The Dipole

Radiating the News of the Marple Newtown Amateur Radio Club

October 2009

Next Club Meeting: Thurs. Oct. 1st, 7 p.m. at The Gauntlett Center

INSIDE THIS MONTH'S DIPOLE

LEARNING CAN BE FUN

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516.674.4072 FAX 516.674.9600

http://www.wb2jkj.org
http://www.hamradiomanuals.com

OCTOBER 1 AT 7 PM...PUT THIS ON YOUR EVER GROWING CALANDAR OF UPCOMING EVENTS.

WE WILL BE THE GUEST SPEAKER AT THE MARPLE-NEWTOWN ARC MEETING www.mnarc.org JUST OUTSIDE OF PHILLY IN BROOMALL PA.

THIS PROMISES TO BE A GREAT NIGHT FOR EDUCATION THRU COMMUNICATION EDUCOM. COME OUT TO HEAR US SPEAK AND BRING SOME FRIENDS AS WE KNOW WE ALL HAVE A "FRIEND IN PENNSYLVANIA"!

APPLE SLICES
The Weekly Reader of the "22 CREW"

This above invitation was included in three issues of "Apple Slices," a wonderfully informative newsletter that easily surpasses the average newsletter. As an example of the quality and quantity of this electronic publication, the week 35 of the 29th year of its published life includes 18 pages of text and images. To prove this is not a fluke, sample visits to week 36

This October 2009 program is a return visit by Joe Fairclough, WB2JKJ. Mr. Fairclough initiated and then refined the use of Amateur Radio as a learning tool. This "carrot" has an enviable record of motivation for the normal learning curriculum, not just science and those learning topics that might normally be associated with Amateur Radio. This informative presentation will demonstrate that Amateur Radio is indeed alive, it has an appeal to a generation that some nay-sayers may want to "write off," and also proves Amateur Radio can and is a very successful teaching tool. A tool that both rewards and motivates in multiple academic areas.

It will; be unusual if attendees at this month's meeting don't comment, "Why wasn't school like that when was in junior and senior high school?"

MARPLE NEWTOWN AMATEUR RADIO CLUB
c/o The Gauntlett Center
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Newtown Square, Delaware County, PA 19073

For information about our club,
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The Dipole

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Meetings, Nets, and Packet BBS

Monthly Club Meetings: First non-holiday Thursday, 7:00 p.m. at the Gauntlett Center in Newtown Square, Delaware County. Talk-in: 147.195 repeater
Daily Weather and Information Net: Every morning at 8:30 a.m. on 147.195 repeater
Club Web Page (including online version of *The Dipole*): http://mnarc.org
Delaware County ARES Net: Every Wednesday at 19:30 local

How It Was Once Done

Before the days of FM broadcasting many AM radio listeners would, from time-to-time, become annoyed by the rasping sounds heard from the speaker. It would not require a lot of research to determine the sources of these sounds.

What was being heard was, in many ways, a type of transmission that was akin to the once-common spark gap transmitter. In the pre FM days, the use of an electric mixer or any device that was motorized with brush-type electric motors could become the source of this interference.

"Once-upon-a-time," the use of a spark gap transmitter was the only form of wireless, code transmissions.

During the first three decades of radio, the spark gap was the source of transmissions. Just as most devices undergo a refinement, this concept underwent changes and refinements.

The true spark gap transmitter that created this form of communications was popular even during the early days of the device's refinement. One of the secrets of this following of the initial design concepts was its simplistic operation. As an example of its acceptance was the concept that when the Morse Code key was released, the carrier would instantly stop. This permitted listening between the transmissions of Code characters.

While this concept of communications was replaced by other forms of transmissions that incorporated new devices such as vacuum tubes, it was the spark gap transmitter that helps begin the concept of transmitting information form point A to point B. The true tests in the ability to provide reliable transmissions were created by the increasing of distances between points A and B as well as the ability of working within smaller segments of RF acreage. By today's standards, a spark gap transmission was insanely broad.

While much is known about the successes of Marconi and his contemporaries, little history is shared about the pre-Marconi era. How did the world acquire the spark gap transmitter?

The spark gap transmitter was the result of the thoughts and works of many pioneering people. Duing the US Civial War era, James Clerk Maxwell predicted that electromatic waves could be propagated through a vaccum. Image the doubts created by such a statement.

In 1879, David E. Hughes, often indentified with the introduction of a microphone and his telegraph experimentations, used a spark gap to generate radio signals, achieving a range of a bit more than 1600 feet. He was more of an experimenter and less of a scientist. This lack of pure science training resulted in little acceptance by the scientists of his day. It was not until his works

were published in 1889 that there began recognition of his earlier findings.

Others were working to verify Maxwell's predictions. In 1888 physicist Henrich Hertz began working with a tuned spark gap and a tuned spark gap detector to establish a short distance of communications. This detector, while simple, worked. It consisted of loop of wires connected to a receiving spark gap.

This attempt at communications provided an insight on a tu ned circuit. When the Hertz transmitter created a spark, small sparks, often requiring a microscope to be seen, would be received.

Nikola Tesla, often thought of as the "bad boy of science" introduced his radio system in 1893 and later developed the so-called "loose coupler" system which produced a far more form of transmission that produced far less interference, worked with much greater efficiency, and could be operated in any weather conditions.

Continuing his experiments, Tesla continued his high voltage high frequency technolgy and in doing so, continued the research that led to what we know today as radio. His experiments incorporated a receiving coil that was tuned to the same frequency used in the transmitting coil. He also demonstrated that this receiver output could be increased through resonant action.

This led to the first patent that dealth with concepts that resulted in production of radio frequencies [US Patent 447,920, March 10, 1891, Method of Operating Arc-Lamps]. These successes resulted in more investigation and susequent invenitons such as a variety of rotary, cooled, and quenched spark gaps capable of handling high power. High power would result in what may have been the DX of that era.

In is time to bring Marconi into this mix of early experimentors in radio transmissions. He began his wireless telegraphy experimentaiton in the early 1890s. In 1895, his successes resulted in a transmission of 1 ¼ miles.

That Marconi transmitter was constructed by connecting an induction coil between a wire antenna and ground. Each time the induction coil was pulsed, there would be a charge within the antenna of very high voltages. The transmission would occur when this high voltage, often has high as thousands of volts, would cause a spark to cross the spark gap. The result was a very brief burst of electromatic radiation.

All good things come with some form of negative outcome. This concept worked sufficiently well to prove the concept of wireless telegrapy, there was the big problem of the amount of electrical charge the antenna could accept .

Considering science, the capacitanc of a practical antenna is small, the only way to achieve distance was to use increasingly high voltages. Two specific problems were introduced by through the use of such high voltages. One is impossibility to transmit in damp or raining conditions. This high voltage also required a wide spark gap thay yielded a very high electrical resistance. This resistance meant that most of the electrical energy was used simply to heat up the air in the spark gap.

There was an even more serious problem, the quality of the transmitted signal. This system's radiation was extremely "dirty" in terms of sideband-radiation. This quality of signal meant receiving problems. One signal would so sideband-rich that it was almost impossible to monitor a different station.

The world was hungry for some form of wireless communications that Marconi was able to generate sufficient interest by the British Admiralty for them to finance even this original, crude system.

The result was the devalopment of a commercial wireless telegraph service between Europe and the United States with refined equipment.

Would the world be satisfied with this form of communications? Not only were there desires for refined Code transmissions, others wanted a way to transmit voice as well as digital Morse Code.

Before the spoken word was sought and found, early Amateur Radio operators joined into the development of Spark Gap transmissions. The Ford Model T spark coil became the foundation for one early and easy form of transmitted radiation. Just like the "big boys,"s the early Ham Radio operators were constantly working to perfect their spark transmissions.

Ham Radio operators soon saw the challenges of spark and the worked for, worked with, and awaited advances in transmission standards that would answer their unique transmission quests. Just like today, our radio forefathers wanted DX and the use of many forms of spark would not foster this form of signal hunting.

It should be noted that even with advances in radio concepts, many sea-going vessels would retain the crude, yet reliable spark transmitters as an emergency backup. When at sea, there was both a perceived and actual need for a backup form of communications.

Time and advances in communications eventually took its toll on Spark. By the World War II era, Spark was no longer used. One might say the Spark was totally suppressed . . . . **finally**.

Well, not that "*finally*." As a postscript to the use of spark gap transmissioins, long after this form of radio transmision stopped being used for communications, spark gap transmitters were employed for radio jamming. Also as late as 1955, a Japanese radio-controlled toy bus used a spark transmitter and coherer receiver; the spark was visible behind a sheet of blue transparent plastic.

It should be noted that spark gap oscillators are still used to generate high frequency high voltage to initiate welding arcs in gas tungsten arc welding. Most high power gas-discharge street lamps (mercury and sodium vapor) still use modified spark transmitters as switch-on ignitors.

Times Have Changed

In reflecting upon events of a century ago, this collection of memories is worthy of being shared. In addition to a lot of "Oh my gosh! " type comments, readers of the **e*Dipole*** now have some information to share with friends, neighbors, children, and grandchildren.

1909 Ford Model T

2009 Ford Model T(aurus)

Periodically, someone compiles a list of comparisons from a historic era and today. This collection of memories is worthy of being shared with friends, children, and grandchildren. "Times they 'hava' changed!"

THE YEAR 1909

This will surely boggle your mind. We are reflecting upon the year is 1909. **What a difference a century makes.**

Here are some statistics for the Year 1909…

- The average life expectancy was 47 years
- Only 14 percent of the homes had a bathtub
- Only 8 percent of the homes had a telephone
- There were only 8,000 cars and only 144 miles of paved roads.
- The maximum speed limit in most cities was 10 mph.
- The tallest structure in the world was the Eiffel Tower.
- The average wage in 1909 was 22 cents per hour.
- The average worker made between $200 and $400 per year
- A competent accountant could expect to earn $2000 per year
- Other earnings: a dentist $2,500 per year, a veterinarian between $1,500 and $4,000 per year, and a mechanical engineer about $5,000 per year.
- More than 95 percent of all births took place at *home*.
- Ninety percent of all doctors had *NO COLLEGE EDUCATION!* Instead, they attended so-called medical schools, many of which were

condemned in the press and by the government. Both entities stated these school were 'substandard. '

- Sugar cost four cents a pound.
- Eggs were fourteen cents a dozen
- Coffee was fifteen cents a pound
- Most women only washed their hair once a month, and used Borax or egg yolks for shampoo
- Canada passed a law that prohibited poor people from entering into their country for any reason.

Five leading causes of death were:

1. Pneumonia and influenza
2. Tuberculosis
3. Diarrhea
4. Heart disease
5. Stroke

- The population of Las Vegas, Nevada was only 30 people.
- Crossword puzzles, canned beer, and ice tea had not been invented yet
- There was no Mother's Day or Father's Day
- Two out of every 10 adults couldn't read or write
- Only 6 percent of all people had graduated from high school.
- Marijuana, heroin, and morphine were all available over the counter at the local corner drugstores. Back then pharmacists said, "*Heroin clears the complexion, gives buoyancy to the mind, regulates the stomach and bowels, and is, in fact, a perfect guardian of health*
- Eighteen percent of households had at least one full-time servant or domestic help
- There were about 230 reported murders in the *ENTIRE* United States.

Life Before Repeaters

Attached is an article about 10-meter AM operation around Philadelphia in the 50's and 60's, with photos of the receiver designed and built by W3NE (nee W3QZO) to support a monitored frequency.

This and the other, companion stories have been contributed by Bob Thomas, W3NE, and they have also blessed the pages of Philmont publication

73,
Bob - NE

CHANNEL 1
Life Before Repeaters
by Bob Thomas, W3NE

Believe-It-Or-Not™ there was a time when hams in this region communicated locally without the "benefit" of a repeater! Foremost among them were the hundred or so members of – you guessed it – the Phil-Mont Mobile Radio Club! We all used AM equipment for our fixed and mobile stations, operating on the common communicating frequency of 29.493 Mc, universally known as *Channel-1*. That specific frequency resulted from availability of cheap surplus FT-243 crystals on 7333.33 kc, using their fourth harmonic to generate a net frequency in the upper end of the 10-meter band. Many Phil-Monters monitored Channel-1 with wideband crystal-controlled receivers with squelch, and some even had remote operating positions around the house enabling them to answer calls almost instantly from wherever they were. One in particular, Brad Martin, W3QV (whose call now graces our 2M repeater) pretty regularly monitored Channel-1 twenty-four hours a day, not unlike the current practice of W3RM. That intense monitoring, supplemented by timely response in emergencies, rightfully led to the club slogan, "Phil-Mont is ready…Every Single Minute". You could count on an answer to a request for a routine contact or a distress call – and there occasionally were some – at almost any time of the day or night.

You might think the range of our mobile stations was limited for direct communications compared to relaying through today's high-altitude centrally-located repeater, but not so. For one thing 10-meter ground wave propagation is inherently better than VHF. Flutter and fading are not as prominent, we all used decent antennas and reasonable power, and we did not have to contend with marginal signals from flea power HTs. Furthermore, when the band was open, DX stations would frequently relay during QSOs between mobiles that were at far ends of the service area,

unable to hear each other directly. One Denver ham often provided that service on a daily basis whenever the band was open. At other times regular denizens of "the frequency" in England and in Germany livened the frequency, all without computer intervention (which thankfully had not yet been invented). Of course another benefit of 10-meters during band openings was solid domestic and foreign DX QSOs for mobiles. A secondary club net frequency of 29.626 Mc. (known as Channel-2) was established for use when Channel-1 was busy, and there also was a National Calling Frequency at 29.640 Mc. for initiating DX contacts worldwide.

Fixed station antennas were typically a vertical coaxial type that employed a ¼-wave radiator above a ¼-wave coaxial matching section fed with 75-ohm coax. One of the club members built several of that type in his shop for early Phil-Monters and when they ran out we reverted to one manufactured by Kreco, a local antenna manufacturer. Coax antennas had a sleek appearance because they were made to screw on top of a ¾" threaded pipe mast with the transmission line running up inside the pipe, through the 8-ft. coaxial matching section made of 2" diameter brass or aluminum tube, to a connector at the bottom of the radiator. Mobile antennas were sometimes multi-band verticals, but generally they were simply an 8-foot whip with spring mount on the rear bumper. W3CNO had a droll sense of humor; George connected a pilot light bulb across a couple of inches of his whip near its center so the bulb was illuminated by RF current whenever he transmitted, no doubt to the wonderment of following motorists.

Occupancy of Channel-1 was consistently high beginning with morning drive time when W3JGB parked on in Fairmount Park before going to his office at IRC. He conducted the "Scrambled Egg Net" for late risers and several members driving to work. The "10-on-10 Net", forerunner of today's less disciplined Sunday morning net, attracted up to sixty stations, many of which also populated the frequency well before net time and continued with contacts long after the net closed. Even when 10M was dead, there were lots of mobile and fixed QSOs going on during the day. Noontime usually saw a rise in activity on Channel-1 from several members who went out to their cars in the parking lot for a brown Bag lunch and still more operation.

It didn't used to be a crime to call CQ, so there were seldom any instances, so common on the repeater where a station will slur his call once, doesn't get an instant reply, and immediately moves off, sometimes just missing a contact. Additionally, QSOs were generally substantive and seldom brief, perhaps because most users of the frequency were Phil-Mont members who knew each other pretty well and had a lot of common interests to discuss. This came about because a high percentage of club members regularly attended monthly Membership and open Mid-Month (Directors) meetings where everyone took an active part in discussions and policy making. There was wide participation in hidden transmitter hunts, exchange visits with the Washington Radio Club, annual club banquets and dinner-dances, frequent public service events and CD drills, and consistent operation on the net frequency in the evenings. That was the way we got to know each other, and it also resulted in a commendably high level of participation which typically brought out two or more candidates for every elected office.

Another difference in operation between the 10-meter AM days and what we (don't) experience now, was activity during evenings and weekends. It typically began around 7 PM and continued, more on than off, until after 10 PM. Sometimes it was serious, but often took a light hearted turn, like the famous "Barrel Modulation Incident". One Friday evening, the most active night of the week on the frequency, somebody made a transmission with a wastebasket over his head and, with booming hollow audio, asked for an audio quality report. The first to reply (either in cahoots, or having an insightful assessment of the impending gag) told the enquiring station his audio quality was excellent, "Sounds just like you – don't change a thing". Another station confirmed that report, and then another. Finally, some poor innocent schlub (the mark) who had been monitoring all along could not keep quiet any longer. With utmost temerity he offered the apologetic opinion that the offensive audio might have just a little too much bass and possibly a slight hollow sound. Of course it was all of that in spades! By then several other stations had

caught on and heaped on even more praise for the barrel modulation, all to the embarrassment of the mark. Eventually the mark caught on and everybody had a good laugh.

A reason often offered to explain periods of low occupancy on 147.03 is that today's hams are much busier than those of fifty years ago. That just doesn't hold water. Many members who were consistently active on Channel-1 and in club events during the first two decades of Phil-Mont's existence were simultaneously raising young families, perhaps taking care of a relative, establishing a small business, and pursuing other aspects of ham radio, just like now. Maybe the answer is simply that hams are not as enthusiastic today or more likely, fascination with other interests, especially computers, leaves less time for amateur operation. Whatever the reason, we undeniably have an incredible resource in the W3QV repeater – it just needs to be used!

Contributor History

The **e*Dipole*** has been blessed by the many reminiscent features that have been shared by the welcomed contributor Robert G. Thomas, W3NE. Bob's entertaining efforts were originally published in "The Blurb," the Philmont publication. Bob's memories may have parallels by **e*Dipole*** readers, as well as being a first time 'memory maker' for the younger readers.

During one of the many enjoyable e-mail exchanges with Bob, he was asked for thumbnail history of his own radio life. The following is that dialog:

Jim,

I was always interested in electrical things. My pals and I often went to the local junkyard where we would buy Atwater Kent receivers for 25-cents, or maybe a bunch of transformers or carbon rods, and then fool around with them. My father taught Electrical Construction at Overbrook High, so there was usually something going on at home.

I got a part time job at the manufacturing division of Herbach and Rademan for afternoons and Saturdays while I was in Haverford High School. I didn't get my ticket (W3QZO) until after graduation from Drexel in 1950, then seemed to make one home brew rig after another.

I worked in the Broadcast Studio Division of RCA in Camden from 1951 to 1983, then retired early and got a great job at the ABC Network in New York, eventually winding up as Director of Technology and Equipment Planning. Did a lot of traveling to evaluate new equipment in the field, and was involved in HDTV development for the network until I retire in 1992.

I spent several retirement years collecting vintage radio equipment and working in my machine shop on a live stem locomotive. We moved to a Life Care retirement facility in 2003, but I have still been able to maintain a shop and shack in one of our bedrooms with the capability of getting on 75, 40 and 10M (more-or-less).

That's about it.

Bob - NE

Why Our Great-Grandparents Were Happy

Charles Higgins, W3CAU, a frequent and greatly appreciated contributor to the eDipole and unearthed the science behind why or grandparents were happy. While they lack the current collections of creature comforts, they were able to be supplied with their own happy quotients.

Bayer Cough Cure

The Bayer Company was one of the contributors to the happiness of an earlier generation. The label on the pictured Friedr. Bayer and Company spells out that product's producer of happiness in its day.

This bottle of Bayer's Heroin was marketed between 1890 and 1910. Heroin was sold as a non-addictive substitute for morphine. It was also used to treat children with strong cough.

Metcalf Coca Wine

Anyone looking for what was billed as "A Pleasant Tonic and Invigorator" would reach for Metcalf's Coca Wine.

Metcalf Coca Wine was one of a huge variety of wines with cocaine on the market. Its users were quoted as saying it would make you happy and, oh yes, it would also work as a medicinal treatment.

Mariani Wine

This wine was blessed with an endorsement that carried a lot of influence. One of its claims was its properties for health, strength, energy, and vitality.

Mariani wine (1875) was the most famous Coca wine of its time. Pope Leo XIII used to carry one bottle with him all the time. He awarded Angelo Mariani (the producer) with a Vatican gold medal.

Maltine

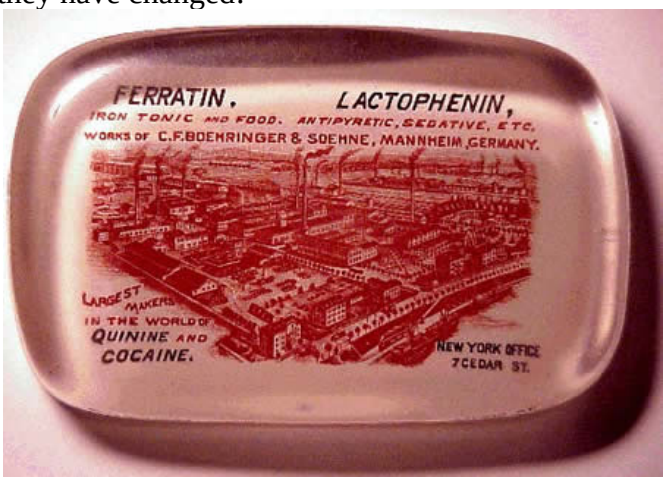
Maltine, complete with its collection of ten gold metal, came with instructions that provided usage guides and endorsements for both adults and children.

Produced by Maltine Manufacturing Company of New York. It was suggested that users should

take a full glass either during or after every meal... It was also suggested that children should be given this award-winning beverage in a dose of half a glass.

German Tonic

This paperweight was an advertising tool for a German firm that promoted this product as a medicinal food product and a tonic. The advertised product contained quinine and cocaine. "Times they have changed!"



A paperweight promoting C.F. Boehringer & Soehne (Mannheim , Germany). They were proud of being the biggest producers in the world of products containing Quinine and Cocaine.

Asthma

There have been many remedies for asthma over the year. None of today's over-the-counter cures can compare in potency with the Vapor Ol treatment marketed by the National Vaporizer Company from Kalamazoo, Michigan. A reading of its ingredients may count for its popularity in its day.

Vaporol Treatment No. 6

Cocaine tablets (1900)

All stage actors, singers, teachers and preachers had to have them for a maximum performance. Great to "smooth" the voice was the claim of the Dragees product

Cocaine Drops for Toothache

Very popular for children in 1885, and appreciated by parents, this product did more that its advertising claim. Not only did these drops relieve the pain, they made the children happy!

Opium for Newborns

The ingredients of this product had double assurance children would sleep well. It not only contained Opium, it also contained 46% alcohol!

This former product has spawned more modern applications in both concept and inference.

By inference, a formerly very popular OTC medicine was Hadacol. This patent medice

marketed as a vitamin supplement. Despite the medical claim, Hadacol's principal attraction was created by its containing 12 percent alcohol. There was no masking of this ingredient. Alcohol was listed on the label of this popular tonic as "preservative."

The inclusion of this preservative made Hadacol very popular in the dry, alcohol-prohibiting areas of the United States. A very large collection of this product could be be found in certain area of the southern part of our nation.

A glance at the label on a bottle of Hadacol saw the reccmmended dosage (1 tablespoonful taken 4 times a day) was to be taken "...in a 1/2 glass of water after meals and before retiring". However, some pharmacies in dry counties were known to sell it by the shot-glass.

The use of Hadacol was found in other differing ways. In at least one bar in New Orleans' French Quarter, Hadacol was a key ingredient in drink called the "Tassel Cocktail." It is also rumored that in Northbrook, Illinois, a suburb of Chicago, sales of Hadacol were limited to liquor stores.

An additional ingredient in the formulation of Hadacol was well chosen as well. That ingredient, "diluted acid hydrolic," also known as "hydrochloric wash" was a very heavily diluted form of the acid that opens the arteries and allows the body's quicker absorption of the other ingredients, including, of course, the 12 percent alcohol "preservative".

Even its name earned Hadacol a spot in America's humor. Comic routines would often state, "It was called Hadacol, because it "had da' be called something"

The use of paregoric was not confined to older times. Many of the post World War II OTC users of patent medicines turned to Paregoric for a collection of maladies. Its use for as antidiarrheal, antitussive, and analagesic applications turned from a household remedy to a regulated drug in the United States. Classified as a Schedule V drug, it regulation spawned over-the-counter sales in pharmacies in several states through signing a register or logbook.

Today, Paregoric has been re-regulated and a Schedule III drug under the current Controlled Substances Act and can only be obtain through a medical prescription.

Silence Can Be Deadly

Automobile manufactures are faced with a paradoxical problem. For years, their quest was to make cars quieter on the inside and less noisy on the outside. The hybrids of this generation of vehicles has reached the super-silent stage and, in doing so, they have created a problem. The need to make the silence of battery operation "more noisy" has safety implications.

Sight-impaired pedestrians have no warning when they and a hybrid operating on battery attempt to occupy a cross walk.

How can this breaking of the hybrid silence be accomplished?

A growing collection of easily recognized sounds is being considered by multiple hybrid manufactures. In keeping with the current mood of regulations and considerations, the front-runners in audio awareness will be presented to government officials and focus groups.

Each audio group and others have begun to fabricate their pet sounds-for-safety

There is a strong division in the emerging hybrid elements of the automobile industry. This division embraces both whether safety sounds should be added to the quiet cars and, if so, what those noises should be.

Robert Strassburger, vice president for vehicle safety at the Alliance of Automobile Manufacturers has stressed, "Frankly, we've been working for 30 years to make cars quiet -- never thinking they could become too quiet."

This organization is an industry group that has been working to address the concerns. Quietly, this group has said, "Those vehicles may be difficult to detect."

Industry reports have commented, "Hybrid vehicles typically operate on hushed battery-powered electric motors when idling and traveling at low speeds. At higher speeds, the noisier internal-combustion engine kicks in. Toyota, which makes the popular hybrid Prius, a small car that runs very quietly at low speeds, does not add artificial sounds. "

This problem is increased by cars like Tesla's Roadster, Nissan's Leaf and General Motors' Volt. These vehicles have either a total dependence or a

strong dependence upon battery electric power. They will be even quieter.

At two recent meetings Nissan presented the chime, the melody and a futuristic whir to the National Highway Traffic Safety Administration, which has recently gathered evidence that the vehicles may pose a safety risk.

Nissan declined to release the audio tracks being considered but said it would make its final decision in consultation with regulators.

Preliminary research has documented that the potential safety problems arises at speeds less than 15 mph, when the electric and hybrid vehicles are notably quiet, almost silent. It has been observed that at higher speeds, the rush of air over the aerodynamic designs and the sounds from tires makes the electrics almost as noisy as their gasoline-powered counterparts.

Congressional input has become yet another source for potential safety issues. For example, Rep. Edolphus Towns (D-N.Y.) has introduced a bill that would require the Department of Transportation to establish a safety standard addressing this problem. It stresses cars would have to be equipped to issue "non-visual alerts" so that pedestrians can determine the vehicle's location, motion and speed.

Among the 139 sponsors is Cliff Stearns (R-FL) He states he has personally been startled by a quiet car.

He explained, "I was down in Florida in the parking lot of a shopping center, and I was wheeling my groceries with my wife, and I didn't hear a car come up behind me. If all the cars are silent in the future, it does pose a problem."

Officials at Tesla have state they have no intention of implementing "fake noises." This new entrant into the US auto world makes the $109,000 electric Roadster. This truly luxury product has earned a strong popularity with eco-conscious celebrity customers.

In her statement Tesla spokeswoman Rachel Konrad stated, "We have delivered more than 700 cars, and our customers overwhelmingly say the relative quiet of the power train is one of the most appealing aspects of the car. Thanks to widespread electric vehicle adoption, we will all enjoy far less noise pollution in the future."

In a yet-to-be released study of accidents in 12 states there is a comparison of accident rates for some hybrid vehicles and their internal combustion engine counterparts. This study covered more than 8,000 hybrid electric vehicles and nearly 600,000 gasoline-fueled cars. The analysis drawn from this study suggests that during certain low-speed maneuvers such as turning and backing up, hybrid vehicles are 50 percent more likely to be involved in an accident with a pedestrian.

"We certainly know that blind pedestrians rely heavily on the sound of vehicles as a means of determining when it is safe to cross the road," said Ronald Medford, the acting deputy administrator of NHTSA. He added, "But all of us are susceptible."

Officials with the National Federation of the Blind, which has pressed the safety issue with automakers and regulators, has been very vocal in asking that electric cars make sounds similar to those of gas-powered cars.

The impact of this issue and its study will have an even greater importance and impact as the availability and popularity of electric and hybrid vehicle increases.

Stay tuned.

The ARRL Offerings

The following is a mass reprint of the most current ARRL informational sharing at the time of the compiling of data for this unusual issue of the **e*Dipole***:

> When you peruse the October issue of QST, you may notice a few extra lines in the Product Review data. "Here at the ARRL Lab, we strive to make our test procedures relevant to current technology and to new features common on today's transceivers," said ARRL Test Engineer Bob Allison, WB1GCM. "We continue to research ways to improve our testing and to develop new tests that will benefit our members. I hope you will find these new measurements useful in evaluating and comparing transceivers."
>
> **Receiver Sensitivity (MDS) at 137 and 505 kHz**

Several countries now give amateurs permission to operate at and around 137 and 505 kHz. In the US, there is activity on 495 to 510 kHz by more than 20 stations around the country operating under the ARRL sponsored WD2XSH experimental license. In addition, there are other Part 15 experimental licensees operating in this range. The WD2XSH stations are on the air regularly, gathering propagation data. They are always ;ooking for signal reports.

Allison said that with many of today's transceivers and a suitable antenna, you can listen for these experimental stations and submit reception reports via the Web site: "The new Product Review tests will help identify transceivers suitable for use on these frequencies. With equipment built over the last 25 years ago or so, I've noticed a wide variety of available sensitivity, from terrible to quite good. Many receivers tune to 137 and 505 kHz; not all are proficient at receiving signals there. For you 'lowfers,' this measurement is for you."

Spectral Sensitivity

Spectral sensitivity is the weakest signal that can be "seen" on a visual display of spectrum above and below the operating frequency. Often called a spectrum scope or panadapter, this feature is included on many mid-range and high-end transceivers. "This data represents the level, in dBm, at which the operator can see a signal poke up out of the display noise floor," Allison explained. "Although the measurement is somewhat subjective, it works out to be about 3 dB above the noise floor at the bottom of the display when the scope is adjusted to show 100 kHz of spectrum. With software-defined receivers (SDRs), such as the FLEX-3000, the sample rate is set to the highest setting."

Audio Output THD at 1 V RMS

Allison said that one of the ARRL Technical Advisors posed the question, "Who ever listens to their receiver at full volume?" Allison explained that audio output power and THD (total harmonic distortion) at the specified load impedances as specified by the manufacturer have been tested and reported. "Generally, the specification is at or near the maximum audio output the receiver is capable of," he said. "If severe hearing loss isn't an issue, we normally listen with the volume control set to around the 9 o'clock to 11 o'clock position on most transceivers and not with the control cranked to maximum."

Allison explained that distortion at normal listening levels is an important factor, especially when you are listening for an extended period of time: "High levels of distortion can make signals more difficult to understand and add to fatigue. We'll continue to measure and report how audio output power and THD compare to manufacturers' specifications, but we have added a new test intended to show distortion at more typical volume levels."

After testing several radios for comfort, Allison picked 1 V RMS as an output level for the new test. "It's an easy figure to remember," he said. "We will now also report THD at this level. Note that this test will appear with the next transceiver reviewed because the FLEX-3000 has only a low-level audio output and is dependent on external, user-supplied devices to amplify the audio to normal listening levels."

Look for these new tests beginning with October's QST Product Review featuring the FLEX-3000.

SMITHSONIAN CURATOR TO SPEAK AT AMSAT-NA BANQUET

Dr Martin Collins, a curator in the Space History Division at the Smithsonian Institution's National Air and Space Museum in Washington <http://www.nasm.si.edu/>, will be the featured speaker at the AMSAT-NA Symposium banquet on Saturday, October 10, at the Four Points Sheraton Hotel at Baltimore-Washington International Airport <http://www.amsat.org/amsat-new/symposium/2009/index.php>.

The title of his presentation will be "Making the Space Age: The First 50 Years."

Dr Collins curates the National Air and Space Museum's civilian applications satellites collection that includes weather, remote sensing and communications satellites and related technologies. He has contributed to a series of Museum exhibits and was primary author of the exhibition catalog "Space Race: The US-USSR Competition to Reach the Moon" <http://www.amazon.com/Space-Race-U-S-U-S-S-R-Competition-Reach/dp/0764909053>.

On the occasion of the 50th Anniversary of Sputnik, he was editor of the book "After Sputnik: 50 Years of the Space Age" <http://www.amazon.com/After-Sputnik-Years-Space-Age/dp/0060897813> that included text and photos on the history of Project OSCAR. He was instrumental in arranging the display of OSCAR 1 at the National Air and Space Museum's Udvar-Hazy Center, along with the Naval Academy's PCSat Amateur Radio satellite. He also arranged the acquisition of AMSAT's MicroSat mechanical test model, just in time for AMSAT's 35th Anniversary Annual Meeting.

The Saturday evening banquet is one of the highlights of this year's 40th anniversary symposium, October 9-11 <http://www.amsat.org/amsat-new/symposium/2009/index.php>.

ARRL Continuing Education Course Registration: Registration remains open through Sunday, October 25, 2009, for these online course sessions beginning on Friday, November 6, 2009: Amateur Radio Emergency Communications Level 1; Antenna Modeling; Radio Frequency Interference; Antenna Design and Construction; Ham Radio (Technician) License Course; Propagation; Analog Electronics, and Digital Electronics. Each online course has been developed in segments -- learning units with objectives, informative text, student activities and quizzes. Courses are interactive, and some include direct communications with a Mentor/Instructor. Students register for a particular session that may be 8, 12 or 16 weeks (depending on the course) and they may access the course at any time of day during the course period, completing lessons and activities at times convenient for their personal schedule. Mentors assist students by answering questions, reviewing assignments and activities, as well as providing helpful feedback. Interaction with mentors is conducted through e-mail; there is no appointed time the student must be present -- allowing complete flexibility for the student to work when and where it is convenient. To learn more, visit the CCE Course Listing page <http://www.arrl.org/cep/student> or contact the Continuing Education Program Coordinator <cce@arrl.org>.

South African Amateur Radio Payload Reaches Orbit: After several delays, South Africa's SumbandilaSat satellite <http://www.amsatsa.org.za/SZASAT.htm> finally blasted to orbit aboard a Soyuz rocket from the Baikonur Cosmodrome in Kazakhstan on September 16 <http://www.russianspaceweb.com/baikonur.html>. The main payload is a multi-spectral imager, but the satellite also carries an Amateur Radio component consisting of a 2 meter/70 cm FM repeater. After SumbandilaSat is fully commissioned, the repeater will be activated with an uplink at 145.880 MHz and a downlink at 435.350 MHz; there will also be a voice beacon at 435.300 MHz. The transponder mode will be controlled by a CTCSS tone on the uplink frequency. The CTCSS tone frequencies have yet to be announced. SumbandilaSat was sponsored by the Department of Science and Technology and was built at SunSpace <http://www.sunspace.co.za/> in cooperation with the Stellenbosch University <http://www.sun.ac.za/>. In addition to the SA-AMSAT amateur

module, the satellite carries Stellenbosch University's radiation experiment and software defined radio (SDR) project, an experiment from Nelson Mandela Metropolitan University and a VLF radio module from the University of KwaZulu-Natal.

Now Is the Time

Just in case readers of the eDipole failed to see the 'currency green' notice near the bottom of the program-announcing post card, the following is a reminder, **"$$$$$$ Bring/Send your Membership Dues to the meeting $$$$**"

While a daily dues allotment of a bit under six cents each day ($ .06) would be a ridiculous way to collect the annual Marple Newtown Amateur Radio Club dues, it does demonstrate what a bargain the annual maintenance and organization obligations continue to be.

The yearly dues payment of $20 is needed to maintain the family of VHF and UHF repeaters and to also fund the other organizational fees required to maintain this highly regarded organization.

If there are any questions about dues, activities, service opportunities, or any other technical or organizational matters, contact President Walt Faust, N3FXR: **610-622-2200**.

Asking for Forgiveness

My desire was to have this October issue of the **e*Dipole*** bear the long-overdue collection of the pictures taken during this year's Field Day. As the saying so aptly states, "The road to h- - - is paved with good intensions."

A problem with my CD reader was the first hurdle that prevented the intended paving.

A problem with the Pennsylvania Legislature and the Governor of the Commonwealth of Pennsylvania became the biggest hurdle.

As some readers of the **e*Dipole*** may know, I am the president of the Delaware County Library System. When the lack of a State Budget grew from being a few days overdue to months without a finished budget, the treatment for library funding went from bad to "*worstest*." The first news from the insiders told of library funding cuts of more than 50%.

This same undesirable cut became a reality several years ago. The local libraries in Delaware County as well as in neighboring Chester and Montgomery counties were able to "rob Peter to pay Paul" and spare patrons from what should have been a dramatic series of cuts in programs and services.

This dramatic cut was slowly replenished over a series of successive years.

Now, both Peter and Paul are both destitute.

Being the "squeak' of the hinge for libraries has consumed more that a handful of hours in attempts at selling the concept that libraries are not sacrificial. As I write this, there still is no news. There are rumors and none of them are comfortable.

I hope to find time in the next month to salvage the image collection and use it to fill future pages of the **e*Dipole***.

Thank you for your patience and understanding.

Jim Biddle,

W3DCL

Young Assets Occupy the Airwaves

Anyone monitoring the Society of Broadcast Engineers Chapter 18/Philadelphia's local repeater, W3SBE (442.55 MHz) may have noticed there is a growing number of school students who have discovered Amateur Radio. This discovery is evidenced by the foundation of a Youth Net.

This Youth Net had its origins during September. Following their licensing, this small group of "youthful hams" began gathering on the area airwaves. Listeners and supporters hope this group does not become snared by a mood that often captures newly licensed Amateur Radio operators. That characteristic is summed up the concept of, "What can we talk about?"

A simple concept that helps eliminate this danger is to let young people talk with other young people.

They have more in common with one another than any other group. Adults may best be guided by

the concept that probably the only thing that is immediately common is the fact that they, like others, have earned an Amateur Radio license.

Seasoned veterans in the quest of helping young Ham Radio operators feel comfortable 'on the air' should observe the first step of being good listeners and wait to be asked to join a youthful QSO. This formula is a great way to foster the youthful population of the airwaves.

Another observer added that listeners should not try to instantly enhance the technical knowledge of these young operators. Just like many older Amateur Radio operators, each group of common-background radio users have their own favorite topics. Our young operators have their own interests, just like all groups.

Chris Brady, N3CB, has been a kindling force in the licensing of many of the newer young operators. He has volunteered that one effort to get "kids" on the air is have them talk about topics that interest them. Success breeds success. This can be observed through a quiet monitoring of this current, on-air meeting at 9 p.m. on Sunday nights. Brady noticed this initial collection of youth operators hopes to plant the seeds to keep this hobby active and vibrant

Area operators with unlicensed "*tween*" children are invited to suggest to their children that they become a part of this net. An adult acting as a station Control Operator can help a youthful prospect acquire some on-air time and hopefully to spark an interest in our hobby.

Hams interested in more information may e-mail N3CB, Chris Brady, at n3cb@arrl.net.

(NOTE: This net is being carefully monitored by adult hams and any station attempting to check-in that is NOT within an appropriate age-range, will be asked to QRT until the net has cleared. It is not an open-forum net, but all hams and future hams, under the age of 18, are invited to participate. Times, days and frequencies are subject to change, based on homework projects, of course!)

Learning a New Word

While doing some **e*Dipole*** writings during a self-promised vacation from that form of research and writing, an accident occurred. That accident expanded to a new word discovery.

Thanks to a Verizon FIOS Internet spell check for an outgoing piece of e-mail, the suggested spelling correction for the word "Dipole" was "*tuple*." At first glance this word was seemingly unknown. The next step in the unexpected, late night learning session was a trip to the electronic version of the Merriam-Webster Collegiate Dictionary

Main Entry:-tu-ple
Function: noun combining form
Etymology: quin*tuple*, sex*tuple*

Definition: set of (so many) elements — usually used of sets with ordered elements <the ordered 2-tuple (a, b)>

When cited as a part of other words, one that indeed was a noun produced by a "combining form," i.e. one word constructed of two elements, the word becomes easily understood. This is better than late night TV.

While Old Still True

While doing some electronic searching, the following BLOG was unearthed. It may be a bit old, December 5, 2007, but it is still valid.

This WDEL Blog was a series of discussions under the heading of Eclectic Hobbies. These exchanges were with Allan Loudell.

Wednesday, December 5, 2007

Want to give your old (or new) Shortwave radio a test? Try to pick-up the Island of Napoleon's Exile!

The long nights of winter in the Northern Hemisphere typically give you some of the best radio long-distance reception, whether on the A.M. Standard Broadcast band, or on shortwave. (Exceptions: F.M. and T.V. long-distance reception)

Perhaps this winter, you'll want to try your hand on the dials of an old shortwave radio receiver. If you listened to shortwave as a kid, you'll find some old "friends" (stations you used to listen to) have vanished from the dials. Other great stations remain,

such as Radio Netherlands and Radio Sweden.

Re: Want to give your old (or new) Shortwave radio a test? Try to pick-up the Island of Napoleon's Exile!

To Arthur,

Let me preface this by saying I am NOT an amateur radio operator, just an AM-FM--shortwave DX'er. Getting my FCC Third-Class endorsed broadcast license -- plus going on the air on my high school station -- satisfied my "need" to go on-the-air.

You WILL find active amateur radio clubs here in the Delaware Valley: You can access the First State Amateur Radio Club at www.fsarc.org. You also have the Mid-Atlantic Radio Club and the ***Marple Newtown Radio Club in Pennsylvania*.** **[**ED: added emphasis**]**

I believe amateur radio operators in the region do an annual DX expedition on Pea Patch Island.

Amateur radio appears to be holding its own here in the United States, with about 600-to 700-thousand operators.

However, undeniably, if you go to a hamfest, you'd probably find many more older guys with gray hair or balding heads, fewer young people... the inevitable result of competition for leisure time, especially from the internet, video games, etc.

An unfortunate development, because particularly since 9-11, we've seen amateur radio operators focus less on the hobby aspect, and more on critical emergency communications.

This is a great form of information and pubic information that was not created through the ***eDipole*** or its representatives. This flattering and deserved image was the result of the efforts of all of the members of the Marple Newtown Amateur Club

What Would You List

In an e-mail exchange with Jim Miccolis, N3EY, this CW and hands-on equipment fabricator, suggested there should be several questions posed in an upcoming issue of the Marple Newtown Amateur Radio Club's **e*Dipole***.

His first suggested question was, "If there was one - just one - piece of ham gear from your past that you could have back in the best condition it was when you had it, what would it be? (And you couldn't sell it)"

In his electronic dialog, he explained why this question might be a challenge to readers of the **e*Dipole***. He explained, "The reason I say just one piece is to make it a challenge for folks like me who would have a very long list otherwise. "

His second suggestion for a reader query was, "List all the rigs you've ever owned. Stuff that you never used on the air doesn't count."

Again, Jim proceeded to volunteer his own list of previously owned Amateur Radio related equipment. He listed the following," Let's see....for me: Heathkit AR-2 receiver, DX-20 transmitter, VF-1 VFO, QF-1 Q multiplier, HW-101 transceiver, HW-2036 2 meter FM rig, EF Johnson Adventurer transmitter, Viking 2 transmitter, 122 VFO, National NC-173 receiver, Gonset Super Six converter, RME 45 receiver, Elecraft K2 transceiver, and Ten-Tec Argosy 525 transceiver.

He added that he, like many of Amateur Radio operators, also had a collection of military surplus equipment. His included the BC-348R, BC-342N, BC-453, BC-454 receivers, and a BC-457 transmitter.

He concluded his list by adding, "This list doesn't even include parts units, stuff I bought and sold without using, test equipment, or homebrew rigs. The last is even longer.". Jim was first licensed as a Novice in 1967. He promptly upgraded to Technician and Advanced in 1968, and became an Extra in 1970. In describing his increased licensing class activities, N2EY added, "Seems like just yesterday! "

The active Field Day partner and busy father and husband has interests in CW and home brewing. In validating he is more than a single focus Ham Radio operator, Jim Miccolis added the he has done many other modes, bands and activities

The rig shown above is N2EY's current homebrew setup, known as the Southgate Type 7. It's a 100-watt all-hollow-state CW transceiver for 80, 40 and 20 meters, and was built in the mid-1990s from 99% reused/recycled parts.

Fees Increased AGAIN

In its announcement, the FCC has stated Vanity Call Sign fees will increase for the second consecutive year. This increase took place on September 10, 2009

In its August 11 announcement, the FCC state the cost of an Amateur Radio vanity call sign will increase by $1.10. The new fee will be $13.40, up from the fee of $12.30.

Readers if the eDipole are reminded that in addition to the need to pay this fee for the initial application for a vanity call sign, this fee is also applicable when renewing a vanity call sign for a new, successive 10-year licensing term. These FCC'S Regulatory Fees, of which Amateur Radio vanity call fees are a contributor, are expected to 'recover' a total of $344,875,000.

Heard in the Air

All too rarely, airline attendants make an effort to make the in flight a 'safety lecture' and announcements a bit more entertaining. John Ferrier, KA2GRM, has shared some real examples that have been heard or reported:

1. On a Southwest flight 245 (Southwest has no assigned seating, you just sit where you want) passengers were apparently having a hard time choosing, when a flight attendant announced, 'People, people we're not picking out furniture here, find a seat and get in it!'
2. On a Continental Flight with a very 'senior' flight attendant crew, the pilot said, 'Ladies and gentlemen, we've reached cruising altitude and will be turning down the cabin lights. This is for your comfort and to enhance the appearance of your flight attendants.'
3. On landing, the stewardess said, 'Please be sure to take all of your belongings. If you're going to leave anything, please make sure it's something we'd like to have.
4. 'There may be 50 ways to leave your lover, but there are only 4 ways out of this airplane'
5. Thank you for flying Delta Business Express. We hope you enjoyed giving us the business as much as we enjoyed taking you for a ride.'
6. As the plane landed and was coming to a stop at Ronald Reagan, a lone voice came over the loudspeaker: 'Whoa, big fella. WHOA!'
7. After a particularly rough landing during thunderstorms in Memphis, a flight attendant on a Northwest flight announced, 'Please take care when opening the overhead compartments because, after a landing like that, sure as hell everything has shifted.
8. From a Southwest Airlines employee: 'Welcome aboard Southwest Flight 245 to Tampa. To operate your seat belt, insert the metal tab into the buckle, and pull tight. It works just like every other seat belt; and, if you don't know how to operate one, you probably shouldn't be out in public unsupervised.'
9. 'In the event of a sudden loss of cabin pressure, masks will descend from the ceiling. Stop screaming, grab the mask, and pull it over your face. If you have a small child traveling with you, secure your mask before assisting with theirs. If you are traveling with more than one small child, pick your favorite.

10. 'Weather at our destination is 50 degrees with some bro ken clouds, but we'll try to have them fixed before we arrive. Thank you, and remember, nobody loves you, or your money, more than Southwest Airlines.'
11. 'Your seat cushions can be used for flotation; and, in the event of an emergency water landing, please paddle to shore and take them with our compliments.'
12. 'As you exit the plane, make sure to gather all of your belongings. Anything left behind will be distributed evenly among the flight attendants. Please do not leave children or spouses.'
13. And from the pilot during his welcome message: 'Delta Airlines is pleased to have some of the best flight attendants in the industry. Unfortunately, none of them are on this flight!'
14. Heard on Southwest Airlines just after a very hard landing in Salt Lake City the flight attendant came on the intercom and said, 'That was quite a bump, and I know what y'all are thinking. I'm here to tell you it wasn't the airline's fault, it wasn't the pilot's fault, it wasn't the flight attendant's fault, it was the asphalt.'
15. Overheard on an American Airlines flight into Amarillo, Texas, on a particularly windy and bumpy day: During the final approach, the Captain was really having to fight it. After an extremely hard landing, the Flight Attendant said, 'Ladies and Gentlemen, welcome to Amarillo Please remain in your seats with your seat belts fastened while the Captain taxis what's left of our airplane to the gate!'
16. Another flight attendant's comment on a less than perfect landing: 'We ask you to please remain seated as Captain Kangaroo bounces us to the terminal.'
17. An airline pilot wrote that on this particular flight he had hammered his ship into the runway really hard The airline had a policy which required the first officer to stand at the door while the Passengers exited, smile, and give them a 'Thanks for flying our airline.' He said that, in light of his bad landing, he had a hard time looking the passengers in the eye, thinking that someone would have a smart comment. Finally everyone had gotten off except for a little old lady walking with a cane. She said, 'Sir, do you mind if I ask you a question?' 'Why, no, Ma'am,' said the pilot. 'What is it?' The little old lady said, 'Did we land, or were we shot down?'
18. After a real crusher of a landing in Phoenix, the attendant came on with, 'Ladies and Gentlemen, please remain in your seats until Capt. Crash and the Crew have brought the aircraft to a screeching halt against the gate. And, once the tire smoke has cleared and the warning bells are silenced, we'll open the door and you can pick your way through the wreckage to the terminal.'
19. Part of a flight attendant's arrival announcement: 'We'd like to thank you folks for flying with us today and, the next time you get the insane urge to go blasting through the skies in a pressurized metal tube, we hope you'll think of US Airways.'
20. Heard on a Southwest Airline flight. 'Ladies and gentlemen, if you wish to smoke, the smoking section on this airplane is on the wing and if you can light 'em, you can smoke 'em.'
21. A plane was taking off from Kennedy Airport. After it reached a comfortable cruising altitude, the captain made an announcement over the intercom, 'Ladies and gentlemen, this is your captain speaking. Welcome to Flight Number 293, nonstop from New York to Los Angeles. The weather ahead is good and, therefore, we should have a smooth and uneventful flight. Now sit back and relax. OH, MY GOD!' Silence followed, and after a few minutes, the captain came back on the intercom and said, 'Ladies and Gentlemen, I am so sorry if I scared you earlier. While I was talking to you, the flight attendant accidentally spilled a cup of hot coffee in my lap.

You should see the front of my pants!' A passenger in Coach yelled, 'That's nothing. You should see the back of mine.'

Problems in the Air

The news media has shared with the world that Pennsylvania's most powerful and expensive tool in fighting crime is struggling. As Pittsburgh was preparing to host the world gathering of economic leaders, a media source states that the 800-megahertz statewide emergency radio system is not working properly. It was reported that state police aircraft were unable to communicate with patrol cars on the ground during G-20 preparations

While the PSP will not comment, at least one Commonwealth lawmaker did: "I think it's ridiculous that we've spent almost $400 million and more into a system that's not reliable and not performing" Continuing his caustic comment PA Rep. Ron Marsico (R-Dauphin) added, "It's an embarrassment to our Commonwealth and our state police."

Marsico is calling for hearings. His concerns are shared by Sen. John Rafferty (R-Berks/Chester/Montgomery), who also wants answers. Coatesville is in his district and he says the state police task force sent in for a series of arsons also had problems with 800 megahertz.

Explaining his concerns, Rafferty commented, "The 800 megahertz system seems to be a dream. It was conceived under the Ridge Administration and continued under the Rendell Administration. There's a lot of money invested into the system. It's not working the way the bill of goods was sold to the Commonwealth."

Charlie Brennan, the deputy secretary for public safety radio in the Governor's Office of Administration has added that this emergency radio system has great promise. He added that building a system from scratch has its perils.

In an amplification of his reported comments, Brennan stated, "Pennsylvania wasn't on the cutting edge of this technology. We were on the bleeding edge of it. We were way ahead of anybody. All the software we got was always new, which is not a good place to be. You never want to be the first in brand new software."

All of these problems have a temporary solution. It was also reported that Pittsburgh and the G-20 activities would see the state police relying on the older radio systems. They kept the old radios along side the new in patrol cars during the transition to the new 800 megahertz.

Capt. Adam Kisthardt, part of the technology bureau staff at Pennsylvania State Police headquarters refined the current situation when he said, "I would not put the radio system out there if I thought it was endangering our troopers or our citizens and I'm the guy who makes that call. I sleep at night because I know they have the VHF radio system to go to if there's a problem."

As readers of the **e*Dipole*** may remember, the use of the 800-megahertz segment of the radio spectrum is not one without problems. Many dollars and many hours of redesign and the expensive altering of the 800-megahertz system plagued the fire and police communications installations in Chester County.

The City of Philadelphia, also using the 800-megahertz format for police, fire, and municipal services is currently undergoing a complete rebuild in their attempt to achieve reliable communications. There have been both radio and phone-company interconnect problems with the City's system.

It should be noted that one source of some of the 800-megahertz system used by Philadelphia were initially assigned to Delaware County. In an unusual swap, the Delaware County former upper TV spectrum frequencies were swapped for a collection of 500-megahertz frequencies that became the foundation for a system that replaced VHF-low band frequencies.

The source of the 500-megahertz frequencies is from the current UHF television frequencies. The local allocations are permitted because of the propagation of 500-megahertz, coupled with the location, specific types of utilization, and effective radiated power will result to no interference to locations like Baltimore that has a UHF TV channel that embraces the collection of Delaware County Public Service frequencies.

"As a rule, men worry more about what they can't see than about what they can." –Julius Caesar

"I never doubted my ability, but when you hear all your life you're inferior, it makes you wonder if the other guys have something you've never seen before. If they do, I'm still looking for it." –Hank Aaron