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ANDEX INTERNATIONAL

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Hasta La Vista...

Farewell, ANDEX!

by Ken MacHarg

Before I ever came to Ecuador to live and work, ANDEX was part of my window on South America.

In fact, I have fond memories of reading ANDEX from issue number one! Yes, I am one of the original

members--membership #24 in fact. And I am proud to say I have a complete collection of every issue ever published.

It was in the pages of ANDEX that I learned some of the unique customs of Ecuador--the "old men" (stuffed figures which are set on fire at midnight on New



Year's Eve) ... *cuy*, more commonly known as guinea pigs, which are grown in the Andes, not as pets, but for food ... holidays very different from my own (Independence Day, Quito Day and many others).

Andex has also been a window to this wonderful world of shortwave broadcasting. As I page through my

business and have continued my interest over the years.

Familiar names crop up in these ANDEX pages ... names of people on and off the air through the years, many of them retired now or in other lines of work--*Clayton and Helen Howard*,

back copies, I find information on building antennas, propagation, QSLing, and so much more. In fact, I admit that it was Clayton Howard on the "DX Party Line" and the ANDEX bulletin which really got me started in this

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Earthquake hits Ecuador

by Curt Cole

On March 28th, at 6:03 p.m. EST, an earthquake hit the central Andean highlands of Ecuador. Curt Cole of HCJB's English Language Service visited the area the next morning...

As I headed south down the Pan American highway, I couldn't help but think of the events of the previous night. It had been just a little after

They all had the same look in their eyes--a look of fear and uncertainty.

6:00 in the evening, and my family had just sat down for supper.

"Did you feel that?" my son asked. I slowly nodded my head as I watched the plants in our dining room sway from side to side. Then another stronger sensation of movement. I looked at my family. They all had the same look in their eyes--a look of fear and uncertainty. Suddenly, as quickly as it started, the quake was over. We breathed a huge sigh of relief and thanked God there wasn't any damage. "Just another little tremor," I thought to myself.

How wrong I was. Reports from the epicenter of the earthquake didn't begin to filter in until several hours later. And it wasn't until I arrived at work the next morning that I read the headlines: "Earthquake 5.7 on the Richter scale"; "Epicenter, 100 kilometers [60 miles] south of Quito"; "Damage in the towns of Latacunga, Salcedo and Pujilí"; "Fear many have died under collapsed homes."

And that's how I found myself on that Thursday morning, riding along with two HCJB Spanish



*(above)
Ruins after
the
earthquake
on
March 28.*



*(below)
One of the
children in
the
earthquake
area
still shares a
smile.*

Radio newsmen to the areas most affected. As I glanced out my window at the patchwork green hills of the high Andean plain, I wondered what I would see. I had never been to the site of an earthquake before.

After two hours we pulled into the small pueblo of Pujilí, a typical small Andean town, built around a large square plaza. A large crowd had gathered there, listening to promises of help from Ecuadorian

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Filters

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Filters are a common linear stage consisting of a combination of circuit elements designed to separate signals so that the currents and/or voltages in a specific part of the frequency spectrum can be accepted while others can be rejected.

Filters can be divided according to their function:

- Low pass filters
- High pass filters
- Band pass filters
- Band stop filters

All these types can be divided into the two broad categories of:

1. **Passive:** Composed of passive components such as resistors, capacitors and inductors.

No power supply is needed. There may be amplifiers before and after a passive filter, but no power is necessary for the filter's equations to hold true. The devices are reciprocal in that the signal can be placed into or taken out of either end. One problem with passive filters in some applications is called *group delay*. This is the difference in time that it takes various frequencies to pass through the device.

2. **Active:** A circuit needing a power supply, usually due to some sort of amplification taking place.

An active circuit consists of the passive components mentioned above, but usually does not utilize inductors. Active filters have the following advantages:

- they are usually less expensive than passive filters requiring inductors
- they are generally easier to tune
- they usually provide gain, eliminating

insertion loss

- usually have high input impedance and low output impedance

Active filters do have a few disadvantages:

- The upper frequency limit is limited to a few hundred kilohertz if low-cost op-amps are used
- They have a limited dynamic range (the output voltage swing must be less than the DC supply voltage)
- Strong signals removed from the target signal may still overload the active device and distort the desired signal

History:

Conventional filter theory goes back to the pioneer work of G. A. Campbell and O. J. Zobel in the early 1920s. The beginning of modern filter theory is credited to S. Butterworth and S. Darlington, in the 1930s. Although filter designers knew that mathematical polynomials had certain "filter-like" qualities when plotted on a frequency graph, it was the digital computer that enabled us to match the filter components (resistors, capacitors and inductors) with the known polynomial poles and zeros.

L. Weinberg was the first to publish computer-generated tables of low pass filter component values in 1956.

Filter Configurations

There are three basic filter configurations:

- Pi-sections

One pi-section has the three filter components arranged on the top and sides of a

(cont. on p. 4)

Farewell ... (cont. from p.1)

Ruth Stanley, Bob Beukema, Dee Baklenko, Brent Allred, John Beck and more. What a great host of God's servants who have faithfully broadcast and worked at the Voice of the Andes!

I even find my own name in these pages from time to time, and that brings back many pleasant memories. I find a reminiscence of our visit to Radio Esperanza in Chile, a commentary on visiting other stations, an exploration of pennants as a part of the hobby. Other trips to Radio Interoceanica and Radio Cusco are part of the record of trips and listening.

And I can't forget our readers--those who shared with us their favorite QSL cards, who were willing to be DXer of the month, and received loads of correspondence as a result! The list goes on and on.

And now the time has come to put ANDEX aside. But it is done with pride for a job well done. For 22

years ANDEX has been a regular friend in the mailbox, alongside the friends on the airwaves of HCJB.

Times change, and the interest in the publication has dropped through the years. People are picking up with computers and e-mail. Reading material has changed and is much more available than it was in the past. So we put ANDEX to rest.

But HCJB, the Voice of the Andes, goes on, and we look forward to meeting you on the airwaves where our friendship will continue.

Thanks, and God bless,

Ken MacHarg

Filters (cont. from p.3)

square configuration. (This is similiar to the Greek letter "pi.")

- T-Sections

One T-section has the three filter components arranged in the shape of a "T." Both the Pi- and T-sections are symmetrical and may offer identical input and output impedances.

- L-Sections

Both the Pi- and T-sections can be broken into half-sections which have an inverted "L" shape.

Miscellaneous Terminology

Poles: The term "poles" can be confusing since it refers to different things in different filters. For low and high pass filters, "poles" refers to the number of reactances in the filter network. However, in band pass and band stop filters, the number of poles usually refers to half the number of inductances and capacitances within the network.

Filter Passband Shapes

Many electronic systems and especially filters are best represented by a frequency domain graphic. Most oscilloscopes display voltages in the time domain (i.e.:

on an $x - y$ graph where x = voltage amplitude and the y axis = time). There are specialized oscilloscopes that display voltage amplitude in the frequency domain which are often referred to as *spectrum analyzers*. On these oscilloscopes the x axis is still voltage amplitude, but the y axis displays a portion of the frequency spectrum.

While displaying the output of a filter in the frequency domain, one would expect a perfect filter to have a flat response (i.e.: constant amplitude) up to the cut-off frequency and then drop down to zero. This downward line is referred to as the *filter's skirt*.

In real life, filter skirts have various shapes. Filters are named for the distinctive shapes they display in the frequency domain: the *Butterworth* (which exhibits a maximally flat response within the band pass) and the *Chebyshev* (which allows some ripple within the band pass). Other shapes include the *Bessel*, *Cauer* and *Thompson*.

John Beck is director of HCJB's International Radio Department.

As one thing comes to an end, the natural tendency is to look for a new beginning.

Think about your last project--perhaps building a workbench or planting some snapdragons. As soon as you completed it and were enjoying a nice glass of iced tea, were you not considering just how to put more pieces of wood together--perhaps into the form of a chair or a radio cabinet? Maybe you were thinking, "Now, what would look best next to those snapdragons?"

That's how we feel at HCJB about ANDEX. We've seen how Clayton Howard and several thousand enthusiastic listeners brought a wonderful and unique listeners' club to life more than 22 years ago. We've enjoyed learning about ANDEX members, the radio hobby, the Andean nation of Ecuador and the world's pioneer missionary broadcaster for more than two decades.

With this issue of ANDEX International, we see the club, in its present form, come to a close. But, even as the decision to close ANDEX was made, discussion began on how to bring the club back in the future on the Internet. That will depend on available personnel.

When a life on this earth approaches its end, it is mostly likely that friends, relatives and the owner of that life itself hope for another kind of beginning--the beginning of an eternal life.

Are you hoping for such a life? Have you thought about it? Perhaps you try not to think about it.

Jesus Christ said, "I am the resurrection and the life. He who believes in me will live, even though he dies; and whoever



Rich McVicar with his wife, Lisa, daughter Rachel, and son Andrew.

lives and believes in me will never die" (John 11:25, 26).

I trust that you and I are alike in one way ... that we both have a longing for something wonderful--a place, a life, relationships--vastly better than what anything our world has to offer. I believe the life Jesus offers is the answer to that longing. It is my prayer that, at the very least, your longing will lead you to investigate the claims and promises of Jesus Christ.

Here's to looking back ... and ahead!

Richard McVicar

A former ANDEX director, Richard McVicar serves as a programmer in the English Language Service and as HCJB's frequency manager.

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Earthquake hits Ecuador

(cont. from p. 2)

President Sixto Durán Ballén, who had just arrived by helicopter. As I glanced around, I saw little evidence of the quake ... but the eyes of the people told me the story. In those poor Indian farmer's eyes, I saw the same fear and uncertainty I had seen in my children's eyes the night before. I knew that for these people it would be some time before their fear disappeared.

One woman sat on the edge of the crowd, holding a baby on her lap. I asked her if she had felt the *temblor* (the Spanish word for "quake").

"Oh yes!" she replied. "We felt the ground move just before the big quake hit and ran outside as our roof began to cave in. I would have died along with my son, his wife and child if we hadn't left our house. Do you want to see the house where we almost died?"

We walked about two blocks from where she was sitting. It was then that the full impact of the earthquake hit me. Nearly every house and building on the street was damaged. Most had large cracks running down their plastered adobe brick walls. Others were nothing more than a pile of rubble. All would have to be bulldozed so new construction could begin.

I stared for a long time at the homes, homes in which people had been going about their business one minute and had died the next. What a profound reminder of the fragility of this life!

As we drove back to Quito, I once again stared out the window at the peaceful, verdant slopes of the Andes Mountains. The late afternoon rain clouds were slowly moving in over higher peaks and into the valleys. Pujilí and all its destruction seemed very far away.

The earthquake that hit the Ecuadorian province of Cotopaxi on March 28 left 21 people dead and 70 wounded. More than 15,000 people were deeply affected, and some still are living in temporary shelters, tents and under pieces of plastic sheeting. President

THE ANDEAN HERALD

If you have access to e-mail and the Internet, you may want to subscribe to THE ANDEAN HERALD, an e-mail newsletter sent out twice a week from HCJB's English Language Service.

There you'll find information on programs coming up within the next few days—information more detailed than what you'd find in our program schedule. Perhaps a particular item will catch your interest, which will air on a program you don't usually listen to. The result? You might become a regular listener to the program!

If you'd like to subscribe, drop us a line at the English Language Service. E-mail address: english@hcjb.org.ec

Durán Ballén says it will cost \$5.2 million dollars to rebuild the homes destroyed in the quake.

HCJB World Radio is working with the Ecuadorian Evangelical Church Association to help build simple two-room cement block homes with steel reinforcement. Communities will be organized to do the building themselves, but they need financial help urgently.

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If you would like to help, please send your donation to: HCJB World Radio, Attn: Earthquake Relief, P.O. Box 39800, Colorado Springs, CO 80949-9800, U.S.A.