

# ANDEX



## INTERNATIONAL

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### PROJECT 500



*Al Hesketh and Don Smith check driver stage*

As many ANDEX members know, HCJB is in the process of constructing a new 500-kilowatt short-wave transmitter. This is being done in Elkhart, Indiana, using the facilities of Crown International. In keeping with our policy of informing ANDEX members of engineering advancements at HCJB, we are presenting three progress reports on Project 500.

#### *May 1977*

The month of May was a busy month for all the folks at Project 500 in Elkhart. We started to see the results of many hours of work at the desks and on the drawing boards.

Our main concentration during the month was in the area of the radio-frequency driver stage. This is a 5000-watt radio-frequency amplifier which is used to drive or excite the final amplifier section of the transmitter. It is physically located under the main tube of the transmitter with part of the circuitry located within the cabinet itself, and

the remainder mounted on a swing-out door for serviceability.

Ralph Horn and Art Johnston were able to fabricate many of the parts that had been on the drawing board for many months. These parts then went together into the final unit under the direction of Don Smith and Herb Jacobson.

This stage of the transmitter is nearing mechanical completion and initial cold tests were begun. During the testing phase some problems were discovered. After some engineering modifications, more tests revealed that the circuitry had been improved. More cold testing is required before we can be sure that all is ready for the hot tests.

A great contribution to the work has been made by several fellows from Crown International who have given of their spare time to help complete many projects. Work has progressed in the control area as Mike Axman has been getting the filament controller operational for the final amplifier tube. Because of the size of this half-million-watt tube, the filaments must be turned on very slowly to prevent thermal problems. We will be using a special controller to turn the tube on over a period of five minutes. Using a commercially available controller, Mike Axman has modified the circuitry and added a control section of his own design to protect the tube during its operation. This work has been done and tested and is now ready for installation and final check-out on the tube itself. With the completion of the driver all of the water-cooling lines have been installed in that area. Our high-pressure water pumps have arrived and are being prepared for use in the driver testing. Orbra Bliss has made a temporary water-cooling tank and is presently hooking up all of the necessary cooling lines.

Work is proceeding with many of the mechanical phases of the transmitter and Don Spragg has

completed the initial work on the control panel to house the various electronic units.

### August 1977

Power testing of the driver stage of the new transmitter began the first week of August. Preliminary tests went well as the transmitter was tuned up on all the bands of operation. Don Smith and Luther Fleming worked along with Herb Jacobson to take care of some minor instabilities in the design. After this was complete, work began on eliminating some spurious resonances in the circuitry. During this phase of the testing the driver plate by-pass capacitor was damaged due to an apparent over-heating problem. Testing has stopped until a new capacitor can be made. In the meantime work continues on the other areas of design and fabrication.

### September 1977

Significant accomplishments have been made in several areas of the transmitter project. This is due in part to the additional manpower which permits our moving ahead in several areas simultaneously, as well as the completion of design work that our men have been carrying on for some time.

The first stage of the transmitter operated in its automatic-tune mode for the first time. After completing the circuitry and tying it into the transmitter, Mike Axman found that the system performed very well.

The design criteria required the system to auto-tune within two or three seconds on any given frequency range. Mike found the system to work over a much broader range than required and to complete its tuning well within the design time. Having this system operational represents a significant step in completing the overall tuning system.

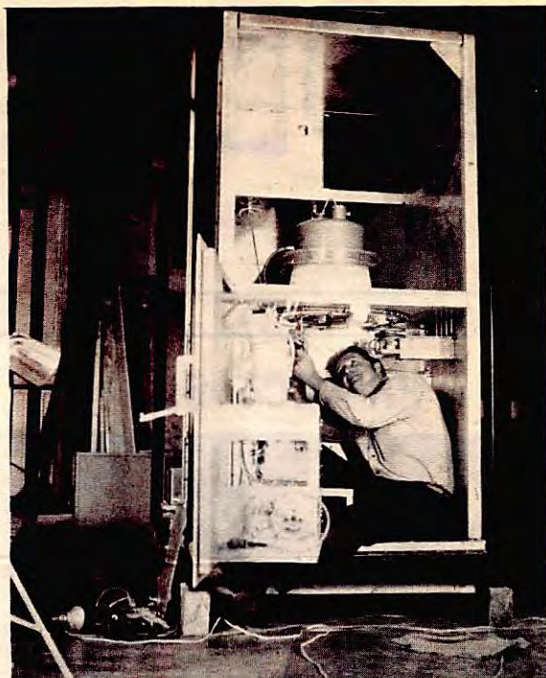
Work on another major portion of the transmitter,

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International Program Director — David Manney  
English Program Director — Dolores Baklenko  
ANDEX Executive Director — Clayton Howard  
DX PARTY LINE host — Clayton Howard

Address all mail to: ANDEX International  
Casilla 691  
Quito, Ecuador



*Art Johnston works on final amplifier*

the modulator, is moving ahead in different areas. The modulator frame has been completely welded and is ready for painting. Don Smith, who is carrying out the modulator design, has been working on a physical layout and location of all of the components within the cabinet. There is still much work to be done in this section.

With the final details worked out on the radiator for cooling the transmitter, Orbra Bliss has given the "go ahead" for construction to begin in this area. Ralph Horn has started fabrication of the steel framework, 12' x 8' x 6' high, which will support the radiator and its six 2-hp fans. Art Johnston has been working on several different fittings in preparation for assembly of the cooling system. By the end of October we should have the total cooling system near completion.

Two high-voltage power supplies for initial transmitter testing are ready for final wiring. PK Myhre and Luther Fleming have been diligently pulling together all of the hardware and wiring diagrams to complete this job. Preliminary tests are complete and final decisions have been made on the RF load for high-power tests of the transmitter. Components will soon be ordered for this section and assembly can begin. This load is necessary, not only for our transmitter tests in Elkhart, but will go with the transmitter and be used in Ecuador.

The specially fabricated panels which form the main amplifier box will be shipped soon to Elkhart. Rick Riggs has prepared for their arrival by completing the design of all the associated hardware to mount this box.

These progress reports indicate that steady progress is being made. The goal is still to complete this powerful transmitter by the end of this year. We will present further progress reports as they are available and do our best to keep you informed of the construction status in future issues of ANDEX International.

## RADIO AMAZONAS

There is a new station operating in Ecuador to challenge our ANDEX members. This station, Radio Amazonas, is located in the northeastern part of the country, in the heart of the oil-producing zone. The city is called Lago Agrio, or Sour Lake, in English. This is the first shortwave station to transmit from this region, which has been growing rapidly in recent years due to the oil production. A large pipeline has been transporting petroleum from this area to the coast for export. The capacity of the line is 250,000 barrels a day. It was built a few years ago by an American Company, Williams Brothers. They said that, up to that time, it was the most difficult engineering task they had handled. At one point the line crosses the Continental Divide at an altitude of about 14,000 feet above sea level.

Radio Amazonas operates on a frequency of 3290 kHz and is heard in Quito with good signal strength during the morning and evening hours. We have not been able to visit the station yet so have no technical details on the operation. However, the Spanish programming is being heard in Quito between 1100 and 1600 GMT and again between 2200 and 0400 GMT.

Do not confuse this station with Radio Rio Amazonas, in Macuma, which is in the southeastern jungle area of Ecuador. Radio Rio Amazonas operates on a frequency of 4870 kHz and is a missionary station owned by the Gospel Missionary Union. Radio Amazonas is strictly a commercial broadcaster and programming consists of music and advertising.

We will attempt to get more information on this new station and will feature it whenever possible

in the ANDEX International. The only address we can give is Radio Amazonas, Lago Agrio, Provincia del Napo, Ecuador. Since it is a new station we do not know anything about their verification policies yet.

## TRUE HAPPINESS

*By Wil Pounds*

*Part 1*

Shortly before his untimely death Elvis Presley appeared on the NBC television program, the "Tonight Show" with Johnny Carson. During the program Elvis was unusually calm. Johnny asked Elvis what he did with all the money he made. Johnny was a little uneasy with envy because at that time Elvis was making six-million dollars a year and Johnny was earning only one million! Elvis sat back in his chair and pondered for a few moments. Then he leaned forward, put his elbow on the desk where Johnny was seated, and said gracefully, "Johnny, I'd give it all up if I could be happy."

What a contrast it was to hear Festo Kivengere, when he was here in Quito, tell about the "blessedness of nothingness." He and his wife were fleeing for their lives from Idi Amin. They were in the middle of nowhere with absolutely nothing but the clothes on their backs. All of their material possessions and earthly goods had been abandoned when they fled for their lives. Festo turned to his wife in the middle of the backwoods of a neighboring country and said, "This is the blessedness of nothingness."

I receive letters every day from some of our listeners who are saying the same thing that Elvis said, "I'd give anything to be happy." But the problem is that many are saying, "If only I had six-million dollars a year, or if only I had my health, if only I had this or that." Elvis had it all, wealth, wine, and women. However, he came to the conclusion that he didn't have anything. That which he wanted he did not have.

Where do we go for that sense of belongingness? Where do we obtain a sense of worthiness? How do we put it all together? Where do we find happiness?

I am convinced, as I have never been before in my life, that there is a sense of belongingness available to all who will come to the Lord God and meet Him on His terms.

Psychologists constantly remind us that relationship, not the acquisition of things, is the meaning of life. When life is over, we leave our things, but we take our relationships with us.

Where can we obtain a sense of belongingness? How can I become aware of being wanted, accepted, and cared for? Who will take the initiative of making me feel accepted?

God the Father took that initiative! The Bible says, "In this is love, not that we loved God, but that He loved us and sent His Son to be the propitiation for our sins . . . We love, because He first loved us" (I John 4:10,19). God loves us with an unconditional love. He takes us just the way we are. That is the beauty of the Good News. He does not say, "If you change and become good, I'll accept you." He knew what you would be like long before you were born. "He chose us in Him before the foundation of the world, that we should be holy and blameless before Him. In love He predestined us to adoption as sons through Jesus Christ to Him according to the kind intention of His will . . ." (Ephesians 1:4,5).

*to be continued*

## DXer OF THE MONTH



*David Russell's old receiver*

David Gerard Russell, our DXer of the Month for January, is a very typical DXer. Of our ANDEX members, fifty per cent are teenagers. When this bulletin reaches our members, David will have just celebrated his fifteenth birthday. He is also a high school student and is in the ninth grade. David is ANDEX member 2111 and lives in Valley Stream, New York, on Long Island, and just a short distance east of New York City.

Early in 1976 David was given an old radio by his grandfather who moved to Florida. This receiver was an old Grunow console model made in 1936. It stands four feet tall and is thirty inches wide, a typical receiver of that day. In addition to the standard AM band the radio also covers the major shortwave bands. David found that the old set still worked and, on tuning around, he quickly picked up the BBC from London. Other stations also came in, including HCJB. This was his first experience with DXing and it fascinated him. He was soon hooked on the greatest hobby in the world!

David also has a second receiver. This is a real contrast from the Grunow. It is a Lafayette Guardian 5500A, a small portable transistorized unit. He spends his summers at a summer home in Southampton and takes his portable receiver along. Southampton is about 75 miles east of Valley Stream and farther out on Long Island. In addition to DXing David does a lot of caddying during the summers at the Shennecock Hills Golf Club. Actually, he says he does too much caddying but it does provide the necessary funds to send off reception reports and build up his collection of QSL cards and station pennants. He has heard 71 countries and has verifications from 33 of them.

Besides being a member of ANDEX, David has joined several other clubs. He is a member of the American Shortwave Listeners Club, the BBC World Radio Club, the North American Short Wave Association, and is in the process of joining some other station-sponsored clubs. Like other DXers he finds membership in some of the clubs to be very rewarding and helpful in the shortwave hobby and in getting to know other DXers.

David spends from four to six hours a day with his receivers and enjoys travelling around the world in this way. He finds real travel an exciting occupation as well. He also enjoys music, reading, various sports, stamp collecting, and model railroading. With so many interests he has very few idle moments.

ANDEX congratulates David Russell on being selected as one of our DXers of the Month. We wish for him many happy years ahead with his fascinating hobby. He will be receiving an attractive certificate in recognition of this honor.

## HAPPY NEW YEAR 1978