyde, Edwin, and Kay. He was 74 years of age at his death. He will be missed by many and we dedicate this issue of AN-DEX International to his memory. He was truly one of the engineering pioneers with HCJB and his contribution to this ministry will never be forgotten.

## CONCLUSIVE EVIDENCE

Easter celebrates the resurrection of Jesus Christ. Christianity is founded on that event. If Christ did not rise from the dead, then Christianity is without a foundation. We rest the case upon that one fact.

What evidence do we have for his resurrection? History tells us that his death on the cross was a public event known to everyone. As Paul said to King Agrippa, "This thing was not done in a corner" (Acts 26:26). The news spread very quickly over the known world. Time after time Christ met and talked with his disciples after his resurrection. On one occasion he was seen by five-hundred brethren at once. If you cannot believe their testimony, then a thousand more witnesses to this fact would not be believed.

You probably believe that Julius Caesar once lived on the earth. However, we have ten times as much evidence to the fact that Jesus lived and died and rose again. Has any day of the week been set apart in memory of Caesar or any other historical figure? Millions of the most intelligent people on earth have observed the first day of the week continuously for nearly two-thousand years in memory of Jesus who rose again from the dead.

Many of the greatest legal minds have carefully weighed all the evidence and accepted it. "I find more sure marks of authenticity in the Bible than in any profane history whatever," said Sir Isaac Newton, the great astronomer and scientist. An-

other profound thinker and writer, Isaac Taylor, said, "The integrity of the records of the Christian faith is substantiated by evidence in a tenfold proportion, more various, copious, and conclusive than that which can be adduced in support of any other ancient writings." Chief Justice Bushe added, "If those facts concerning the life, death, and resurrection of Christ are not established, nothing in the history of mankind can be believed."

If you cannot believe and accept these as fully established facts, then you ought to be consistent and toss all history overboard and refuse to believe any of it.

Although we have such an abundance of external evidence, this is not all the evidence, thank God! When an individual believes this evidence and puts his personal trust in the death and resurrection of Christ for his personal salvation, God supplies him with amazing new evidence, the indwelling of God's Spirit within his heart. "The Spirit himself bears witness with our spirit, that we are the children of God" (Romans 8:16).

This can all be summed up beautifully in the words of a well-known hymn: "He lives! He lives! Christ Jesus lives today! He walks with me and talks with me along life's narrow way. You ask me how I know he lives? He lives within my heart!" Does Christ live in your heart? Your eternal destiny depends on your answer to this question!

*Adapted from a tract*

## FREQUENCY SELECTION

*By Don Jensen*

*Part 1*

How does a major international broadcaster make up its program schedules? When will it broadcast to a certain area of the world? How about frequency selection? How are the shortwave frequencies picked and why do they change at least several times each year?

First, the schedule selection is a relatively easy matter. To a great degree, the "when" is determined by the listening patterns of the intended audience. It would be senseless to schedule an English-language shortwave service to North America at 10:00 A.M. Eastern Standard Time. Relatively few listeners in the United States or Canada do their listening at that hour. Most

people are at work or in school. Most North American listeners do their tuning during the evening hours. Thus, you will find many international broadcasters beaming programs toward the United States and Canada during their prime evening time, say between 0000 and 0500 GMT. Likewise, the English-language programs from the larger African and Middle Eastern stations, which are heard by North American listeners during their afternoon hours, are probably intended for an audience in the British Isles. The North American afternoon, of course, is evening in Great Britain when its largest potential audience is tuned in.

For propagational reasons, reception during the North American prime evening hours is generally better for stations to the east, Europe and Africa, because a path of darkness exists between the transmitting station and the point of reception. This is also true for stations in South America such as HCJB. A dark path is essential on the lower shortwave frequencies.

Asian stations are at somewhat of a disadvantage. They are farther away from North America than the European and African transmitters. Also, some of their most favorable reception paths to North America occur in the early morning which is not the most popular listening time for American SWLs. There are some stations, Radio Australia, Radio Japan, and Radio Peking to name a few, that are often heard well during the North American evening. But strange things are scheduled by some stations. For years, Radio Thailand has scheduled a so-called North American service in English from 0415 to 0530 GMT. Indeed, this would be a terrific time in terms of listener convenience. But it is a wretched time, propagationally speaking. This particular service has probably never been heard in North America! However, Radio Thailand can be heard Stateside mornings when it is, ostensibly, directed to audiences elsewhere. Inscrutable!

*To be continued*

## **DXer OF THE MONTH**

Our DXer for this month has had a long history of involvement in radio and communications. Milo Getz has been interested in shortwave listening since he was a student in the seventh grade. He is currently employed as an operator by Western Union. This means that he not only spends his



*Milo Getz tuning his Zenith portable*

working hours in communications, but many of his free hours as well.

Milo lives in St. Charles, Missouri, a small town located about twenty-five miles west of St. Louis. From this location he does his shortwave listening with a Zenith Trans-Oceanic Royal 1000 battery-operated portable receiver. His antenna is quite simple and consists of the built-in whip which is about five feet in length. He considers himself mainly a shortwave listener and finds a great deal of enjoyment as he listens to programs from around the globe. Most of his listening is done between the hours of 0130 and 0230 GMT. He usually listens for about thirty minutes at a time. He doesn't remember exactly when he first heard HCJB, but it was between twenty and twenty-five years ago.

In addition to the speaker built into the receiver, Milo uses a large Magnavox table-model speaker which gives excellent tonal quality. When conditions are rough, he finds a pair of Archer dynamic headphones make the programs easier to understand.

Milo enjoys listening to the DX Party Line program from HCJB. He joined ANDEX toward the end of 1976. He is member No. 2287. This is the only radio club he has joined. We are happy to have him as an active member of ANDEX so we can introduce him to our other members. Milo has other interests which include photography, fine arts, and crafts. After nearly fifty years of shortwave listening, he still finds the hobby fascinating. We trust this will continue to be the case for many more exciting years. Our congratulations to Milo Getz, our DXer of the Month for April, 1979.