

ANDEX



INTERNATIONAL

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FREQUENCY CONTEST WINNERS

ANDEX members were invited to participate in a frequency contest, to try to hear as many HCJB frequencies as possible in a 24 hour period between March 15 and March 30. Congratulations to the three winners!

First place winner with a score of 33 is JAMES W. YOUNG, ANDEX charter member No. 14 from Wrightwood, California, USA. He heard all 30 of the frequencies that were being used plus 3 harmonic frequencies, and heard all of the languages being used.

Mr. Young, a professional astronomer, writes "The hardest frequency was the MW 690 kHz outlet. I used the BCB loop antenna to null out the local stations enough to catch some of the program details. I used two Hammarlund HQ-180A's, one with a 6 digit readout; and my general coverage ham transceiver, an ICOM IC-720A. I use several well placed inverted vee's on a 70 foot tower. My elevation is at 1844 meters, so the elevation does help!"

Second place was secured with a score of 28 by KIRK ALLEN, ANDEX No. 4280, from Ponca City, Oklahoma, USA. The 28 frequencies he heard included 8 different languages. His equipment is a Japan Radio Corporation NRD 515 with a 100 foot long wire antenna. Mr. Allen works for Cessna Aircraft Company.

The third place winner with a score of 27 is BRUCE R. CLARKE, ANDEX No. 3857 from Rockville, Maryland, an engineer. He heard 6 different languages on the 27 frequencies with his Kenwood R-1000 receiver and a long indoor wire antenna.

Although all three of our winners are from the USA, the runners up are from England (Peter Willars) and New Zealand (Brian Webb). Many entrants caught the mistake in the frequency schedule printed in the February-March ANDEX International. 3020 kHz should have been 3220 kHz.

All participants who included program details will receive a QSL for each language heard. ANDEX director Ruth Stanley, who is in the USA for a few months, will send a prize to James Young, Kirk Allen, and Bruce Clarke. Again, congratulations, and thanks to all who took part.

ADVICE

This time I want to tell you beginning DXers the following things about shortwave listening. Shortwave listening is a very nice hobby, but before you buy some new receiver, try first with an ordinary receiver that has a shortwave band on it and pick up nearby stations.

You need a list of stations and their frequencies or meterbands because most receivers don't have a digital counter. This way of finding stations can be very exhausting, but one must have much patience for the results give great pleasure.

A good radio shop in your town which sells shortwave radios can give you information, but don't buy at once an expensive receiver because there are so many facilities on these receivers that only more experienced DXers can handle them. Words such as SSB-USB-LSB-CW are for later on.

What you further need is a headphone and a list of world times because the time in your country is different from somewhere else in the world. Have patience and listen, in the beginning, for one or two hours a day. I have been DXing about five years now and always there is something new and unexpected to listen to.

A good telescoping antenna is sufficient, but for real DXing you need a long wire antenna. You must also make time for unusual hours of listening. . . like in the evening up to 2400 GMT or early at 0500 GMT.

On some professional receivers, you'll find a BFO and a CW switch. This is to receive sideband transmissions and Morse signals. Sideband is used by amateurs and some difficult to receive stations, but this is not a necessary part of a radio.

To further have a good shortwave set-up, last, but not least, have a tape or cassette recorder for making records of interesting news or so. Oh, yes, and join a DX club in your country. This is very important.

Well, folks, that's all for now. I wish you good reception and good results and many 73's.

Thanks to Antoon Schut, ANDEX No. 3734, Gildemeesterplein 136, 6826LP Arnhem, Gelderland, Holland, for writing.

FEARLESS FORECAST:

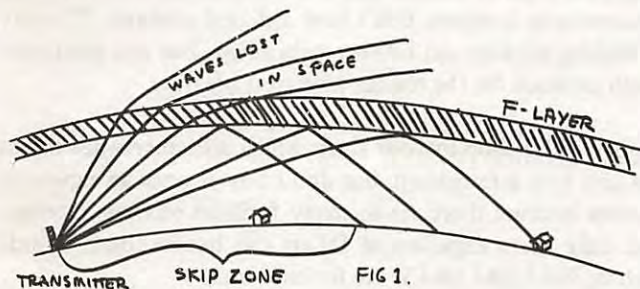
The Skip Zone

By John Stanley

One of the things that surprises DXers sometime fairly early in their career is to find out that there are times when we can not hear a station because we are too close to it! This seems to defy logic, but, when understood, is very interesting to observe.

Signals striking the F-Layer of the ionosphere are bent back to earth. The higher the frequency, the less bending can take place. If a wave is not bent enough, it does not return to earth, but goes through the F-Layer and on into space.

Waves that leave the transmitter at progressively higher angles are bent less and less and, finally, do not return to earth. This creates a zone in which the station cannot be heard. This is called the skip zone. (See Fig. 1)



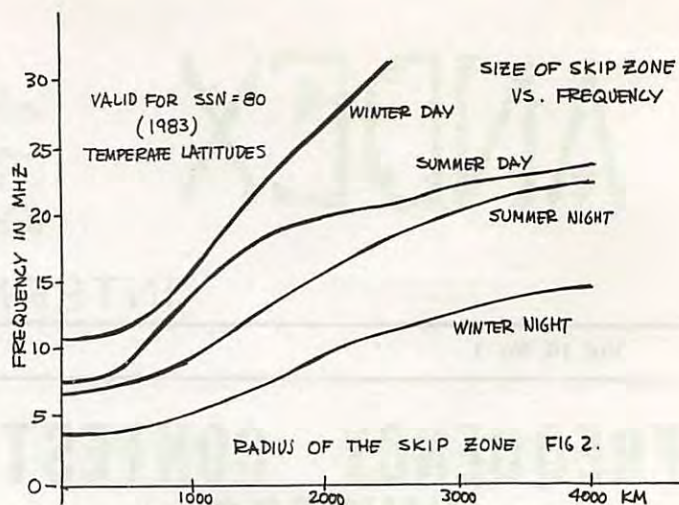
The radius of the skip zone depends on the frequency used and the degree of ionization of the ionosphere. Ionization varies with time of day and season of the year. Figure 2 shows the expected radius of the skip zone for various times and frequencies.

The effect of this skip zone is that in the area inside a circle around the transmitter, listeners are not being served. There are two solutions. One, the broadcaster can go to a lower frequency where the skip phenomenon is not present or, two, he can locate the transmitter far enough away from the target area so that no listeners fall in the skip zone.

Since domestic broadcasters often cannot move away from the target area, their only option is to use lower frequencies. This makes the 90 and 60 meter bands highly desirable for domestic broadcasting and in the tropics, they are so used.

Note on Figure 2 that except for winter nights, there is no skip zone on 60 meters (5 MHz) and there is never a skip zone on 90 meters (3 MHz).

The existence of skip also makes it possible for DXers to hear distant stations without interference from strong domestic stations. Since the skip zone can be as large as 4000 km on the higher frequencies, DX and only DX will often be heard.



Of course, if you live only a few kilometers from a station you will hear it by direct wave (not via the ionosphere). 11 meter (CB) operators usually hear only local stations and stations 1000 km or more away. Stations several hundred kilometers away are almost never heard. CBers often refer to the DX station as "skips" but, in reality, the stations that skip over you are the ones you DON'T hear. Of course, all 11 meter DX is skipping over someone since there is always a skip zone on frequencies above 18 MHz.

VOICE OF PEACE

An interesting station in Israel is a pirate station, the Voice of Peace, which operates from a superannuated coastal freighter which plods up and down the Eastern Mediterranean.

The owner of the station, Abie Nathan, is a colorful character. An Indian Jew born of Iraqi parents in Abadan, Iran, he flew for the Royal Indian Air Force during World War II, then flew for the Israelis as a volunteer in 1948 and then, settled in Israel permanently.

He conceives it to be his mission to bring peace first to the Middle East and then to the rest of the world. He used to do this by flying various antique aircraft to the different Arab capitals, but since the beginning of the year, he has tried to achieve his purpose by broadcasting on 1540 kHz, 24 hours a day. His staff are almost all volunteers and his programs consist of rock, "golden oldies", some classical and international music (that is, whatever records from anywhere which people send him!).

His wattage varies, but it can be anywhere from 250 watts to a kilowatt, depending on whether somebody on board has their electric shaver plugged in at the time they are broadcasting.

This information was sent to us by a fellow in Israel interested in joining ANDEX, Ron Lahav, P.O. Box 138, Or Yehuda, Israel. He also mentioned that he didn't know whether Mr. Nathan would respond to QSL cards, but says that he is well worth listening to. So why not give it a try?

SPECIAL DXer FROM THE USA

Robert Bruck lives at 21 Ventnor Drive in the town of Edison, New Jersey, 08820, USA. Since the special DXer from Canada is a 14 year-old student, I thought we would also feature a 14 year-old student as the special DXer from the USA.

Robert has been DXing for about a year and a half. He started out using his step-father's ham radio equipment as a receiver (the transmitter part was no longer operational). But now he has a Realistic DX-100 and listens to it every night. He uses a home-made folded dipole for his antenna and records all the programming he listens to, saving it for later study.

Edison is an appropriate place for Robert to live as he seems to be following in the footsteps of a great inventor of that same name. Robert is very interested in electronics, having worked with electrical equipment for nearly SEVEN years. (Remember how old he is?!) He also does some integrated circuit designing, small appliance repair, and even some major electrical work.

Robert says that he would like to become a ham radio operator in the future, having had some practice with local (CB) transmissions.

Robert is ANDEX No. 4505 having joined in the later part of last year.

Congratulations, Robert. Good listening and continued success in your electronic experiments!

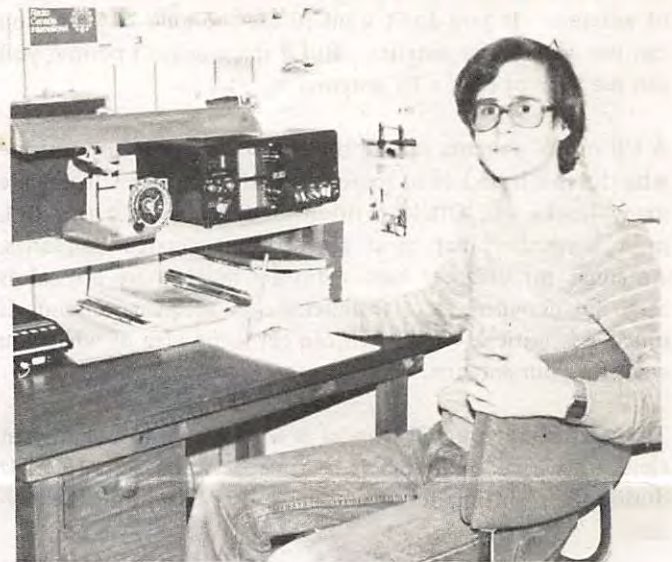


HANDY ADDRESS

Some of you have been writing to ask what the address is of the American Shortwave Listeners Club. Just in case others of you have been wondering about it too. . . here it is:

American Shortwave Listeners Club
16182 Ballad Lane
Huntington Beach, California, 92649 USA

SPECIAL DXer FROM CANADA



The DXing bug bit our special DXer from Canada one day in 1981 when he was in the attic! For it was in the attic, that he found a very old tube radio. The radio had a shortwave band and after cleaning it up, the foreign countries started to roll in.

Neal Bridges of 4 Crescent Drive, Welland, Ontario, Canada, L3B 2W5, is our special DXer for areas outside of the USA. Since finding his first radio in the attic, he has gotten another receiver, a new one this time. It is a Realistic DX-200 and Neal spends almost all of his spare time tuning around on the bands. He enjoys listening to international broadcasters, utility stations and especially enjoys listening in on USA military communications.

Besides his shortwave radio, he has a portable cassette recorder and an Ingraham 12 hour clock that he has converted into a 24-hour clock to aid in his hours of listening. Neal also has a Sears portable radio that he uses for his AM, FM, and VHF DXing. And he plans to get a television soon to use in TV DXing.

Neal joined ANDEX early in 1982 and is member No. 4245. At the time of his entry, he was also working on requirements for Radio Kiev's DX Club. He is a monitor for Spanish Foreign Radio, Radio Korea and Austrian Radio and is a charter listener to WRNO in New Orleans, Louisiana, USA.

Neal uses an indoor antenna of his own design with his receiver as well as a 30 inch whip antenna with a homebrew antenna tuner.

In addition to rummaging through attics and listening to radios, Neal likes to collect stamps and postmarks so let's see if we can give him some mail in the next few weeks.

Congratulations, Neal Bridges, 14 year-old student from Canada!

INTRODUCTION TO SWL

You have brought your shortwave radio home, and you wonder how to get started. First, you have to hook it up to some kind of antenna. If you don't want to use the built-in whip, you can use a long wire antenna. But if space doesn't permit, you can use a CB or even a TV antenna.

A CB or TV antenna can be the perfect solution for someone who doesn't have lots of space for an antenna farm. There are many books and articles written on antennas, but the SWL must remember that most are stressing amateur antennas. Antennas for amateur ham radio are much more critical as they are designed for transmitting. A receiving antenna is much less critical. Still, you can get some idea of what you want for your antenna.

The next thing you will wonder is where to tune and at what time. My rule of thumb is to tune between 2 to 12 MHz during the nighttime hours and above 12 MHz during the daytime.

GMT? UTC? What's that....you ask. These letters aren't a part of alphabet soup. They stand for Greenwich Mean Time and Coordinated Universal Time and there is a reason for using it. There are 24 time zones in the world, and if everyone used their local time, you would have to figure out how many hours ahead or behind their local time you are. By using GMT or UTC, both you and the broadcaster know exactly what time you are talking about in your reception report and you know exactly what time to tune to your favorite program without figuring it out.

Why do stations play musical chairs? For a while they are on one frequency, then they change. The answer to that is so the station won't interfere with another broadcaster or so they can put a better and, perhaps, stronger signal into your target area. Stations can change frequencies four times a year.

A DXer likes to collect QSL cards. These are cards that confirm your reception of a certain station. Sometimes, a QSL can be a letter. To get a card, you must send the station a reception report. A report includes the date, time in GMT or UTC, the frequency and at least 15 minutes of program details. Then mail your report to the station. Don't expect a quick reply. I had to wait seven months for one card, but most should arrive between three weeks to four months.

Some stations may request IRC's. These are international reply coupons that you get at your post office. You enclose these with your report instead of return postage. The station exchanges your IRC's for postage to put on your QSL card or letter. In your report tell the station how well you received their signal. Nobody can read your mind. Also include your comments on the program.

So says Rose Akers. Rose, you might remember, was one of the winners in the Sporadic E Contest and lives in Urbana, Indiana.



ANTENNA CORNER: The Curtain Array

A young fellow in Spokane, Washington, USA, (not an ANDEX member), wrote recently to ask "How does a curtain array work?" I handed the letter over to my husband, John, (FEARLESS FORECASTER) and after he answered the question for the young fellow, we both thought it would be good to run it in ANDEX, so here it is.

A curtain consists of half wave dipoles in phase. How this produces gain may be seen as follows: If we take the power that would normally go into one dipole and split it evenly between two dipoles that are broadside to us, each dipole will carry .707 times the current that would be in a single dipole which had the full power applied. (This .707 is because power is the square of current, so half the power means the current is divided by the square root of two.)

Now in the receiving antenna, the current received is proportional to the current in each transmitting antenna times the number of antennas that add in phase. (They will all add in phase if they are all in a plane, all oriented the same way, and all fed in phase.)

In the case of the two element "curtain", two elements each have .707 times the current of a single dipole so $.707 \times 2 = 1.414$ times the current from a single dipole will be induced in the receiving antenna. This is the same as doubling the transmitter power or a gain of 3 dB. You could use the same logic to show that a four element curtain will produce 6 dB gain; an eight element, 9 dB, etc.

This simplified explanation neglects "mutual impedance", a complicated business that allows curtains to have a bit more gain than calculated.

A reflector makes the curtain unidirectional and adds 3 dB of gain. The reflector can be passive, that is, a non-resonant grid of wires; or parasitic, that is, tuned as a director or reflector; or driven. All three systems are used, however, the passive system is the most common.

As power increases, the wire size goes up. Actually, the limiting factor is not current, but voltage. A large conductor resists "corona" loss better. For transmission lines, 10 KW requires about #10 wire; 100 KW, a 1/2 inch wire and 500 KW, a one inch wire. Since voltages build up on the ends of dipoles, the antenna wires must terminate in balls or corona rings. Good practice calls for one inch diameter for 10 KW; five inch for 100 KW and 20 inch for 500 KW. This would be for a dipole. In a curtain, each dipole has only a fraction of the total power, so smaller wires are used.

ANDEX ITEMS

Just a reminder that we have a few ANDEX items for sale that might be something you have been looking for to spark up your listening post or your correspondence or you, yourself!

First, we have an ANDEX patch to put on your jacket, shirt or cap. It is a three inch triangle-shaped patch with the ANDEX symbol in red, white and blue that will tell the world that you belong to a special club. Note that the price is higher now.

These patches cost \$1.25 each. Please send your money to our Florida office or if you live in the United Kingdom, New Zealand or Canada where we have set up the new payment system, you can send the equivalent sum of money in your currency to your local office.

Or how about an ANDEX T-shirt? We can order T-shirts for you in small, medium, large, or extra large sizes from HSW Enterprises in New York.

T-shirts are light blue in color with the ANDEX logo and lettering in black. For members living in the Americas, the cost, including postage, is \$6.50. For members living in other places, the cost is \$7.60.

If you would like to order a T-shirt, please write and give your name, address and size information and send, along with the funds, to the Florida office or your local office. Mark your letter ANDEX and include your membership number for good handling.

Then, I will be notified of the arrival of your money and will place the order for your T-shirt from the company who will send the shirt to you.

The final item we have is a rubber stamp that has the ANDEX logo on it. For just a regular ANDEX logo stamp, the price is \$2.00. If you would like to have your membership number printed beneath the logo, the price is \$3.00 and if you would like your name printed also, the price is \$4.00.

Again, same rules apply. Send your order and money to our Florida office (or local office) and when they notify me, I will place the order with our stamp man and he will send it to you.

And a review of the office addresses: United Kingdom members, send to HCJB, 63a Main Street, Bingley, West Yorkshire, England, BD16 2HZ. For New Zealand members, HCJB P.O. 27-172, Auckland 4, New Zealand and for Canadian members, the address is HCJB, 3251 Sheppard Avenue E., Scarborough, Ontario, Canada, M1T 3K1. For all other members, including all USA members, send to HCJB, Box 3000, Opa Locka (Miami), Florida, 33055.

If any of you have other suggestions of items you would like to see being handled by ANDEX, let me know.

ANDEX CALL BOOK

I thought before I went on summer leave, I would say a little about the idea of an ANDEX CALL BOOK. You remember that I asked for your comments several months ago and that I reported back to you that since most members thought it would be a good idea, I would start working on the call book.

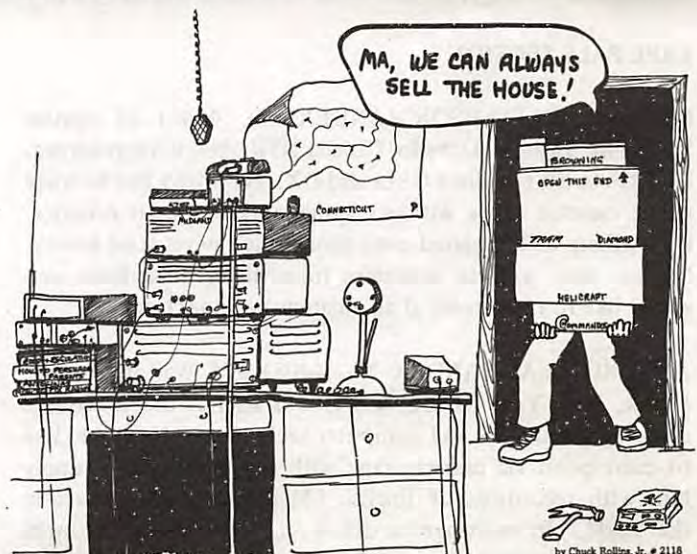
Well, my friends, I have done a good deal of thinking about it, but I have not done one thing of actual work on it. The reasons for that disgraceful state of affairs are two-fold. First, I find myself continually out of time for starting something in addition to the regular duties of ANDEX. Secondly, HCJB is in the middle of thinking-out a system of automation regarding computers for all areas of the mission. We need to come up with a system that will take care of all computer needs of the various departments of the mission, including ANDEX.

So, I find myself hesitating to type out a long list of names and addresses for an ANDEX call book only to find that in the future I will probably be typing it again for inclusion into some computer system.

So, continue to be patient. I think that the idea of having a call book so that we can find out who is a member in what country is a great one. However, I would like to wait a little while as the discussion of the computer group goes on. Hopefully, it will not be too long before we can automate some areas of ANDEX and then the project of the call book can become a reality.

NOTICE

It sometimes happens by mistake that an ANDEX member will receive an ANDEX application form in the mail from HCJB. No need to get concerned — we in ANDEX know you're a member, and you should not return the form. When you write be sure to specify on the envelope and in the letter that you're an ANDEX member. Do look for your renewal slip that we send once a year, and DO return it (with the specified payment, of course.) We really regret having to put ANDEX members in the inactive file.



PEN PALS INTERNATIONAL

RUSSELL PARKER (ANDEX No. 4499) was listed before but wants to be included again because he has some new hobbies. He is 15 years old and a newspaper boy. He collects QSLs, stamps, and radio station stickers. He likes pen pals, recordings from local AM and FM stations in other countries, and tapesponding. Write to him at 43635 Cottisford, Northville, Michigan 48167, USA.

ELAINE HILL (ANDEX No. 4291) Rt. 2, Box 201, Skyland Drive, Clinton, South Carolina 29325, USA, is a junior in college majoring in history and minoring in political science. She would like to correspond with people in other countries age 21 or older.

BRUCE DE SHAZO (ANDEX No. 4470) 35 years old and unemployed because of an illness, lives at 1710 Whitman Road, Memphis, Tennessee 38116, USA. He would like to correspond in English with DXers all over the world. He likes to collect QSLs, listen to good music, read, and correspond with other DXers.

HEATHER BRAINERD (ANDEX No. 4218) 4526 Schenley Road, Baltimore, Maryland 21210, USA, is 13 years old and wants a pen pal from another country, preferably France and/or Arabia. Her interests include horses, horse back riding, the Andes Mountains, volcanos, drawing, and music (she plays the flute.)

JUKKA RINTALA (ANDEX No. 4224) Havinki, 29200 Harjavalta, Finland, would like to correspond with someone in Finland, the nearer to Harjavalta the better. He is a 17 year old high school student. If you are a girl or boy about his age and enjoy Bible reading and Christian activities, he would like to exchange ideas with you.

WAYNE KOEHLER (ANDEX No. 3248) 18 Greenfield Road, Montgomery, Illinois 60538, USA, is 31 years old and works as a school custodian. He will answer all letters no matter where they are from, but would especially like letters from England.

TAPE PALS SECTION

MICHAEL PATTERSON (ANDEX No. 4548) 21 Spruce Street, St. Thomas, Ontario, Canada N5R 1N4, is 16 years old. He likes to SWL, collect QSLs and DX. He would like to trade music cassette tapes with someone outside North America. He's willing to tapespond even though he's never tried before. Michael also collects souvenirs from different stations and would like to trade coins at an amateur beginner level.

ARTURO LEAL (ANDEX No. 4408) 975 Walton Avenue, Bronx, New York 10452, USA, is a sophomore in college studying electronics and computer technology. He would like to correspond via cassette tape with anyone who can supply him with recordings of English FM broadcasts anywhere in the world. In exchange he offers recordings of one or more of the various FM stations in New York City.

NO COPIES PLEASE

A photocopy machine is indeed a fascinating invention. Unless they get all jammed up, then they are just a bunch of wires, metal and mess. But how did we ever do without photocopy machines? In fact, how did we ever do without air conditioning, color TV, push button telephones, and "call waiting"? Well, of course, we used other forms of copying, duplicating machines, and people who spent hours just making copies of an original.

The state of the art photocopiers are indeed a benefit. Some copy back and front, reduce or enlarge, turn out copies right side up in order or reverse and upside down. Some machines even make better a copy than the quality of the original, but most do not!

Evangelism is the way the church produces greater numbers. Perhaps the key mission of the church is evangelism....producing more Christians. There is, however, one big difference between the work of a photocopier and the work of the Holy Spirit who produces new followers of Jesus Christ. The difference is....all new Christians must be ORIGINALS. There are no photocopies in the kingdom of the Lord. Each one of us is called, with our own special resources, talents, yes, and hang-ups, and personalities.

God loves his originals....you and I....there are no two of us alike. His Holy Spirit is constantly reproducing originals....those who fall in love with Jesus Christ.

If you are a Christ follower, you are an original. God likes originals. He called you.

ANDEX International -

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