Anchorage Amateur Radio Club

Next Meeting February 6th 2009, 7:00 PM

FEBRUARY PROGRAM:

David Charlton, the FCC Alaska resident agent will be providing information and addressing questions about the FCC DTV transition as well as the radio enforcement actions of the FCC in Alaska.

DIGITAL TV

What makes digital television so special? A digital image isn't inherently better than an analog image, and in some cases it can be worse. An HDTV picture doesn't have to be digital either; Japanese HDTV is broadcast over an analog signal. There has to be another reason why the United States is choosing to go through the pain of switching from analog to digital. The digital transition is something that's giving a lot of people headaches. What is it? Who will it affect? When is it? Why? What if I have cable or satellite? Do I have to buy a new television? These are just some of the questions people are asking.

Why Is the Digital Transition Occurring?

The FCC says that we are transitioning to digital because "it will free up parts of the valuable broadcast spectrum for public safety communications (such as police, fire departments, and rescue squads). Also, some of the spectrum will be auctioned to companies that will be able to provide consumers with more advanced wireless services (such as wireless broadband)."

Another reason for the transition is that digital television (DTV) will give people access to a better picture and sound and data services that analog doesn't support.

It is also important to note that the transition from analog to digital in currently being incorporated in many nations throughout the world. In some countries, this is being forced on consumers and stations, while in other nations it is entirely voluntary.

When Is the Digital Transition?

The digital transition will happen on **February 17, 2009**,* for full-power stations. The U.S. is home to about 1,760 full-power TV stations. The Federal Communications Commission (FCC) did not include low power, Class A or translator stations in the mandatory transition to digital, which means that many people will not be affected by the transition. While Class A, low-power and translator stations aren't part of this mandate, the FCC will likely require them to convert to digital at some point in the future. No date is recognized or near being recognized at this time. The FCC estimates that there are more than 2,100 licensed low-power television stations, more than 4,700 licensed translator stations and about 600 Class A Stations.

To put an exact number on it is difficult, but think of it this way –- most full-power stations are the stations affiliated with national broadcast networks, like ABC, CBS, Fox, NBC, UPN, etc. Low-power, Class A or translator stations are generally in smaller or rural markets, distribute non-English programming and/or function in a big market to a smaller niche group of individuals.

Here is how the FCC describes these stations:

Class A stations are former low-power stations that have some interference protection rights not available to low-power stations. They must broadcast three hours of locally-produced program each week and operate much the same as full-power stations.

Low-Power stations provide opportunities for locally-oriented TV in small communities, which may be in rural or individual communities within larger urban areas. Programming can include satellite-delivered programming, syndicated programs, movies, and various locally-produced programs.

Translator stations rebroadcast programming from full-power stations to live in regions that are unable to receive the full-power signals because they are too far away or live in the mountains or other remote areas.

Per the FCC database, there are 536 registered Class A, low-power and translator stations in ALASKA. (Go To http://www.ntia.doc.gov/lptv/LPTV_AK.html see a complete listing of Alaska communities with low power stations.)

What Is the Digital Transition?

The digital transition in the United States is when all analog television signals originating from full-power broadcast stations will become 100% digital. This means analog signals will disappear from full-power stations. They will not exist. People that continue to use an analog television and an antenna will not receive TV unless they have a digital-to-analog converter box -- that is, unless they receive signals from a low-power, Class A or translator station. Yes, there is always an exception to the rule.

Mechanical TV

First lets talk about mechanical TV. It all goes back to a little invention by Paul Nipkow in 1884 consisting of a disk with holes spiraling into its center. I know it's hard to believe, but this little disk shaped the development of television. Engineers like John Logie Baird and Charles Francis Jenkins, among others, used Nipkow's disk to create the first systems for scanning, transmitting, and receiving images in the 1920's. These guys created entire television systems based on mechanical image scanning and receiving. No Cathode Ray Tubes (CRTs) were used here.

Electronic television systems lagged behind mechanical systems for several years, mostly because mechanical television was cheaper to build and it didn't use delicate parts. Not only that, but it was really hard to get financial backing to develop electronic TV when mechanical TV worked so much better at the time. With a cheaper system that already worked, few people saw the need to change. Then Vladimir Kosmo Zworykin and Philo T. Farnsworth made some critical breakthroughs, and electronic television began to catch up.

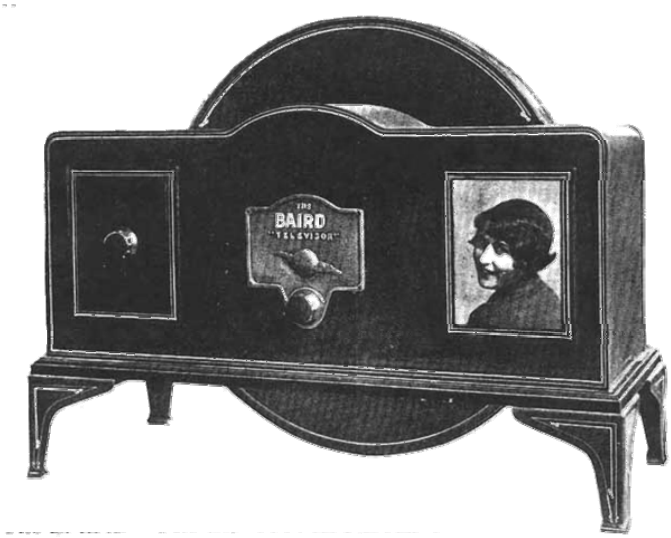
Vladimir Zworykin found financial backing from David Sarnoff, Senior Vice President of RCA. Sarnoff was watching mechanical television development and predicted that electronic TV would eventually be more commercially viable. Later, when Philo Farnsworth found some investors to back his ideas, he and Zworykin competed to get their electronic televisions to the public first. Both Farnsworth and Zworykin, working separately, made great advances towards commercial television and affordable TV sets. By 1935, both were broadcasting intermittently, using all-electronic systems. But Baird Television was first in 1928 with an all mechanical television system.

At the time, very few people had television sets and the viewing experience was less than impressive. The small audience of viewers was watching a blurry picture on a 2 or 3 inch screen. The future of television looked bleak, but the competition for dominance in television broadcasting was hot. By 1939, RCA and Zworykin were ready for regular programming and they kicked it all off by televising the World's Fair in New York. Things moved quickly, and in 1941 the National Television Standards Committee (NTSC) decided it was time to write guidelines for television transmission in the United States. Five months later, all 22 of the nation's television stations converted to the new electronic standards.

In the early years, during the Great Depression, television sets were too expensive for most of the public. When prices eventually dropped, the U.S. was knee-deep in World War Two. But when a new age dawned after the war, the time was right for the Golden Age of Television. Unfortunately, everyone had to watch it in black and white.

COLOR TELEVISION

CBS developed a workable color system years before their rival, RCA, but it was incompatible with the huge number of black and white sets in homes around the country. CBS poured a lot of money into their new color system, but it was all for nothing. With increased interest by the industry in color television, the Federal Communications Commission on July 11, 1949 called for hearings to determine the feasibility of introducing color service. Hearings began on September 26, 1949 and were, to last until May 26, 1950 with 10,000 pages of testimony and 265 exhibits submitted for the record. Three competing methods of color were proposed: the Field Sequential method by CBS;



the Dot Sequential approach of RCA; and the Line Sequential proposed by Color Television Incorporated. RCA, motivated by CBS's work on a color system, bet on their own color system. They soon had a color system that would work on monochrome monitors too. At the conclusion of the color hearings in 1950, there was much pressure by the color television proponents for the FCC to immediately adopt a color standard. On September 1, 1950, the FCC issued its First Report on Color Television Issues (Public Notice 50-1064) in which it deferred the adoption of a standard. The FCC declared that the poor performance of color fidelity, interfering dot and line crawl patterns, poor registration, and high studio and receiver cost, associated with the RCA and CTI systems, precluded their adoption. The compatibility problem of the CBS system was acknowledged. After RCA demonstrated their system, the NTSC adopted it for commercial broadcasting in 1953.

Broadcasting a TV Signal

The Basics

The analog TV standard has been in use in the United States for about 50 years. To review quickly, here are the basics of analog television transmission:

- A video camera takes a picture of a scene. It does this at a frame rate of 30 frames per second.
- The camera rasterizes the scene. That is, the camera turns the picture into rows of individual dots called pixels. Each pixel is assigned a color and intensity.
- The rows of pixels are combined with synchronization signals, called horizontal sync and vertical sync signals, so that the electronics inside a TV set will know how to display the rows of pixels.
- This final signal, containing the color and intensity of each pixel in a set of rows, along with horizontal and vertical sync signals, is called a composite video signal.

When a composite video signal is broadcast over the airwaves by a TV station, it happens on a specific frequency. In the United States, we know these frequencies as VHF channels 2 through 13 and UHF channels 14 through 83.

The composite video signal is transmitted as an AM signal and the sound as an FM signal on these channels. The FCC allocated three bands of frequencies in the radio spectrum, chopped into 6-MHz slices, to accommodate these TV channels:

- 54 to 88 MHz for Channels 2 to 6
- 174 to 216 MHz for Channels 7 through 13
- 470 to 890 MHz for UHF Channels 14 through 83

When your VCR wants to display its signal on a normal analog TV, it takes the composite video signal and the sound signal off the tape and then modulates those signals onto a 60-MHz (channel 3) or 66-MHz (channel 4) carrier, just like a TV station would. Instead of broadcasting it, however, the VCR sends it straight to the TV. A cable box or satellite box does the same thing.

VHF stations often have very tall antennas due to their long wavelength, but require much less effective radiated power (ERP), and therefore use much less transmitter power output, also saving on the electricity bill and emergency backup generators. In North America, full-power stations on band I (channels 2 to 6) are generally limited to 100 kW analog video (VSB) and 10 kW analog audio (FM), or 20 kW digital (8VSB) ERP. Stations on band III (channels 7 to 13) can go up by 5dB(W) to 316 kW video, 31.6 kW audio, or 63.2 kW digital. Low-VHF stations are often subject to long-distance reception just as with FM. There are no stations on channel 1.

UHF, by comparison, has a much shorter wavelength, and thus requires a shorter antenna, but also higher power. North American stations can go up to 5000 kW ERP for video and 500 kW audio, or 1000 kW digital. Low channels travel further than high ones at the same power, but UHF does not suffer from as much electromagnetic interference and background "noise" as VHF, making it much more desirable for TV. Despite this, in the U.S., the FCC is taking another large portion of this band (channels 52 to 69) away, in contrast to the rest of the world, which has been taking VHF instead. This means that some stations left on VHF will be harder to receive after the analog shutdown. Since at least 1974, there are no stations on channel 37 in North America for radio astronomy purposes.

Remember the days before cable television when someone in the family would assume the job of antenna contortionist? *(Editors Note: if you are under 50 you probably don't remember this☺)* To improve that ephemeral picture to a viewable standard, they would skillfully adjust the alignment, length, and altitude of the antenna to get the best possible picture. But sometimes the picture would still show a foggy double image or ghostly images from the next channel. All these problems are caused by the weak signals from distant or blocked transmitters.

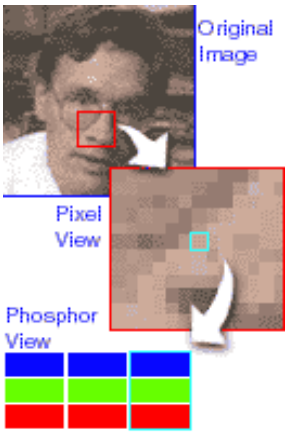
DIGITAL TV TRANSITION

A basic natural law that our technology can't overcome is the weakening of television signals as they travel away from the transmitter and around or through objects. Both analog and digital signals get weaker with distance. However, while the picture on an analog TV slowly gets worse for more distant receivers, a picture on a digital set will stay perfect until the signal becomes too weak for the receiver to pick it up. By perfect I mean the picture on the TV is exactly the same picture the broadcaster started with at the transmitter. In a digital signal, a one is always a one and a zero is always a zero.

Over forty years later, we now talk to each other on digital cellular phones and send email over a global network, but television in the United States has stayed essential the same. Sure, we've seen a few incremental advances, such as stereo sound, closed captioning, and better receivers, but nothing has come along to shake up the way we think about television. But that's about to change. Television is going digital.

RESOLUTION

An obvious question would be, "What's wrong with analog TV?" The main problem is resolution. The resolution of the TV controls the crispness and detail in the picture you see. The resolution is determined by the number of pixels on the screen. An analog TV set can display 525 horizontal lines of resolution every thirtieth of a second. In reality, however, an analog TV displays half of those lines in a sixtieth of a second, and then displays the other half in the next sixtieth, so the whole frame is updated every thirtieth of a second. This process is called interlacing. That has been fine for years. But now we have all become conditioned by computer monitors to be comfortable with much better resolution. The lowest-resolution computer monitor displays 640x480 pixels. Because of the interlacing, the effective resolution of a TV screen is perhaps 512x400 pixels -- for example, when an MSN TV (formerly WebTV) box tries to display Web pages on an analog TV display, it can display about 512x400 pixels. So the worst computer monitors you can buy have more resolution than the best analog TV set; and the best computer monitors are able to display up to 10 times more pixels than that TV set.

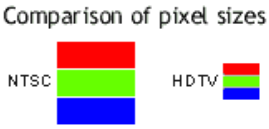


There is simply no comparison between a computer monitor and an analog TV in terms of detail, crispness, image stability and color. If you look at a computer monitor all day at work, and then go home and look at a TV set, the TV set can look very fuzzy.

The drive toward digital TV is fueled by the desire to give TV the same crispness and detail as a computer screen. If you have ever looked at a true digital TV signal displayed on a good digital TV set, you can certainly understand why -- the digital version of TV looks fantastic! Besides a wider screen, the picture is going to have more detail and crisper images. With the bigger pictures comes a finer resolution. The image you see on your television screen is made up of small rectangular dots called pixels. The word pixel stands for Picture Element, and it's the smallest resolvable rectangular area of an image. Actually, each pixel is itself composed of three close dots of color: red, green, and blue. Combined together on the phosphor screen, the three separate colors appear to blend into a single color.

Each phosphor emits light in proportion to the intensity of the electron beam hitting it. On a standard television screen, the electron beam has about 256 levels of intensity for each of the three colored phosphors. Therefore, each pixel has a spectral range of about 16.8 million colors. Ideally, the three phosphors would be in exactly the same spot, but they're only close enough together to fool your eyes into thinking they are.

From a distance, each pixel ends up looking like a single dot of color. If you look up close, though, you'll see that each pixel is really a rectangular trio of red, green, and blue. You can really see it on a projection television when the colors separate a little more. The resolution on current television isn't very good. To improve the resolution, HDTV is going to use smaller pixels that are closer together, and they're going to be square.



The old NTSC format uses rectangular pixels that are slightly taller than they are wide. The new HDTV format is composed of square pixels, just like most computer monitors. This will remove some of the image distortion seen on older televisions. The digital pixels are also smaller. How much smaller? Well, in the area taken up by a single pixel on a standard NTSC TV, HDTV will have four and a half pixels. That's over four times the detail, and the more pixels in a given area, the better the picture (all other things being equal). There is no comparison. With 10 times more pixels on the screen, all displayed with digital precision, the picture is incredibly detailed and stable.

DIGITAL TV TRANSITION

WHAT IS DIGITAL TV?

Right now you hear a lot about "digital satellite systems" and "digital cable systems," but they are not DTV. The set-top box does receive a digital signal from the satellite or cable; but once received, the signal is converted to an analog signal and sent to your analog TV on channel 3 or 4. This is not "digital television" -- it is a normal composite video signal for analog television converted to a digital format for transmission and then converted back to analog for display.

The term "digital TV" is used in many different ways right now, depending on who you are talking to. There is also the term "HDTV," which is the most advanced form of digital TV in use in the United States. The reason it gets confusing is because digital TV in the U.S. combines three different ideas. The first idea that is new to digital TV is the digital signal. Analog TV started as a broadcast medium. TV stations set up antennas and broadcast radio signals to individual communities. You can put a pair of rabbit ears on your TV and pick up channels 2 through 83 for free. What you receive, as described earlier, is a single, analog composite video signal and a separate sound signal.

True digital TV, on the other hand, is completely digital and involves:

- Digital cameras working at a much higher resolution than analog cameras
- Digital transmission
- Digital display at a much higher resolution

There are several good reasons to go digital, including: how much data it can transmit, how consistent the data stays over distance, and what type of data the signal can carry. For the same amount of bandwidth, you can stuff a lot more information into a digital signal than an analog signal. A digital signal doesn't produce the same problems with the picture we see on a distant analog television, either. And television in the digital age won't be limited to video and audio; our televisions will become truly interactive. Combined with HDTV and digital sound, this means a better picture, better sound, and digital data. But how are we going to fit all this into the same amount of frequency?

Unlike many other countries, the United States is converting to both digital signals and high-definition pictures at the same time. Some countries are already broadcasting high-definition pictures, but they're using an analog signal. To send more picture detail, they just expanded the amount of frequency bandwidth for each. Broadcasters in the United States won't have the option to expand the size of their signal. They'll have to squeeze more picture detail into the same bandwidth they were using for analog television.

Digital Compression

An advantage digital has over analog is that analog signals can't be compressed as well as a digital signal can. To transmit an image on analog television, every pixel is included in the signal. A standard NTSC screen includes 525 lines of 720 pixels, for a total of 378,000 pixels per frame. That's a lot, but it fits into the 6MHz bandwidth of a television channel. Japanese HDTV takes 20 MHz of bandwidth to send pictures with over 675,000 pixels. That's over two times as much signal to send a high definition picture and higher quality sound, but no other data.

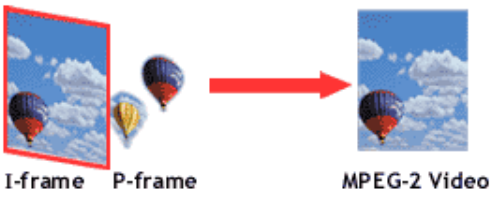
In the United States, a standard ATSC (Advanced Television Systems Committee) screen can have up to 1080 lines of 1920 pixels each, or 2,073,600 pixels per frame. Somehow, more than five times as much information will need to squeeze into the same bandwidth of 6 MHz. That doesn't include the compressed audio or data. So how are they going to do that? The same way the compression software on your computer squeezes your files. Well, almost the same way.

Video on digital TV will be compressed using a scheme called MPEG-2. It takes advantage of how the eye perceives color variations and motion. Inside each frame, an MPEG-2 encoder records just enough detail to make it look like nothing is missing. The encoder also compares adjacent frames and only records the sections of the picture that have moved or changed.

The idea of sending multiple programs within the 19.39-Mbps stream is unique to digital TV and is made possible by the digital compression system being used. To compress the image for transmission, broadcasters use MPEG-2 compression, and MPEG-2 allows you to pick both the screen size and bit rate when encoding the show. A broadcaster can choose a variety of bit rates within any of the three resolutions. You see MPEG-2 all the time on the Web, on Web sites that offer streaming video. For example, if you go to iFilm.com, you will find that you can view streaming video at 56 kilobits-per-second (Kbps), 200 Kbps or 500 Kbps. MPEG-2 allows a technician to pick any bit rate and resolution when encoding a file.

There are many variables that determine how the picture will look at a given bit rate. For example: If a station wants to broadcast a sporting event (where there is lots of movement in the scene) at 1080i, the entire 19.39 megabits per second is needed to get a high-quality image.

On the other hand, a newscast showing a newscaster's head can use a much lower bit rate. A broadcaster might transmit the newscast at 480p resolution and a 3-Mbps bit rate, leaving 16.39 Mbps of space for other sub-channels. It is very likely that broadcasters will send three or four sub-channels during the day and then switch to a single high-quality show that consumes the entire 19.39 Mbps at night. Some broadcasters are also experimenting with 1- or 2-Mbps data channels that send information and Web pages along with a show to provide additional information.



If only a small section of the picture changes, the MPEG-2 encoder only changes that area and leaves the rest of the picture unchanged. On the next frame in the video, only that section of the picture is changed. MPEG-2 has some problems, but it's a good compression scheme and it's already an industry standard for digital video for DVD-Videos and some satellite television services. One problem with MPEG-2 is that it's a "lossy" compression method. That means that a higher compression rate gives a poorer picture.

There's some loss in picture quality between the digital video camera and what you'll see on your television. However, the quality is still a lot better than an average NTSC image. And using these compression schemes, MPEG-2 can reduce the amount of bits by about 55 to 1!

On its digital channel, each broadcaster sends a 19.39-megabit-per-second (Mbps) stream of digital data. Broadcasters have the ability to use this stream in several different ways. For example: A broadcaster can send a single program at 19.39 Mbps. A broadcaster can divide the channel into several different streams (perhaps four streams of 4.85 Mbps each). These streams are called sub-channels. For example, if the digital TV channel is channel 53, then 53.1, 53.2 and 53.3 could be three sub-channels on that channel. Each sub-channel can carry a different program.

Formats

The reason that broadcasters can create sub-channels is because digital TV standards allow several different formats. Broadcasters can choose between three formats:

- 480i - The picture is 704x480 pixels, sent at 60 interlaced frames per second (30 complete frames per second).
- 480p - The picture is 704x480 pixels, sent at 60 complete frames per second.
- 720p - The picture is 1280x720 pixels, sent at 60 complete frames per second.
- 1080i - The picture is 1920x1080 pixels, sent at 60 interlaced frames per second (30 complete frames per second).
- 1080p - The picture is 1920x1080 pixels, sent at 60 complete frames per second.

(The "p" and "i" designations stand for "progressive" and "interlaced." In a progressive format, the full picture updates every sixtieth of a second. In an interlaced format, half of the picture updates every sixtieth of a second.)

The 480p and 480i formats are called the SD (standard definition) formats, and 480i is roughly equivalent to a normal analog TV picture. When analog TV shows are upconverted and broadcast on digital TV stations, they are broadcast in 480p or 480i. The 720p, 1080i and 1080p formats are HD (high definition) formats. When you hear about "HDTV," this is what is being discussed -- a digital signal in the 720p, 1080i or 1080p format.

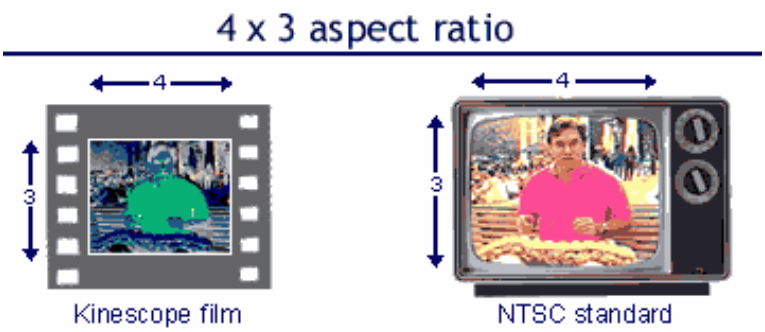
Aspect Ratio

This film has been modified
from its original version.
It has been formatted to fit your screen.

Ever wonder about that little message means when you see it just before a Hollywood movie on your television? You usually see that message because the movie was shot in a wider picture for the movie theater. When the studio released the home version they had to cut the sides off the images so that it would fit your TV screen. The HD formats of digital TV have a different aspect ratio than analog TVs. An analog TV has a 4:3 aspect ratio, meaning that the screen is 4 units wide and 3 units high. For example, a "25-inch diagonal" analog TV is 15 inches high and 20 inches wide. The HD format for digital TV has a 16:9 aspect ratio.

Our televisions use a different aspect ratio than widescreen movies. The aspect ratio of your old TV is 4:3, which means it's a little wider than it is taller. For every 4 units of width our television screen stretches out 3 units of height. For example, if the width of the screen is 20 inches, its height is about 15 inches (20:15, or 4:3).

The current aspect ratio used for television was originally developed by W.K.L. Dickson in 1889 while he was working at Thomas Edison's laboratories. Dickson was experimenting with a motion-picture camera called a Kinescope, and he made his film 1" wide with frames 3/4" high. This film size, and its aspect ratio, became the standard for the film and motion-picture industry because there was no apparent reason to change. In 1941, when the NTSC proposed standards for television broadcasting, they adopted the same ratio as the film industry. It made sense fifty years ago.



Well, in the 1950's Hollywood wanted to give the public a reason to buy a ticket instead of stay home and watch their sets. They tried a lot of ideas, some good and some bad, but one idea that still works today is the widescreen format. Wider screens, such as Cinerama, Cinemascope, and VistaVision, give the theater audience a more visually engulfing experience. Because our two eyes give us a wider view, a wider movie makes more sense. Like the widescreen movie formats, the HDTV screen is formatted much closer to the way we see. Our field of vision is more rectangular than square. So, when we view movies in widescreen format, the image fills more of our field of vision and has a stronger visual impact. After a few decades of experimenting with ratios, the most common theater screen aspect ratio is 16:9. HDTV is going to use the same aspect ratio.

The type of signal, format and aspect ratio have all changed in the process of converting from analog TV to digital TV in the United States. With that ratio, there's a lot of information that gets thrown away, but there's still enough to look like everything is still there. The human ear isn't as easy to fool, though. It's much more sensitive to subtle changes in sound. Digital TV is going to improve the sound over today's television using advances in digital sound developed over the last two decades.

DIGITAL SOUND

The days of vinyl are long gone. I'm not talking about the upholstery in your grandparent's sedan. Instead, I'm getting nostalgic about those old 78 RPMs spinning on the record player and the oh-so-careful lift of the needle. Stereophonic sound! When CD's appeared on the market, most people were skeptical about the silver discs, but the sound was great. Digital audio recordings on CD have a wider frequency range, finer sampling, and they won't wear down with age (it stays perfect until something like a scratch damages the data). Almost everyone can hear an obvious improvement. Eventually they have taken over the commercial music industry, but television is still low-range analog.

Taking the next logical step, HDTV will broadcast sound using the Dolby Digital/AC-3 audio encoding system. It's the same digital sound used in most movie theaters, DVDs, and many home theater systems since the early 1990's. It can include up to 5.1 channels of sound: three in front (left, center, and right), two in back (left and right), and a subwoofer bass for a sound you can feel (that's the .1 channel). Sound on digital TV will be "CD quality" with a range of frequencies lower and higher than most of us can even hear. When you look on the back of your VCR and you see the yellow plug that is the plug for composite video. Sound is either a white plug (on VCRs that do not handle stereo sound) or a red plug and a white plug (on VCRs that do handle stereo).

MULTICASTING

Digital broadcasters are not restricted to just sending a high-definition picture. They can still broadcast a standard-definition picture, but why would they want to do that?

There's a very good reason. In the same amount of signal they can "multi-cast" four standard-definition pictures instead of only one high-definition picture. Some broadcasters, including many PBS stations, are already planning to multi-cast four choices of programming during the day, and then switch to high-definition for prime-time. When you tune to your local Public Broadcasting station during the day, you may have a choice between children's programming, do-it-yourself shows, adult education, popular documentaries, or other programming. All from the same broadcaster. Digital TV is going to offer us more choice, and it's going to make our viewing experience more interactive.

DIGITAL TV TRANSITION

ENHANCED TV

Many people may think it's the best use of the technology, but interactive TV (or ITV) isn't limited to ordering pizzas or flying biplane dogfights on your television. Digital television is heading toward a convergence with computers -- and students, sports fans, news junkies, and anybody with an interest in anything will get more out of television. Nobody really knows how we'll interact with our televisions in the next few years, but TV is never going to be the same.

Digital TV broadcasts are just long streams of bits that can contain any data the broadcaster wants to add to their signal. Each channel has about 19.2 Mbs (megabits per second) of data they can add to their broadcast. Most of it will be video and audio, but some of the signal can be other forms of data.

Imagine a very fast network connection sending pictures, sounds, multimedia games, and illustrated articles, all related to the television program you're watching. You can still passively watch TV, but you can also customize the experience and make it your own.

Interactive television isn't really a new idea. Almost every television station sends data with their signals already. Closed captioning and descriptive audio are sent to millions of televisions everyday, but only a small percentage of the viewers actually see (or hear) any of it. These are a great benefit to those who can't hear or see the television, but they are very limited in their interactivity. For many households, the television is the most popular appliance.

Instead of using an external network connection, as these experiments used, digital TV is going to embed interactivity inside the broadcast signal. There is little cost in sending the interactive data out to every viewer with a digital television. The convergence of television and computers is going to take a major step with digital broadcasts. Data will be sent along with video and audio. How we'll use the data is still largely unknown, but one of the more practical options is the set-top box.

Buying a Digital TV Set

If you go to an electronics store today to buy a new TV set, there are four types of sets that you will see on the shelf:

- Analog TV sets
- Digital-ready sets - They should be called SDTV sets. These TVs are normally 480p displays with an analog tuner (for the normal channels 2 through 83) built in. The problem with these sets is that their maximum resolution is the low 480p SD resolution, which eliminates the HD resolutions and makes the TV essentially useless in the future if you plan to watch HDTV programs.
- HDTV-ready sets - These sets are essentially computer monitors able to display 1080i/p resolution in the 16:9 aspect ratio. They may or may not have analog tuners built in.
- Integrated HDTV sets - These sets have a digital tuner for broadcast DTV signals integrated into an HDTV display. With the standards changing so much, you may end up paying for an integrated tuner that becomes obsolete.

The preferred way to handle HDTV is to purchase the components separately:

- A 16:9 HDTV display capable of 720p and 1080i/p resolution
- A digital receiver
- An antenna

Since the HDTV display will be the most expensive piece and will likely last 10 years or more, buying the components in this way allows you to change the receiver if you need to.

There are currently three types of receivers:

- You can purchase a set-top box and a Yagi antenna to receive broadcast HDTV signals.
- You can purchase a set-top box and a small satellite dish to receive HDTV signals from a satellite.
- You can purchase a board for your computer, like the access TV board, along with a Yagi antenna, and use it to receive signals on both your computer monitor and your HDTV display.

Hopefully this will help you the reader understand the changes that are to take place on Feb. 17, 2009. For more information about the NTIA and FCC rulings to convert to digital broadcasting please review the Digital Television Transition and Public Safety Act of 2005 http://www.ntia.doc.gov/otiahome/dtv/PL_109_171_TitleIII.pdf

Click or call for coupons:
1-888-388-2009
1-888-DTV-2009
www.dtv.gov

- As of the printing of this article, the US SENATE had voted to delay the transition completion date 4 months to 6/17/2009.
- **ALL Anchorage stations plan to turn off their analog signals on the original date of 2/17/2009**.

VOLUNTEERS BEHIND THE SCENES

The KL7AA station is available for training in HF operations. Learn from an experienced HF operator about propagation, voice and morse code modes as well as best practices and legal operations. The station is fully integrated with a PC and soundcard to operate in many digital modes. There are weekly contests to participate in even if just helping Hams all over the world gain points and multipliers to win awards.

Your club station is quite capable and has great ears. Club operators have made many QSO's with all modes on all continents. Recent activities have seen SSTV QSO with New Zealand, hearing a Fallujah Iraq operator on PSK, a 15 meter contact to Peru during the CQ WW Phone contest. Common contacts are made with the lower 48 states and Caribbean, Canada, Japan, Korea, Taiwan, China, Russia and islands in the Pacific.

Take advantage of this unique benefit! Arrange a session by contacting (ELMER) to meet at the KL7AA station on Rowan Street.

Are you a member of ARRL?

ARRL is the American Radio Relay League. This is the national organization that advocates on behalf of amateur radio operators to the FCC and the communications industry. **KL7AA** is an ARRL affiliated club with more than 50 years. Consider becoming a member of ARRL today.

Fore more information about the ARRL DXCC Program check out: http://www.arrl.org/awards/dxcc/

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News Letter Submissions, Information or corrections: Submissions must be received 2 weeks before meeting Email: editor@kl7aa.net
Mail: PO BOX 101987, Anchorage, AK 99510-1987

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NEWSLETTER ARTICLES: All articles from members and interested persons are very welcome. If you wish to submit any articles, jokes, cartoons, please have it typed or neatly handwritten. It can be submitted by mail, computer disk or E-mail to the newsletter editor at the address listed above. Submissions must be in the hands of the editor **no later than the 10 days prior** to the meeting or it may not be included.

KL7AA Mail Reflector

If you like to **stay in touch on KL7AA news** and other posts of local interest.

Step #1: First point your browser to:
http://mailman.qth.net/mailman/listinfo/kl7aa

Step #2: On the web page you will see a section titled "Subscribing to KL7AA". Enter your e-mail address in the "Your email address" entry box.

Step #3: Pick a password for your account and enter it in the box marked "Pick a password" and then enter the same password in the box marked "Reenter password to confirm". This password will be used to change your settings on the list such as digest mode, etc.

Step #4: If you would like the e-mails in daily digest form click yes on the line marked "Would you like to receive list mail batched in a daily digest?"

Step #5: Click on the "Subscribe" button below the information that you just entered.

Termination of Satellite Monitoring of 121.5 MHz ELT's Are You Ready?

Notice Number: NOTC1518

In October 2000 the International Cospas-Sarsat Program, announced at its 25th Council Session held in London, UK that it plans to terminate satellite processing of distress signals from 121.5 and 243 MHz emergency beacons on February 1, 2009. All mariners, aviators, and individuals using emergency beacons on those frequencies will need to switch to those operating on the newer, more reliable, digital 406 MHz frequency if they want to be detected by satellites.

The decision to stop satellite processing of 121.5 / 243 MHz signals is due to problems in this frequency band which inundate search and rescue authorities with poor accuracy and numerous false alerts, adversely impacting the effectiveness of lifesaving services. Although the 406 MHz beacons cost more at the moment, they provide search and rescue agencies with more reliable and complete information to do their job more efficiently and effectively. The Cospas-Sarsat Program made the decision to terminate 121.5/243 MHz satellite alerting services, in part, in response to guidance from the International Maritime Organization (IMO) and the International Civil Aviation Organization (ICAO). These two agencies of the United Nations are responsible for regulating the safety on international transits of ships and aircraft, respectively, and handling international standards and plans for maritime and aviation search and rescue. More than 180 nations are members of IMO and ICAO.

The International Cospas-Sarsat Organization (U.S. included) will terminate processing of distress signals emitted by 121.5 MHz Emergency Locator Transmitters (ELTs). Pilots flying aircraft equipped with 121.5 MHz ELTs after that date will have to depend on pilots of over flying aircraft and or ground stations monitoring 121.5 to hear and report distress alert signals, transmitted from a possible crash site.

Protect each other…

Currently only 12-15% of the registered aircraft in the United States are flying with 406 MHz ELTs. This means that there is at least an 85% chance that an aircraft in an accident will only transmit a 121.5 MHz signal, thus remaining silent to the satellites. It will be up to other pilots monitoring the 121.5 MHz frequency in the cockpit to alert Search and Rescue authorities to accidents involving 121.5. When you fly, look out for your fellow pilots and when possible monitor 121.5 MHz.

If a 121.5 MHz ELT is heard on guard, report to the nearest air traffic control tower, the time and location of when you first detect the ELT, when it is the loudest and when it drops off your radio. Listening and reporting may well be the difference that saves a life.

Protect yourself…

Cospas-Sarsat System (U.S. included) has been and will continue processing emergency signals transmitted by 406 MHz ELTs. These 5 Watt digital beacons transmit a much stronger signal, are more accurate, verifiable and traceable to the registered beacon owner (406 MHz ELTs must be registered by the owner in accordance with Federal Communications Commission (FCC) regulation at www.beaconregistration.noaa.gov. Registration allows the search and rescue authorities to contact the beacon owner, or his or her designated alternate by telephone to determine if a real emergency exists. Therefore, a simple telephone call often solves a 406 MHz alerts without launching costly and limited search and rescue resources, which would have to be done for a 121.5 MHz alert. For these reasons, the search and rescue community is encouraging aircraft owners to consider retrofit of 406 MHz ELTs or at a minimum, consider the purchase of a handheld 406.

MHz Personal Locator Beacon (PLB) which can be carried in the cockpit while continuing to maintain a fixed 121.5 MHz ELT mounted in the aircraft's tail. Protect yourself and your passengers and Get the Fix Switch to 406.

Remember, after February 1, 2009, the world-wide Cospas-Sarsat satellite system will no longer process 121.5 MHz alert signals. Pilots involved in aircraft accidents in remote areas will have to depend on pilots of over flying aircraft and or ground stations to hear emergency ELT distress signals. For further information concerning the termination of 121.5 MHz data processing visit **www.sarsat.noaa.gov**or contact **Switchto406@noaa.gov** with any questions.

Address SARSAT inquiries to:
NOAA SARSAT
NSOF. E/SP3
4231 Suitland Road
Suitland, MD 20746
Phone: 301.817.4515
Toll free: 888.212.7283
Fax: 301.817.4565

406 MHz	121.5 MHz

POWER OUTPUT

- 5.0 Watts - Easy to detect, punches through overhead cover and improves accuracy
- **0.1 Watt** - Hard for satellites to detect and reduces accuracy

COVERAGE

- Global via low-earth orbiting satellites
- Between 70° North & South latitudes via geostationary satellites (provides nearly instantaneous detection)
- Ground station dependent; ground stations have an effective radius of about 1800 nm (2300 km). Both ground station and beacon must be in view of the low-earth orbiting satellite, within this footprint. Current coverage is about two-thirds of the world.

ALERTING

- First location alert warrants launch of SAR assets. Earlier launches puts assets on scene sooner - an average 3 hours saved in maritime, 6 hours saved in inland.
- Average initial detection/alerting by orbiting satellites is about 45 minutes, maximum 90 minutes.
- Average subsequent satellite passes every 60 minutes, maximum 90 minutes.
- Beacon ID combined with registration data and point of contact information allows rapid verification and launch or stand-down.
- Allows false alert follow-up to continuously improve system integrity/ reliability.
- Near instantaneous detection by geostationary satellites. Beacon ID combined with registration data and point of contact information allows potential for near real-time immediate launch of SAR assets even without beacon derived location information.
- High false alert rate makes first-alert launch unfeasible. Absent independent distress information means RCCs must wait for additional alert information.
- Average initial detection/alerting by orbiting satellites is about 45 minutes, maximum 90 minutes. Same as 406 MHz.
- Average subsequent satellite passes every 60 minutes, maximum 90 minutes. Same as 406 MHz.
- Alerts are anonymous. 121.5 MHz analog technology not capable of transmitting data.
- No false alert follow-up capability.
- No geostationary satellite detection capability = no instantaneous detection.

POSITION INFORMATION

- 1-3 nm (2-5 km) accuracy on average. Position calculated by Doppler shift analysis. Position information on first satellite pass.
- Better than 300 feet accuracy with GPS equipped beacons. GPS position processed with initial alert, near instantaneous via geostationary satellites.
- 12-15 nm (15-25 km) accuracy on average. Position calculated by Doppler shift analysis. Requires minimum of two satellite passes.
- No GPS capability.

SURVIVOR LOCATION

- Position accuracy (non-GPS) limits initial search area to about 25 sq. nm (65 sq. km) or better.
- GPS equipped beacons reduce search area to virtually pinpoint area.
- 121.5 MHz homing signal facilitates final short-range survivor location by radio detection finder equipped search units.
- Initial position uncertainty result in 500 sq. nm (800 sq. km) search area on average.
- No GPS capability.
- 121.5 MHz signal facilitates survivor location by radio detection finder equipped search units. Larger search area makes this more difficult and problematic.

FALSE ALERTS

- All alerts come from beacons. Satellite beacon transmissions are digital, coded signals. Satellites process only encoded data, other signals are rejected.
- About 1 in 12 alerts are actual distress.
- Beacon-unique coding/registration allow rapid incident corroboration. Registration mandatory since 1994. 90% beacons registered. About 70% of false alerts are resolved by a phone or radio call to registration point of contacts prior to launching SAR assets.
- Only about 1 in 5 alerts come from beacons. Satellites cannot discern beacon signals from many non-beacon sources. Beacons transmit anonymously with no unique identifier. Non-beacon interferers have included ATM machines, pizza ovens, and stadium scoreboards.
- Fewer than 2 in 1000 alerts and 2 in 100 composite alerts are actual distress.
- Since 121.5 MHz beacons transmit anonymously, the only way to ascertain the situation is to dispatch resources to investigate -- a costly disadvantage that puts SAR crews at risk unnecessarily..
- High false alert rate makes first-alert launch unfeasible.

THE FUTURE

- International standard for the foreseeable future.
- Next generation system already being fielded is 100% backward compatible and results in improved accuracy and shorter alert times with current available beacons.
- Satellite processing will cease on February 1, 2009.
- Use of 121.5 MHz EPIRBs by U.S. boaters is illegal effective January 1, 2007.

KL7AA Club Business

ANCHORAGE AMATEUR RADIO CLUB
MEMBERSHIP MEETING
January 2, 2009
Carr Gottstein Building – APU Campus
Anchorage, AK

Call to Order

The meeting was called to order at 7:00 PM by Vice-President Heather Hasper, KL7SP. Members and guests introduced themselves. Thirty-seven were in attendance.

Presentations

John Mears, AL7LA gave a presentation on submarine communication and navigation. John noted that while deployed, a submarines communications is almost non-existent, however the subs are constantly listening. One example of their listening antenna is a 300 foot long wire with a foam insulation to allow it to float on the surface. A problem is that occasionally boats get tangled in the wire John gave a very interesting presentation on the evolution of the integral part of navigation, the gyro. Early gyro design utilized a stable platform model using an integral gimbal system (similar to that of a U-Joint). This device utilized 3 gyros to provide information on 3 axis's (N/S, E/W, and vertical). These were accurate to 1/3600th of a degree and within 60-70 feet, were the size of a football, and had issues with friction and unbalance. These gyros were usable to the 70 degree latitude (Pt. Barrow), had a tilt limitation of 45 degrees (remember the scene from "The Hunt for Red October"). The computer providing calculations had a 1 kHz processor with 15k of memory and a ½ ms clock rate.

Around 1970 the Navy wanted to upgrade the system for reliability and accuracy in order to accommodate more missiles with increased range. The goal to create the perfect gyro (a perfectly round ball in a vacuum) was researched by Honeywell using a ceramic ball with scribe marks on a research ship for 2 years however the electronics and integrated circuitry had not been developed yet to support this technology. As electronics were developed to support this technology the gyro was designed using a 1cm, perfectly round (to within 1/100,000 of an inch) ball supported using electrostatic means revolving at 3600 revolutions per second! The ball in these gyros gets very warm during operation and requires a cool down period of 2 hours. These were referred to as 2 degree of movement gyros. Backup power/UPS systems for this design allowed for the last battery of the 3 battery system to allow for spin down of the gyro to delevitate and prevent damage.

The Navy increased its requirements to a new design able to reference all attitude/all latitude providing roll/pitch/heading/longitude/latitude navigation information. These units were developed utilizing an external gimbal system using 4 gimbals. This new design used 2 – 2 degree of movement gyros and could read out to less than 1 degree of arc (1/3600 degree).

Design of these systems had a specific limitation on earlier submarines; all equipment had to fit through a 24 inch diameter hatch.

John explained the use of accelerometers on submarines. These devices measure acceleration to within 6 decimal places accuracy. These units are manufactured using a thin piece of glass 2 inches in diameter attached to a hinge 1/1000 in. thick. Using 2 coils and capacitor plates to keep the unit centered, this device is accurate to 1 micro G.

Other items of interest on submarine life are that there are no problems with asthma while onboard due to the closed air systems. After being aboard a sub for a while and then going to shore, it takes a week or so for the eyes to be able to focus on anything at a distance as the longest length visible is approximately 20 feet.

Business

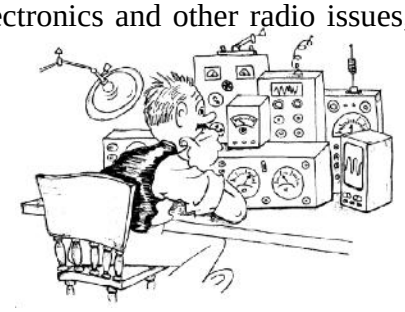
None

OTHER

Members in attendance were reminded of renewals and Membership Chairman Fred Erickson, KL7FE was introduced. New memberships and renewals can also be done via PayPal on the KL7AA website.

Rich Gillin, KL2RG, announced the ARRL RTTY Roundup contest occurring over the weekend. Rich noted several digital modes would be used during the contest and the ham shack station would be set up and available for the contest beginning Saturday morning. Rich noted contacts recently with Uruguay and South America.

Corny Eastman, KL0FK announced that he was available Friday evenings (when not traveling for work) at the AARC ham shack. Corny has been teaching an electronics class on Saturday mornings and is available to assist members with electronics and other radio issues, problems, etc.



ARES D.E.C. Michael O'Keefe, KL7MD, announced that at meeting time APD was searching for a vehicle that indicated it had rolled off the highway somewhere between Eklutna and the Knik River. At meeting time, the vehicle had not been located and Mat-Su members were asked to be on the lookout on their way home after the meeting.

Heather Hasper, KL7SP made the following announcements:

-Numerous updates had been done to the www.KL7AA.net website and volunteers to scan material to be added were being sought. Volunteer to KL7SP at arrl.net via email. The ARESAlaska.org website has had its calendar updated to include all statewide events.

-KL7CY is looking for volunteers for the Fur Rondy races and also for a volunteer to take over the planning and logistics for this event. John is willing to Elmer the person as to the details for this event in order for the individual to take over responsibility next year.

-Jim Wiley, KL7CC has radio, electronics and shop equipment for sale and if interested, contact Jwiley at Alaska.net.

-Sean Jensen, KL2CO is looking for a coordinator for the Klondike 400 dog sled race. Sean can be reached at Sean. Jensen at Gmail.com

-The online calendar has an error in the AARC Board meeting dates which will be corrected and that the printed copy in the newsletter is correct.

-The AARC Board Position of Activities Manager is vacant and volunteers for the position are being sought.

-AARC club coats are available for $75/ea.

-Recent RFI issues remind us that we need to be aware of RF power calculations and safety and also RFI.

-Interest has been expressed by members in attending Extra and CW classes. Any volunteers interested in participating in teaching these classes should contact Heather at KL7SP at arrl.net.

Door Prize Drawing

KL7MM, KL1KL, KL1UN, KL7KO, KL7LL, WL7CPX.

The meeting adjourned at 8:45pm.

Submitted as recorded on January 2, 2009 by:
Richard Tweet, KL2AZ
Secretary

ANCHORAGE AMATEUR RADIO CLUB
BOARD MEETING
January 20, 2009
540 WEST INTERNATIONAL ROAD
Anchorage, AK
(*UNAPPROVED* at Printing)

The meeting was called to order at 7:00 PM by President Randy Vallee KL7Z. The Board members and guest introduced themselves.

BOARD MEMBERS PRESENT:

President Randy Vallee KL7Z, Vice President Heather Hasper KL7SP, Secretary Richard Tweet KL2AZ, Treasurer Calex Gonzalez KL2BT, Past President Kathleen O'Keefe KL7KO, Eric McIntosh KL2FM , Susan Woods NL7NN, John Orella KL7LL, T.J Sheffield KL7TS, Tom Rutigliano NL7TZ, Michael O'Keefe KL7MD, Sean Jensen KL2CO, Bruce McCormick KL7BM

NON-VOTING MEMBERS PRESENT

Keith Clark KL7MM, Fred Erickson KL7FE

EXCUSED

None

UNEXCUSED

Craig Severson KL2FN

REQUEST FOR AGENDA ITEMS

CCV Security, Randy Vallee KL7Z
WL7BF Resignation, Randy Vallee KL7Z
Field Day, T.J. Sheffield KL7TS

GUESTS

Chris Nolan AD5CM

SECRETARY REPORT

Previous Board meeting minutes for the December Board meeting were presented as well as the membership meeting minutes from the January membership meeting. Motion made Heather Hasper KL7SP, seconded Calex Gonzalez KL2BT to accept the minutes as presented with the correction of the membership minutes to reflect the Klondike 300 (from 400) dog sled race. The motion carried unanimously.

TREASURER'S REPORT

Calex Gonzalez KL2BT gave the financial report for month ending December 2008. The treasury is healthy. The transition between the outgoing and incoming Treasurer went smoothly, No grants are before the Board at this time, financial adjustments, as recommended by the CPA were made to more accurately reflect the balance sheet, key assets for the Hughes Net

project have been obtained and the monthly service for this project is being finalized, several projects have been closed and rescinded due to an undefined scope of work and outstanding revenue appropriations. Motion made Bruce McCormick KL7BM, seconded John Orella KL7LL, to accept the Treasurers report as given. The motion carried unanimously

VE REPORT

Eric McIntosh KL2FM reported that testing remains steady with 6 people testing at the last session of which 5 became new Technicians and 1 upgraded to General.

TRUSTEE REPORT

Keith Clark KL7MM reported that approximately 8000 to 9000 KL7AA Q's are logged with Logbook of the World. A logbook upload issue is being resolved.

MEMBERSHIP REPORT

Fred Erickson reported that the PayPal option and renewal notices have helped a lot. Only about 50 haven't renewed so far this year. Fred noted the renewal rate appears to ahead of the norm.

ARES TRAINING

Michael O'Keefe reported that there was not a training session in December and is looking for suggestions for January. It was noted that there was interest in the club in having an Extra class or another General Class. Discussion noted the presence of more hams on the low bands.

OLD BUSINESS

TITLE 21

T.J. Sheffield KL7TS reported that chapter 5 was adopted in September of 2008 with favorable language to amateur radio and that chapter 14, which contains definitions, is still before Planning and Zoning and at last report also contained language favorable to amateur radio. No public hearings are scheduled at this time.

CCV TOILET

General discussion was held on the installation of a handicap accessible toilet in the AARC Ham Shack. Motion made Tom Rutigliano NL7TZ, seconded Eric McIntosh KL2FM to approve up to $400 towards the purchase of a handicapped accessible toilet to be installed at the CCV facility pending owner/landlord approval. Motion carried unanimously.

REAL ESTATE

Keith Clark reported the Car Care Center facility at 332 Muldoon Road is still available. General discussion as to road access concerns and building conditions was held. Keith is meeting with banks to discuss details regarding such a purchase. Keith also noted that the market is being watched for other properties as they become available. It was noted the current AARC CCV garage and Ham Shack facility lease is up for renewal in June of 2009.

USE OF CLUB TEST EQUIPMENT

General discussion was held regarding the formation of an AARC policy regarding the use and borrowing of club assets, .Bruce McCormick, Corny Eastman KL0FK, John Orella KL7LL and Heather Hasper KL7SP will be setting up a meeting to discuss the issue and develop a policy for review. Discussion noted a need for a general policy covering all equipment, with a purpose not related to commercial business, a general loaning policy using the honor system was tried and resulted in missing equipment from the facility (radio, TNC and misc. items), current sign out sheets and the use of CCV needs to be addressed as part of the policy.

NEW BUSINESS

RESIGNATION OF BOARD MEMBER

Due to work related issues and work hours, Paul Spatzek WL7BF submitted his resignation as a 3 year board member via email. Discussion noted that Paul was completing the final 2 years of a vacated 3 year Board position. Susan Woods NL7NN nominated Tom Rutigliano and Heather Hasper KL7SP nominated Eric McIntosh KL2FM to fill the vacant position. These two names will be presented to the membership at the February 2009 meeting for a decision. It was noted that when either of the two nominees moves into the 3 year position, it will vacate a current 1 year position. Keith Clark indicated that he knew of an interested party and would contact them to discuss. Randy Vallee KL7Z thanked Paul for his volunteer service on the Board and for the AARC.

PROGRAM FOR FEBRUARY MEETING

No program for February has been scheduled. Heather Hasper is pursuing 3 leads for speakers for upcoming meetings.

AMSAT

With past contributions by the AARC to Newsline, ARRL, YLRL noted and the interest in satellite communications by AARC members discussed, Heather Hasper KL7SP made the motion to donate $2,500.00 to AMSAT (at the Platinum level), Bruce McCormick KL7BM seconded and the motion carried unanimously. Discussion noted AMSAT is in the process of trying to get another satellite (Eagle) launched, AMSAT provides a monthly journal to the AARC, and donation would be used from non-gaming revenue as the donation is out of state.

KL7AA Club Business

AARC BOARD TRAINING

Heather Hasper noted the CPA suggestion that Non-Profit Board of Directors training be taken by the AARC Board. Heather noted the Foraker Group provides the training locally and also provides other training that could be beneficial to the AARC. The Board of Directors training is a 2 hour course and could be offered in the evening in conjunction with a Board meeting. Cost as a member organization is $25/pp vs. $65/pp as a non-member. Membership in the Foraker group is $150.00 per year. Heather Hasper recommended membership in the Foraker Group, Board of Director training for 6pm on a Board Meeting evening (with the regular Board meeting to begin at 8pm) and that all voting and non voting members of the AARC Board be included in training. Motion made John Orella KL7LL, seconded Sean Jensen KL2CO that the AARC become a member of the Foraker Group at a cost of $150.00, establish a Board of Directors training session at a cost not to exceed $25.00 per person attending and that the training be held in conjunction with an AARC Board meeting. The motion carried unanimously.

2009 FIELD DAY

T.J. Sheffield reported on the upcoming Field Day event June and asked if the club was interested in participating again. T.J. noted that he and Keith Clark KL7MM have been the co-chairs of this event and have offered to co-chair for this event also. T.J. noted that discussions to date have suggested not tearing down the Ham Shack station for this event. T.J. noted that may cause a shortage of club owned equipment at the event. This will be discussed in the upcoming planning meeting and be brought back at the February Board meeting. T.J. noted that this year's event will be set up to combine a shared antenna farm in one location at the North end of Kincaid Park.

SKI FOR WOMEN

Heather Hasper KL7SP reported that she had been contacted by the Ski for Women event to be held on February 1st. The AARC was contacted for communication support regarding parking for this event. The event is 2 miles long, will be held in Kincaid Park and has 1300 registered entrants. 8 to 10 volunteers are being sought for communication support between 0800 and 1300 on February 1st. Contact Heather via email at KL7SP at ARRL.net

IDITAROD TRAIL COMMITTEE

Heather Hasper KL7SP reported that Gordon Hartlieb AL1W will be keeping Randy Vallee updated as to the status of the ITC requesting amateur radio communication support for the start of the race. Ray Hollenbeck KL1IL attended the ITC restart meeting in the valley, where he reported that volunteers will be required to pay $10 this year. Heather noted Gordon is continuing to look for an opportunity for amateur radio operators to participate in this event.

CCV SECURITY

Bruce McCormick KL7BM reported on current and proposed security coverage and zones at the CCV garage and Ham Shack. The project room and garage will be on their own zones to further tighten security at the station. Additional training will be required and provided when the additional zones are programmed. Discussion noted that new AARC officers need to contact Keith Clark for keys to the facility, security at the facility is layered with additional security being provided for radio equipment. APRS, Packet and portable repeater kits (with the exception of one of each) are secured with a common chain requiring a key for removal from the facility. Closed Circuit TV (CCTV) monitoring via IP was discussed also.

FUR RONDY

Heather Hasper KL7SP noted that John Lynn KL7CY is looking for a person to mentor into the position of coordinator for amateur radio communication for the event. Please contact John if interested in volunteering. It was noted the Grand Prix will be returning to the Fur Rendezvous this year. This event requires a lot of volunteers and is an opportunity to promote amateur radio.

CCV REPAIRS

Richard Tweet reported on recent generator problems while deployed with the CCV. Discussion noted the need for repairs to the fuel system and governor controls, only 1 Onan repair facility in Anchorage, question as to upgrading the generator to provide 220 volts. Motion made Richard Tweet KL2AZ, seconded Bruce McCormick to authorize up to $1,000.00 to have the CCV generator repaired. The motion passed unanimously.

CCV CONFERENCE PHONE

A speaker phone for the Ham Shack has been donated by Michael O'Keefe.

JIM WILEY TEST GEAR AVAILABLE
Discussion noted that Jim Wiley KL7CC has test equipment available for sale. Randy Vallee KL7Z will get in touch with Jim to see what is available.

AK SCIENCE AND ENG. FAIR
Heather Hasper KL7SP noted that the Alaska Science and Engineering Fair is soliciting for donations and support. It was recommended that Craig Bledsoe KL4E be contacted to review.

MT. SU REPAIRS
Michael O'Keefe reported that John Lynn KL7CY has the equipment for repairs to Mount Susitna. General discussion suggested hiring ProComm for repairs, Randy Vallee will check on cost for this service. Mount Susitna repairs include battery chargers and antenna replacement. It was noted that this site has a fully redundant set of equipment

GRUBSTAKE STATUS
Discussion noted that repairs have been made to the Grubstake site and that it is fully operational again. Heather Hasper noted the removed Kenwood equipment is being repaired at Surveyors Exchange. This site does not currently have the equipment to be fully redundant. Michael O'Keefe noted there is equipment available in the CCV garage to build a redundant repeater for this site and then utilize the existing equipment, when removed, for testing and training purposes at the CCV.

APPROVALS, KL7AA IN THE NEXT MONTH
Fur Rendezvous for possible Special Event Station

ADJOURNMENT
Motion made John Orella KL7LL, seconded Bruce McCormick KL7BM to adjourn. Motion carried. The meeting adjourned at 8:53pm.

Respectfully submitted as recorded on 01/20/09 by

Richard Tweet, KL2AZ
Secretary

FOR SALE

By JIM WILEY, KL7CC

For sale, many items of interest to hams, audiophiles, hobbyists, collectors, etc.
Professional electronic test equipment, machine and carpentry tools, audio and stereo equipment, big screen TV (HD ready), ham equipment, linear amplifiers, QRP gear, collectible antique electronics, antennas and towers, hand tools, parts, diesel generator, wire and cable, batteries, astronomical telescope, cameras, books, many other items. Contact for appointment to see items. It's time to unload all the extra stuff I have been accumulating for the last 40 years, and that some of you have been coveting.
I have finally decided I don't really need three, or more, of everything <grin>.
Most equipment is in excellent, fully operable condition, some was obtained for spare parts to maintain the operating units. And don't worry, I will still have plenty left - this is just the excess.
Jim Wiley, KL7CC; 338-0662, jwiley@alaska.net

ELECTRONICS CLASS

CORNEY EASTMAN, KL0FK is offering a great Electronics Class on Friday evenings at the KL7AA HAMSHACK.

The classes are open for anyone wanting to learn more about electronics or test equipment used in radio applications, anyone who wants to test or troubleshoot radio or antennas.

This informal fun class discusses design and equipment options that might be used to build a radio. RADIO KITS are available to purchase and build. Bring your questions and projects to the KL7AA Radio shop on Friday Evenings at 530PM.

The class is currently scheduled to meet on the following nights:

- **2/13 2/20 2/27**
- **3/6 3/13 3/20**

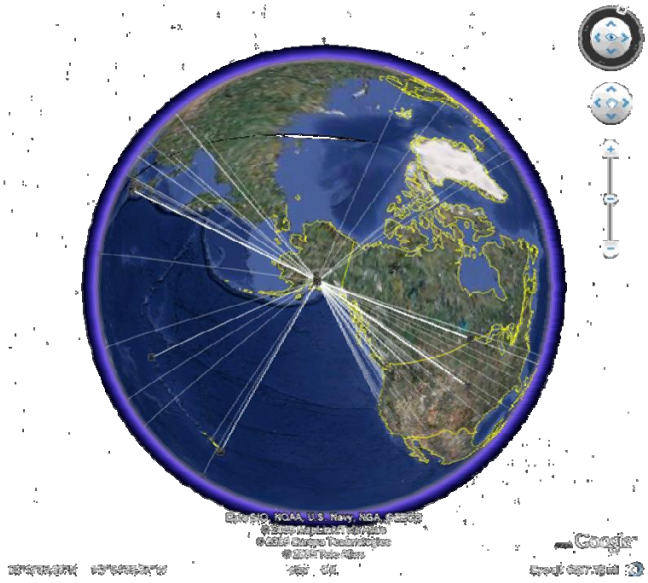
THANKS TO CORNEY for offering this course

HAM RADIO ACTIVITIES

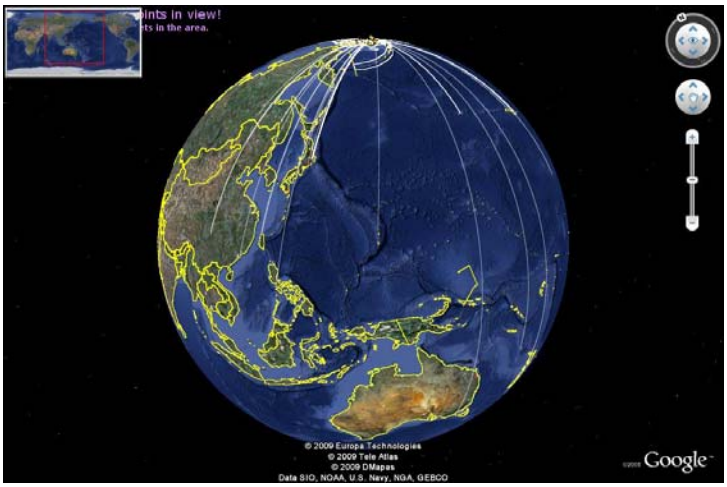
There are plenty of opportunities for operators who enjoy all modes of amateur radio to get involved in your club activities.

CONTESTING: DX Operations

KL2RG has been very active in getting the KL7AA station in most recent digital mode contest. Below is a Google Earth map projection of the KL7AA recent Casual and Contest Log.



The first is a projection of the Northern hemisphere and the second is the projection of the QSO's made in the Eastern Hemisphere. Great Job Rich, KL2RG who has made great strides with the KL7AA station.



SPECIAL EVENTS

The Alaska DX Club (KL7DX and KL7CQ) has been granted a third call sign which we will be using for a yearlong special event (2009) in honor of the 50th Anniversary of Alaska's Statehood. The call sign is KL5O.

Attached a picture of what the QSL card will look like.

EMERGENCY EXERCISES

This spring will bring many opportunities to practice emergency communication scenarios with multiple agencies. AARC and ARES have been asked to participate in an upcoming UAA exercise that will involved the University, the Red Cross, Providence Hospital and the Anchorage Emergency Operations Center. This event takes place on **Monday, March 23, 2009**.

On **Saturday, June 6, 2009**, **Anchorage International Airport** will be practicing a disaster operations exercise. Due to the size of ANC International, the airport is required to complete this exercise every 3 years as part of the recertification of the airport under Federal Aviation Regulations Part 139. This training exercise will involve a **simulated aircraft crash** on or near airport property. This training exercise will help the airport prepare for it's response to an aircraft accident.

This is a multi-agency exercise. Many client agencies will be participating including Anchorage Office of Emergency Management, AFD, APD, State Troopers, Providence Hospital, Regional Hospital, Kulis Air National Guard, USFW, USCG, Port of Anchorage as well as many other Non Government Organizations. More details about volunteer opportunities in future newsletters.

ARES DISTRICT 7 & 5
KL7AA & KL7JFU

2/1
SKI for Women;
Contact: Heather Hasper, KL7SP
kl7sp@arrl.net

2/27 - 3/1
FUR RONDY Sled Dog Races
Contact: Heather Hasper, KL7SP
275-7474

2/26 - 3/7
FUR RONDY Special Event HF Station; Contact Corliss, AL1G
AL1G@yahoo.com

ARES NETS:
1st Thursday: HT / Portable
2nd Thursday: Mobile Madness
3rd Thursday: RED CROSS
4th Thursday: Emergency Power

www.aresalsaska.org

February 2009

Anchorage Amateur Radio Club
PO BOX 101987
Anchorage, AK 99510-1987
www.KL7AA.net

ARES NET:Thursday Nights 8:00 PM 147.27+
PL:103.5 or 443.30+ PL 103.5

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 ***SKI for WOMEN***	2	3	4	5 	6 ***AARC Meeting 7PM***	7
8	9	10	11	12 	13	14 ***PARKA meeting 11 AM***
15	16	17	18	19 	20	21 *ARES Training* ***EARS 3PM***
22 	23 FUR RONDY	24	25	26 	27 ***MARA meeting 7PM***	28 RONDY!

Public Service

Listed below are events that local radio clubs and event coordinators are looking for communication volunteers to support these upcoming public service events. Your participation is appreciated.

SKI for WOMEN 2/1 KINCAID PARK, Anchorage
Contact: **Heather, KL7SP; kl7sp@arrl.net**

Fur Rondy Sled Dog Race February 27, 28 & 3/1
Contact: **Heather, KL7SP; kl7sp@arrl.net**

SPECIAL EVENT STATION

A special event station will be operating on HF for the duration of the Special Event Station to correspond with the 50th Anniversary of Statehood. KL7AA with the KL7DX club will use the call sign KL5O throughout the week of Fur Rondy to the start of the Iditarod on 3/7. Stations wanting to operate should contact Corliss Kimmel, AL1G@yahoo.com for a schedule of operations;

Junior Iditarod February 28 - 3/1, 2009
Contact KL7DY Richard Plack 745-5222
kl7dy@arrl.net

38th Annual IDITAROD START: March 7, 2009
Contact: AL1W, Gordon Hartlieb al1w@arrl.net

ARES - Section 7, District 7 (Anchorage, ALASKA)

Mission statement:
Dedicated to amateur radio as it pertains to disaster services. The history of amateur radio operators' involvement in sending life-saving information in and out of disaster areas [and] providing help during and after earthquakes, floods, hurricanes and tornadoes. "HAM's have been there to assist local, state, and federal agencies and relief organizations such as the American Red Cross and Salvation Army." When All Else Fails, Amateur Radio.

ARES TRAINING

WHEN: FEBRUARY 21, 2009

SUBJECT: Practice ARES activation plan; we will be practicing our calling tree and activation system to evaluate the ARES emergency notification system as defined in the ARES ALASKA Emergency Plan.
WHERE: Stations will be contacted after 0930 SAT to determine their availability.

WHEN: MARCH 21, 2009

SUBJECT: WINLINK

Jerry Curry, KL7EDK and Linda Mullen, AD4BL will be traveling from FAIRBANKS to Anchorage to provide a demonstration of the WINLINK system and how to incorporate this resource support network into your emergency operations. This will be a joint Statewide Training opportunity for all amateur operators.
WHERE: Carr Gottstein Building, APU; 0930
Operators from Remote Alaska are encouraged to attend; If you need housing or transportation support, options can be arranged through the Anchorage Amateur Radio Club by contacting Michael O'Keefe, KL7MD at mok@gci.net

ARES District 7 Contact Information
Michael O'Keefe, KL7MD
DEC7 at kl7aa.net

VE License Update

FCC LICENSE ACTIVITY ON THE RISE

According to ARRL VEC Manager Maria Somma, AB1FM, there continues to be a heightened interest in Amateur Radio following the FCC's elimination of the Morse code exam requirement in February 2007: "The number of new license applicants remains strong under the new Amateur Radio Service rules. The following table chronicles all 14 FCC authorized VEC organizations' new license activity over the last few years." In 2008, the total number of US amateurs rose 1.2 percent, from 655,800 in 2007, to 663,500 in 2008:

The number of General and Extra class upgrades is also on the rise. "When looking at 2006 totals," she said, "we see that upgrade applications for 2007 were up 286 percent; in 2008, they were up 146 percent over 2006. Requests for new club licenses also remain strong. In 2008, we had 671 applications for club licenses come in, while in 2007, there were 506 applications. That's an increase of 133 percent."

Calling it a "ripple effect," Somma said that the number of amateurs who want to be volunteer examiners and who want to teach Amateur Radio classes is also going up. "Here at the ARRL VEC, we've seen a spike in the number of applications from General and Extra class radio amateurs who want to give back to their community by serving as examiners and instructors," she said.

Somma further broke down the numbers to show the approximate number of licensees per FCC license class:

Novice:	18,500
Technician:	322,500
General:	145,000
Advanced:	62,000
Extra:	115,500
Total US Amateurs:	**663,500**

"I can think back to the mid 1980s when there were approximately 450,000 US Amateurs," Somma recalled. "These are the highest numbers of General and Extra class licensees I have ever seen." As of April 15, 2000, the FCC no longer issues Novice or Advanced class licenses. "As expected, the number of Novice and Advanced class licensees has decreased," she said. "As I look toward 2009, I see Amateur Radio growing in a positive direction." -- Some information provided by Joe Speroni, AH0A

AARC VEC report for last 3 months:

A total of 51 new licenses and/or upgrades have been processed by the Anchorage VEC during the last 3 months. For individual areas, we had 21 actions for Anchorage, 9 for Fairbanks, 8 for Palmer-Wasilla, and 13 for Bethel. There were no exams given in the Juneau or Kenai areas during this time. For calendar year 2008, we processed a grand total of 183 actions, including both new licenses and upgrades, and offered a total of 62 exam sessions at 10 different locations around the state. These totals do not include failed attempts.

Jim, KL7CC
Chairman, Anchorage VEC

New Amateur Totals 2006 through November 2008

Month	2006	2007	2008
Jan	1274	1647	1755
Feb	1605	2435	2998
Mar	2531	3478	2816
Apr	1728	2673	3090
May	2283	2607	2562
Jun	1967	2281	2402
Jul	1401	1786	2077
Aug	1623	2183	2084
Sep	1357	1462	1763
Oct	1781	2109	2303
Nov	1993	2132	2197
Dec	1569	1935	2019
Totals:	21,112	26,728	28,066

IOTA KL7RRC 2009 DXpedition NA-233

2009 Expedition

to NA-233 IOTA group

Ogliuga Island

3 spaces available as of 11/01/2008. (TTL 6)

Dates: Plan for 3-4 weeks vacation! (+/- weather) 3rd week of July 2009- 1st week of August 2009, so we can take part in IOTA contest.

Transportation: Alaska Airlines Seattle-Anchorage-Adak, 1-2 nights stay at Adak on the way to the island, 1-2 nights stay in Adak on the way back. Boat transportation from Adak to Gareloi and p/up ~ 1 week.

Other activities planned: real halibut fishing and possibly side trip to Amchitka (Rat Islands, 5% claimed).

Costs: unknown at this time, but with more $ bigger boat can be chartered (60' v 32') and boat will be on our schedule, not other way around.

If you would like to participate, please email to Yuri a.s.a.p. ***N3QQ at NA-234 dot com***

>>>

Jeff Williams with USFWS (KL2HD) suggested to land on Ogliuga instead of Goreloi due to much better camping spot and portion of it not wilderness, so generator can be used.

Above info is posted on website. Costs-wise one quote so far for charter Adak-Ogliuga, $6k/day 100ft fishing boat. 1-2 days one way. So r/trip $12-24k depending on weather. R/T tickets Anchorage-Adak~$1,230 as of now. Equipment transportation costs $1.79/lb one way by Alaska Airlines from Anchorage ~1200lbs. + some hazardous materials charges/paperwork for generators. Equipment we already have: 2x Icom IC-756PRO-III, 1x IC-7000 (b/up), 2x Honda EU2000i generators, 2x Ameritron ALS-600S amplifiers, Spiderbeam for 20-10m, G5RV for 40m/80m and TW2010/4040 vertical dipole. Do not have yet: Alaska military style tent for 6 persons, stove. Both broken during last DXpedition. Plus some expenses in Adak for 1-2 days stay on the way to and back from island. In Russia Yuri UA9OBA is asking $8k from each member, but it includes tickets from Moscow to Seattle ($1500) and Seattle-Adak is $1650. Abt $5000 if person is in Adak, again depends on qty of people actually going. With $30k we will have some room for unexpected problems and will be able to cover worst case scenario of 4 days charter. Last 100 miles are most expensive as always. Hi Hi. If a person with local knowledge and contacts can minimize charter costs, whole picture will be different. On the other hand safety of members is the #1 goal and we have to be very careful with Aleutian weather.

Thank you very much!

Sincerely,

Yuri Sushkin N3QQ

WHAT IS IOTA?

Created in 1964 by Geoff Watts, a leading English short wave listener, and taken on by the RSGB in 1985, Islands On The Air (IOTA) is an amateur radio activity programme designed to encourage contacts with island stations world-wide. The oceans' islands have been grouped into some 1200 'IOTA groups' with, for reasons of geography, varying numbers of 'counters', i.e. qualifying islands, in each. The objective, for the island chaser, is to make radio contact with at least one counter in as many of these groups as possible and, for the DXpeditioner, to provide such island contacts. For both it is a fun pastime adding much enjoyment to on the air activity. 21 separate certificates are currently available for island chasers, graded in difficulty, as well as two prestigious awards for high achievement.

Data You Can Use:

2009 Board of Directors

President: Randy Vallee, KL7Z president at kl7aa.net
Vice Pres: Heather Hasper, KL7SP vicepresident at kl7aa.net
Secretary: Richard Tweet, KL2AZ secretary at kl7aa.net
Treasurer: Calex Gonzalex, KL2BT treasurer at kl7aa.net
Activities Chairman:
VACANT activities at kl7aa.net
Trustee: Keith Clark, KL7MM trustee at kl7aa.net
Membership Chairman:
Fred Erickson, KL7FE membership at kl7aa.net
News Letter Editor: Heather Hasper, KL7SP editor at kl7aa.net

Three Year Board Members

Michael O'Keefe, KL7MD mok at gci.net (3rd Year)
Paul Spatzek, WL7BF Paul.Spatzek at acsalaska.net (2nf Year)
Bruce McCormick, KL7BM kl7bm at arrl.net (1st year)

One Year Board Members

Eric McIntosh - KL2FM, kl2fm at arrl.net
TJ Sheffield - KL7TS, kl7ts at arrl.net
Craig Severson - KL2FN, chipman at clearwire.net
John Orella: KL7LL, kl7ll at arrl.net
Susan Woods: NL7NN, NL7NN4606 at yahoo.com
Tom Rutigliano, NL7TZ, tomr at alaska.net
Sean Jensen, KL2CO, sean.jensen at gmail.com
Kathleen O'Keefe, KL7KO (Past President) kok at woodscross.net

AARC web page & Email contact addresses:
Homepage: http://www.KL7AA.net/
Webmaster: webmaster at kl7aa.net
Membership: membership at kl7aa.net
Newsletter: editor at kl7aa.net

News Letter Submissions, Information or corrections:
Submissions must be received 2 weeks before meeting
Email: editor at kl7aa.net

Any AARC sponsored repeater, with or without an auto-patch, will always be open to all licensed amateur radio operators in the area who are authorized to operate on those frequencies.

Anchorage & Mat Valley Area Repeaters-a/o JAN 1 2009

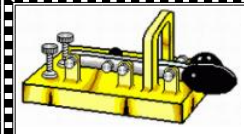
KL7AA: Flattop Mountain 2,200 ft
146.94/34 MHz, 80 watts, auto-patch, 141.3 Hz PL
224.94/223.34, 25 watts, no patch, no PL
444.70/449.70, 25 watts, auto-patch, 103.5 PL

WL7CVG: Mount Susitna 4,396 ft
VHF: WL7CVG/R1 147.270/147.870 PL 103.5, no auto-patch
UHF: WL7CVG/R3 443.300/448.300 PL 103.5, no auto-patch

WL7CVF: Grubstake: Hatcher Pass 4,536 ft
VHF: WL7CVF/R1 147.330 / 147.930 PL 103.5 Hz (no patch)
UHF: WL7CVF/R3 443.900 / 448.900 PL 103.5 Hz (no patch)

KL7ION at Mt. Gordon Lyon: PARKA 3,940 ft
147.30 / 147.90, MHz - 80 watts, no patch, 141.3 Hz PL
KL7AIR Elmendorf AFB: EARS: 146.67/146.07, 107.2 Hz PL
KL7CC, Anchorage Hillside, SCRC & QCWA
146.97/.37 MHz, 30 watts, auto-patch, 103.5 Hz PL
KL7M Anchorage Hillside
147.21 / 147.81 MHz, on IRLP, 97.4 Hz PL
KL5E Chugiak: 147.15/147.75, 123.0 Hz PL, auto-patch
KL7JFU, KGB road, MARA: 146.85/146.25, auto-patch, no PL
Palmer IRLP: 146.64/.04, simplex patch, no PL
Mile 58.3 Parks Highway IRLP: 147.09/.69 MHz, 97.4 Hz PL
KL3K, Girdwood - IRLP
146.76 / 146.16 MHz, 25 watts, no patch, 97.4 Hz PL
KL7AX: South Anchorage IRLP - 146.79/ 146.19 MHz, 100 Hz PL
WL7CWE: Cliffside Amateur Radio Association
WL7CWE Anchorage IRLP
2 Meter: 146.82/146.22MHz PL 103.5
6 Meter: 51.65 output / 51.15 input, PL 103.5Hz
70 cm: 444.85/449.850 MHz PL: 103.5 Hz (Node 3400)

South Central Area Simplex Frequencies
146.52 MHz Calling and Emergency frequency
147.57 MHz National DX Calling / Coordinating frequency
146.49 MHz Anchorage area simplex chat
146.43 MHz Mat-Su Valley simplex chat
147.42 MHz Peninsula simplex chat
146.58 MHz Simplex IRLP - Wasilla Lake



Nets in Alaska:

The following nets are active in South-Central Alaska:

VHF

ARES Net: 147.27/87 103.5Hz - Thursdays at 8:00 PM local
PARKA Net 147.30/.90, 141.3 HZ Thursdays at 7:00 PM local
Morning Road and Weather Report:
147.27/87 103.5Hz - Daily at 9:00 AM
No Name Net: 146.85/.25 repeater Sundays 8:00 PM
and 1900 - 2400 Alaska Time - AL7N or KL5T monitoring.
Big City Simplex Net: 146.520, 446.0, 52.320 FM, 29.6 FM, 28.400 USB
With Packet 145.01 and 147.96, Tuesdays 8:00 PM local
Grandson of SSB Net: 144.20 USB Mondays 8:00 PM local
Alaska VHF Up Net: 144.200 USB Saturdays 9:00 AM local
Statewide LINK ARES Net: 147.27/87 103.5Hz
Sunday 8:00 PM local: Echolink: KL7TQ

HF

- **Alaska Sniper's Net**
  3.920 MHz 6:00 PM daily
- **Alaska Bush Net**: 7.093 MHz 8:00 PM daily
- **Alaska Motley Net:** 3.933 MHz 9:00 PM daily
- **ACWN (Alaska CW Net)**
  3534, 7042 Daily @ 0700 –1000,
  Net Purpose:Formal NTS traffic via CW.
- **Alaska Pacific Net**:
  14.292 MHz 8:00 AM M-F
- **ERC HF Net:** 3.880 MHz – Sunday 8:30PM

Internet Links, the favorites from our readers:

AARC http://www.KL7AA.net
SCRC http://www.KL7G.org
EARS http://www.kl7air.us
MARA http://www.kl7jfu.com
Moose Horn ARC http://www.moosehornarc.com
PARKA http://www.parka-kl7ion.com
ARES http://www.aresalaska.org
Practice Exams : http://www.AA9PW.com
Fairbanks AARC: http://www.kl7kc.com/
ALASKA MARS: http://www.akmars.org
Alaska VHF-Up Group: http://www.kl7uw.com/avg.htm
Béthel Amateur Radio Klub: http://www.al7yk.org/
Yukon Amateur Radio Association: http://www.yara.ca/
Links for Propagation http://www.haarp.alaska.edu/
QRP and Homebrew Links http://www.AL7FS.us
Solar Terrestrial Activity http://www.spaceweather.com http://www.swpc.noaa.gov/
ARRL http://www.arrl.org/
Propagation Report Recording 566-1819
Please let us know if there are other clubs pages or good starting points that should appear here**.**
Report dead links or bad info to editor@kl7aa.net

Regular HAM Gatherings:

Tuesday Lunch, 11:30 AM: Denny's on Denali behind Sears. Several old timers show for this and have lots of stories to share about amateur radio in Alaska.

Saturdays Breakfast, 7:30 AM: Here is a good way to get started on the weekend. Come and meet with some of the locals and have a great breakfast at American Diner, at the Northeast corner of Arctic and International. Great Fun.

Who Do I Contact to Join AARC

Fred Erickson KL7FE
12531 Alpine Dr
Anchorage, AK 99516-3121
E-mail: membership (at) kl7aa.net
Phone number: 345-2181
Annual Dues are $12 (prorated as appropriate)
Additional Member in same household is $6.
Full Time Student is no charge.
Ask about Life Memberships

MONTHLY EVENTS

1st Friday each month: AARC general meeting - 7:00 PM in the Carr-Gottstein Building, on the APU Campus. Talk in will be on 147.27+ repeater.

1st Tuesday each month (except for holidays): VE License Exam 6:30 PM, at the Hope Cottage offices, 540 W International. Bring photo ID, copy of license (if any) and any certificates of completion. Contact: Jim Wiley, KL7CC 338-0662.

2nd Saturday each month: PARKA Meeting at 11:00 AM. Polar Amateur Radio Klub of Alaska. All amateurs welcome. Denny's on Denali Street in Anchorage. Talk in on 147.30+.

2nd Saturday each month (except for holidays): VE License Exams at 2:00 PM. at Hope Cottage 540 W. International. Be sure to bring photo ID, copy of license (if any) and any certificates of completion. Contact: Jim Wiley, KL7CC 338-0662.

3rd Saturday of each Quarter month: EARS general meeting at 3:00 PM. EARS meetings are held formally each Quarter during the first month: Jan, April, July, and October. Meetings are held informally each month at R1 North. Contact info - PO Box 6079, Elmendorf AFB 99506 or email Ron Keech, KL7YK for information. EARS: 552-2664 (recording); Talk in on 146.67-. Email: KL7AIR@arrl.net or KL7YK@arrl.net

3rd Tuesday each month: AARC Board meeting at 7:00 PM at Hope Cottage 540 W. International. All hams are invited and encouraged to attend.

3rd Saturday each month: ARES General meeting 9:30AM to 12:00 PM. Call Michael O'Keefe, ANC DEC: dec@kl7aa.net HM: 243-4675 for additional information. Also check for ARES Info at: www.aresalaska.org

4th Saturday of each month:Valley VE Testing at 7PM. sessions will be held at the Wasilla Red Cross at 7 pm on the fourth Saturday of each month unless it is a major holiday weekend. Wasilla Red Cross is in the Westside Mall, next to Speedy Glass…it's just a click up from AIH hardware.

The last Friday each month: MARA meeting at 7PM Fire Station 61, located two blocks up Lucille Drive, from the Parks hwy. Talk-in help for the meeting can be acquired on either the 146.640 or 146.850 repeaters. Further details can be found by contacting Tim Comfort, NL7SK, NL7SK at arrl.net.

Anchorage Amateur Radio Club, Inc
Post Office Box 101987
Anchorage, Alaska 99510-1987
www.kl7aa.net

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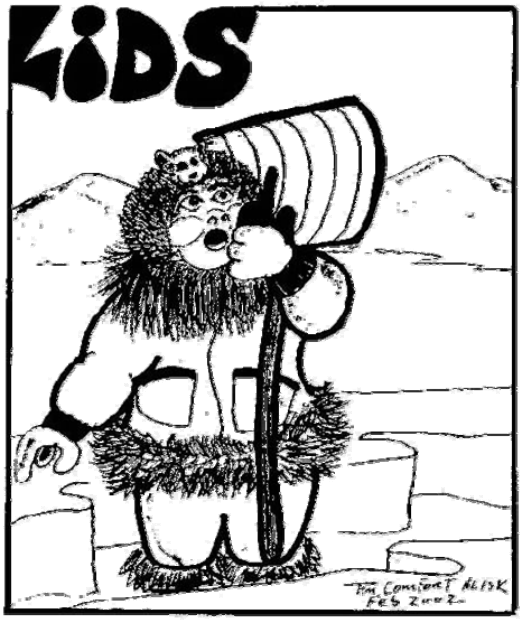
ARRL Affiliated Club for more than 50 years

AMATEUR RADIO



CHATTY PATTY AT # 3 CHECK POINT, FOUND A NOVEL WAY TO PASS ON DOG RACE TRAFFIC TO HEADQUARTERS. HER H.T. DUCKIE WIMPED OUT AT A CRITICAL TIME. USING SUPER SCOOPER SNOW SHOVEL AS A PARABOLIC REFLECTOR, TO ENHANCE HER SIGNAL, SHE GOT THE JOB DONE. THOUGHTS OF AN ANTENNA CAD SESSION ON THE SHACK COMPUTER DANCED IN HER HEAD.

ONLINE MEMBERSHIP is now Available.

If you would like to pay by credit card to renew your membership, please go to www.kl7aa.net and select M E M B E R S H I P APPLICATION and complete the online membership renewal/application form.

LIDS Cartoons are the creation of NL7SK, Tim Comfort and are available for purchase on CD for only $15. All sale proceeds go to support the Matanuska Amateur Radio Association. www.kl7jfu.com