

ANODE

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Editor's Comments

April 2005

ham.

the compendium.

"I think you ought to know I'm feeling very depressed." - Marvin (the paranoid android)

We intend releasing a CD ROM with both text articles, circuit diagrams, reference data stored on it. We as a club will sell this for a nominal sum at all our functions to interested Radio Amateurs."

I still use my 20 year old text books for reference information. I still read the collection issues of Elektor in December and July/August for ideas and stimulation. Many of the magazines that I used to read professionally are no longer printed and some are appearing on the web. I didn't get paid to read them, I read them to keep up to date with cur-

In September 2000, I said :-

"What we are setting out to do is to provide an 'Electronic Computer Handbook' for the Radio Amateur fraternity. This will detail the practical uses that the computer can be put to by the

A CD ROM has been available at all the major meetings at the club. But the 'handbook' has not been created. Maybe you would consider it the collection of articles in

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Build A Return Loss Bridge

Another of the tasks that I wanted to perform on the newly designed 2N2/20 was to characterize the input impedance of the receive strip, and the output impedance of the transmit strip. This Return Loss Bridge was built for that purpose. The design comes directly out of "Experimental Methods in RF Design" by Wes Hayward, W7ZOI et. al., figure 7.41 on page 7.23. It works exactly as described.



Special points of interest:

- Contact details on back page (updated)
- New email address for Anode and ZS6WR. See back page

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Editors Comments & News

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rent developments in the electronics industry.

I don't believe that the old 'paid for' amateur radio magazine is of any interest to the average radio amateur such as the RadioZS. It is 'paid for' by the Amateur's subscription to the SARL. I also don't believe that organisations should charge for a magazine service for a group that isn't interested in paying for it.

Printed reading material costs money. Information as such costs nothing to display on a computer. Therefore we felt we had done the right thing in sending out a PDF (Portable Document File) of the Anode by email. If the recipient needed to read the Anode in bed, he could print the pdf file on his printer. It would be his cost of paper and ink that prevented him from doing this.

In reality it only costs time-online to transfer the Anode to the mail server at Mweb to send the Anode to every club member.

Feedback (Not Feedbag!)

In the old days, that is to say, last century, readers would write letters to the editor or authors of articles that appeared in a magazine. It would seem that in this Internet based age that nobody writes letters or emails to the editor or authors. In fact it would seem that the

members did not even get the Anode, as they never write thank you emails. If it weren't for the 'read-receipt' flags on all the emails sent, I would never know that there was anybody receiving the Anode!

Anode to become even cheaper! (Not worth the paper its printed on)

During the last couple of years, the distribution of emailed newsletters has changed radically. It is now done in several different ways. Some newsletters arrive as formatted html with pictures as links to a web server. These newsletters are generated from an XML template which can be assembled from a multitude of sources (authors). This means the email can be small as only the text is transmitted to the recipient.

Other newsletters arrive from a 'feed' by the use of RSS. This is generally an xml based web page from a server and provides up to the minute information to your computer. With the general uptake of the broadband ADSL Internet connection, this is a very rapid way of getting the news out there.

Why can't we do the same?

Would it be possible to carry the Anode on the packet BBS and have radio amateurs access it via packet radio? Would it be possible to connect the packet BBS to the internet or at least have a dial-up connec-

tion? Yes I know it is a low bandwidth connection via packet. But it could be done at higher rates on higher frequencies. So why don't we (the club) do it?

In the 'old days', the Headquarters bulletin was transmitted by RTTY to all who wished to receive it. Couldn't we do the same with packet radio? I understand that most of the members have not got packet or rtty but that they do generally have a computer. This is what the computer is for. It can do several things at the same time.

Old equipment to find new homes

At the recent Boot Sale, I noticed several other vendors of old computer equipment. These vendors were as unsuccessful at selling their worthwhile "junk" as I was. I don't believe I am alone in having old working computers. These are usually rejected by charitable organisations or educational services as being too old for use as they don't in some cases even run Windows (tm).

I propose that we as a club, on 'bring and fix' nights, construct working radio amateur computer systems. We install and test all relevant software and operating systems as necessary and then sell the complete systems to club members or other radio amateurs.

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Editors Comments & News

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The project will have several good spin-offs. The club members who participate will gain valuable experience in rebuilding computer systems. Also the installation and use of the available Amateur Radio software.

How about some feedback? JB

{—}

<http://www.k8iqy.com/testequipment/TestEquipment.htm>

Subject: Truth of Winlink

From: "Jerry" <n9lya@blueriver.net>

Date: Sat, 2 Apr 2005 09:16:48 -0500

Newsgroups: alt.radio.amateur

If you wish to file your comments with the ARRL regarding their bandwidth proposal, there is little time left to do so. Comments should be sent to:

bandwidth@arrl.org

It is my understanding that the proposal, in it's current form, will allow WL2K stations control of nearly 40% of ALL of our current allocations in the 10, 15, 20, 40, and 80 meter bands.

This does not include their efforts to swallow up 1/2 of the 30 meter band. CW users will give up the most when you consider that these users will share their remaining bandwidth with all "narrow" digital modes ... which is everything BUT WL2K. Also, packet radio will forever be laid to rest on the HF bands,

as the proposal will eliminate those miniscule parts of the bands for their auto-forwarding.

If it's OK with you to give up 40% of your favourite bands to internet e-mail spewing Pactor III robots, then disregard this message, and your wish will come true. The ARRL is wearing blinders, and can only see one direction at this time, and that's WL2K. I don't intend to stand idly by and give up 40% of our most popular bands so some rich dudes in their motor homes, or on sailboats, can enjoy cheating the legitimate ISP's out of the fees that they charge for providing this service.

I am all in favour of reorganizing our allocations in an effort to accommodate new digital modes, but this proposal takes way too much from the 98% of amateur radio operators who are not interested in turning our hobby into a cheap internet e-mail gateway for the rich and privileged. Oh yeah, they will cry emergency communications, and the "amateur radio internet e-mail for every EM's desk" motto, but it's just not worth it.

Tell the ARRL how you feel ... this could certainly be your last chance to do so.

Ponder this ... if these new wideband modes are soooo efficient, then why do they require 20 Khz of space? If you give packet radio 20 Khz, it too could be much faster. The

speed limit on packet radio is now determined by the pitiful amount of bandwidth allocated to them. Why does WL2K, a proprietary mode, with very high start-up costs deserve all of this spectrum when packet radio has had to deal with the microscopic slices of bandwidth for all of these years??? It just smells of yesterday's garbage, and I don't think that the proposal, in it's current form, will benefit anyone but the 2% minority fighting for 40% of our bands.

For the record ... I do NOT, nor do I plan to utilize packet radio on the HF bands. My concerns are for the service in general, and the negative impact this proposal will have.

Best 73,
Luke Bannister AD4MG

Deputy State Emergency Radio Officer - Digital Communications Virginia RACES, Inc.

{—}

Subject: Re: Thruth about WINLINK!

From: "Hank Oredson" <horedson@earthlink.net>

Date: Sun, 03 Apr 2005 14:56:27 GMT

Newsgroups: rec.radio.amateur.digital.misc

Goggle WinLink, WL2K, Air-Mail.

-- ... Hank <http://home.>

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Editors Comments & News

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earthlink.net/~horedson
http://home.earthlink.net/
~w0rli "Paul Rubin" <http://
phr.cx@NOSPAM.invalid>
wrote in message
news:7xekdsmpk8.fsf@ruckus.
brouhaha.com...

" H a n k O r e d s o n "
<horedson@earthlink.net>
writes:

I think you missed the point.

WinLink2K depends on connectivity to the internet to work. For emergency communication it is totally useless.

I'm not sure what WinLink2K is or what its relation to emergency communication is supposed to be. Is there a url about it?

I've been interested for a while in a packet mode that uses the internet. An endpoint node wouldn't have to be on the net, but it would connect to a remote node that also had internet connectivity.

So it would be fine for an emergency at the endpoint. If there was a catastrophe that took out the whole internet, then it wouldn't work.

Build A Return Loss Bridge

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RLB Schematic

Here is the schematic of the bridge. The resistors used are 51 Ohm, 1/4 watt carbon film units. 49.9 Ohm metal film resistors probably would have been a better choice, but those were not in the parts bins, and I was in a hurry!

RLB Inside

This project again used Manhattan-style construction. The 3 side panels with BNC connectors were built first. They were then soldered to the bottom panel. Once all of the other parts were soldered in place, the unit could be tested.

RLB Packaged

With testing complete, the remaining top panel could be soldered into place, along with adding some simple labels. To close the remaining side, a cover was fabricated from tin plated hobby steel sheet, and also tack soldered into place.

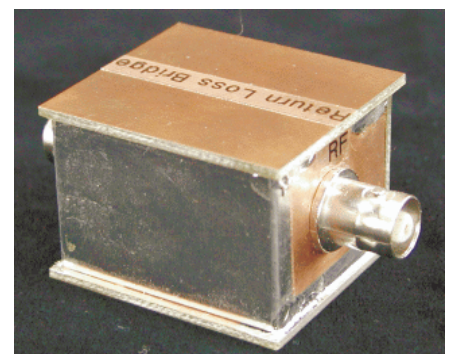
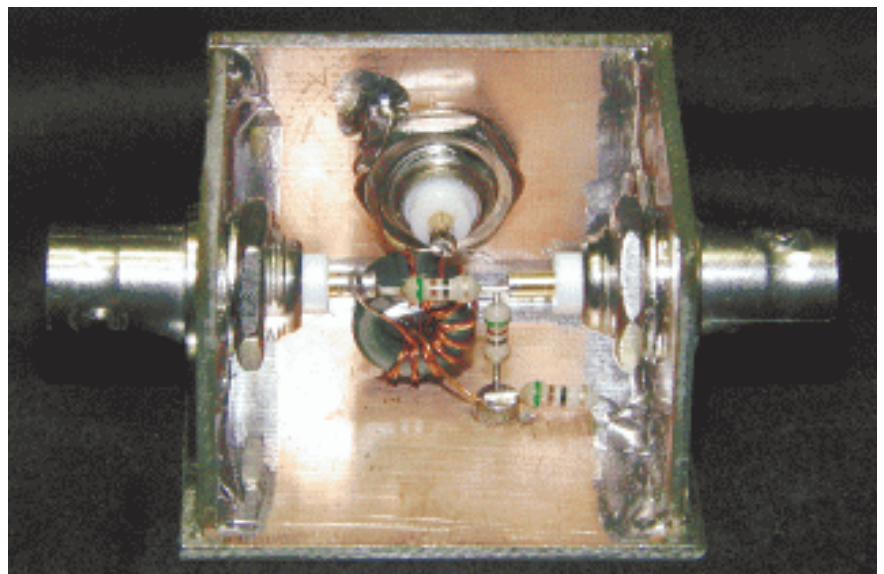
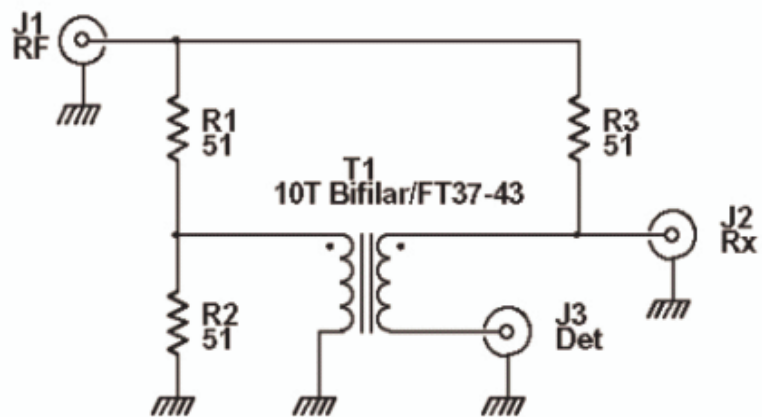
RLB Cover Detail

A detail picture of the tin plated steel cover. Just the corners were soldered so that it could be removed easily if internal repairs were needed.

Taken from :-

<http://www.k8iqy.com/testequipment/TestEquipment.htm>

HF Return Loss Bridge
[From Experimental Methods in RF Design]



My Close Encounters With Florida Lightning Bolts

I have been observing and studying lightning and thunderstorms for 39 years, related to my weather forecasting/consulting career, as well as a Skywarn severe weather spotter and storm chaser and therefore know the dangers. Even with safety in mind living here in Florida, the lightning capital of the U.S., I've still had my share of close calls!!! Seven of the eight close calls occurred as I watched for the danger. In those seven instances the close call was the first lightning strike of the storm.

By the way, on Friday December 10, 1999 a film crew from The Learning Channel came and did 6 hours of interviews with me concerning my experiences with and knowledge of lightning and it's effects. The interview was broadcasted on TLC on September 7, 2001.

One more thing. At one time I was a proponent of Early Streamer Emission and Charge Transfer Systems including Spline Balls for lightning strike frequency reduction. Professional as well as personal study and research by me within the Amateur Radio hobby seemed to support the concept of lightning strike reduction with this system. However further study by me of recent research into the concept by other lightning experts, as well as claims of lightning strike prevention by private companies has changed my mind.

Lightning incident #8 March 17, 2003:

I was feeling somewhat better with my second flu bug of the season so went outside at about 3:40 pm to make my 160-10 meter antenna lightning grounding system more permanent, due to all the recent lightning storms.

At 3:55 pm I was squatting at one of my 10 foot "in the ground" ground rods, attempting to clamp the #6 ground wire to it from the antenna.

Suddenly I felt a static electricity charge and before I could let go of the wire and rod I got jolted pretty good, as an upward moving stepped lightning leader from my 160-10 meter "L" antenna went looking for the downward moving lightning leader, from a developing thunderstorm approximately four miles to my SE. Fortunately an upward moving lightning leader from another object nearby, a concrete and rebar reinforced 35 foot street light approximately 200 yards to my SW, took the strike!!! As I write this email my hands are still tingling. I knew there was danger, as the 500 mb temperature was -12 deg. C and this assists in excessive lightning development but there was nothing in the area when I started. This lightning bolt was the first one of the day in my area.

Lightning incident #7 August 19, 2001:

I got caught in a horrendous, incredibly fierce electrical storm this afternoon in Tampa and all the way home to Plant City. When I left an employee meeting at Radio Shack at district H.Q. at 3:00 pm I made a mad dash for the car at Waters and Armenia Avenue in north Tampa, as lightning struck the Winn Dixie sign on the east side of the parking lot. On the way home along Busch Blvd. between I-275 and U.S. 301 through Tampa and Temple Terrace, I saw lightning hit all seven cell towers along the route. As I was sitting at the red light at Busch Blvd. and 30th Street lightning struck a power pole to my right and just behind me. I saw a secondary smaller feeder bolt rise up from the hood of my car with a thump, could feel heat, static electricity and smell ozone and burning wood. I also heard weird buzzing, zapping noises and felt my body involuntarily pull slightly back and to the right, INCREDIBLE!!! As I passed Busch Gardens I saw lightning strike one of the tall steel roller coasters, lightning once again struck a power pole just in front of me and to the right at Busch Blvd. and 40th St and then a third time at Busch Blvd. and 78th St. and then a fourth time at Bullard Parkway and Harney Road and then a fifth time at U.S. 92 West and Moore Lake Rd, near my house in west Plant City. I felt like I

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My Close Encounters With Florida Lightning Bolts

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was on a battlefield!!!

It was simply incredible to be so close to lightning so many times in one storm. As many times as this has happened to me in my lifetime, sometimes I wonder if this is how I will die. What was even more incredible was the number of citizens walking around outside totally oblivious to the danger. Last week a 44 year old Professor at USF was struck and killed by lightning on campus and nearby a 29 year old man was struck while walking his dog, he survived.

Lightning incident #6, August 22, 1999:

The time was 9:15 pm. We were having a post sunset thunderstorm. I was looking out of my east facing window watching as the thunderstorm approached my location from the SE. All of a sudden BLAMO lightning strikes the 64 foot vertical section of my 256 foot L antenna, suspended from a 75 foot pine tree approximately 30 feet away. The flash, actually 4 ground to cloud return strokes nearly blinded me for about 5 minutes and the thunder a bull-whip multiple cracking sound made my ears ring for two hours. I also felt heat and static electricity.

The 64 foot vertical section of the antenna wire, which was made up of double coated #12 stranded wire evaporated.

When I checked the pine tree the next day I found a 1.5 foot long gash in the tree bark with sap oozing out, 1.5 feet off the ground, the point at which the return strokes began. I also observed a branch blasted off where the antenna was tied off, at a point 65 feet up where the antenna made a 90 degree bend and sloped off and down to the north. Ironically the return bolts left the trunk of the tree at the point 3 feet off of the ground and jumped to the 64 foot vertical section of the antenna. My antenna saved the tree from death by lightning. Fortunately none of the voltage and current from the lightning strike entered my radio shack, as the near end was grounded to four 10 foot ground rods.

Lightning incident #5, June 5, 1999:

I was visiting a at a state correctional institution, with many, many lightning targets around like steel lighting poles, miles of fencing and communications towers, etc. Every summer the institution suffers numerous electronic equipment damaging lightning strikes, even with some very serious lightning protection systems in place. The time is approximately 3:55 pm as I'm quickly walking across the parking lot, with the institution surrounded by developing thunderstorms, though no lightning has yet occurred. I look back over my left shoulder at one developing storm approximately one mile to my

southeast, keeping in mind the numerous minor injuries due to lightning on the mile wide compound over the years.

That's when it happens. I observe lightning strike our 150 foot communications tower approximately 200 yards to my south and simultaneously strike a 30 foot tall steel lighting pole approximately 30 yards to my south, standing adjacent to an 8 foot tall security chain link fence. The crack/concussion of thunder is instantaneous and deafening, as the lightning flows onto the nearby 8 foot chain link security fence, that I'm only 3 feet away from. I see the charge pass by me, with a piece in the form of a miniature lightning bolt, jump off the fence and hit me on the left side of my head, singeing my hair. The charge made a buzzing, snapping sound as it passed by me on the fence.

The complete 8 foot vertical chain link was engulfed in a solid curtain of fluid like electricity. I was completely dazed by the electrical charge for about 40 minutes and I'm still a little dull mentally, three days later.

Approximately 1 hour after the incident my pulse was still 110 beats per minute verses my normal 60, blood pressure 155/105 versus my normal 110/55, my body temperature 101 degrees. It has now been approximately 24 hours since the incident and I still feel

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My Close Encounters With Florida Lightning Bolts

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weak, shaky, my skin still crawling and half deaf. By the way while at the local hospital emergency room, the ER admitting receptionist was similarly injured by lightning when it zapped her while on her computer!!!

Lightning incident #4:

October 18, 1998. I always leave my radio equipment unplugged and grounded when not in use, during the thunderstorm season which generally runs from mid May to Mid September. Before I operate I always go outside and check the weather. When I went outside I immediately noticed an out of season air mass thunderstorm developing approximately three miles to my north. I have a 256 foot long L antenna up 64 feet for 160 meters, which is directly grounded outside to four ten foot ground rods. I decided to check the grounding system real quick, just in case I had forgotten to attach the two very large alligator clips which complete the grounding circuit, which by the way "were not" connected to each other. The moment I grabbed the clip on the antenna side with one hand, The very first lightning strike to occur with the storm, struck a power pole approximately 100 yards away, inductively coupled to my antenna and shocked the heck out of me. I was very lucky to escape without any permanent/serious injury, only 30 minutes in a daze.

Lightning incident #3:

July 17, 1997. My radio shack and weather instruments were in my bedroom at the time. A typical summer thunderstorm was raging outside. My wife and I were laying on our bed reading, when lightning made a direct hit on my homebrew lightning detection system! The sensor was mounted on a grounded steel mast 45 feet in the air, with it's receiver in the bedroom. My wife and I received a significant electrical shock when the lightning entered the room. My wife says it was actually a ball of lightning but I didn't see it. We felt intense heat, smelled ozone, felt static electricity before and after and were both pretty much deafened for one week from the crack of thunder.

The following damage occurred, the eave of my house caught fire but fortunately was put out by the rain, my lightning detection system vaporized, my electronic weather station was destroyed, as well as an expensive communications receiver. I was very fortunate not to have lost my Yaesu FT-840 rig and other radio equipment. We also lost the following appliances around the house, NONE of which were plugged in in any way, three televisions, three telephones, one stereo system and a microwave oven. We always unplug everything when a storm threatens. All were damaged by an inductively coupled electromagnetic pulse!!!

Lightning incident #2:

July 4, 1989. It was a typical early summer afternoon in Nobleton, Florida. I was in the front yard mowing, with no clouds overhead or nearby, not even any fair weather cumulus. Way off in the distance to my south I saw a classic Thunderstorm with anvil top. As I watched the storm I saw a positive polarity anvil cloud to ground lightning bolt strike the power pole and transformer in my front yard 75 yards away, of course knocking out the power and scaring the HECK out of me. I went inside and took a look at my lightning detector and the lone thunderstorm cell was 30 miles to my SSW!!! I also verified the storms distance with a call to NWS Tampa Bay. BIG TIME BOLT FROM THE BLUE.

Lightning incident #1:

Summer 1969. It was another terrifying Florida electrical storm. The mid and late 1960's seemed to have more vicious lightning storms in number and closeness, then the 1970's, 80's or 90's. I think it was related to more cold air aloft intrusions then we have experienced since. When you have a 500mb temperature of -10 Celsius or colder here in Florida during summertime it contributes to a high lightning strike frequency. I was in the kitchen of my parents home. I observed lightning strike an oak tree (rare) in

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My Close Encounters With Florida Lightning Bolts

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our back yard.

cerning lightning, it can still get you, so beware!!!

A second later a ball of lightning (plasma) about the size of a basketball and as bright as an arc welder, rolled off the tree about 6 feet off the ground. The ball made a loud buzzing sound as it slowly moved towards and hit our large in wall air conditioning unit, knocking it out. My mother saw a blue flame shoot out of the air conditioner about 6 feet long. The ball then moved onto the chain link fence in our back yard, accelerated and hopped succeeding chain link fences for about 2 blocks. The ball then ran out of chain link fence where it terminated at the corner of a neighbours stucco and block house, blowing a very large hole in the house. As the ball travelled through the neighbourhood, it also knocked a man off of his porch swing, causing minor injury.

Taken from :-

<<http://www.kn4lf.com/kn4lf22.htm>>

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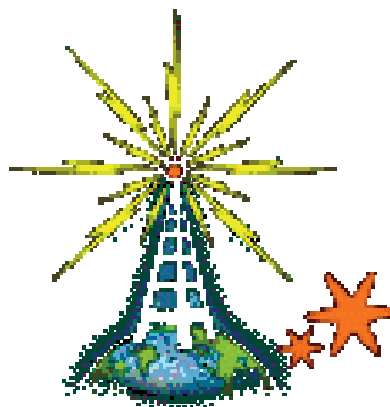
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West Rand members - we need your input!

To make this the best ham radio magazine in South Africa we need your input. Please submit articles, comments, suggestions etc.

Please send plain text with no formatting to the email address below.

In July 2003, we re-published an Anode Compendium on CD. It has the issues from July 2000 until June this year. This included the new Adobe reader. It has been updated, check with the chairman for details.



We need your input! Email us articles, comments and suggestions please.
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