

## Clay's Corner for July 2017

### Clay's Corner

Providing news and views from a broadcast engineers perspective since September 1986

Finally, as if Mother Nature was watching the calendar, summer arrived in our area about the 21st of June. As if a switch was thrown, our gray cool weather was replaced with sun and warmth. In fact, on the 25th the temps were in the 90's. Around these parts – This is HOT! But not fear, our natural air-conditioning was right around the corner. For those of you that are not in this area and reading this column, let me explain how this works. In the summer, the Seattle area is dry...sometimes very dry...to the point that we fear wild-fires, etc. However, unlike other areas of the country our weather has a couple of distinct differences ...1) We have summer weather cycles. The temps will go up and up and then, after a hot day, you will wake up to thick, low, overcast and dramatically cooler weather, with the sun peeking out in the late afternoon as the clouds burn off. Each day the clouds burn off earlier and the days get warmer until you are back to clear skies all day. This is caused by our proximity to the ocean and the changing of wind directions from off-shore to on-shore flow. This is what we call our natural air conditioner. What makes it interesting is that you can go higher in elevation and get to see all of this taking place below you as you bask in sun all day. 2) We have a very unique relationship with humidity. During the winter, when many areas experience low humidity, ours is the highest. During the summer, when our temperatures go up, our humidity actually goes down. People that live in the East and Southeast parts of the country have come to believe that humidity and temperatures track each other...Not the case in the Pacific Northwest, which makes this area such a wonderful place to be during the summer. Let me not forget the fact that we must have sun for the famous Fremont Solstice Parade...You would not want all that body paint to run would you?

One of the major firms in radio broadcasting, Cumulus, is still dealing with a mountain of debt and now there are reports that they may be the target of a hostile takeover. Reportedly, Lew Dickey has launched a new company that may have that in mind. Mr. Dickey was forced out of the company a couple of years ago. The plot thickens.

Not very often do you hear about someone developing a new antenna...but that's apparently what a company in Redmond, WA has done. They've come up with a 'flat' antenna that, potentially, has a lot of people talking. Vehicle makers should be interested because they could have an antenna that does not look like a shark fin. Airplanes could have one that does not introduce wind resistance, etc. The Company – Kymeta – has some very heavy duty backers and sharp people on the project. And, of course, we are proud to have them in the Seattle area. Redmond is located NE of Seattle and is more famously known for a little software outfit you might have heard about....Microsoft. For more information – take a look at – <http://www.kymetacorp.com/>

You need a program these days to keep track of who is buying who. Mergers and acquisitions are certainly popular. One of the big names in audio streaming now has a new investor. SiriusXM, the satellite radio company, has just invested \$480 Million in Pandora, a huge name in the world of streaming.

Likely due to pressure from many quarters, the FCC appears to be increasing the pressure on Pirate Radio Stations. First the Commish uses their famous 'warning letter' telling the party to turn if off. Realizing that the FCC has a limit as to what they can do (their warning letters often are ignored), Commissioner Michael O'Reilly admitted that they need additional tools to deal with the problem. He's asked Congress to do just that by allowing larger fines and the ability to seize equipment of the violators. The problem is that the present administration is proposing that the FCC's budget be cut and staff reduced. Add to this the fact that a number of these operators simply ignore their fines. Perhaps Congressional action is the only thing that will provide the tools to finally deal with this issue?

As I was driving to our favorite frozen yogurt shop recently I could not help but notice this sign:

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For those of you that are not in the broadcast business, an 'Air Check' is a recording made of a person when they are actually on the air that has been edited to eliminate other items in the broadcast. In this case, the sign is at a business servicing vehicles that wants you to come in to have your tire pressures checked. (Note the fueling nozzle in the upper left.) They likely have never heard of the other use of the term 'Air Check'.

Here we go again. The FCC is, again, opening a filing windows for more FM translators for AM stations. This time for Class C and D Stations (the two lower classes). Not sure that this will impact the FM band in larger markets as the band is pretty full. Another thing to watch will be the prices that AM stations will be willing to pay to add an FM. There are a lot of very creative things happening with all of this....We will have to wait and see what transpires.

In recent columns I have mentioned one of the giants of business in the Seattle area, Amazon. Seems like this rapidly growing firm is in the news frequently. Most recently, in the middle of June, they announced that they are buying Whole Foods for a meager \$13.7 Billion. There a lot of people wondering where Amazon will go next. When you have lots of money, you normally buy stuff! One impact of this move has been to lower stock prices on others that sell food, and this includes another Seattle area based

company, Costco. When you are huge – the fear is that you will dominate a particular retail segment.

Let us not forget that Amazon has a broadcast connection. You can now purchase radio and TV broadcast equipment from the Big-A. Additionally, Amazon employs broadcast engineers. I discovered that fact while recently visiting their site while preparing this column. One has to wonder what impact they will have on the traditional suppliers of equipment for the broadcast industry!

My readers have probably concluded that I like to boast about certain aspects of the Seattle or Pacific Northwest area. Some statistics are good, while others are bad. For example, a recent survey has determined that there is a 72 percent increase in the number of people who commute 90 minutes. Think of it this way – if you are one of those, and you work 9 to 5, you have to leave for work at 7:30 a.m. and don't get back home until 6:30. The rapid expansion of business and population in this region has made the Puget Sound area the 3rd fast growing mega-commuter region in the country. The traffic congestion is not just in Seattle, but region wide. This directly impacts me. For example, it will often take me a hour to drive from my home in Auburn to Lakewood SW of Tacoma. Highway 18 has become a commuter route for people going to and from work, which means that I often am 'caught in traffic' just trying to get to Tiger Summit, where I (fortunately) get to drive faster on that one-lane gravel road than on the highway I just exited. What is making things worse, at a rapid pace, are the sky-rocketing prices of houses. The closer to the center of the city the higher the prices...the impact of which is to force workers to head out of town where prices are more reasonable and this puts them on the roads as commuters. Recently a boarded up shack in Seattle's Greenwood district sold for over \$450,000.

The S&P/Case-Shiller U.S. National Home Price NSA Index, reported a 5.8% annual gain in March, up from 5.7% last month and setting a 33-month high. Seattle, Portland, and Dallas reported the highest year-over-year gains among the 20 cities. In March, Seattle led the way with a 12.3

% year-over-year price increase, followed by Portland with 9.2% surge. From this study, here are some results for cities where my column is read:

Denver-Aurora-Lakewood, Colorado Year-over-year home price change 8.4%; median home value, March 2017 \$366,000; 3-yr population change 5.7%; median household income \$70,283.

Portland-Vancouver-Hillsboro, Oregon-Washington Year-over-year home price change 9.2%; median home value, March 2017 \$360,000; 3-yr population change 4.9%; median household income \$63,850.

Seattle-Tacoma-Bellevue, Washington Year-over-year home price change 12.3%; median home value, March 2017 \$440,000; 3-yr population change 5.2%; median household income \$75,331.

Everyone in Broadcasting knows what HD means - For TV it's High Definition, for Radio it means that Digital Radio thing. Did you know that in Seattle we have a firm that appears to be in the HD Business? I was creeping along a freeway recently behind one of their trucks and could not resist pulling out my camera so I could share.



I really enjoyed listening to KONP while on the North Olympic Peninsula recently. If anyone wants to experience small market radio, this is a great example of a station doing it right. I had to smile however at their traffic reports. Port Angeles is one of those locations that does not really have freeways, unless you count US 101 going to Sequim. Freeways, to us in this area, are multiple lane highways without traffic signals with higher speed limits, that don't charge for parking! The big news was they were paving part of a highway west of town. I wonder if they realize how lucky they are? I did find it interesting that they were going to broadcast – live – the local high school graduation ceremony. Kudos to Todd at KONP for his work at being a true community radio station.

I can, perhaps, understand how a small market station might not keep up with the rules regarding the Emergency Alert System, and get caught by the FCC. However, it's a bit hard to grasp how a major ownership could let something take place that would net them a huge FCC fine for EAS violations, but that's just what happened to Tegna, who will now pay 55 Grand for running an ad with false EAS Tones. In this case, it happened

with their Channel 12, WTLV in Jacksonville, when they aired a spot that started with EAS tone and the sounds of a storm and a voiceover that stated, "This is an emergency broadcast transmission. This is not a test. This is an emergency broadcast transmission. This is not a test. Please remain calm. Seek shelter". As, all too often, those that create these spots are just looking for something to grab the viewers' attention and have little or no knowledge of the FCC's EAS Rules. In this case, a staffer at the station heard the spot and they stopped airing it....But not until the damage had been done. I'll be that there was a pretty easy to understand memo circulating inside Tegna.

On the topic of EAS.....the FCC is out with an NPRM that would create a new Event Code, BLU. You will find all kinds of information about this on the Washington State EAS Remailer. The WaState SECC will be dealing with this and other EAS issues at their regular meeting on July 13th at CPTC in Lakewood. To subscribe, go here -

<http://sea.sbe16.org/mailman/listinfo/eas-wa>

I bring you this web-site just becuz –

<https://www.spreadshirt.com/broadast+engineer+t-shirts>

There is a new player in town in the world of devices able to be a radio receiver, in the form of Amazon's Alexa. You have perhaps seen the TV Spot for the device where the actor approaches Alexa and asks it questions and gets frustrated? Like all computer based gizmos, GiGo (Garbage in equals Garbage out) is the rule. You have to say something that the device recognizes or you end up getting the wrong thing. Stations that use slogans more than call letters have to be careful for there may be duplications. For instance in Seattle a person may ask for 'The Wolf' but not know that there are many 'Wolfs' in the country just like there are a lot of Mix 100's, or Boss 99's etc. This new device has caused radio broadcasters to suddenly be in a nation-wide race to be the first to have – their – station be the one that Alexa recognizes. The way Amazon's policies work stipulates that only one entity can have a particular name,

meaning there can only be one *Mix FM* or *Lite FM* or *Z100*. The first radio station to build what Amazon calls a 'skill' under that name and win Amazon's approval locks up that real estate. Add to this equation the Google version. Call letters are usually unique. However, there are exceptions where you have an AM/FM that are only unique with one of them appending their letters with FM. Who would have thought that these devices would cause the broadcasters to change. Suddenly a station that only covers a specific geographic area has to think almost globally. Then again, a station might wish to use a different slogan for their OTA product than what they use in streaming. It's also likely that the advantage may go to the larger groups that have the resources to devote to this new issue. Small mom and pop operations could (again) find themselves with the sort end of the stick. Then there is this issue with speech recognition. Those with an accent could be at a disadvantage. Unlike some telephone-based system, you are not likely to have an 'operator' sort things out for you. I look for a number of broadcast outlets having to fine-tune their alternative names, as these devices become more popular, and, in effect, bring Radio back into homes. These things may also have an impact on the devices know as Internet Radios. Time will tell.

This got me to thinking...I wonder just how many people today actually go out and purchase a radio for their home. It used to be that every kitchen, night stand etc. had a radio. Not so much the case these days. Recently, while shopping at Fred Meyer (a local Kroeger store) I was delighted to find a rather large assortment of radios...including several 'clock radios'. Apparently they are still being purchased (that's a good thing). Of course you can purchase one from Amazon – Google "Amazon Table Radios" and your screen will be filled with options.

Look for new Domain Extensions – We commonly see .com, .net, .org, .edu, .biz and .ca (Canada). Soon we will be seeing .radio. Go here for more - <http://www.domainregister.com/comorg.html>

Ever wonder what the difference is in the sound of an audio source whose upper limit is 15 kHz vs 20 kHz? Those of you that have an HD Radio experience these different bandwidths as FM is 15 and HD is 20. Bob Orban put it this way – ***The subjective effect of HD's superior HF handling consists of two parts: the bandwidth increase from 15 to 20 kHz (which, according to a number of peer-reviewed journal studies, is usually not audible with program material because the lower frequency energy psychoacoustically masks the energy between 15 and 20 kHz), and the lack of need for pre-emphasis limiting. The second of these is by far the most important. The actual audible benefits of HD's improved HF power handling start at around 2 kHz (where 75 us pre-emphasis starts to become significant on the analog FM channel) and extend to 20 kHz. By 15 kHz, the HD has 22 dB better HF headroom than the analog channel (17 dB for the pre-emphasis + 5 dB for the analog/digital gain offset). The only downside is that up at 15 kHz, the information is carried by the SBR part of the HD codec, and this is only an approximation of the fine details of HF spectrum at the codec's input.***

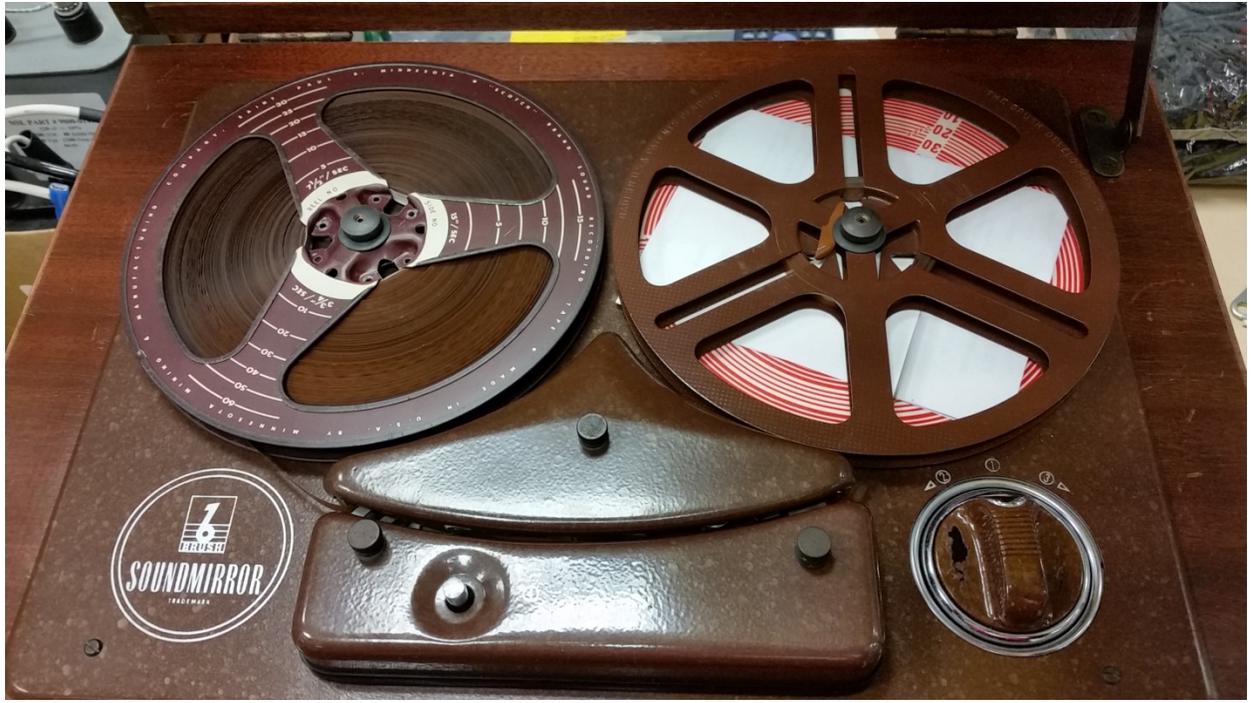
The main impact of listening to HD compared to FM (in a mobile environment) is the lack of noise and transmission artifacts with HD...And, as Bob points out, the highs will sound better. Probably the greatest demonstration of this difference in the Seattle area can be found at 98.1. To a great extent, KING-FM's classical format was not listenable in many areas with only an FM Radio. HD changed all that, making listening to the classics in a moving vehicle possible. In other areas with more favorable topography than Seattle, the HD advantage is not going to be as noticeable. Of course, at my age, ears develop their own high-frequency roll off.

I caught this image recently in Seaside Oregon. The top was a 'forest' of antennas.



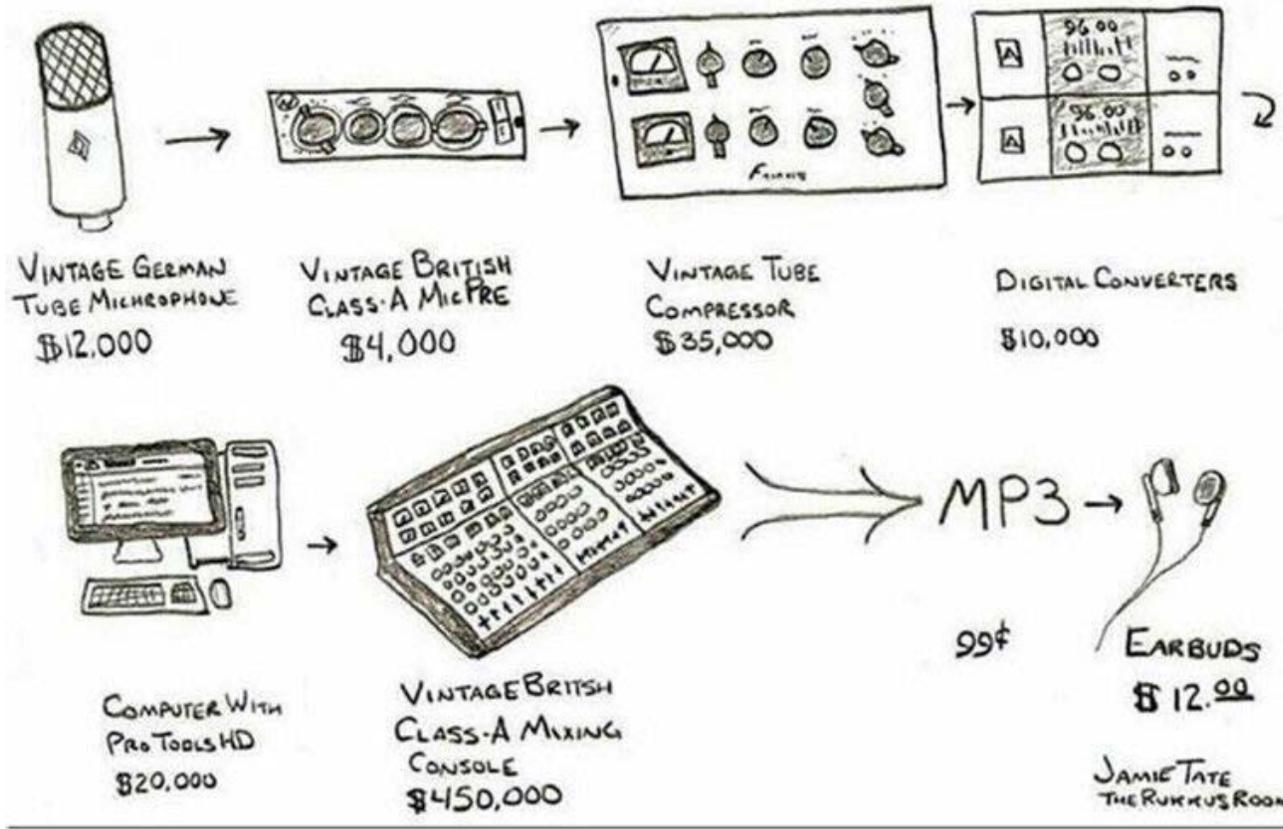
Skywarn is a program where Amateur Radio Operators (Hams) participate with NWS.

Speaking of Seaside, we were blessed with wonderful weather while there for the annual Ham Radio event. Got to actually do some patio eating! (Something that does not take place every day on the Oregon Coast.) At the event, attended by some 2200 Hams this year, is a flea-market where I spotted this device - Brush Sound Mirror. Looking at a web site, it appears that there may be more to this item. Here's a web site and a YouTube video with more: <https://www.brushindustries.com/about-us/history-of-brush-industries/page.aspx?id=1396> <https://www.youtube.com/watch?v=c5XbCkSKqYg>



This old tape recorder made me think of this -

# MODERN RECORDING



Hard to believe that it's been 55 years since the Space Needle was erected. I wonder if those that were involved had any idea that this structure would become the symbol for Seattle? In the early days it was common to have a radio station broadcasting from the Needle. I recall the natural gas torch on the top that was lit hourly and mentioned on a local radio station. In the early days there was a Ham Repeater up there as well....6 meters if I recall. Does anyone remember that?

During one week, the station I worked for at the time did their morning show from the needle. That was kind of cool as I'd show up at about 4 a.m. with a cart load of equipment, loading it in the elevator for the trip upward. What was neat about this was the fact that I got to operate the elevator. Usually the elevator was operated by a person that explained the sights to the many tourists that flock to get the view.

Over the years there have been some changes made. Most significant was the addition of the restaurant part way up. Now we are learning that the place is going to get a significant makeover...its third major renovation. Not to be outdone by other locations that feature glass floors so you can get that special feeling in your stomach, reportedly the new Needle will have some of that too. Apparently, the restaurant that revolves once an hour will also get the glass floor treatment that is certain to impact more than a few that choose to dine there. I do have to wonder how it will impact appetites! The project is supposed to start this fall and will take a while to complete.

Seems like there are a number of job opportunities cropping up –

There is an opening for a Radio cluster in Redding, California. The firm is offering a competitive salary + benefits, 401K. If you're interested, or know someone who is, contact [ronc@sonic.net](mailto:ronc@sonic.net). E&OE.

Congratulations to Mark Huffstutter on his retirement from KING5. My occasional visits to that transmitter site on Queen Ann Hill will not be the same without Mark's 'museum of wonders'. Those that have been there

will know exactly what I mean. The retirement of yet another broadcast RF guy makes one wonder what this industry is going to do in the future. Finding younger, experienced people that can give a company 20 or so years dealing with these plants is going to become increasingly difficult. For people like me that elected to continue to work well past conventional retirement age, there is plenty of demand. The fact that there is still a lot of old equipment still in place needing someone to keep it going is what has kept me from being a greeter at Walmart. The problem is with the newer generation of folks that are tasked with maintaining equipment that is older than their dad. Many of today's (and tomorrow's) Broadcast Techs are likely to come from the IT world where some of the things we deal with are unknowns - for example - Vacuum Tube Transmitters with huge power supplies, blowers and lethal voltages. Analog devices, a 'Greenie' screwdriver, equipment that does not require a laptop or tablet to communicate, etc.

One does not need a crystal ball to see that there is a convergence coming that is going to force change, and that some of this change will be very painful to those who own and operate these facilities. Older managers are used to buying equipment that lasts a very long time, knowing that they have someone on staff that will make sure that this happens. However, this is changing as younger managers view the world of equipment differently. They are accustomed to equipment with shorter life cycles like Desk Top PC's, Copiers, Laptops etc. The winners will be the contractors. Likely broadcasters will be employing a lot fewer conventional engineers and looking at broadcast equipment much as they do office equipment. When they do, replacement cycles will likely change too.

Bustos Media has purchased some broadcast properties in Eastern Washington, KNNA in Mabton/Yakima and KLES and KZXR in Prosser. Bustos owns stations in the Seattle and Portland markets.

Since 2009 you have been hearing KOMO Radio give their ID as KOMO-Seattle, KOMO-FM Oakville. This has all been possible due to an LMA that Fisher had with South Sound Broadcasting related to the 97.7 FM

transmitting from South Mountain west of Shelton. Now that the Sinclair owns the stations in Seattle, they have 'pulled the trigger' and are purchasing the FM for reportedly \$6.75 Million. Included in the deal is a translator in Redmond. South Mountain got its name from being the southernmost mountain in the Olympics. The site is presently the home of 3 FM stations, with rumors that this will increase. The stations there can perhaps be described as high-powered 'Rim-Shots' being 50 miles from Downtown Seattle. FCC data shows KDDS (located on the top of the tower), operating with 64 kW from 742 meters above average terrain with an elevation of 1032 Meters. KOMO-FM is running 69 kW at 701 meters AAT. Both Stations operate with a directional antenna protecting co-channel operations in the Vancouver, BC area.

We've all seen those outdoor/patio speakers designed to be left outside, year around. But what about a TV set? No one would dream of letting a TV get caught in a rain storm. That is until now. A firm I've never heard of, Peerless-AV has come out with an all-season outdoor TV. Probably not designed for places like Phoenix however, as the high end temperature it is designed for is 122 degrees. That would mean it should be under-cover in most locals. However, if you wish to watch TV or videos outside in the winter...You are in luck as it will work down to -22 F. These are not little screens either...They will be available in 49, 55 and 65 inch sizes. Perfect for those summer, or perhaps winter, evenings on the patio!

Around about July first, the first of the four Entercom Stations is slated to move to their new address at 800 5th Ave., 14th floor. Entercom has been based, for many years, in the Metropolitan Park West Tower. No word on how this move will be involved with the merger with CBS radio. The relocation was in the works prior to that announcement.

The May radio ratings are out and here are some of my usual observations of the 12+ Numbers:

- Hubbard's KQMV remains #1

- Non-Commercial KUOW is #2
- KMPS is certainly winning the Country race at #6 (the Wolf is down to #19)
- Non-Comm KNKX is at #9
- AM continues to suffer with KIRO and KOMO sharing 16th place with all other AM's well below that
- KCMS is now down to #20, perhaps due to the impact of KLSW
- There are now 3.704 Million over 12 in the area
- Hispanics now total over 311,000

CNN recently released a list of 12 iconic mountains from around the world with many familiar names – Mt. Everest in Nepal, Mt Fuji in Japan etc. The ONLY mountain in the States listed – Mt. Rainier! The picture below is what it looks like from the transmitter site at West Tiger Mt. Never tire of seeing this magnificent sight. And for my readers in other parts of the country – The mountain is white – year around. (Mark of a real mountain.) Much of the white you see in this picture is not snow, but rather ice from the many glaciers.

The little peak on the left is called 'Little Tahoma' and is 11,138 ft. Mt. Rainier is 14,411. If you ever wanted to compare Oregon's Mt. Hood to Mt. Rainier – Here's what it looks like. Mt. Hood, the highest peak in Oregon, is 11,250. As you might gather, Mt. Rainier is huge. The name Little Tahoma is reference to Mt. Rainier that used to be known as Tahoma, a name that is used frequently in the area.



The RTDNA is out with their annual Murrow Awards. (RTDNA means Radio Television Digital News Association). Scoring big were CBS Radio and TV, winning the overall excellence award at the network level. Also scoring well were NPR and CNN. The Edward R. Murrow Awards are named after the famous CBS news reporter. Perhaps I should mention that Washington State University operates the Murrow College of Communications in Pullman. If you ever get there, be sure and take in the area dedicated to Mr. Murrow...including the door that was on his office in New York! In our area, the Murrow College operates Northwest Public Radio, with radio and TV transmitters all over the state and into Idaho and Oregon.

I love to catch people working – I found Buzz Anderson the other day working at Cougar Mountain on KNHC. Note the 'C-89' sticker on the top of the blue transmitter.



Broadcast history has recently been made in NYC. 16 years after the destruction of the original World Trade Center towers by terrorists, the new One World Trade Center tower is receiving its first broadcast operations as TV stations begin transmitting from the highest point in that city.

Once in a while you hear a news story about a police vehicle being stolen. Tough for the cops being a crime victim. But what about a TV news truck being stolen while they were reporting on crime in the area? That's exactly what happened to a TV news crew in Albuquerque, NM recently to KOB-TV. The news director was quoted as saying – "I have a rule that you are never the lead of your own newscast". Understand they got it back thanks to GPS tracking equipment they had on board.

Don't forget the SBE Picnic on Vashon Island on July 29th. Check the SBE16 Web Site for details.

As I reach the end of this edition – I'd like to share with you something that, hopefully, will bring a smile. As usual, this comes from one of my many friends that keep me supplied with this stuff. In this case, a comparison of

how math teaching methods have changed over the years -

### 1. Teaching Math In 1950's

A logger sells a truckload of timber for \$100.

His cost of production is  $\frac{4}{5}$  of the price.

What is his profit?

### 2. Teaching Math In 1970's

A logger sells a truckload of timber for \$100.

His cost of production is  $\frac{4}{5}$  of the price, or \$80.

What is his profit?

### 3. Teaching Math In 1990's

A logger sells a truckload of timber for \$100.

His cost of production is \$80.

Did he make a profit?

Yes or No

### 4. Teaching Math In 2000's

A logger sells a truckload of timber for \$100.

His cost of production is \$80 and his profit is \$20.

Your assignment: Underline the number 20.

### 5. Teaching Math In 2016

A logger cuts down a beautiful forest because he is selfish and inconsiderate and cares nothing for the habitat of animals or the preservation of our woodlands.

He does this so he can make a profit of \$20.

What do you think of this way of making a living?

Topic for class participation after answering the question:

How did the birds and squirrels feel as the logger cut down their homes?

(There are no wrong answers, feel free to express your feelings e.g, anger, anxiety, inadequacy, helplessness etc.)

Should you require debriefing at conclusion of exam there are counselors available to assist you adjust back into the real world.

That's it for this month – Enjoy summer and stay safe.

Clay, K7CR, SBE Fellow.