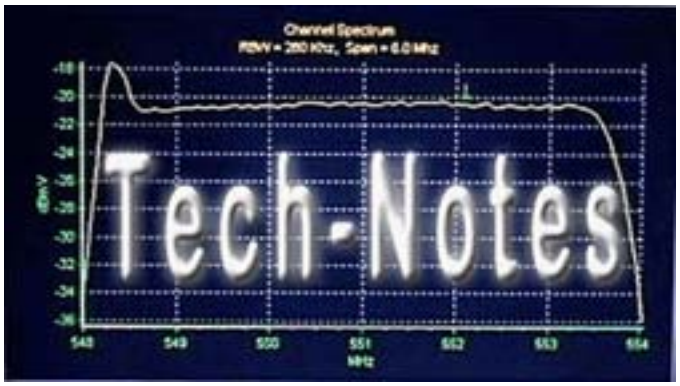

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Our purpose, mission statement, this current edition, archived editions and other relative information is posted on our website: WWW.Tech-Notes.TV
This is YOUR forum!

Index

Note: All **Blue** underscored items in this PDF newsletter are working links.
(Click on the Link below to navigate to that section of Tech-Notes)

Editor's Comments

Yes! It has been a while since we've gotten our Tech-Notes out and a lot has happened since the last one. We'd like to thank all of you who've stayed with us and also to those contributing folks, like John Silva, for their patience while we were addressing the plethora of issues that have impeded our efforts. This edition has a lot in it and there's a lot we left out. We opted to publish this now before the rest of what we've selected to include becomes ancient history. None-the-less, here we go. We'll not bore you with the obvious, but there are a few things that we think should be address from our "unbiased" vantage point.

FREE – OVER THE AIR Television and costly Cable/Satellite

It goes without saying that television started out as a FREE – OVER THE AIR service to our great nation and was a natural outgrowth of a very successful FREE – OVER THE AIR radio broadcast service/industry. It's a known fact that RCA began the National Broadcasting Company so their "Music Boxes," as David Sarnoff (RCA's CEO) called them, would have something to tune into. It is a no-

brainer that one of the world's largest manufacturers of television receivers would continue that tradition with television.

The birth of Cable TV

Cable television, formerly known as Community Antenna Television or CATV, was born in the mountains of Pennsylvania in the spring of 1948. The whole reason cable television was born began in 1947 when John and Margaret Walson decided to sell television sets in their appliance store in Mahanoy City, PA (Schuylkill County). Sales, however, weren't all that good. It's hard to demo a TV set when the signal is either week or non-existent. Needless to say, local residents had the same problems receiving the three nearby Philadelphia network stations with local antennas because of the region's surrounding mountains.

The Walsons erected an antenna on a utility pole atop a local mountain that enabled them to demonstrate the TVs in their store with good broadcast signals coming from the three Philadelphia stations. It didn't take long for the Walsons to have an epiphany and "The Service Electric Company" was born – offering TV for a fee via "a wire". The rest is history.

That's not all; Walson was also the first cable operator to use microwave to import distant television stations, the first to use coaxial cable for improved picture quality, and the first to distribute pay television programming (HBO). Now you know who to blame.

We recall, many years ago, there was an initiative on the ballot in Southern California that would permit a "new service" called ***cable TV*** to be established. It was resoundingly defeated. Ever since, we've been asking ourselves the question: "What happened?" It would appear that the voice of the people, even back in the early-50s, was ignored. Today, some sixty years later, the issue is certainly moot. In the nearly sixty years of cable television service, there has been very little regulation. The only thing that has really raised its head has been the issues of "**MUST CARRY**."

Satellites on the horizon

On July 26, 1963, when the very first successful geosynchronous satellite was launched, Syncom II (Syncom 1 blew up when its apogee rocket was fired.) and positioned, a whole new industry was born. Within a month, a series of tests utilizing Syncom II were initiated (August 1963) and, in September 1963, the first successful transmission of television through a synchronous satellite was achieved.

It took thirteen years for "the satellite industry" to finally crawl into bed with television (or was it visa-versa) as a service when in 1976 Home Box Office (HBO) made history by initiating satellite delivery of programming to cable with the heavyweight boxing match know as "The Thriller From Manila."

Also in 1976, as a result of his private experiments with video transmission from communications satellites, the first consumer Direct to Home (DTH) Satellite System was created in the garage of Stanford University Professor and former NASA scientist Emeritus H. Taylor Howard. (This is not the first business that started in a garage in Palo Alto, CA by folks associated with Stanford University – remember Hewlett-Packard?) Howard and a mechanical engineer, Bob Taggart, co-founded Chaparral Communications Inc., which was to become a $50 million company with in six years.

In 1977, Pat Robertson launched the first satellite-delivered basic cable service called the Christian Broadcasting Network (CBN), later The Family Channel. Others followed suit, such as Turner Broadcasting System (TBS). Also, there was the establishment of SPACE, the Society for Private and Commercial Earth Stations (the Satellite Television Industry Association, Inc.) and COMSAT/Satellite Television Corporation's request to construct and operate a Direct Broadcast Satellite (DBS) system.

Unfortunately back when Walson put up his very first CATV antenna in 1947, there were no low power TV station or translator (a device that receives on one channel and retransmits on another) rules on the Federal Communications Commission's (FCC) books. According to the FCC, the first translator was on the air as early as 1948, but was an illegal operation. It took the FCC eight years (1956) to recognize the need and create the framework where a translator could be licensed and extend the range of a primary, full power broadcast station. These early translators where supported in just about everyway you can imagine from the full power station paying for everything, to local communities charging for the service through a local non-profit organization.

As of October 18th of this year, according to the FCC, there are 1760 full power television stations on the air. In addition this, there are 560 Class A television stations (*Class A television service was set up by the FCC to regulate some low power TV stations as the result of the Community Broadcasters Protection Act of 1999.*) and 2,357 Low Power TV stations. That's not all, extending the range of full power TV stations; there are 4,410 (legal) Translators. There are ten states (only one east of the Mississippi River) that have 300 or more translators and three of those states have 600 or more (Alaska, Colorado and Utah).

So what?

At this point, you must be asking: "Where are they going with all this?" Quite simple: These two industries charge for something that can be had, in most places – **FREE!** Why pay for cable or satellite when you can watch television most anywhere for FREE. All you need is an antenna, lead-in wire and a television receiver.

It is sad to say that many folks today don't either remember this of don't know about it. We gave a talk to a bunch of high school students about the transition to digital and told them all they needed to receive TV is an antenna, lead-in wire and a television receiver. We were asked by more than one student: "How much a month do they charge for this service?" The look of disbelief was quite surprising when they were told – "It cost you **nothing** once the antenna system is connected to your TV set."

What you won't get

We know that many of the television stations that offer digital service right now, offer some of the enhancements that come with digital: near studio quality pictures and sound, programs in high definition and multicasting, just to name a few.

Multicasting is a great service. Here in Oregon, Oregon Public Broadcasting (OPB) offers four different programs via their digital TV stations; you can only get one program on there (or anyone else's) analog service. In Eugene, the local NBC affiliate (KMTR) offers all NBC program on their digital – both the

standard and high definition fair on what they call 16-1 as well as all the programs from the new CW network on what they call 16-2.

When asked, many of the big hitters in cables television industry across this great land of ours and the satellite providers, “Will you carry all the material the digital stations are offering in your local-into-local service?” The answer was a resounding: “NO!” Besides, you have to pay them for what you can get off the air for free.

Boy do they have the public brain washed!

Not to try to top all of this, but the satellite industry is now crying that they’ve not got enough time to put into place digital receivers before February 17, 2009, the drop dead date for all full power analog television service here in the US that they deliver in their local-into-local packages.

DUH! What in the hell have they been doing? Have they been asleep? Most US television station has had digital on the air for quite some time now. Both satellite and cable should have been taking the digital off the air signals instead of the analog signal as soon as the local station had their digital transmitters up and running so they could provide their customers with the near studio quality sound and picture digital has to offer. Now that the FCC is looking at both cable and satellite with the intent of more regulation, perhaps it time these two industries gird up their loins and got ready to suffer the same crap that the broadcast industry has suffered for many year. After all, don’ they have the same fiduciary responsibilities to the public as broadcasters do?

Next time around in the Tech-Notes

We’d like to address EAS and where it’s going. If you have any input, please pass it along. The current EAS system isn’t as good as it could be and some view it as a total waste of time. What can done to improve it – fix it or replace it with something better? Should it address every kind of both natural and manmade disaster and how? Should it interrupt all types of broadcast delivery – Satellite, Cable and over the air? How would local vs. regional vs. national EAS messages be promulgated?

There is little doubt that you can come with more questions that should be address. Let us know.

Food for all

The chariot

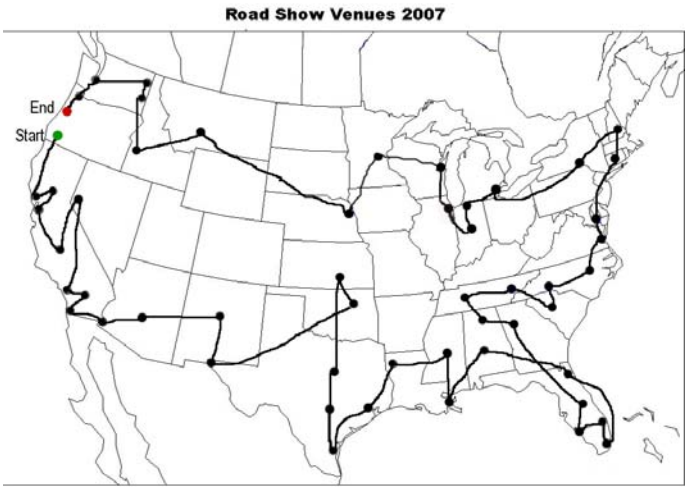
The assistant

The Road Show - A Taste of NAB 2007

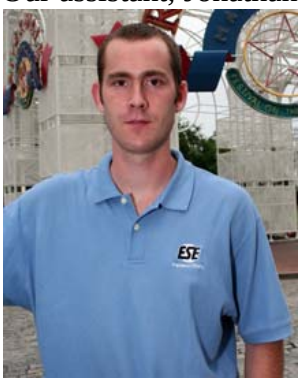
Statistics on the Road Show – A Taste of NAB 2007

We've exceeding **everyone's** expectations!

- **Venues:** Scheduled Fifty-Two. **www.tech-notes.tv/2007/2007-Itinerary.htm**
- **Completed: Fifty-two**
- **Duration: 4 ½** months (May 1st – September 12th)
- **Traveled: 18,671** miles (**30,048** km).
- **Attendance:** over **1303** Total – Average attendance per venue: **25.05**.
- **Target audience:** Broadcast Managers, Engineers, Technicians, Decision Makers, Technical School Students and others interested in broadcast technology – Those who couldn't make it to the real thing.
- **Received:** over **150** E-mail thanking us and/or asking us to return in 2008. See them at: **www.tech-notes.tv/2007/2007_Comments.pdf**.
- **Collected:** hundreds of different business cards as part of our door prize drawings. Most all from decision makers
- **Door prizes given away:** This year's door prizes, both those at each venue and those at the end of the Road Show, have an undetermined value: It is well into the tens of thousands of dollars. This factor was a significant ingredient in encouraging folks to attend.



Our assistant, Jonathan Haase, documented what we did in a video he made. Jonathan is a recent graduate



of the University of Oregon's school of journalism and specialized in electronic media. He did an excellent job. You can view this documentary at: **www.tech-notes.tv/DVD.html**. This and other works by Jonathan can be seen on his new website: **www.JonathanHaase.com**. He is young, talented and quite good. Check out his other work for yourself.

Jonathan is currently doing a documentary down in New Zealand and will be back ready for anything that comes his way. You can reach him at: **Jonathan@JontathanHaase.com**. Let him know what you think of this work.

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Making the Taste of NAB 2007 Road Show Possible

Alphabetically, here are the companies who cared enough to share their technology with those who couldn't or didn't make it to NAB and made the Road Show possible. (All logos are links to the respective company's website.)

AJA has been on the Road Show since it began - six years.

This year we featured three new conversion items introduced at NAB 2007 – **HI-5**, an SDI (high & standard def) to HDMI converter, **GEN-1**0, a sync generator that puts out a number of tri-level, black burst and color bar signals, not to mention an AES-11 output, **FS-1**, an everything in – everything out converter device that exceeds anything on the market today. In addition to this, we also describe a new desktop product, the **IO-HD** that is based on a new Apple codec. These new items are discussed in a Power Point presentation. Some of these items, along with legacy products are on display. CDs are available.

This is Blackmagic Design's second year on the Road Show.

This year we featured a **Workgroup Video Hub** routing switcher which is a 12 X 24 with machine control that will work with both HD-SDI and SD-SDI signals, and their **Multibridge Extreme**, soon to be replace on the Road Show with the Multibridge Pro (introduced at NAB 2007), both of which are bi-directional converter devices which can instantly switch between HD and SD.) CDs will soon be available.

ESE has been on the Road Show since it began - six years.

This year we featured two **Master Clock Systems**: one **GPS** based and the other based on Network Time Protocol (**NTP**) and we discuss the different kinds of clock ESE has in their repertoire along with their addressing the new daylight savings time issues. We also are showing ESE's portable audio DA with one in (loop though) and four out and discuss other similar products. We close ESE with a mention of their time-code generators and readers. CDs are available

This is Henry Engineering's third year on the Road Show.

This year, we featured several new products introduced at NAB 2007 – **Multiphones II**, an **AES – USB Matchbox**, the **USDA 2X4** (a 2-in, 4-out analog DA), the **MicroMixer** (a 4-in, 2-out stereo line mixer) and a 19 inch, one RU high shelf showing how 3 devices can be rack mounted. Other Henry Engineering units are discussed as well.

InPhase Technologies has been on the Road Show for four years.

This year we showed a short DVD on the progress being made in **holographic storage** and where it is going. We pass around a piece of the Tapestry Media while we discuss its history, future and possible uses. The DVE is available.

Leader has been on the Road Show since the start, six years.

This year we featured the LV 5800, the most vestal video/audio monitoring device on the market that was introduced in January of this year (2007). It is a Multi-SDI Monitor for HD/SD-SDI signals, and with the proper input cards, can also display analog signals and up to eight channels of audio. It is eight scopes in one. We are also featuring the LT 4400, a Multiformat Video Generator also introduced in January of this year. Later in the Road Show, we will be receiving an LV5750 Portable Multi SDI Monitor as well. We discuss Leader's unique gamut display and Cinelite meter option, as well as mention their LV7700 Rasterizer and how it differs from these other two scopes. We utilize the LT 4400, a Multiformat Video Generator's output as a source to display on other technology's that are on the Road Show this year. Printed literature is available.

This is Network Electronics first year on the Road Show.

We had a half-rack high rack on wheels that we display and show the various options with what is considered to be the most rock-solid **routing switcher** on the market. We have a **32X32 AES/EBU router**, a **128X128 HD-SDI/SD-SDI router**, a two RU high interface card cage which we explain and the several programming panels and control panels that are mounted in the rack. CDs are available.

This is Nverzion's first year on the Road Show.

We had a CPU with a full working **Nverzion Automation System** on it. We show how the various facets of this very stable system fit together and discuss several locations where this system is running stations for many hours unattended. We highlight this technology's functions, features and benefits are superior to the competitions. CDs are available.

This is Omneon's third year with the Road Show.

This year we featured the **MediaDeck**, introduced at NAB 2007; a video server based on Omneon's Spectrum server technology. We have one of the first ever delivered. We discuss this technology's functions, features and benefits by demonstrating it and showing a power point presentation. We utilize the **MediaDeck**'s three outputs as sources to display on other technologies that are on the Road Show this year. CDs are available.

This is Ross video's first year on the Road Show

We featured Ross's **OpenGear** approach to rack real estate conservation and how it can benefit users. We also discuss how it works, how it can be

controlled using "**Dashboard**," the options that are available when picking the kind of black-plains that are available and the various companies that are signed-on to support the **OpenGear** concept. We have a half-rack of equipment on wheels that we can actually show the concept, while highlighting **OpenGear**'s functions, features and benefits though the use of a Power Point presentation. We lightly touch on Ross's **Ross Gear** as well. CDs are available.

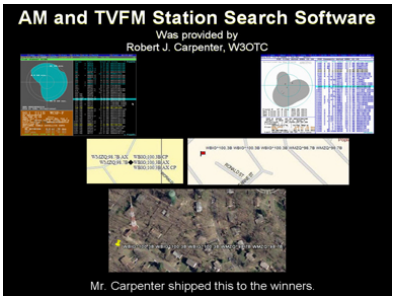
This is Telecast Fiber's first year on the Road Show.

After a brief Power Point tutorial about Fiber-Optics where in we discuss the differences between multimode and single-mode fibers, the advantages of fiber over cable, how various kinds of fiber-optic cables are made (the advantages/disadvantages of each), the various kinds of connectors used in fiber-optics (their strengths and weaknesses), we get into the actual equipment used to make Fiber-Optics the unquestioned choice in nearly every application. We pass around the **Rattler** series, the **Copper-Head** ENG/EFP interface and discuss the **Viper** tri-ax extender. We have shown how the Fiber-Optic cable (650 ft) can be slammed in doors, run over by trucks etc. CDs are available.

The Door Prizes

The Taste of NAB Road Show wouldn't be complete without door prizes. This year we were fortunate enough to have with us thirteen different door prizes that were given away at each venue of the fifty-two venues. The winners at each venue are posted on the respective venues website pages and can be accessed from our itinerary on our website at**:** **www.tech-notes.tv/2007/2007-Itinerary.htm**.

The door prize providers for each of the fifty-two venues are presented here in alphabetical order. As with above, each frame/logo is a link to each of their respective websites:



In addition to this, we gave away ten expensive door prizes at the completion of our entire trip. They are presented here in alphabetical order. As with above, each frame/logo is a link to each of their respective websites:

Coaxial Dynamics

Model 81000-A Wattmeter with element

Value ~ $450

dorrough

The Classic 40-A

Model 40A Loudness Monitor

Value ~ $900 - pair

FLUKE.

Value ~ $450

Chuck Pharis

Value ~ $40/set

radi·osophy™

SENNHEISER

Value ~ $1400

Towerswitch, LLC

Value ~ $500

VidCAD

Value ~ $3500

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KTLA ANTICDOTES

By John D. Silva

INTRODUCTION

This effort consists of "instant replays" of incidents that happened along the way that might be of reader interest. I call these, "ANTICDOTES". If you like these, others may follow.

REVIEW

As previously mentioned, I joined Klaus Landsberg in 1946, when he was Vice President and General Manager of Paramount-Pictures owned W6XYZ.

(Atop the Paramount studio)

At that time we were located in a sound stage on the Paramount lot in Hollywood.

ANTICDOTE #1 – MY HIGHLIGHT OF THE DAY

One day, shortly after I joined W6XYZ, I was driving post-haste from the Main Paramount Gate to our studios located inside the former sound stage. All of a sudden, out of nowhere, a man swiftly crossed at an intersection, just as I was about to drive across it. I jammed on my breaks, and fortunately just missed him, and he continued to the other side of the street. I turned my head and looked to see who it was, and I got the surprise of my life. The person was none other than the famous comedian and Paramount movie star at that time, Bob Hope. He then turned and looked at me; and then waved and gave me a big smile. I of course, returned the wave and smiled at him. With out a doubt, this turned out to be my main event of the day!

A BIT OF HISTORY

In 1947 we moved from the sound stage to a building just outside the Paramount lot on Melrose Avenue

One month later W6XYZ became KTLA, the first commercial television station west of the Mississippi River. Our opening show was emceed by none other than Bob Hope, himself.

Our only competition at that time was Don Lee-operated experimental television station W6XAO,

The W6XAO studio and transmitter site was located on Mt. Lee, just a few miles north of Hollywood, as shown. The chief engineer and station manager was none other than our dear departed friend, Harry Lubke. He was also one of the founding members of the Society of Television Engineers (STE), a Los Angeles based and arguably the first television engineering society..

THE LONG HAUL

For the next eight years (1948 to 1955), I served as Remote Supervisor for KTLA. One of my main responsibilities at that time was to set up as many remotes all over the Los Angeles area as could be fit in during the daylight hours.

Most of these were strictly exercises – most were not actual shows – but some were, including breaking news events. The idea was to gain the experience for future on-the-spot coverages, shows, and news events -- sometimes as many as 10 a day! All of these setups and their locations were logged for future reference.

ANTICDOTE #2 -- A TRYING, BUT REWARDING, EXPERIENCE

One experience I remember happened on one of these 10-remote days. At some point, late in the afternoon, it was time to pack up and head for the Olympic Auditorium on Grand Avenue, and get set up for Wrestling at 8:00pm that night, which I also had to direct. (We did these things in those days.)

Racing to the Olympic, we drove right over a *huge* pot-hole, shaking the truck and equipment badly. When the truck stopped shaking, I remember saying to the driver: "You know -- we're the only two people in the *whole* world that know that Wrestling is not going to be on TV tonight!"

Sure enough, when we got to the Olympic and set up, and were joined by a camera crew, Mt. Wilson engineers reported no reception of our microwave signal. - I tried everything to fix the problem. Time was running out, and I was getting pretty frustrated. A moment later --and I don't know why I did it; but I just gave the transmitter a big frustrating kick -- and guess what! Barney at Mt. Wilson immediately reported on the two-way that he was now receiving a very acceptable signal from us.

I was elated -- at which point I blurted out, "I've just discovered the secret of it all! You're not a real television broadcast engineer until you know *how* and *where* to kick a piece of inoperative equipment to make it work"!

ANTICDOTE #3 -- THE FIRST COMPETITIVE REMOTE NEWS COVERAGE WEST OF THE MISSISSIPPI RIVER

From February, 1947 when KTLA did the world's first breaking news event up until 1949, KTLA pretty much had a lock on breaking news events in the Los Angeles. But then, in the early part of the latter year, and before the networks had set up in Los Angeles, KTTV, Channel 11, went on the air for the first time. Soon afterwards, it became apparent that they wanted in on the on-the-spot news coverage game.

From that time on, both stations were destined to become head-locked in a kicking - biting - scratching game of competitive breaking-news coverage.

Our first competitive encounter was with not only KTTV; but with Don Lee's Channel 9, that had just previously gone on the air. This occurred on April 9, 1949.

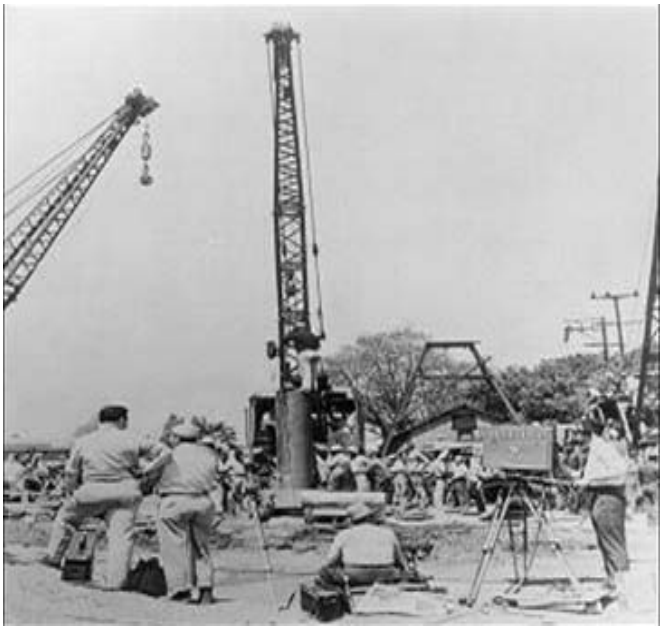
On this day, our news room had got the word that a little 3 1/2 year old girl named Kathy Fiscus had fallen down an abandoned 14 inch well-pipe in a vacant lot near her home in the town of San Marino.


KATHY FISCUS

In those days we weren't really prepared to set up quickly and get on the air at a breaking news event. We expected commercial power, and none found. And we didn't have two-way communication - expecting to tie in to some phone line at the site, and there was none. Both of our competing stations had also arrived on the scene; but, fortunately for us, they had the same problems.

Then suddenly, it seemed as though God had intervened on our behalf. Some kind gentleman that had been observing our set-up, offered us the use of his portable gas-driven AC generator that was mounted on a trailer in his driveway, just down the street. And you know very well, we immediately accepted his offer; and he soon had it operating for us.

We surmised that the men manning the microwave receiver at our transmitter on Mt. Wilson would be looking for our signal, so we quickly placed a note in front of one of our cameras that read: "If you see this, put us on the air!"



Well, it worked! We had our microwave antenna pointing in their direction. They had been frantically looking for us and they were receiving our signal, so they immediately put us on the air -directly from the transmitter -- without going back through the studio. And we were first on the air – by a long shot – soundly beating our competition.

As it turned out, this first competitive breaking-news coverage, that, incidentally, lasted 27 1/2 hours - became of historic prominence. Klaus Landsberg directed the event; I served as his technical director; and Stan Chambers and Bill Welsh were our on-the-spot news announcers.

As far as this news event was concerned, Kathy was eventually brought to the surface, by a brave rescuer, but unfortunately the child had expired. This was a sad moment for everyone, including hundreds of thousands of television viewers throughout the southland that had stayed with the story from its beginning.


Los Angeles Times

KATHY FISCUS TRAGEDY - April 9, 1949

THE DAY LIVE TV NEWS COVERAGE WAS BORN

27 ½ hrs Continuous News Coverage

As it turned out, this event was a pivotal point for television and competitive on-the-spot breaking-news coverage.

As you can see by this article in the Los Angeles Times, the heading read: "THE DAY TV LIVE NEWS COVERAGE WAS BORN".

What did all of this have to do with the eventual birth of the Telecopter that happened in 1958? Well actually, it had a lot to do with it! From this point on KTLA and KTTV became locked in head-to-head competitive breaking-news coverage. And later, other Independent and Network stations joined in the fray.

ANTICDOTE #4

EARLY MOBILE UNITS -- TRYING TO KEEP BEATING THE COMPETITION TO BREAKING NEWS EVENTS

From that time on, an important part of my job developed into the responsibility of making sure that we physically and technically got on the air first.


THE SCORECARD, SEEMINGLY USED BY THE PRESS

BREAKING NEWS:	GRADE FOR THE DAY:
1. FIRST ON THE AIR	HERO!!!!
2. SECOND ON THE AIR	DUMMY!
3. THIRD ON THE AIR	DOUBLE DUMMY!!
4. FOURTH ON THE AIR	GO BACK TO WHERE YOU CAME FROM!!!

As the competition heated up, the Press took up task of grading the stations as to who got the story on the air first. The station that got on the air first was the hero. Those that got there afterwards were described as “dummies”.

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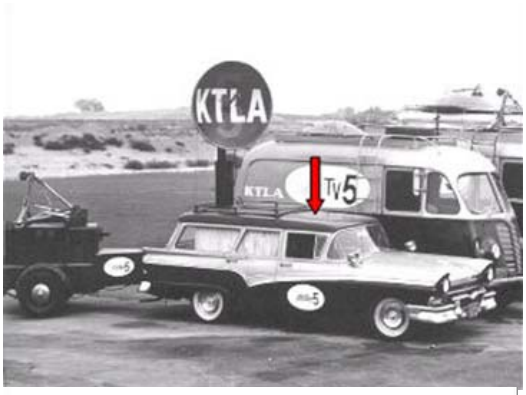
That being the case, I started designing better mouse traps in the form of improved mobile units used for breaking news-events. Immediately after the Kathy Fiscus tragedy, we incorporated two-way radio communications.



Shortly thereafter, to help us get through the heave traffic, I designed a news mobile unit in a station wagon. With this, we started hauling a gas-driven ac power generator behind, mounted on a trailer.

This was followed by using the generator to power up all the equipment en route to a breaking news event.

And then, later on, this was later followed by incorporating a pop-up microwave dish on the roof of the mobile units so that it would only take a few seconds to pop up the antenna and point it towards our Mt. Wilson microwave receiving antenna as we arrived at a breaking news story.

Every time we came up with a new mobile unit feature, we noted that our competition soon followed with the same. Having these improved features would always help us in the beginning, but later, the playing field was always leveled.

It was these design necessities and the further consternations of many times getting to a breaking news event only to see: that a victim stretcher-case had already been loaded and transported away by an

ambulance, or find that a suspect had already been taken to jail, or were beaten by the competition.

These are the things I had to continually dwell on, and long suffer with.

TELECOPTER MICROWAVE EQUIPMENT SELECTION

In 1958, in designing the Telecopter for the first time, one of the first major problems was how to transmit and sustain live aural and visual TV signals from the 'copter to the proposed microwave receiving point at KTLA's TV transmitter building atop Mt. Wilson, 25 miles north of our studios in Hollywood.

This involved selecting a microwave transmitter having sufficient carrier-power. Microwave Associates, who was then delivering transmitter/receiver units having 2 watts of microwave transmitter power at 2GHz, was the selected manufacturer to provide this. I chose 2GHz as the microwave operating frequency because the carrier signals for 2GHz were propagationally rugged~~-~~and not affected by rain or other bad weather conditions.

MICROWAVE ANTENNA SYSTEM DESIGN

Next, a special microwave antenna system had to be considered and developed to make sure that the transmitting and receiving antennas were always pointing exactly at each other, no matter what attitude the helicopter might be at any time while in flight – anywhere in the vicinity of the Los Angeles area.

Three microwave antenna system types were considered:

OPTION #1:

Using brute force microwave power was first considered. This would involve a high-power transmitter system that would beam the signal in all directions, thereby eliminating the need for any precise positioning system for the Telecopter transmitting antenna. The receiving antenna at Mt. Wilson would be a parabolic antenna having a high signal gain.

OPTION #2

Using an antenna system incorporating a homing system was also considered. This would involve using existing microwave links with transmitting and receiving antenna servo-mechanisms and automatic direction finding equipment to keep both antennas always pointing at each other, ~~and~~ or --

OPTION #3

Going with a compromise antenna system using a semi-directional transmitting antenna that would transmit equally in all directions horizontally and be somewhat directional (having antenna gain) in the vertical axis.

THE SOLUTION

ALTERNATIVE #1 REJECTED

The first alternative was rejected because high power 2GHz microwave transmitters were not cost-effective and available at that time, let alone light enough considering the on-board weight restrictions.

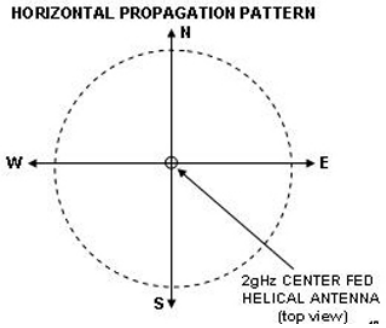
ALTERNATIVE #2 REJECTED

The second alternative was also rejected because of cost, time to develop, and weight.

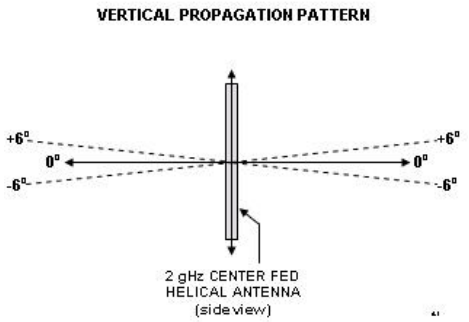
THE SOLUTION

The third alternative, a compromise system, though not ideal, was ultimately chosen as it could get the job done without any of the above problems mentioned above.

Here's the propagation pattern looking down on the antenna. The pattern is omni-directional in the horizontal plane, and therefore has no gain in this attitude.

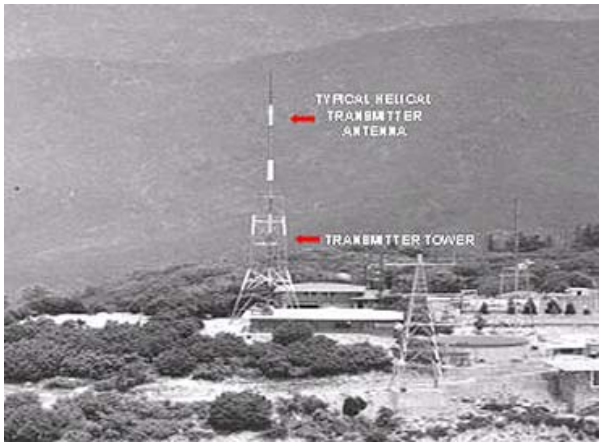


This is the side view of the antenna, and you can visualize that the pattern extends +6 degrees up, above the horizon, and -6 degrees down, below the horizon, making a total of 12 degrees. This pattern would go around a complete 360 degrees, like a wedged pineapple slice**,** if you will, giving it an overall antenna gain of 9db, which was contributed by its directivity in the vertical plane.



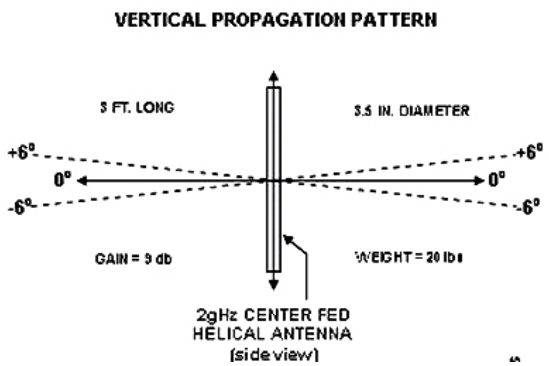
The first major problem was how to get and sustain a live TV signal from the 'copter to the proposed microwave receiving point, which was located at the KTLA transmitter building on Mt. Wilson, 25 miles north of our studios in Hollywood.

I contacted the General Electric Company in New York.



From the antenna design department, I found out that they would be willing, on a custom basis, to re-design and provide a scaled-down version of their end-fed helical UHF television transmitter antenna.

Their analysis showed that if an helical antenna, as used with many TV station transmitters, as shown in this slide, and was designed to be center-fed in a 2GHz microwave operation that it's size would be about 3 ft. long, about 3.5 inches in diameter, have an antenna gain of approximately 9 db, and would weight no more that about 20 pounds.



All of these specifications were right on-target for meeting the goals of the third alternative. Furthermore, General Electric would only charge us a nominal amount for the design specifications, and we could then have it built at any qualified machine shop of our choice. What a deal this was!

This is what I needed to know, and it served to finalize the decision of making ALTERNATIVE #3, above, the solution of choice for Telecopter #1. The order was placed, even though I did not have any kind of station project approval at this time.

In conclusion, in 1957, when Jim Schulke came on board as General Manager of KTLA, I readily received his hearty approval of my idea of the Telecopter, and in about six months its design, installation, and the commencement of years of usage became a reality. All of the pre-design and equipment selection worked out quite well, which shortened the installation time considerably. Even though the antenna system was a compromise in itself, it worked; and it served well until more efficient microwave antenna systems became available; and were then purchased and put into operation. When this happened, our maximum range expanded to include reception from as far south as over the bull-ring in Tijuana, Mexico and as far north as Santa Barbara, California. Finally, this is what the antenna used with Telecopter #1 looked like after the Paramount Machine Shop put it together per GE scaled-down specifications.

BROADCAST STATION TOTALS AS OF SEPTEMBER 30, 2007

The Commission has announced the following totals for broadcast stations licensed as of September 30, 2007:

AM STATIONS	4776	
FM COMMERCIAL	6290	
FM EDUCATIONAL	2873	
TOTAL		**13,939**
UHF COMMERCIAL TV	795	
VHF COMMERCIAL TV	584	
UHF EDUCATIONAL TV	253	
VHF EDUCATIONAL TV	128	
TOTAL		**1,760**
CLASS A UHF STATIONS	465	
CLASS A VHF STATIONS	95	
TOTAL		**560**
FM TRANSLATORS & BOOSTERS	5618	
UHF TRANSLATORS	2661	
VHF TRANSLATORS	1749	
TOTAL		**10,028**
UHF LOW POWER TV	1830	
VHF LOW POWER TV	527	
TOTAL		**2,357**
LOW POWER FM	815	**815**
TOTAL BROADCAST STATIONS		**29,459**

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From the FCC Daily Digest

Although not directly related to television or radio broadcast, it is interesting to note these actions of the commission and they do speak for themselves.

ROBERT D. LANDIS. Revoked amateur license of Mr. Robert D. Landis convicted of child molestation and determined that Mr. Landis lacked the requisite character qualifications to remain a Commission licensee. (Dkt No. 06-149). Action by: Chief, Enforcement Bureau. Adopted: 11/20/2007 by Order of Revocation. (DA No. 07-4676). EB
<http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-07-4676A1.doc>
<http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-07-4676A1.pdf>
<http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-07-4676A1.txt>

LONNIE L. KEENEY. Commenced a hearing proceeding against Lonnie L. Keeney to determine whether Mr. Keeney, in light of a felony conviction against him, remains qualified to be a Commission licensee and whether his Amateur Radio license should be revoked. (Dkt No. 07-264). Action by: Chief, Enforcement Bureau. Adopted: 11/20/2007 by Order to Show Cause. (DA No. 07-4675). EB
<http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-07-4675A1.doc>
<http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-07-4675A1.pdf>
<http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-07-4675A1.txt>

SD not HD Dominates Recording Formats

From: SCRI RESEARCH
scri@scri.com

According to SCRI's just published "2007 – 2009 HD / Digital Video Trends Report", recording formats are always a bell weather of trends in our industry. This year we see expected large penetration for SD format, but surprisingly no HD formats reached more than HDV (25.5%), despite the fact that HDV is a relatively new player in the market. HDCAM still has over 21% penetration, with DVCPRO HD slightly lower at about 17%. Neither reached the remaining penetration of Betacam SP (well over 50% of the market still has Betacam SP). Penetration of HDCAM has remained essentially constant since the last Survey. In SD products DV based recorders (DV, DVCPRO, DV CAM, and variants) are present in more than 80% of all facilities.

Data for the 2007 - 2009 HDTV / Digital Trends Report, which is now available, was derived from extensive surveys of broadcast and professional video/film production post facilities, worldwide. This years Summary includes very important data which shows that the industry will remain healthy and growing into the future. It shows support for existing standards, and some degree of skepticism about the uptake rates for some emerging technology. Above all it represents a snapshot of the changes which are shaping the hardware and programming in which we are all involved. The US economy has weathered recent storms well, with strong corporate profits. With an election year next year both production facility and broadcast station owners should do well, as is traditional in presidential election years.

Summary data about the survey includes information on respondents, including Media and Video Functions, and Demographics. Approximately 1 out of eight respondents were associated with broadcast

licensees, and six out of ten respondents were associated with production of film or commercial production facilities. A follow up question appears to identify most of the bradcast respondents as being related to ENG/EFP operations. 27% were associated with religious organizations, government, corporate facilities, or healthcare.

This extensive 75 page report includes an Executive Summary, followed by an analysis, charts and tables of how the broadcast / professional video marketplace equipment end-users respond to questions on key trends.

For more information, Contact SCRI International, Inc., 1317ThirdAve., NY, NY10021 212.867.6060

Intel introduces chips designed to improve Internet video quality

The delivery of television program, irrespective of what kind it is (analog, digital, standard definition or high definition), has taken on many different forms – over the air, via cable, satellite, etc. It would be remiss on our part were we to not mention in this list, the Internet. A recent article in Broadcast Engineering magazine gave a prime example of why it is ludicrous to go back and update MPEG-2 with a level to support 1080@60P.

http://broadcastengineering.com/hdtv/intel-improve-video-quality-1119/

From Intel on the same subject:
Intel® 45nm high-k (Hi-k) metal gate silicon technology is the next-generation Intel® Core™ microarchitecture. With roughly twice the density of Intel® 65nm technology, Intel's 45nm packs about double the number of transistors into the same silicon space. That's more than 400 million transistors for dual-core processors and more than 800 million for quad-core. Intel's 45nm technology enables great performance leaps, up to 50-percent larger L2 cache, and new levels of breakthrough energy efficiency.

But that’s not all:
In another world's first, Intel has demonstrated its 32nm logic process with a functional SRAM packing more than 1.9 billion second generation high-k metal gate transistors. It's a monumental step towards delivering 32nm microprocessors in 2009—and a great leap towards developing significant density, performance, and power improvements beyond today's 45nm technology.

And what are these 1.9 billion transistors? They're the tiny switches that process the ones and zeroes that make up our digital world. They enable Intel to continue to deliver record-breaking PC, laptop and server processor speeds. And they're all packed onto a single memory cell nearly half the size of the 45nm cell—which means, for example, that Intel will be able to deliver more cores on the same die and more cache for even greater performance in the future.

We're developing beyond the speed of Moore's law

Moore's Law states that the number of transistors on a chip doubles about every two years. And Intel has kept up with that pace. In fact, this SRAM milestone is several months ahead of schedule.

Intel's unique position allows it to use "Design for Manufacturability" (DFM) techniques to co-optimizing product design and manufacturing disciplines.

Intel's DFM was key to our early ramp of 45nm logic technology-and one of the catalysts for bringing our revolutionary innovations to market faster than ever before.

The future of 32nm microprocessors—your future

The digital age is transforming the way we live, work, and communicate. And with this breakthrough in 32nm SRAM logic technology, you can expect more in the future—a lot more. Like faster processor speeds, greater computing capability, improved functionality, and more sophisticated applications.

While others aren't scheduled to deliver on this technology until much later, you'll be seeing it just around the corner from Intel. Our 32nm microprocessors are right on track to make a breakthrough debut in 2009.

Along the same lines, a new technique to slow down, stop and capture light called “Trapped Rainbow” offers a bright future for the Internet and powerful computers.

According to Science Daily — Professor Ortwin Hess, his PhD student Kosmas Tsakmakidis of the Advanced Technology Institute and Department of Physics at the University of Surrey and Professor Alan Boardman from Salford University have revealed a technique which may be able to slow down, stop and capture light.

The technique would allow the use of light rather than electrons to store memory in devices such as computers, enabling an increase in operating capacity of 1,000% by using light’s broad spectrum rather than single electrons. Slow light could also be used to increase the speed of optical networks, such as the Internet. At major interconnection points, where billions of optical data packets arrive simultaneously, it would be useful if we could control this traffic optically, by slowing some data packets to let others through. This system would work in the same way as traffic congestion calming schemes do on our motorways, when a reduction in the speed limit enables swifter overall flow of traffic...."

For more, see;
http://portal.surrey.ac.uk/portal/page?_pageid=799,1772670&_dad=portal&_schema=PORTAL

Wireless Operators Tap New Markets For Growth

Since we broadcasters constantly are competing for the most valuable thing in our industry – SPECTRUM – it is always a good idea to keep an eye open for what others are doing that my well lead to our losing more of it – you know wifi etc in all of its incarnations. There is hardly a facility, not to mention the plethora of folks in our industry that don’t rely very heavily on cell or mobile phones:” ergo this report.

It wasn't too long ago when the only mobile coverage here in the US was MTS – Mobile Telephone Service. All calls in the MTS were operator assisted and there were only two providers – Wireline (the phone company) and non-wireline (independent carriers). Often times the non-wireline carriers were part of answering services and the like.

Then came: IMTS – Improved Mobile Telephone Service. This service permitted the user to dial his/her own calls and receive calls mostly without operator assistance. The number of channels was very limited with only a few in Low Band VHF in each market, more channel in Hi-band VHF in each market and a dozen channels in UHF. Those services have now all gone away in favor of AMPS or Cellular phone service. In the beginning of Cellular service had hundreds of frequency pairs evenly divided between the two providers – wireline and non-wireline and then, with "deregulation," the lines began to get blurred. It's hard to say who owns what today. Service has migrated from and analog service to digital and many, many more channels- hay friends, that's spectrum and they want more.

According to Reinhardt Krause, a writer for an international journal, hunters in the dense forest of Papua, New Guinea stalk their prey with cell phones. It seems that a privately held company, Digicel, expanded into the south Pacific island nation early this year. Mobile operators are rushing to expand in just-emerging markets where's there's still subscriber growth to be had.

It is reported that half the world's population now uses mobile phones. Even in some big emerging markets -- China, Russia and Brazil -- the days of big subscriber growth are over or winding down, but new services and other "on the move communication scenarios" are demanding the move to this kind of technology. India, where 18% of the population uses mobile phones, is one exception. And wireless firms continue to flock there, including AT&T (NYSE:T - News). Wireless penetration is still well below 30%, and in some cases 10%, in many parts of Africa, Southeast Asia, central Asia and other remote areas of the globe. In those markets, disposable incomes are low but growing.

Dozens of developing countries are expected to award wireless licenses in 2008, including "3G" licenses for high-speed networks. With more stable governments and expanding economies, Africa has emerged as a key wireless battleground. France Telecom is aiming to double its subscriber base in Africa to 50 million in three years.

With all this growth in foreign countries, it might not impact us too much here in the US, but as the world shrinks and people travel, you can bet that the demand for SPECTRUM will continue to grow.

Internet Speeds and Access

While assembling each edition of the Tech-Notes, we always make an effort to check out our information which includes going on the Internet. Don't know if you've noticed it or not, but with the same connection and same equipment, things seem to be getting slower. To add insult to injury, an article recently published says: "Internet speeds increased just about everywhere in the world in 2007-except in North America, where they did not." Check it out at:
http://point-topic.com/content/dslanalysis/BBAtariffspeeds071126.htm.

Isn't it comforting to know we're tied with (second world) Eastern Europe for broadband speeds? Some say that is greed, yet others say it is because cable Internet is now managed by this company or that company, which slows down p2p connections to almost zero.

Despite all of this, the internet is a great resource and as long as we can keep the government – any government, at any level – out of it, it will continue to be a great resource. There is little doubt that things will improve – speed included.

We've only begun to scratch the service of what the internet can offer. Some of the features that probably have been around for a while are such things as SKYPE. The idea of video phones around the world and at no cost, is truly amazing and all on the internet. The internet has also offered various VOIP services for a fraction of the cost of what landlines cost. A story about one such service can be seen at: windowssecrets.com/comp/071213#story1. Skype offers a very similar service that includes Europe as well.

As long as we're talking about the internet and internet access, in traveling with the Taste of NAB Road Show over the years, we've stayed at any number of hotels – some provided internet access at no charge while others charged as much as $10 to $15 a day for access. After getting screwed by these daily access charges and knowing that cell service is available nearly everywhere, we opted to get wifi service from our cell provider. The return on the monthly investment turned out to be about 5 days at a charging hotel – after that, no more headaches trying to connect through the freebees either.

Here's another story along the same lines. It says that half the world's population now uses mobile phones. http://news.yahoo.com/s/ibd/20071207/bs_ibd_ibd/20071207general

And Still more – Verizon Plans Wider Options for Cellphone Users
www.nytimes.com/2007/11/28/technology/28phone.html?th&emc=th

In a major shift for the mobile phone industry, Verizon Wireless said yesterday that it planned to give customers far more choice in what phones they could use on its network and how they use them.

While there are technical limitations involved, the company's move could lead to an American wireless market that is more like those in Europe and Asia, where a carrier's customers can use any compatible phone to easily reach a wide array of online services - and take their phones with them when they switch companies. The move, which surprised industry watchers because Verizon Wireless is known to be highly protective of its traditional business, is part of a larger shift in the communications world.

What's your take on all of this? We're not on a cable connection and our test speeds say we're doing quite well. I think they lie!

Use TV Channel 6 for Radio

Talk about losing spectrum, one can't help but wonder if there isn't a conspiracy going to eat away at the television broadcast spectrum. "It's time to drop radio's protections for TV Channel 6 and re-purpose that spectrum to the FM band," so says engineering consultant John Mullaney.

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In a filing to the FCC for MB Docket 87-268, “Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service,” Mullaney says adding 82 to 88 MHz to the bottom of the FM band would ease overcrowding; the time is also right for the agency to decide if TV Channel 5 should be reallocated to radio as well, he said.

“The assumptions that Channels 2–6 are technically equal to the remaining Channels 7–51 has proved not to be totally accurate,” says Mullaney in the filing.

We believe the problems associated with impulse noise and greater difficulty in compensating for signal cancellations are some of the major reasons why there are only 38 potential [TV] digital allotments under consideration while there are currently 302 analog full-service analog allotments.”

Because only eight digital allotments are proposed for TV Channel 6, Mullaney believes, based upon this “extreme underutilization of TV 6, the commission could also consider a shared use of the channel but limit the sharing to just those full-service digital TV allotments currently under consideration.”

Many of the recently filed NCE applications for radio allocations either ignored Channel 6 protection or curtailed their proposed power levels to protect those analog channels, he said.

The thousands of applications filed in the recent window, as well as more than 14,000 applications filed in the 2003 FM translator window, demonstrates pent-up-demand for FM spectrum, he argues.
One allocation for a TV channel could be used for up to 30 FM radio stations; such additions could go a long way towards easing short-spacing conditions on the FM band, he states.

HD Squeeze Play

From: Todd Spangler -- Multichannel News

No matter what a cable or satellite marketer might say, there is no precise definition of high-definition — just competing methods of taking out as much of a picture as possible, before viewers see it.

When high-definition TV enters the living room, it's been through the digital wringer.

Getting HD into a house or apartment is the television industry's biggest squeeze play to date. A cable or satellite operator only scores if it convinces all spectators that it has delivered a drop-dead gorgeous, real-as-life image — even if it has wrung out 99% of the data in the original picture.

And that technical illusion is now a high-stakes exercise, as DirecTV moves to beam down 100 or more HD channels from satellites and cable operators, from Comcast to Time Warner Cable, try to respond in kind, making use of switching and other techniques to match not just the quantity but quality.

“HD quality is becoming a battleground,” says Gary Traver, chief operating officer of the Comcast Media Center, which is trying to refine ways to compress high-definition signals in novel ways.

That's because uncompressed HD signals cannot economically be distributed by cable, telephone or satellite providers: They would eat up far too much bandwidth.

For now, the top-of-the-line HDTV signal standard in wide use is 1080i. That means 1,920 lines of 1,080 pixels each are painted on a screen to create a picture. Each frame, in this case, contains 50 million pieces of data. With about 30 frames needed each second to create a movie or show that means 1.5 billion bits of video data would have to be delivered every second, if no compression took place.

That stream would consume bandwidth occupied by more than 400 digital standard-definition channels on a cable system. The stream also could not fit into typical satellite uplinks, which can beam at most about 80 million bits of data per second per channel (or transponder) into the sky.

So all HDTV channels must be compressed to some degree. It's a necessary evil. The bottom-line metric is the bit rate of compressed video.
The key question is: Which bits of the video signal can be taken out without viewers noticing that anything is terribly wrong? Take an HDTV signal down to too low a bit rate and it starts to show "artifacts," industry lingo referring to blotches or blurs in a video image.

As such, video distributors make different decisions regarding how much compression to apply to a given HD signal — and that's often an element of carriage agreements, thus confidential.
The HD-quality issue is central in the fight among cable, satellite and telco operators to win new video subscribers. It has even prompted false-advertising lawsuits by DirecTV against Comcast and Cox Communications, as well as one by Time Warner Cable against DirecTV that was settled in August ("Competition in High Definition," May 28, 2007, page 12).

Verizon Communications, meanwhile, has claimed that unlike many cable or satellite providers, it doesn't further compress the HDTV channels on FiOS TV. "We've definitely shown that there's a big gap between what the consumer expects in this space [on video quality] and what we can deliver," said Verizon vice president of video solutions Shawn Strickland.

But delivering the "best" high definition is still as much art as science, as there is actually no absolute definition of what constitutes high definition.

"There's disagreement even among so-called industry experts about what exactly the bit rate should be for HD with any given type of content," said Tandberg Television vice president of technology for compression systems Matt Goldman.

Here's a look behind the battle's front lines — at the squeeze play cable, telco and satellite operators are trying to execute in order to claim the highest quality picture on the market while also delivering the greatest quantity of HD channels.

THE CGC COMMUNICATOR

Robert F. Gonsett, W6VR, Editor r.gonsett@ieee.org

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CGC #821

Radical base jumping:
http://www.biertijd.com/mediaplayer/?itemid=4262

A celebration of machines that do not work:
http://www.lhup.edu/~dsimanek/museum/unwork.htm

History: Build the "Cyclops," a one tube magic eye receiver:
http://www.oldradios.co.nz/projects/cyclops/index.htm

Snowball fight, great fun, but DO NOT hit Santa:
http://www.elfmovie.com/swf/snowball_fight/index.html

Another outstanding greeting card from Jacquie Lawson, audio included:
http://www.jacquielawson.com/viewcard.asp?code=ZS43976949

CGC #822

LPFM RULE CHANGES - THE DETAILS

The FCC has released the details on its just-adopted rule changes for the Low Power FM (LPFM) Radio Service. Details on the LPFM Second Further Notice of Proposed Rulemaking - looking toward more changes yet - are included in the same document.

The bottom line is that the fringe listeners of FM stations are likely to become an endangered species over time. If HD Radio IBOC (In Band Off Channel) sidebands don't kill your distant audience, LPFMs will.
http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-204A1.doc

PART 76 AMENDED RE CABLE CARRIAGE OF DTV SIGNALS

The FCC has adopted Rules to ensure that all cable customers will receive local TV stations after the digital television (DTV) transition occurs on February 17, 2009:
http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-170A1.doc

FCC ISSUES NEW EMERGENCY ALERT SYSTEM (EAS) HANDBOOKS

The FCC has released the 2007 Emergency Alert System (EAS) Handbooks for EAS participants. The FCC's Public Notice is at the first URL below. The remaining URLs are shortcuts to the Handbooks. Click on the Handbooks you need:

Overview Public Notice:
http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-278628A1.doc

Individual Handbooks:

AM & FM (Including IBOC) EAS Handbook:
http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-278628A3.pdf

TV & DTV EAS Handbook:
http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-278628A5.pdf

Cable System EAS Handbook:
http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-170A2.doc

Wireline Video Providers EAS Handbook:
http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-278628A6.pdf

Satellite EAS Handbook (including Digital Audio Radio Service):
http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-278628A4.pdf

DTV CONVERTER BOXES ARE ON THE WAY

The NTIA has given the go-ahead for a mid-February sales launch of DTV converter boxes at eight retail giants, including Best Buy, Circuit City, Kmart and Wal-Mart, and more than 100 electronics specialty shops. Beginning Jan. 1, consumers who rely on an antenna to receive their TV signals can receive two DTV coupons worth $40 each toward the purchase of converter boxes, according to acting NTIA administrator Meredith Attwell Baker.
http://tinyurl.com/yuh4n2

125 YEARS OF ELECTRIC LIGHTS LOCALLY - THE END OF DC POWER IN NY

Electric lights have only been with us in southern California for 125 years. That's pretty amazing. The location of the first bulb: Etiwanda, about 12 miles west of San Bernardino.

New York's Consolidated Edison has just ended 125 years of providing direct current electricity service -- service that began when Thomas Edison opened his power station on Sept. 4, 1882. Turns out that a dwindling number of old buildings still need DC for elevators and other equipment, and those buildings now have their own AC-to-DC converters. (Amateur Radio Newsline 12/14/07)
www.dailybulletin.com/ci_7627591

NEWS BRIEFS

o NPR Labs has released an important paper entitled, "Measurement and Modeling of HD Radio Coverage." The author is John Kean and his findings should be of great interest:
www.nprlabs.org/publications/reports.php

o The NAB Show in Las Vegas is now officially called the NAB Show.
www.radioworld.com/pages/s.0103/t.10126.html

o The Peter W. Dahl Co., a manufacturer of custom transformers well known in engineering circles, is closing at the end of the year. Mr. Dahl has Parkinson's disease and is looking for a buyer of his company's assets.
http://www.radioworld.com/pages/s.0121/t.10189.html

o Nuclear radiation is dangerous, but apparently less so than the popular press would have us believe:
www.spiegel.de/international/world/0,1518,519043-2,00.html

o Here is a delightful firsthand report on watching the "lens" (probably the 200-inch mirror for the world famous Hale Telescope) being moved to Palomar Mountain decades ago. The story starts halfway down this page:
www.mypalomarmountain.com/observatory/

o Wonderful space photos accompanied by music for your viewing and listening enjoyment:
www.greatdanepro.com/somewhere%20in%20time/index.htm

o The singing cartoon Santa and his reindeer have returned for an encore performance:
www.thecompassgroup.biz/merryxmas.swf

Lawmakers Voice Concern over TV Interference

Four more U.S. Representatives recently sent a letter to FCC Chairman Kevin Martin voicing concern over the use of unlicensed personal-portable devices that have been shown to cause interference to television reception. The so-called "white space devices" operate in spectrum reserved for television broadcasting. In July, a report by the FCC concluded that sample prototype white space devices did not accurately detect broadcast signals and caused interference to TV broadcasting and wireless microphones.

Representatives Joe Wilson (R-2nd), John Spratt (D-5th), J. Gresham Barrett (R-3rd), and Henry E. Brown (R-1st) of South Carolina sent this letter requesting that the FCC move cautiously and consider "safer options" for use in the television spectrum in order to ensure a smooth digital transition. This letter follows concerns expressed in a previous letter by South Carolina Senator Lindsey Graham.

"As we move forward, we ask you to refrain from permitting the use of portable, unlicensed white spaces devices until it is proven that this technology will not interfere with existing signals, that there be an enforceable method put in place to resolve any interference that does occur, and that the spectrum used by these devices would be available in the future should we ever have the need to repurpose it," the lawmakers wrote. "We would also encourage you to explore other methods of allocating this spectrum."

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This letter follows 65 lawmakers who have also expressed concern over the use of unlicensed personal-portable devices in the broadcast spectrum:

Senator Mary Landrieu (D-LA)
Senator Lisa Murkowski (R-AK)
Senator Pete V. Domenici (R-NM)
Senator Charles E. Grassley (R-IA)
Senator Lindsey Graham (R-SC)
Senator Johnny Isakson (R-GA)
Senator Saxby Chambliss (R-GA)
Senator Olympia Snowe (R-ME)
Senator Susan Collins (R-ME)
Rep. David Davis (R-TN)
Rep. Ric Keller (R-FL)
Rep. Bobby L. Rush (D-IL)
Rep. Jim Cooper (D-TN)
Rep. Vito J. Fossella (R-NY)
Rep. Eliot L. Engel (D-NY)
Rep. Carolyn B. Maloney (D-NY)
Rep. Howard P. McKeon (R-CA)
Rep. Leonard Boswell (D-IA)
Rep. Sanford Bishop (D-GA)
Rep. Marion Berry (D-AR)
Rep. Lincoln Davis (D-TN)
Rep. David Scott (D-GA)
Rep. John Barrow (D-GA)
Rep. G. K. Butterfield (D-NC)
Rep. Howard Coble (R-NC)
Rep. Robin Hayes (R-NC)
Rep. Walter Jones, Jr. (R-NC)
Rep. Mike McIntyre (D-NC)
Rep. Sue Myrick (R-NC)
Rep. Melvin Watt (D-NC)
Rep. Bob Etheridge (D-NC)
Rep. Brad Miller (D-NC)
Rep. David Price (D-NC)
Rep. Heath Shuler (D-NC)
Rep. Gene Green (D-TX)
Rep. Ralph Hall (D-TX)
Rep. Charles Gonzalez (D-TX)
Rep. Sam Johnson (R-TX)
Rep. Nick Lampson (D-TX)
Rep. John Carter (R-TX)
Rep. Al Green (D-TX)
Rep. Steve Chabot (R-OH)
Rep. Dave Hobson (R-OH)
Rep. Jim Jordan (R-OH)
Rep. Patrick Tiberi (R-OH)
Rep. Steven C. LaTourette (R-OH)
Rep. Tom Price, M.D. (R-GA)
Rep. Lynn Westmoreland (R-GA)
Rep. Jack Kingston (R-GA)
Rep. David Scott (D-GA)
Rep. John Lewis (D-GA)
Rep. Phil Gingrey, M.D. (R-GA)
Rep. Tom Latham (R-IA)
Rep. Robert Aderholt (R-AL)
Rep. Jo Bonner (R-AL)
Rep. Mark Souder (R-IN)
Rep. Frank LoBiondo (R-NJ)
Rep. Jon Porter (R-NV)
Rep. Tom Tancredo (R-CO)
Rep. Shelley Berkley (D-NV)
Rep. Christopher Shays (R-CT)
Rep. Michael Michaud (D-ME)
Rep. Tom Allen (D-ME)
Rep. Bart Gordon (D-TN)
Rep. Frank Pallone Jr. (D-NJ)

One can't help but wonder what it will take for the FCC to understand the laws of physics and abandon this foolhardy concept of generating the kinds of interference they are supposed to prevent.

Nerd alert - C64 is 25!

From: Jeff Johnson jeff@rfproof.com

The Commodore 64 is 25! You can see the story at:
www.cnn.com/2007/TECH/ptech/12/07/c64/index.html?iref=mpstoryview

FCC OKs Broadband Service for Airplanes

The Federal Communications Commission granted ViaSat blanket authority for domestic operation of up to 1,000 earth stations aboard commercial aircraft. The agency said the earth stations will provide Aeronautical Mobile Satellite Service using standard Ku-band frequency ranges to link with leased transponders on the AMC-6 satellite.

According to FCC documents, the ViaSat aircraft earth stations will provide two-way broadband communications for passengers and aircrew members aboard commercial airliners and private business jets, with access to email, the internet and corporate virtual networks. Implementation of the ViaSat AMSS system will enhance competition within the mobile telecommunications market in the U.S., the agency said.

ViaSat said its planned AMSS system, dubbed Arclight, is designed to provide two-way broadband data communications via satellite radio links between aircraft earth stations and ground earth stations. Viasat said it will use previously-licensed ground stations in Carlsbad, Calif. which it currently operates to support ARINC's SkyLink AMSS system.

ViaSat said in its blanket-license application that there are no terrestrial radio services licensed for operation in North America in the same GHz band that would receive interference from operation of Arclight AES terminals.

World's Most Complex Silicon Phased-array Chip Developed

According to Science Daily — UC San Diego electrical engineers have developed the world's most complex “phased array” -- or radio frequency integrated circuit. This DARPA-funded advance is expected to find its way into U.S. defense satellite communication and radar systems. In addition, the innovations in this chip design will likely spill over into commercial applications, such as automotive satellite systems for direct broadcast TV, and new methods for high speed wireless data transfer." ... "“If you wanted to download a large movie file, a base station could find you, zoom onto you, and direct a beam to your receiver chip. This could enable data transfer of hundreds of gigabytes of information very quickly, and without connecting a cable or adhering to the alignment requirements of wireless optical data transfer,” explained Rebeiz who estimated that this kind of system could be available in as little as three years."

For more, visit: www.sciencedaily.com/releases/2007/10/071030135705.htm

FCC vs cable, it’s getting nasty

The stand-off between FCC chair Kevin -Martin and the US cable industry is getting serious, and complicated. Two of his fellow Republican commissioners seem to be doubting the validity of his data for determining that cable has crossed the arcane 70/70 threshold.

Martin, a relentless critic of ‘big cable’, has said the data in question indicated that the cable industry had reached the 70 per cent concentration threshold that allows the FCC to heavily regulate the sector under a rule established in 1984. But commissioners Deborah Tate and Robert McDowell expressed reservations about the data Martin was using. In a letter the two commissioners asked Warren Communications News, which compiles the data for the FCC, to send them "all information" regarding the data, including any "caveats" or "footnotes" to the statistics.

Reacting to Martin’s plan, the cable industry ditched all efforts to improve its strained relations with Martin and instead accused him of backing measures "designed to hurt the cable industry". "In my judgment, the FCC is broken,’’ Kyle McSlarrow, president of the National Cable and Telecommunications Industry Association, said.

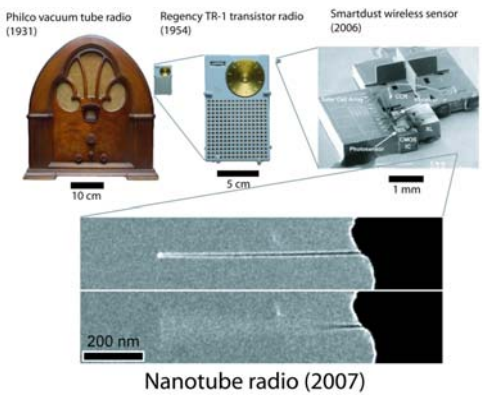
"We'd much rather have a better relationship, but we're not going to fundamentally wreck a business model and hurt our customers to appease one chairman of the FCC," said McSlarrow. Cable companies are upset at what they see as the latest in a series of attacks by Martin, in retaliation for their refusal to sell cable programming on a channel-by-channel basis. Martin has long been a proponent of the a la carte system because he believes it would offer more choice and cost consumers less.

Seagate Ships Virus-Laden Hard Drives

A small number of Seagate's Maxtor Basics Personal Storage 3200 consumer hard drives are infected with a password-stealing virus, according to an article that appear recently in PC World. (www.pcworld.com/article/id,139576/article.html?tk=nl_dnxnws)

Hardware is normally trusted and assumed benign. The article mentions Seagate and Apple but there are probably other manufacturers that have done the same thing but it hasn't been publicized. "Security experts say that it's easy for this kind of thing to happen, if one PC in the testing, manufacturing and quality assurance chain is infected." If it's that easy then there's something that needs to be done about it during the affected chains.

World's smallest radio?



Nanotube radio (2007)

Check out the world’s smallest radio from the National Science Foundation. They say it can fit into the palm of an ants hand.

http://nsf.gov/news/news_summ.jsp?cntn_id=110566

30 Years and Counting

1977 marks a critical milestone in the development of the modern Internet and also wireless networking. While many people trace the Internet's origins to the ARPANET of the late '60s, in fact the word "internet" means joining different kinds of individual networks together. This kind of internetworking made its formal debut with the three-network transmission of 1977.

In the fall of that year, an unmarked step van stuffed with futuristic equipment, scientists, and sometimes fully uniformed generals quietly cruised the streets of the Bay Area. Only an oddly shaped antenna gave any hint of its purpose. The moment of truth came on November 22; on that day, data flowed seamlessly through the van between SRI International in Menlo Park and the University of Southern California via London, England, and across three kinds of networks-packet radio, satellite, and the ARPANET.

The test was also a major milestone in packet radio, the technology which foreshadowed WiFi and other kinds of wireless internet access.

There are even those who do remotes via the internet – both radio and television. Sure has come a long way!

Stop IBOC web site

It seems a little late, but there are those who'd like to IBOC radio go away. I'm surprised to see this website being backed by WSM's chief engineer. Check it out: www.stopiboc.com

Microsoft Strikes Again

If you use Windows XP and have installed Office 2007 or Windows Live Photo gallery, then you may have already encountered Microsoft products installing a new search tool (Windows Desktop Search, WDS) without your permission. They have come in for a fair bit of stick for it, but it could be argued that since WDS is used by these products, they have to install it. However if you thought that was the end of the matter, then you were very wrong … WDS is now an automatic update to Windows XP.

If you enable automatic updates to Windows, it'll appear on your machine in the next couple of days (or may already be there; mine installed itself this morning). If you do manual updates, keep an eye out for it. In theory, you can mark it not to be installed, it ought not to and should stop nagging you (though since Microsoft admit they install updates even when the feature is turned off, I'd not trust this.)

But what if it has already installed? Can you get rid of it? Well give it a try first, you might like it. If you don't there are various ways of disabling it, but I've no idea how to uninstall it. It installs itself as a service, so can be disabled that way apparently (I've not tried this though). Alternatively, simply follow Scott Hanselman's advice by running up regedit, select the HKEY_CURRENT_USER\Software\Microsoft\Windows Desktop Search\DS key and then set "ShowStartSearchBand" to 0. Finally remove "Windows Desktop Search" from the startup folder in your start menu and it should plague you no more.

Here's another take on this:

Microsoft: The Live Installer / WDS Invasion was Just the Rehearsal Personal Productivity, Technology

Here's a quick chronology:

- Under the auspices of installing Live Photo Gallery, Microsoft installs their Desktop Search product on XP systems, without asking for user permission or even bothering to notify users. (for details, see previous posts listed below)
- User uproar follows
- Microsoft updates their Photo Live Gallery, and it no longer requires Windows Desktop Search.

Naive me, I welcome this as proof that Microsoft Listens, after all.

No, they don't. All the above was just the rehearsal. The Real Invasion is happening now, under the disguise of Window Server Update Services, as reported by the Register: "The admins at my place were in a flap this morning because Windows Desktop Search 3.01 had suddenly started installing itself on desktops throughout the company," a Reg reader by the name of Rob informs us. "The trouble is that once installed, the indexer kicks in and slows the machines down."

"I'm slightly pissed of [sic] at M$ right now," an admin in charge of 3,000 PCs wrote in a comment to the first aforementioned link. "All the clients have slowed to a crawl, and the file servers are having problems with the load."
Mea Culpa for my naivety. The Borg does not change.

My previous stories on the invasion (and more):

- Windows Live Installs More than it Tells You
- The Ongoing Windows Desktop Search Controversy
- You Think You Own Your Computer? Think Twice. Microsoft Shows Who's Boss.

Other Related posts: Sadjad's space, David and David Arno's Blog. Of course these are hard to find, TechMeme is full of reporting how the Borg kissed the Berg.

Technorati Tags: microsoft, windows live, windows live installer, windows desktop, desktop search, wds, windows desktop search, windows live photo gallery, windows update, XP, winxp, wsus

And yet another take on this: More gnashing of teeth after Microsoft update brings PCs to a standstill
From: Dan Goodin.
Something seems to have gone horribly wrong in an untold number of IT departments recently after Microsoft installed a resource-hogging search application on machines company-wide, even though administrators had configured systems not to use the program.

"The admins at my place were in a flap this morning because Windows Desktop Search 3.01 had suddenly started installing itself on desktops throughout the company," a Reg reader by the name of Rob informs us. "The trouble is that once installed, the indexer kicks in and slows the machines down."
(Source's name withheld on request)

Don’t Blame the Media

Check out what Scientific American has to say about taming baby rage: “Why Are Some Kids So Angry?” According to them, “New research indicates babies are born with violent tendencies that most learn to control.” To learn more, visit: http://www.sciam.com/article.cfm?SID=mail&articleID=AB014D4A-E7F2-99DF-32520DB62378CE94&chanID=sa003

Putting Videos on Mobile Devices – It’s Easy!

For some compelling reason you really want to move the timeshifted TV show or latest video content from your PC to your mobile device -- iPod...Smartphone...PSP...Zune...you name it.

Pinnacle's Mobile Media Converter is software that can do it painlessly and in expensively. So cheap it's an impulse buy, the software lets you take content -- even if you're running Vista -- wherever life takes you. The darn stuff just works but if you want to learn more visit www.pinnaclesys.com. It will show you how to get more content on those small screen monsters.

Sure is a different world!

Free TV shows may air on cellphones

According to Paul Davidson of USA TODAY, the local TV channels on your living-room set may soon make their way to — where else? — your mobile phone. And it may not cost you a dime.

He says that local broadcasters are quietly planning to beam the stations to cellphones, video iPods, in-car DVD players and other gadgets that would be equipped with TV tuners. The high-quality digital broadcasts likely would start after the transition to digital TV ends in 2009.

Verizon (VZ), AT&T (T) and Sprint (S) offer video services on cellphones, but they typically cost $10 to $25 a month. They include news and sports clips, previously aired network programs and 1- to 3-minute "mobisodes." Verizon in March launched a Qualcomm (QCOM) service that simulcasts prime-time network shows.

This might be a way to pump fresh life into local broadcast stations that have steadily lost viewers to cable TV, the Web, game players and mobile phones. There’s no reason it wouldn’t work via translators either.

"We do know that people want real live television" on mobile devices, "not sound bites of television," says David Smith, president of Sinclair Broadcast Group (SBGI), which owns 58 TV stations.

Prices have not been set, says Brandon Burgess, CEO of TV broadcast company Ion Media Networks (ION) and head of the Open Mobile Video Coalition, a group of about 750 broadcasters leading the mobile TV effort.

But Patrick Mullen, head of Fox's Chicago stations, says many broadcasters would transmit their main channel for free. They'll reap revenue by charging advertisers a premium to reach larger audiences and by selling them mobile ads that let consumers press a button to buy products, says Envisioneering Group analyst Richard Doherty. Stations also would charge fees for additional channels that might show local news or weather, or cable staples such as ESPN.

Stations can keep prices low because they've already spent millions installing digital broadcasting equipment. All they lack is gear, now being developed, to beam a signal that's customized for small screens and can work when people travel at high speeds in cars or trains.

Consumers would need a video-equipped device that has a chip with a TV tuner. LG and Samsung are among manufacturers developing such a chip, which would add up to $10 to the price of a mobile device. An add-on tuner costing less than $50 could be an option.

A technology is to be chosen as the industry standard early next year.

Satellite TV Tax Unconstitutional

A judge in the Ohio Court of Common Pleas, Franklin County, recently ruled that a sales tax on satellite TV subscribers violates the U.S. Constitution's Commerce Clause. After the decision, DIRECTV and EchoStar applauded the ruling saying the tide is turning on sales taxes that discriminate against satellite subscribers.

Ohio Judge Daniel Hogan's decision established the satellite-specific taxes as unconstitutional and discriminatory as they undermine free and fair commerce between the states. In response, EchoStar and DIRECTV reiterated their positions that taxing satellite subscribers more than cable subscribers is "illogical (and) unfair because no group of consumers should be singled out for a heavier tax burden based solely on what technology they use, particularly when they are predominately rural or price-sensitive."

Together the companies said Judge Hogan's conclusions are not isolated, citing U.S. House Judiciary Committee Chair John Conyers' (D-MI) recently introduced State Video Tax Fairness Act of 2007. The bipartisan-supported bill would prohibit states from taxing any pay-TV service differently from others.

"We believe state legislatures should heed Judge Hogan, Chairman Conyers, and an increasing number of public officials and eliminate discriminatory sales taxes for good," the companies said in a statement.

Tektronix to Be Awarded 7th Emmy

Tektronix, Inc. recently announced they will receive a Technology & Engineering Emmy Award from the National Academy of Television Arts and Sciences (NATAS) for "Real-time Transport Stream Monitoring for ATSC & DVB Conformance." This will be the seventh Emmy awarded to Tektronix.

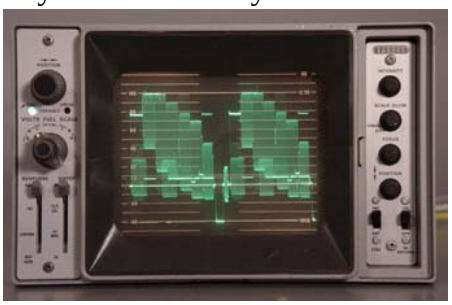
MPEG-2 is a key technology in the new digital world with products widely used today in a variety of content delivery and consumer electronics applications. Networks, distribution channels and consumers benefit from this technology by receiving reliable, compressed video and audio content for viewing with high confidence of proper decoding.

The Tektronix MPEG products including the MTM400 MPEG Transport Stream Monitor and MTS400 Series MPEG Analyzers are widely used by technical and operations staff in broadcast television networks, cable and satellite program providers, satellite teleports, mobile truck uplinks, digital television stations, IPTV operators, and other facilities supporting content delivery worldwide. Networks, distribution channels, terrestrial DTV stations and consumers benefit from this technology by receiving reliable compressed television programs for viewing with high confidence of proper decoding.

The 58th Annual Technology & Engineering Emmy Awards will be presented by the National Television Academy the CES show in January 2008.

DHR To Acquire Tektronix, Inc. For $38.00 Per Share, Or $2.8 Billion

Danaher Corporation and Tektronix, Inc. recently announced they have reached a definitive agreement under which Danaher will make a cash tender offer to acquire all of the outstanding common shares of Tektronix. The aggregate purchase price is approximately $2.8 billion, including debt, transaction costs and net of cash acquired.



The offer is subject to customary conditions, including tender of a majority of the outstanding shares into the offer (on a fully diluted basis but excluding any shares issuable pursuant to the Tektronix Notes), regulatory approvals, and the absence of a material adverse change with respect to Tektronix. The transaction is expected to be completed soon.

With annual revenues of approximately $1.1 billion, Tektronix is a well known supplier of test, measurement, and monitoring products enabling the design, manufacture, and management of global communications networks, computing and advanced technologies. Tektronix will become part of Danaher's Electronic Test platform, joining Danaher's Fluke and Fluke Networks businesses. The combined brands are some of the most highly recognized in each of their respective product segments.

Bye, bye, Burbank...

"Live from a building across the street from Universal Studios..." Doesn't have the same ring, but that's the way it gonna be when the Peacock flies.

Our sources tell us that The Tonight Show will go to Universal in 2009 but the first move to a new building will be in 2011 with everything gone from Burbank in 2017.

They have changed their mind about everything that has been announced in the last 10 years so don't hold your breath on this one either.

Three and a half years after the NBC-Universal merger, the company is relocating most of its television operations from Burbank to Universal City, centralizing its West Coast media operations on one lot.

NBC Universal has unveiled plans to create a "green," state-of-the-art, high-definition West Coast News Headquarters and content center in Los Angeles that will house the Los Angeles bureau of NBC News, as well as KNBC, KVEA and "Access Hollywood." The facility is expected to be up and running by 2011.

Additionally, as it has been rumored for months, NBC is planning the renovation and expansion of Stage One on the Universal lot, which will host "The Tonight Show with Conan O'Brien" in 2009.

As a result, NBC Uni is looking to sell a major portion of its 34-acre studio lot in Burbank in a transaction that will likely involve the retention of portions of the Burbank property, and the leaseback of certain facilities. That way, NBC Uni would keep some productions on the Burbank lot for several years.

NBC News' Los Angeles bureau, KNBC, KVEA and "Access Hollywood" are the only organizations planning to relocate to the content center in Los Angeles.

The new NBC content facility will be located at the Metropolitan Transportation Authority Red Line Subway Station in Universal City, directly across the street from Universal Studios. It will be modeled after the NBC News World Headquarters at 30 Rockefeller Plaza in New York City.

The renovated Stage One, which was originally built in 1961 for "The Jack Benny Show," will feature a theater designed for a live audience, state-of-the-art broadcast production facilities and office space.

Sony Unveils First OLED TV

Sony Corp. unveiled the world's first organic light-emitting diode (OLED) television recently, pushing the limits of thin-screen displays further than ever before.

Aimed at the top end of the consumer market, Sony's XEL-1 television offers an 11-inch OLED screen that is just 3-millimeters (mm) thick and is on sale now. The screen is thinner than a LCD (liquid crystal display) or PDP (plasma display panel) set because no backlight is required: OLED materials, which are carbon-based, emit light on their own when an electric current is applied.

The XEL-1 will accept up to a 1080p video image. The 11-inch screen has a resolution of 960 pixels by 540 pixels for a total viewing area of only 518,400 pixels. A 1080p video image needs no less than 2,138,400 pixels for the entire number of pixels being delivered to the set to be displayed.

The launch of the XEL-1, came one day before the start of the Ceatec 2007 exhibition, which Sony believes will give them a head start as many of their competitors are also working on OLED technology for televisions. After several years of being upstaged by competitors pushing into new technology areas, such as MP3 players and LCD televisions, Sony feels that the OLED launch will put them firmly ahead in the race to thinner flat-screen televisions.

OLEDs offer other advantages over LCD and PDP technology, including wider viewing angles, faster response time, and better contrast and colors. However, the technology is difficult to manufacture and the OLED material degrades over time.

The XEL-1 has a thin, widescreen display mounted on a metal arm attached to a base. The base contains all of the electronics required for the television, and has an HDMI (High-Definition Multimedia Interface) port, a built-in satellite tuner, as well as a USB port and an Ethernet connection.

The television, which uses the same XMB user interface found in the company's Bravia line of LCD televisions and PlayStation 3, measures 287 mm by 253 mm by 140 mm, and weighs 2 kilograms.

Sony said the XEL-1 has a viewing life of 30,000 hours, which allows a user to watch eight hours of television each day for 10 years. The television went on sale in Japan on Dec. 1, with a price tag of whatever $1,740.50 is equivalent to in Yen. With a price tag that heavy, it is a no brainer that there are no plans to sell the television outside Japan and they'll be luck to sell the 2,000 sets scheduled to be manufactured each month with the lower pixel count even in Japan.

No Viewer Left Behind

In a compromise between broadcasters and cable operators, the FCC has voted to require cable operators to make broadcast signals viewable on both analog and digital receivers until February 2012, three years to the month after the over the air analog drop dead date.

In addition to carrying the broadcasters' digital signals, cable operators must convert those signals to analog for viewers with older receivers. This can be achieved either by converting digital signals to an analog format at the headend, or by providing analog subscribers with converter boxes.

Under the rules, cable systems must carry HD broadcast signals in HD format, and the FCC reaffirmed its current material degradation standard. Cable operators must carry broadcast signals so that the picture quality is at least as good as the quality of any other programming carried on the system. Cable and Satellite operators are notorious for reducing the bit rate and bandwidth of signals.

The compromise, which will likely insulate the new rules from lawsuits, offered cable operators a victory by not requiring them to carry all bits that a broadcaster transmits. Broadcasters had wanted such a definition as protection against cable operators degrading their signals.

Both the NAB and NCTA agreed with the ruling. However, smaller cable operators, as represented by American Cable Association (ACA), feared that a requirement to carry both digital and analog signals would put them out of business.

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The FCC, acknowledging the problem, said it would entertain waivers from cable systems with activated channel capacity of 552MHz or less. ACA president Matt Polka said that even the possibility of waivers "offers little meaningful relief, requiring these systems to engage in, and pay for, yet another process at the FCC, with the outcome far from certain."

Commissioner Jonathan Adelstein issued a partial dissent over that issue. "I must dissent in part because the Order does not provide small, often rural, cable operators a much-needed exemption from the carriage obligations in this Order. Unlike the major MSOs and LECs, small system operators face serious financial and technological resource constraints, and the Commission should consider these limitations moving forward," Adelstein said. "It is not fair to ask these tiny rural systems to engage lawyers in Washington when a simple exemption would have sufficed."

PC giants sued over DVD formatting

According to Ed Sperling, Editor in Chief of Electronic News, A Los Altos, Calif.-based software developer claims PC giants Dell, Apple, Gateway and Acer are infringing on technology that allows users to determine the proper format for DVD recording.

Mediostream filed suit in U.S. District Court for the Eastern District of Texas, claiming the PC giants are infringing on a 2006 patent entitled "Method and system for direct recording of video information onto a disk medium." Mediostream is seeking damages and a permanent injunction.

At issue is the ability to determine the size and format for the video recording, so that when it is played on a widescreen television, for example, it doesn't appear in full-screen format. The software also can convert streaming compressed files into uncompressed files that can be recorded and played on a DVD player, a technology that could become extremely useful as companies such as Blockbuster and Netflix begin streaming videos to customers instead of sending disks.

PBS making television "History"

According to Kimberly Nordyke of the Hollywood Reporter, A PBS project, tentatively titled "The History of Television" and set to debut in spring 2009, will comprise a series of programs examining every aspect of the medium.

Kicking off the series will be a four-hour look at scripted primetime programming and the iconic characters featured in comedy and drama series during the past six decades.

The Academy of Television Arts & Sciences Foundation has teamed with Washington-based public television station WETA and the Documentary Group to produce the series.

Information & Education

The Tenth Edition of the National Association of Broadcasters Engineering Handbook

By Larry Bloomfield

Anyone who's been in this business for more than five minutes would agree that keeping pace with the every advancing and changing technology is a full time job. There was a time when most any member of a broadcast facility's engineering staff could answer most any technical question right off the top of his head. Those days are long gone, so having a good reference book is not only wise, but a must.

The National Association of Broadcasters has attempted to fill that niche over the years and it has become necessary to publish many editions to keep things "current" (excuse the expression). Joining my 9th edition (copy written in 1999) in my reference library is NAB's latest and greatest attempt to this end, their 10th edition. My other previous editions have been retired to my storage facility. Have they succeeded? You bet they have! A better investment you'll go a long way to make.

One reviewer put it: "The Tenth Edition of the NAB Engineering Handbook is the definitive guide to broadcast engineering for radio and television" and that's putting it mildly. It is doubtful you'll find anything anywhere that can compare to this opus when it comes to depth of subject matter in our industry. Looking at the staff that put it together will help explain why. Editor-in-chief: Edmund Williams; Associate editors: Graham Jones, Thomas Osenkowsky and David Layer. The cost of this book ranges anywhere from just over $160.00 to well above $250.00, depending on where you look.

Along with the book comes a CD that is said to contain color and high resolution images of many of the graphics used in the handbook. The publisher, Focal Press, made a (in my opinion) a stupid decision to prevent copying or printing from the CD. According to the Editor-in-Chief: "That was not our intent and I would be interested in your (and your associates and readers) assessment of that restriction." The CD is a good idea, if it were user friendly, which, in my opinion, it is NOT! I have toyed with Rubik's Cubes that were easier to work through then trying to find information from that CD. On the other side of that coin, it does make a nice coaster.

Make no mistake: the book is big, bulky and heavy and all the things that often discourage people from reading such a volume. However, those attributes rarely deter a broadcast engineer from finding the information that is needed to do the job!

Because the handbook is from the National Association of Broadcasters, it includes both radio and television chapters. Some chapters apply to both disciplines. All legacy information was updated for the 10th edition by the original author or another author using the original material from the previous 9th edition. Because digital technology pervades virtually every aspect of broadcast engineering today, most chapters include the impact of digital on a particular technology.

The Tenth Edition of the NAB Engineering Handbook covers every aspect of broadcast engineering in one volume. This most recent updated text is an objective, referenced work of approximately 100 articles organized in 10 major sections, each written by industry experts on the subject. It reflects all the revolutionary changes in broadcast engineering, media, systems, and components.

Particulars: the format is hardcover with dimensions being 8.5 in. x 10.88 in. and very thick. It was published: May 25, 2007. It was published by Focal Press and its ISBN number is: 0240807510

Editor-in Chief

Having known **Edmund A. Williams** for many years, and being familiar with his technical background and achievements, NAB couldn't have picked a better person for the job. Ed Williams broadcast engineering activities cover over forth-five years in the industry. Ed is now retired and in the process of moving to Florida, but prior to his putting this 10th edition together, he retired from the Public Broadcasting Service (PBS) at the end of 2004. While with PBS, Ed work with public television stations to develop and implement cost-effective DTV transmission facilities, participated in industry standards (ATSC, SMPTE) and special committees with respect to DTV issues, assist the PBS Engineering Department in the development of advanced television policy and interconnection, develop facilities for and conduct tests for the expeditious implementation of advanced television systems and when he wasn't doing that, he publish technical briefs and articles, lead seminars, conduct briefings on DTV transmission systems --- and the list goes on. Needless to say, his resume is quite impressive.

While on the Taste of NAB 2007 Road Show, I had the privilege of having Ed Williams attend our thirty-fourth (of fifty-two) presentations in the Baltimore, Washington, DC & Ft. Meade area on Monday, August 6, 2007. Actually he has joined me at several Taste of NAB Road Show presentations whenever they've been in the Washington DC area of the six years I've been doing the Road Show. While there this year, he promised me a copy of Tenth Edition of the NAB Engineering Handbook to review and keep. He kept his word.

When I received my copy, I called Williams and told him I was going to do a review on the book. I asked him if there was any kind of overall guide line they used in putting it together and he told me that while working on the handbook their motto was to make the material "what the engineer needs to know to do the job." He also directed me to the Editor's Notes and Acknowledgements where he used a quote at the beginning that says: "*In theory there is no difference between theory and practice. In practice there is.*" He said: "I think you will appreciate that statement."

It is important to know that the articles, chapters and other materials were written knowing that a vast number of diverse readers would call upon the information within the 2050 pages and would encompass knowledge and experience levels ranging from a wet-behind-the-ear "newbie" to many seasoned veterans of the industry. In my opinion, Williams and his staff reached that very difficult common denominator; neither talking over the newbie's head nor talking down to the seasoned vet. Williams told me that an important aspect of how the handbook is used comes from his staff's years of experience in the business: "….broadcast engineers are a pretty savvy group and can determine for themselves what is needed.

Reading a chapter is only the first step in a learning process that leads to making a technical product decision. It is up to the engineer to conduct additional research as may be needed."

He then went on to tell me a story I feel quite germane to this review: "I had a fellow say to me at a recent IEEE Broadcast Symposium that upon reading the Handbook he found a solution to a problem he was having at his station and that solution alone was worth the price of the book. Think how many other solutions lie within those 2050 pages with 104 chapters (including 24 new chapters) written by 140 authors." That certainly sums it up.

Williams knows that nothing is perfect. He told me: "While we worked diligently to make sure there were no mistakes in the 10th edition, of course there will be some. If you or any or your readers find any, please let us know so we can make correction for the next printing of the volume." Feel free to pass comments, corrections, etc. on to us here at Tech-Notes (Handbook@Tech-Notes.TV) and we'll pass them on to the appropriate person or department.

Associate Editors[3]

I've know **Graham Jones** since back in the days when he was Engineering Director for the Harris/PBS DTV Express - the educational road show that introduced digital television to many U.S. broadcasters some ten years ago. Jones also attend our thirty-fourth (of fifty-two) presentation in the Baltimore, Washington, DC & Ft. Meade area on Monday, August 6, 2007.

When you call him at NAB, where he is currently Director, Communications Engineering, specializing in advanced television issues, implementation, and standards, there's no mistake as to who's on the other end of the phone with his very pronounced, but pleasant, British accent. Jones is chair of the ATSC Planning Committee and active in several specialist committees of the ATSC Technology and Standards Group. He is also a member of SMPTE technology committees D27 on Data Essence and S22 on Television Systems, chairing the ad hoc groups on Lip Sync Issues and Image Formatting.

In 2005, he was elected a governor of the Society of Motion Picture and Television Engineers and is currently the Education Director for the society.

Jones is author of the book "A Broadcast Engineering Tutorial for Non-Engineers." He has written and presented numerous papers for NAB, SMPTE, and other conferences and publications and, with the United States Telecommunications Training Institute, provides a DTV tutorial seminar for broadcast trainees from the developing world.

He has 40 years experience in the broadcast industry. Having started his career with the BBC in London, he was, for many years, a partner with International Broadcasting Consultants where he designed and managed implementation of TV and radio systems for broadcasters and international agencies in Europe, Africa, the Middle East, and Asia. He came to the United States in 1989 as a consultant for short wave radio station projects with the Voice of America and in 1997 joined Harris Corporation to serve as Engineering Director for the Harris/PBS DTV Express.

Jones holds a degree in physics. He is a UK chartered electrical engineer, a Fellow of SMPTE, and a member of the SBE, IET, and the Royal Television Society. In 2004, he was awarded the ATSC Bernard J. Lechner Outstanding Contributor award. Now with credentials like that, he certainly knows what he's talking about!

I can't begin to tell you how long I've known or known of **Thomas G. Osenkowsky**. I do know that he has attended several of the Taste of NAB Road Show presentations at the facilities of HB Communications in North Haven, CT. He can be found lurking on any of several list servers: BC and RT, to name two. His one-of-a-kind, but often refreshing sense of humor mixed with his reservoir of knowledge has helped many an engineer out of trouble.

Osenkowsky began his broadcasting career while a senior in high school. He has been practicing broadcast engineering since 1976 and had his first Chief Engineer job at WOWW in Naugatuck, CT. He's been a CE at AM & FM stations in CT and has served as a consultant to clients in the United States and Caribbean Islands. When not "CEing" it up, he writes software for directional antennas, phasing system design/optimization, mapping, RFR and other broadcast engineering applications.

As for associations, he's well connected there too. He's a Senior Member of the IEEE, NARTE and SBE. He holds a Master Engineer certification with RF Radiating Endorsement issued by NARTE, and is a Certified Professional Broadcast Engineer through the SBE. Outside of broadcasting, he is a private pilot and Amateur Radio Operator with call sign N1IXJ.

When speaking with him about this review, I asked him to tell me something that would make him look smart to which he replied: "Let me tell you, it takes A LOT for me to look smart. My payroll includes a talent agent, makeup artist, vocal coach, wardrobe manager, speech writer and fashion consultant. Makes me wonder if working so hard and long to pay these people is worth it?"

Those who know Tom Osenkowsky would agree, he was a good choice to fill this job as Associate Editor of the Tenth Edition of the NAB Engineering Handbook.

I've never had the pleasure of meeting **David Layer** in person, but have spoken to him on the phone. Layer is Director, Advanced Engineering in the Science & Technology Department of NAB and has been with NAB since 1995. Prior to working at NAB, Layer was employed at COMSAT Laboratories in Clarksburg, MD. He received a BSEE degree from the University of Maryland, and an MSEE degree from Purdue University, where he was also a teaching assistant.

He's very active in the radio standards setting area. He is also involved in NAB's technical conference planning and technical publication activities, and has been an author and contributing author for numerous technical publications, including IEEE Spectrum magazine (a journal of the Electrical Engineering profession) and the McGraw-Hill Yearbook of Science and Technology. In addition to this, he is also involved in NAB's technical conference planning and technical publication activities, and has been an author and contributing author for numerous technical publications.

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Layer is an Associate Member of The Association of Federal Communications Consulting Engineers where he serves on the association's board of directors, and is a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE) having served a six-year term on the Advisory Committee of the IEEE Broadcast Technology Society. He also served as the Chairman of the annual IEEE Broadcast Symposium from 2002 to 2004. Now who could argue with credentials like these?

Summary

The NAB Engineering Handbook provides detailed information on virtually every aspect of the broadcast chain, from news gathering, program production and postproduction through master control and distribution links to transmission, antennas, RF propagation, cable and satellite. Hot topics covered include HD Radio, HDTV, 2GHz broadcast auxiliary services, EAS, workflow, metadata, digital asset management, advanced video and audio compression, audio and video over IP, and Internet broadcasting. A wide range of related topics that engineers and managers need to understand are also covered, including broadcast administration, FCC practices, technical standards, security, safety, disaster planning, facility planning, project management, and engineering management.

Basic principles and the latest technologies and issues are all addressed by respected professionals with first-hand experience in the broadcast industry and manufacturing. This edition has been fully revised and updated, with 104 chapters and over 2000 pages. The Engineering Handbook provides the single most comprehensive and accessible resource available for engineers and others working in production, postproduction, networks, local stations, equipment manufacturing or any of the associated areas of radio and television.

DTV Training

From: Gary Sgrignoli

With the World Series over, and the victorious Chicago Cubs the reigning champions in the baseball world for the first time in 99 years, I excitedly watched on my 46" LCD HDTV set the parade traveling down Michigan Avenue with thousands of adoring fans screaming wildly, when suddenly a white haze came over the parade, and then... and then ...I woke up abruptly. Oh no, it was only a DREAM, it wasn't real after all. Such is life on the north side of Chicago! But you won't have to dream about attending one of the upcoming VSB Fundamentals or VSB Measurements seminars that is being offered around the country in the next year since you can do so for real !!! And, you can always check on the status of upcoming VSB seminars on the MSW website (www.MSWdtv.com).

The DTV transition continues to accelerate with over 1600 DTV stations on the air covering 211 markets containing about 99.95% of the TV households (about 91% of the households are in markets with 5 or more DTV signals). Behind us is the FCC tuner mandate (100% of all TV sets must have DTV tuners after March 1, 2007), the "plug & play" cable compatibility issue, the "broadcast flag" issue (kind of ...), and the DTV translator rules. NTIA has already issued a Report and Order regarding their $40 coupon program to be used at the end of the transition, which contained the logistical rules for obtaining units & the required minimum converter box performance specs (2 manufacturers have been certified already). IBM has been picked to administer the coupon program, which is scheduled to start in less than a month. And some of these D/A converter set-top boxes are going to be sold with pricing as low as $60. Besides that, there is a significant increase in HD programming, including live sports programs (such as the Super

Bowl, the Olympics, March Madness), and even the local news in many cities. There are now many more models of lower-cost flat-panel DTV sets with integrated digital tuners on showroom floors (5th generation VSB chips have been out since spring 2005 & 6th generation chip sets were announced at the end of 2006), with retailers lamenting about reduced or minimal profits from all the great DTV sales prices! Even mobile DTV with the terrestrial VSB transmission system is being investigated seriously as two competing backwards-compatible prototype systems having been demonstrated in Las Vegas at the past NAB show. The ATSC is currently in the process of actively setting a mobile standard and being backed by the Open Mobile Video Coalition. The NPRM for the 3rd periodic review just prior to the end of the transition has been issued to help facilitate the broadcasters' prepare for the end of the transition. And to top it all, broadcasters (including the NAB organization) have actually started promoting their over-the-air DTV signals by educating the public about the 2/17/09 end of the transition (see the recent NAB/CEA/NCTA announcement in February and DTVanswers.com) !!! WOW !!!

With the post-transition channel election and replication/maximization process complete (the channel allocation R&O has finally come out), and with Congress settling on February 17, 2009 as a hard analog "turn off" date, the last phase of the DTV transition is surely well under way ! Since the broadcasters have actually begun telling people that they can receive DTV signals off the air for FREE, and that their older analog television sets will be useless for off-air reception in less than 15 months unless a converter box is connected, acceptance of over-the-air DTV should really accelerate now.

These day-long digital VSB transmission seminars have been offered around the country for almost 9 years, with more on the way. Some of the cities across the country that have hosted seminars in the past have been: Albuquerque, Atlanta, Austin, Baltimore, Birmingham, Boise, Boston, Calgary (Canada), Chicago, Champaign (IL), Cincinnati, Columbia (SC), Dallas, Denver, Des Moines, Durham, Harrisonburg, Honolulu, Indianapolis, Kansas City, Knoxville, Lansing (MI), Las Vegas, Los Angeles, Manchester (NH), Milwaukee, Minneapolis, New Orleans, New York City, Norfolk, Oakland, Orlando, Philadelphia, Phoenix, Pittsburgh, Portland (ME), Portland (OR), Raleigh, Reno, Sacramento, Salt Lake City, San Diego, San Francisco, San Jose, Seattle, Spokane, Tampa, Topeka, and Washington DC. The plan is to visit new cities as well as to revisit some of the ones mentioned above.

There are now three (3) types of VSB transmission seminars to consider. The original 1-day VSB Fundamentals course contains all the basics of data communication in general as well as the VSB System in particular, and is a pre-requisite to the 1-day VSB Measurements seminar that identifies and describes the pieces of test equipment needed for VSB testing in the laboratory, at transmitter sites, and at remote field sites. The third seminar is a 1-1/2 day VSB Combo course that combines both VSB Fundamentals and VSB Measurements together for a complete look at the system. This 3rd seminar includes a solid fundamentals review in the first 1/2 day, and then focuses on the measurements the following full day of the seminar.

All three seminars are operated in a similar manner, with corporate sponsors covering the majority of the costs and only modest registration fees for the attendees. Look carefully at the list below to see which of the three seminars is being offered in each city !!!

Upcoming all-day VSB seminars are currently scheduled for:

Topic: VSB Measurements Date: Monday, March 10, 2008 Location: Grand Rapids, MI (Great Lakes Broadcast Conference) Time: 8:30 am to 5:45 pm Hosts: Michigan Association of Broadcasters Sponsors: TBD www.michmab.com	Topic: VSB Combo Seminar Dates: Friday March 14, 2008 (8:30 am - 5:45 pm) & Saturday March 15, 2008 (8:30 am - 12:30 pm). Location: KLSR-DT studios in Eugene, OR Hosts: Oregon SBE Chapters 76, 124 & 141 Sponsors: **TBD**

In addition to the above confirmed dates, Rochester, NY, Manchester NH, New York City NY, and Houston, TX SBE chapters are trying to schedule seminars for some time next year along with a group in Toronto Canada. These additional seminar dates should be forthcoming.

Corporate SPONSORS that are interested in being involved in any of the above upcoming seminars should contact me immediately so that I can put you in touch with the appropriate seminar host people before sponsorship opportunities close.

As usual, the modest registration fee for these seminars includes an updated 1-1/2" thick (800-page) detailed seminar notebook as well as lunch. If you know anyone wanting to attend such a seminar (e.g. any local station engineers or business clients in the area), please forward this to them.

As an FYI, local TV broadcasters often host these seminars in conjunction with local broadcast organizations such as SBE and SMPTE. These seminars are designed to be "break-even" events for the hosts with my travel expenses and speaker fees paid by corporate sponsors, while the cost of the handout books and refreshments are typically covered by the very modest registration fees (often between $70 - $80 per person) charged to the attendees. The seminars often draw between 30 - 60 people (and sometimes more), and one credit is given towards SBE re-certification. Also, the material in the "VSB Fundamentals", "VSB Measurement", and "VSB Combo" seminars will help those preparing to take the 8-VSB Specialist Certification test that is now offered by SBE. See the national SBE website for more details (www.sbe.org).

If you know of any broadcast-related groups that would want to co-host or co-sponsor any future VSB seminars in their cities, please let me know. The fall and winter seminar schedule is currently being planned. I believe that these educational seminars are well worth the time, energy, and money to attend, especially in this last phase of the DTV transition where there are so many requirements put on broadcasters.

As the DTV transition continues to roll out, broadcasters plan to make the final transition, the NTIA coupon program becomes finalized, DTV education of the public begins in earnest, and the final date for analog shutoff comes closer to reality, let's all work towards continued success and increased consumer DTV education in 2008.

Gary Sgrignoli, DTV Transmission Consultant
Meintel, Sgrignoli, & Wallace
847-259-3352 Office phone - 847-650-9878 Cell phone
gary.sgrignoli@IEEE.org - www.MSWdtv.com

Throwing around terms

In the past several days, we've heard a number of very bright broadcast folks use some terms interchangeably. So that we don't have to see them embarrassed when corrected by some young computer geek, here goes:

Computer software is a general term used to describe a collection of computer programs, procedures and documentation that perform some task on a computer system. The term includes application software such as word processors which perform productive tasks for users, system software such as operating systems, which interface with hardware to provide the necessary services for application software, and middleware which controls and co-ordinates distributed systems.

Computer firmware is a computer program that is embedded in a hardware device, for example a microcontroller. It can also be provided on flash ROMs or as a binary image file that can be uploaded onto existing hardware by a user.

As its name suggests, **firmware** is somewhere between hardware and software. Like software, it is a computer program which is executed by a computer. But it is also an intimate and vital part of a piece of hardware, and has little meaning outside of that particular hardware.

Viewing High Definition Discs

By Larry Bloomfield

Most of us are aware of the two formats for High Definition disc distribution: BluRay format, backed by a group lead by Sony Corp., and HD DVD format, which is backed by a consortium headed by Toshiba Corp. Needless to say, this is reminiscent of the early days of consumer video tape when two formats, VHS and Beta, were vying for acceptance and the better, technically, didn't necessarily win out. It's difficult to say, at this time, which of the two Hi-Def disc formats will win out, so we are confronted with trying to play back one of the two or both. To accommodate both formats, do we do it on a single machine, or buy two machines – one for each format?

As early as January of this year (2007), LG Electronics said they have a dual-format high definition player designed, as they said: "to call a truce in the continuing war between rival DVD formats." Their model BH100 has been touted to play discs in both BluRay and HD DVD formats. But the question is: does it do it and how well.

Right after this year's Taste of NAB Road Show had concluded with our fifty-second presentation in Portland, OR, on my way home to Florence, OR, I stopped at Fry's Electronics in Wilsonville, OR to check out the BH100 just to see how well it did what it was advertised to do. I was initially impressed, so I bought the unit at a special discounted price as it was their last one; the one they'd been demonstrating on the floor with. Let me say that that old Latin proverb "Caveat emptor" "Let the buyer beware" rains true even today – Read on.

These units list out at about $1200.00, but you can usually find them for well under $1,000.00 if you search for them. I also bought one DVD in Hi-Def in each of the two formats along with the BBC 6 disc series “Planet Earth” in BluRay.

I have my BH100 hooked up to my home entertainment system using HDMI cables between the BH100 and my 62 inch Toshiba hi-def television set with the audio going into the 5.1 channel surround sound inputs of the audio part of my system. It all worked find and my wife didn’t kill me too badly for spending the money after she’d seen the stellar pictures and heard the surround sound. I was truly impressed also, but the story did NOT end there.

At the end of my block is “3 2 1 Video,” Florence, OR’s answer to Hollywood Video, Blockbuster, etc. They now have both BluRay and HD DVD discs as they come out each Tuesday. Although they charger a buck more for the hi-def disc in either format per 2 day rental than they do for the standard def DVDs, it is convenient. I loaded up! Got home only to find that most of my rental features would get recognized by the BH100 player, as shown on the screen, would play past where it says the government will do horrible things to you if you make copies of the disc and then it would stop and go no further. Needless to say I was not happy.

Florence, being a small town, the owner gave me credit for those that we couldn’t view. We both though there was something wrong with the discs. NO SO! As weeks went by and this same scenario randomly reoccurred, both the owner of the rental store and I thought there might be a problem with the BH100. A call to LG Electronics confirmed these suspicions and some guy in a country where the accent was hard to understand said they (LG Electronics) would be mailing me out some FIRMWARE that would fix my problem.

After two weeks of waiting, I called LG Electronics once again only to be told that they didn’t have any of these FIRMWARE discs and that I had to download an ISO copy (an image copy) of the fix, convert it so I could burn the disc myself, that is if I wanted to get the problem fixed. I am experience in doing this kind of thing so when I tried that and it didn’t work, I was not too happy with LG Electronics, the BH100 or the world in general. A third call to LG Electronics resulted in them telling me they’d FedEx a copy of the FIRMWARE fix the next day. Two weeks later, a fourth phone call to LG Electronics resulted in them telling me that the Fix-disc had been “**mailed”** out just the day before.

Two days later, the firmware arrived via FedEx and the following day I got a copy in the US mail as well. Can’t say I was under stocked with firmware at that time. Following the directions on the disc, it told me that the FIRMWARE had been up graded. I ran the disc twice, just to make sure.

Since then and after nearly two months with equipment that didn’t work properly, I think all is OK now and both formats appear to play OK: that is until I tried to play the latest version of “Spiderman” this past week. The problem of not wanting to play beyond the damn insufferable “previews” and the “copy warning” seemed to have returned. Fooling around with the remote control and pulling up the menu etc, I was finally able to get the feature to play.

If you wish to go through all these hoops, go ahead and give the BH100 a try or you can wait and see what else will be hitting the market. In September, Samsung announced it will “bridge the gap between

the two rival next-generation DVD formats by building a machine that is compatible with both." I have yet to see one on sale, advertised or available.

HPA Technology Retreat
& pre-retreat activities on February 19

From: Mark Schubin tvmark@earthlink.net

Just a heads up if you were planning to attend the HPA Technology Retreat in February (or even if you weren't" that there will be an outstanding lineup of activities the day before the retreat officially opens.

Starting at 8 am on February 19, there will be an LCD lab. Learn how LCDs work, about processing issues, and even take them apart yourself. Then there will be an ATSC-coordinated seminar of audio issues: lip-sync and loudness. There will also be a Charles Poynton seminar and an Academy of Motion Picture Arts & Sciences Technology Council seminar on "The Academy Image Interchange Framework for Digital Motion Picture Mastering."

That's just the pre-retreat day! The next morning begins with a supersession on stereoscopy, followed by "Less Than a Year and Counting" on what happens with analog turnoff.

http://www.hpaonline.com

Features, History & Opinions

Online FCC rules Update

From: Harold Hallikainen harold@hallikainen.com

I just finished an update to my FCC rules site. As before, if you click on the part of a rule number that is before the decimal point, you get a pdf version of the rule. If you click after the decimal point, you get an html version of the rule. What's new is that the pdf is now hosted on my server and has an extension of pdf so it shows properly in a browser. Previously, the pdf link pointed to a script at the GPO and returned with an extension of cgi, which browsers did not know how to deal with.

The current (daily updated) rules are returning pdf from October 1, 2006, which is the latest available. In a few weeks this will be changed to October 1, 2007 (when the GPO finishes creating the pdfs). I'm still in the process of converting previous years to locally hosted pdfs.

The transistor: sixty years old and still switching

Sixty years ago, scientists at Bell Labs demonstrated the most important invention of the 20th century: the first real transistor. For an interesting read, check out: www.eetimes.eu/semi/204300920

It's hard to say when the electronics age started, but William Sturgeon's 1825 development of the electromagnet laid the seeds that led to Joseph Henry's crude telegraph in 1830, which was the first electrical system used to communicate over long distances (a mile). Just 14 years later, Samuel Morse sent a message by telegraph over a 40-mile link he had strung between Washington DC and Baltimore.

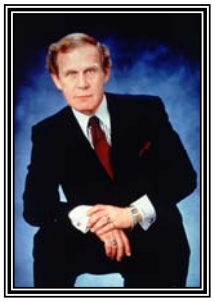
"The first transistor ever assembled, invented in Bell Labs in 1947." Photo and text from Porticus.org, www.porticus.org/bell/belllabs_transistor.html. (Follow that link to see more historical documents and images about Bell Labs and the transistor.)

A number of inventors soon came up with the idea of wireless transmission. The early circuits were electrical, not electronic – spark gap. Telephone signals, though, degraded quickly over distance while radio remained crude and of limited range. The world desperately needed devices that could control the flow of the newly discovered electron. Names like Fleming, Edison and de Forest made their contributions.

The very first active device in electronics may arguably have been cat whisker crystals, a bit of springy wire touching a raw hunk of galena that works as a primitive diode. It's rather ironic that this, the first active element, which predated the tube, was a semiconductor, but that nearly another half century was required to "discover" semiconductors.

Walter Brattain and John Bardeen (who, with William Shockley won the 1956 Nobel Prize for this and related semiconductor work) invented the transistor. Though some claim this was the first "practical" such semiconductor, the Bell Labs scientists had actually constructed a point-contact transistor, a difficult-to-manufacture device that is no longer used and whose use was never widespread.

From Andy Marken



Analog...digital...HDV...AVCHD...Pinnacle's new MovieBox is the complete movie-making solution. All you need video content and a PC.

It includes:

* a great high speed video capture device that captures analog content from 8mm camcorders, VCRs, TVs, set-top boxes. It will take your DV camcorder content and even "up sample" to HD. Got an AVCHD camcorder? You can transfer the content in native format for easier, faster editing/authoring. You can burn in HD DVD or AVCHD format to play in your HD DVD and BD player

* Full version of Vista compatible (and XP) Studio 11 Ultimate that include hundreds of keyframeable and format-independent (SD and HD) real-time effects and transitions to give videos a unique, professional look. There are even presets to conveniently send content to your iPod, PSP or DivX device.

There's more...lots more. But what would you expect from the folks who know people want to produce movies like a pro (without all the hard work)...on a budget?

The Great Escape

(**Editor's Note:** *Since most of us are married to a cell phone, the following from Andy is germane to all of us*)

Mobile Technology -- Everything You Want But a Reliable 3-Min Call "It's possible for one man to get out through the wire, even get away, but there are in fact a considerable number of people besides yourself in this camp who are trying to escape." Squadron Leader Bartlett (Richard Attenborough) – The Great Escape (1963)

The nice thing about the CTIA (the wireless association) conference is that you get to see all the new mobile toys and the great thing about the Mobile World Congress in Barcelona is that you get to see everything – present/future mobile infrastructure technology…services/offerings in every country…devices/features that make your eyes water.

We change "devices" about every six-nine months (it helps the economy). Until recently, we kept the same mobile service provider. Service was OK.

Digging to find a new provider just seemed to be too much work.

Digging Out – While you may be paying to use their service to communicate with others it is often extremely difficult to dig your way out of the really great contract. It all sounds great at the outset, calls anytime/anywhere, shoot/send photos, watch TV on your screen, IM folks, stay in email touch…great. Until you try to escape. [Photo – *The Great Escape (Universal Artists)*]. But our provider made the work a little easier. We had been paying (extra) for service in neighboring countries (Canada, Mexico). But not being able to make/place a call made us determined to escape.

Tech support in Bangladesh assured us the provider has service in those areas. Had to be "our" fault. Weren't satisfied? Call to their international roaming staff. No they can't transfer you. No they can't email them to call you. Other option…escape!

The First Call

The industry has changed dramatically since Martin Cooper, a manager at Motorola, made the first call with a mobile phone. Can You Hear Me Now -- Martin Cooper, a Motorola manager, didn't have any trouble connecting with the industry's first "brick" phone call in Japan. Of course, it's not like the call had to go halfway around the globe through 20 different providers either.

Moving from provider S to V or A in the U.S. isn't one of them. In most countries you want mobile connectivity you have choice. Go to the store, pick the phone. Go to another store, pick the service. Then pick the features and talk…text…listen to music…watch videos…catch TV shows…email…surf the web.

Figure 1 - Pick Your Service – Today's mobile service providers and some of the Greatest Products of the Year offer you capabilities like you wouldn't believe. It may all be just data but each has a different price.

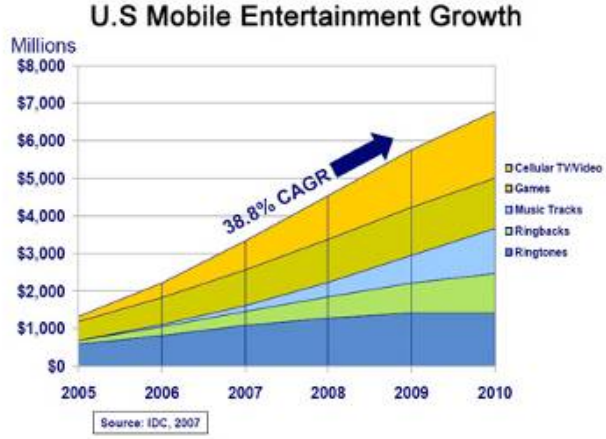
Over "there", they don't use the "free phone" (Americans really are cheap!) to confine you to a 2-year iron-clad contract!

In the U.S. the provider doesn't tell you but what he's saying is repeating Co. von Luger's statement…"We have in effect put all our rotten eggs in one basket. And we intend to watch this basket carefully." After all, the provider has built out "his" infrastructure…"his" service offerings to meet your needs.

After all, the offering is where the money is at:

- 4 million people will use mobile maps this year
- Premium mobile content will generate $44 billion in 2011
- By 2010 there will be 100 million mobile video subscribers
- 29% of adults 25-34 will download mobile games
- By 2010 there will be 134 million mobile gamers
- Mobile video generated $200 million in sales last year
- By 2011 mobile video will be a $6 billion industry

Figure 2 - Not Just Dialing for Dollars – Phone call minutes are just minutes. But put mobile entertainment into the picture and an hour can whiz by in no time at all. That's big bucks!! **Source -- IDC**



Big deal! If you're a supplier (hardware, service, content) sure. If you're a consumer? Most simply want a phone service that works…all the time!

A Little Love
According to an In-Stat study 60% of the users feel unappreciated by their wireless operators.

Sure In-Stat also notes that 70% of the folks over 50 are satisfied with their provider but that just means:

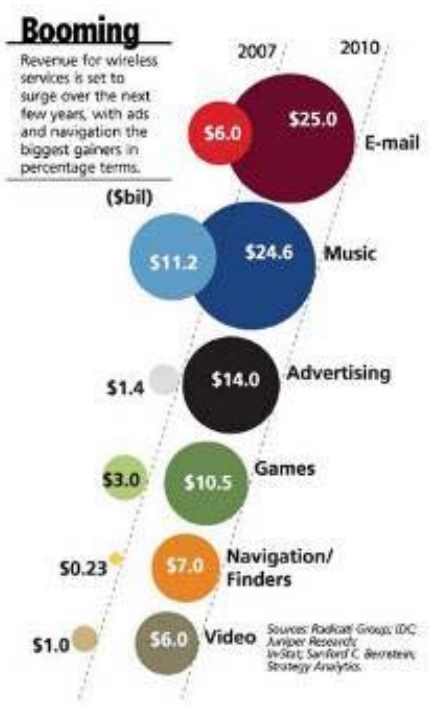
- escaping their clutches is too much trouble for them
- they stay pretty close to home where service is "reliable"
- they don't use their phone that much

But the sweet spot for mobile providers, the teens, tweens, 18-24 year olds?

They care about them. That's where the money is:

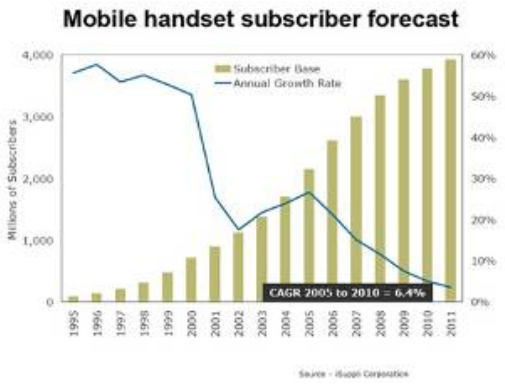
- 46% regularly rack up 500 min usage a month
- 68% use the camera feature…regularly
- 85% text regularly (our kids don't holler at each other anymore)
- 38% watch videos on them
- 26% use the built-in MP3 player
- 8% use the GPS (damn kid…it's a phone, call if you're lost!)
- Less than 2% use them for TV service

Figure 3 - Revenues Rising – Once the consumer is paying the base cost for basic calling service to pay for their infrastructure access, incremental service offerings bring big dollars to the bottomline. In addition, ads are more effective (and more expensive) because they are more targeted to specific customer profiles. Source -- NYTimes



No wonder our phone bill weighs 10 lbs each month! – Doesn't seem to hurt too much because folks are still signing up, snapping up phones.

Figure 4 - Callers Rising – Mobile service provides can't wait for 2009 when about half of the global population will have a device of one type or another. Service dollars will just keep ringing and ringing. Unfortunately the number of new subscribers is already declining which means fewer new instrument sales for manufacturers without new features, new capabilities, new pricing structures. Source -- iSuppli



ABI Research estimated 263.8 million handsets were sold in Q2 2007. By 2009 it is estimated there will be 3 billion mobile subscribers…half of the world's population will be connected!

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That's encouraging for the service providers. Not for device manufacturers since penetration growth is dropping from 19.3% to 3%. Worse yet, 25% of the phones are going to cost less than $20 by 2011. But a cheap unit wasn't at the top of our list for switching (stuff we want never seems to be on sale anyway!). Neither was MP3 play, TV on the phone, video playback, GPS. Didn't want all the bells, whistles.

Figure 5 - Everything Phone – Device manufacturers have only a few choices as the number of new mobile subscribers decline. They can focus on the high-volume, low-price throw-away units or they can add more capabilities and more cost to their units. The latter approach is designed to encourage people to upgrade/replace their devices more frequently.

Focus on the Basics

Needs were simple – call performance/reliability; decent customer service; "reasonable cost." We also wanted 3G and Bluetooth that worked with our car (who knew all Bluetooth wasn't the same?). We'd like smartphone capabilities like email but there are a couple of hurdles: has to mesh perfectly (without my having to think about it/work at it) with my email solution – no, not Outlook or Mac) and our wife barely tolerates our bringing a notebook along on holidays. 24x7 reading/responding wouldn't be treated very kindly! To make an intelligent decision we polled people we respect on the available services. Consensus wasn't too good. Sorta like Herr Kuhn said…"If you escape again, and are captured, you will be SHOT!

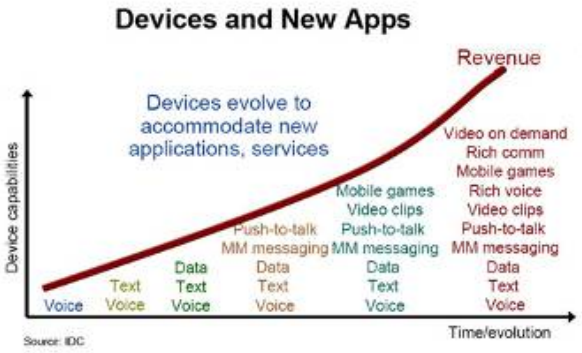
Turns out, they all suck! It's just a matter of degrees…trade-offs. It's all a matter of network control…their network control! Unlike your ability to move around the Internet, providers not the user rule.

Dollars from Airwaves

They leverage, control, manage all of the new and emerging services – radio, TV, web surfing, gaming, gambling, email, video download/viewing.

So device manufacturer's shoehorn in all of the attributes and capabilities they possibly can into their units to warrant a higher price.

Figure 6 - Growth Curve – As service providers expand their infrastructure to support higher performance, higher speed 3G solutions, call quality and reliability will not only increase but the added headroom will make it possible to add and sell new higher profit services to consumers. Source -- IDC



You simply choose which "walled garden" you want to enter. After that…you're theirs baby. Only problem is, as Steve McQueen said…*"You're twenty feet short of the woods. The hole is right here in open. The guard is between us and the lights."*

If the providers can remember back to why we all bought mobile devices – you know security, productivity – and did that really well churn might go way down. Then they could focus on adding all the other gotta have features our kids want.

Figure 7 - Enhanced Productivity – The initial promise of the mobile phone was increased personal productivity for business people. It was suddenly easy for them to stay in touch with staff members and business partners all the time. But it's apparent that the mobile phone has quickly evolved from a communications tool to a personal entertainment device. One that is almost indispensable by males/females, young/old.

Over the Fence – It's not easy getting out of the mobile service walled garden. Even when you jump the wire, your option is to either go silent or choose a walled garden that best meets your personal wants/needs…and hope for the best. [Photo – Universal Artists]

When our provider asked why we were switching, we told them what Steve McQueen said…"*Well, like I told Max... I was trying to cut my way through your wire because I want to get out.*" It's still a walled garden but at least we can call out and folks can call us. That's what people expect with their mobile provider!

Disasters/Amateur Radio

From: Douglas Pritchett radiofool@gmail.com

Amateur radio and its members have provided community service for as long as there has been radio. However, amateur radio has done, in my opinion, a less than effective job of telling our story.

Sure, the ARRL is a good organization, but all too often they are preaching to the choir. They have been moderately effective in lobbying the FCC (BPL is an example) but as far as lobbying Congress and telling the ham radio story to the mainstream media, they have been poor.

Ham radio today has to be marketed using today's conduits to the mass audience. Think about product placement portraying ham radio in a positive light in movies and TV. Celebrity endorsements.....more people probably know that Tom Cruise is a Scientologist than know that guitar legend and Eagles member Joe Walsh is a ham? You and I know, but do your neighbor, or your kid? Besides the Boy Scouts, can we name any kind of outreach to the younger demos?

For ham radio to be relevant to the mass audience as well as police, fire, EMS and disaster services, we hams need to actively tell our story in as many ways and using as many avenues as possible to demonstrate our skills, and reinforce the issues of service and dedication.

To this Ronald Johnson, w2wu@verizon.net, adds:

Truer words were never spoken about the value of Amateur Radio. It's a pity most people don't have or can get accurate information about us.

Some emergency management officials e.g. our local (PD) rebuke us outright. They contend only their professional dispatchers know how to get things done. They use common names and city names in place of ICAO phonetics. Our local "newspaper" the "Star Ledger," of Newark, NJ equated Amateur Radio equal to CB, and would not print a correction or retraction.

I've provided disaster communications from the front lines. People were surprised at our quick response and what was done with makeshift equipment. I've been active since 1960 and a MARS member, so circuit discipline/procedures are part of life.

Landlords don't want you-at least in my area. Neighbors, say our antennas decrease property values.

To this, Burt Weiner adds:

You're right, but it should also be pointed out that while we are called "Amateurs", many are anything but "amateurs" in this field. I'm aware of many people who think of Amateur Radio Operators as just that - Amateurs who do not know a lot about radio. The general public also needs to be made aware of how much "Amateur Radio" has contributed to the creation of things they enjoy today.

Amateur Radio is capable of being responsive in disaster situations because Amateur Radio operators are creative. Part of why they are creative is because they are not hindered by rules that suppress experimentation, learning and creativity.

I understand the political need for numbers in Amateur Radio count but I also believe that quality is more important.

63 New HD Channels in 2008

According to Philip Swann - aka Swanni - there will be a huge increase in the number of HD channels available in the coming year. Looks like we are reaching the point where HD is becoming a competitive issue for NON-broadcast programmers.

Bryan McGuirk, president of satellite distributor SES Americom, says there will be 63 new HD channel launches in the next nine months.

McGuirk should know. SES Americom operates the commercial satellites which transmit HD and SD programming to Earth. (Programmers lease space on SES' satellites.)

The satellite executive tells Multichannel News that SES now delivers 64 different high-def feeds. But McGuirk says his company knows of at least 63 more channels planned in the coming months.

He did not reveal the names of the new channels. However, he said DIRECTV's recent high-def expansion has accelerated programmers' interest in launching high-def versions of their channels.

The satcaster recently increased its national HD lineup from nine to more than 80 channels. Additionally, McGuirk noted the rise in high-def set sales over the last year.

"We're going through another wave of adoption with the DIRECTV launches and all the new HDs," McGuirk said.

Becky Powhatan, The Weather Channel's executive vice president of distribution, echoed McGuirk's comments. TWC recently launched a high-def channel, although studio segments are not scheduled for HD until early next year.

"We thought we'd launch an upconverted HD simulcast in 2009 and do native HD in 2010," she told Multichannel News. "But we changed plans. I think the pace of HDTV sales surprised everyone."

The list of new HD channels cited by McGuirk will undoubtedly include high-def simulcasts of existing basic cable networks. Several prominent cable networks, such as E!, have yet to launch HD feeds. But it also could include dedicated HD channels from new start-up companies.

You can see Swanni predictions at; http://www.tvpredictions.com/newhd120207.htm

Lots of Little Screens: TV Is Changing Shape

According to DENISE CARUSO of the New York Times, inexpensive broadband access has done far more for online video than enable the success of services like YouTube and iTunes. By unchaining video watchers from their TV sets, it has opened the floodgates to a generation of TV producers for whom the Internet is their native medium.

And as they shift their focus away from TV to grab us on one of the many other screens in our lives - our computers, cellphones and iPods - the command-and-control economic model of traditional television is being quickly superseded by the market chaos of a freewheeling and open digital network.

According to Move Networks, a company based in Utah that provides online video technologies, more than 100,000 new viewers jump online every 24 hours to watch its clients' long-form or episodic video. During the first two weeks of November alone, more than twice the number of Americans were watching TV online than in the entire month of August.

The shift is proving quite inspirational to digital media entrepreneurs.

"What absolutely convinced me to start a company in this area was when I realized just how large the disruption was," said Kip McClanahan, the co-founder and chief executive of ON Networks, an online studio in Austin, Tex. "It touches everything - how video content is created and monetized, how it's distributed and consumed. And it's a half-trillion-dollar market, if you include the advertising that supports it and the revenue associated with subscriptions, tickets and so on."

A market that size provides plenty of room for experimentation. Many flavors of technology and programming are being tested, as are some changes in traditional revenue models.

Vuze, based in Palo Alto, and Joost, based in Leiden in the Netherlands, for example, have both developed proprietary software that must be downloaded to view their video programming. In addition to providing programming from established brands like PBS, Showtime, the BBC and A&E, the start-ups encourage new producers to make deals with them and upload new programs to their sites.

ON does not distribute any traditional TV shows. Instead, it works with professional content creators who develop original programs in HDTV. So far, it has produced hundreds of episodes for 25 programs, all of which are available at the ON Web site, as well as through iTunes and AT&T, its distribution partners. They include a dating show, produced in partnership with NBC, and a home-building show called "Mainstream Green."

Blip Networks, based in New York, is another company working to create its own established brands, providing thousands of short-form videos from all comers. In addition to one-off documentaries like "Gotham Girls Roller Derby," Blip's library includes weekly news satires like "Goodnight Burbank," which drew favorable notice from several mainstream media outlets, including USA Today and The Los Angeles Times.

Blip syndicates its programming to America Online, Yahoo, Google, iTunes, Facebook and other big Web distributors. Vuze, Joost, Blip and ON all share as much as 50 percent of their revenue with the content producers, regardless of distribution medium. "If that model existed today, writers wouldn't be on strike," said Mr. McClanahan.

René Pinnell, the director of "Backpack Picnic," a popular sketch comedy show that came to ON after the troupe produced two pilots that were never shown by MTV, said the online environment is a "really good deal" for many reasons.

"The biggest one is that it allows us a tremendous amount of creative freedom we wouldn't get in a more traditional media environment," he said. "The investment is low for them - nowhere near the $500,000 a network will spend on one episode. They can afford to trust us."

For its part, Hulu of Los Angeles has turned a traditional TV library into a promotional vehicle for, well, more TV. The joint venture between NBC Universal and the News Corporation offers scores of popular prime-time shows from all the major networks and channels, as well as past hits like "Buffy the Vampire Slayer."

"Because people can watch TV shows when and where they want, they can sample a lot more shows," said Jason Kilar, chief executive of Hulu.

As a means to that end, Hulu may have persuaded the industry to relax a bit. Hulu's player allows viewers to create short video clips from the shows they watch and put them in e-mail messages or on Web sites, including blogs, an activity that in the past has drawn nasty letters from copyright lawyers. "This is a key way that we can make sure the content finds the audience," said Mr. Kilar.

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But what happens to the television industry when the traditional way for content to find its audience becomes obsolete?

"There's a lot of rewriting of the concept of windows in the TV network world today - the timing of when and where shows appear," said Allen Weiner, the managing vice president for media and consumer technologies for the Gartner Group in Scottsdale, Ariz.

In the old days, after something appeared on TV, its release to other distribution channels was carefully staged - from the timing of reruns to the DVD release to when it would be available on-demand. "We're seeing all kinds of new windows occurring, and no one knows what the magic formula will be," he said. "A lot depends on advertiser reaction and on user behavior."

One closely watched approach is the new online series "Quarterlife," by Marshall Herskovitz and Edward Zwick, who produced "My So-Called Life." Episodes first appear on MySpace TV, then are available the next day on Quarterlife.com, and a week later on YouTube, Facebook and Imeem. There is talk that they may even appear later on network TV - but as the last window, rather than the first.

As far as ON is concerned, Mr. McClanahan intends to put his programs in every single window he can find. Unlike other companies, ON optimizes all its shows for viewing on any video-capable device, a feature he calls "lifestyle distribution."

That's why he has deals with partners like iTunes and AT&T's Television, Broadband and Wireless Services, both of which can deliver video programs to multiple devices, from plasma TVs to computer screens and cellphones.

"You can't expect to control consumers and force them to come to prime time at 7 p.m. on a Monday night," said Mr. McClanahan. "If the consumer wants it on their phone at 3 p.m. while they're on the golf course, then that's where we have to deliver it."

Denise Caruso is executive director of the Hybrid Vigor Institute, which studies collaborative problem-solving. E-mail: dcaruso@nytimes.com .

http://www.nytimes.com/2007/12/02/business/02frame.html?_r=1&th&emc=th&oref=slog

NAB Anyone ?

From: RichardBJohnson@comcast.net

I’m not sure the NAB is the same as it used to be. At one time we had radio engineers who lived and loved radio –and a few lucky ones, television. The NAB Convention was where they got to meet the others from the big cities and little towns all along Route 66.

Now, there are probably only about twelve in the whole world, and they have to maintain all the stations between them, meaning that when the week’s work is done they don’t even want to even think about radio until forced by the next telephone call in the middle of the night.

The NAB Convention now represents a last ditch effort by manufacturers to say to the world; “See I’m still alive. I survived another year.” The booths are mostly filled with sales persons who know everything about the product they are trying to push onto management, and little about its engineering aspects. The NAB is now a sales convention designed to impress managers and owners. It isn’t like the “good old days!”

By the way, there is a radio station in Connecticut where the transmitter site hasn’t been visited for a whole year. I know this because I put an old resistor in the crack of the door on October 2006 and I stopped by this weekend and it was still there, the door never having been opened since October of last year. The transmitter is still running and sounds fine on my truck radio. I guess that’s all that counts. When that transmitter stops, the owner will call me to find out where the transmitter site is. Watch out for 1/4 watt resistors. They tell the story!

Richard B. Johnson
Read about my book
http://www.LymanSchool.org

How to clean your LCD computer or television monitor

From: Rodney Goldston

There are many commercial solutions available for cleaning your LCD. For some time now I've used a product called iKlear made by Meridrew Enterprises.

iKlear is easy to use and portable (important because I'm a laptop user). iKlear works wonderfully. Apple has tested iKlear and found it does not cause any harm to the plastics.

Homemade LCD cleaner

So how do you clean an LCD monitor screen without buying any of those expensive LCD Monitor Cleaner solutions or Monitor Wipes available in the market?

It's important to note that LCD monitors unlike CRT monitors are extremely sensitive. Therefore you are not advised to clean an LCD Monitor by wiping it with a piece of dry lint-free cloth since the sensitive display is likely to get scratches from dust particles.

Handkerchiefs or microfiber wipes work best for cleaning LCD monitors. You can find microfiber wipes in most camera stores. Never use tap or mineral water, as they will leave marks on the screen due to minerals and salts in the water.

You can find simple instructions and two recipes for creating your own homemade solution here.

State of the Art
TV Anytime or Place: The Sequel

From: David Pogue of The New York Times

O.K., it's happened: we're officially old.

When you sheepishly tell your children that you used to have to watch TV shows by sitting down in a certain place at a certain time - well, you know you're old.

First came the TiVo and its ilk, eliminating the bit about sitting down "at a certain time." Then came the Slingbox from Sling Media, which obliterated the need to be "in a certain place." Later, SlingPlayer Mobile software for cellphones even wiped out the part about "sitting down."

Of course, the Slingbox isn't nearly as famous as the TiVo; you may not even have heard of it. In that case, saying that the new Slingbox Solo has a lower price than its predecessors and has built-in jacks for high-definition gear probably won't mean much to you.

In that case, a primer is in order. For more:
www.nytimes.com/2007/11/01/technology/personaltech/01pogue.html?ex=1351569600&en=0726498879100937&ei=5090

Bathroom TV Manufacturers Seek DTV Waiver

Did you know bathroom fixture manufacturer Kohler sells TV receivers? They do, and so does Electric Mirror LLC, which makes vanity mirrors with built-in TV sets.

Kohler requested a waiver of the FCC's March 1, 2007 deadline requiring DTV tuners in new broadcast TV receivers, effective until Jan. 1, 2008. The temporary waiver would cover bathroom mirrors with an optional integrated television receiver. The FCC Public Notice (DA 07-1560) said Kohler submits that "these products are specialized TV receivers intended as a bathroom accessory and consumers will most likely have a primary TV receiver in their residence which will be capable, or made capable, of receiving DTV signals." The FCC Office of Engineering and Technology is reviewing the waiver request and concluded the proceeding will be treated at a "permit-but-disclose" proceeding for ex parte purposes. The notice has details on how to file comments.

Electric Mirror requested a six-month waiver of the DTV tuner requirement. The requested waiver would apply to mirrors with built-in TV sets designed for hotels to use with closed-circuit video systems. FCC Public Notice (DA 07-1561) summarized Electric Mirror's argument as stating "a temporary waiver of the DTV tuner requirement would be in the public interest because it would facilitate the DTV transition for this niche product and also place Electric Mirror in a similar position to the other small manufacturers of niche TV receivers that recently received longer 12-month waivers."

What I find interesting in both of these cases is both manufacturers are requesting relatively short waivers lasting only through the end of this year, after which, apparently, they will include DTV tuners in these

bathroom TV sets. I wonder if the manufacturers have considered using large surface area of the mirror to create an indoor antenna for their new digital TV sets in a mirror!

Here's how I can spot which PSIP generator a particular station uses:

From: John Willkie

Pearl from Thomson/Grass Valley Group – The clear characteristic here is that all the text strings in the Region 1 Rating Region Table (RRT) are compressed. Pearl is a registered trademark of Thomson, Inc. If there are any characteristic failure modes for this unit, two of which are in continuous service in my local market, I have not seen enough failures to notice a pattern.

PSIPPro from DTV Innovations – I might be stretching this a bit, because this has only been observed in transport streams that don't meet any of the criteria that apply to other units. If I am correct, this unit can be spotted in the field when the Event Information Tables (EITks) change (starting at midnight UTC + Gps_Utc_Offset), and each three hours thereafter). I won't describe it in any more detail, except to say that the 'dance' routine is unique and distinctive and seems to fully comply with ATSC A/65. I have talked to users of this system that encompass dozens of units, and all are extraordinarily happy. PsipPro is a registered trademark of DTV Innovations, Inc.

GuideBuilder from Triveni Digital – The clear characteristic I note with a working Triveni Digital GuideBuilder is a clarion; the lowest Event Information Table instances (EIT-0, covering up to the next three hours) always seems to appear on packet id 7424 / 1D00. Also, the Rating Region Table always seems to be emitted, along with the Master Guide Table even when, to put it delicately, no other PSIP tables are present in the transport stream. If no Event Information Tables can be found in the transport stream, the only clear signature of a GuideBuilder is the lack of a System Time Table (STT) in the transport stream, or a System Time Table where the time doesn't advance, or, in one early reported case, ran backwards. In one famous case, one major-market station that was a GuideBuilder customer offered a System Time Table with an unvarying time, a condition that persisted for several years, resulting in an FCC fine. Whether this condition was caused by a faulty GuideBuilder implementation or the customer having removed GuideBuilder from service for unreliability issues (or both), isn't clear at this point in time. A few failure modes for GuideBuilder are listed here because, particularly (but not exclusively) with early and older units, such modes may help identify a common GuideBuilder in the field. However, the preceding list is not exhaustive of the category of observed GuideBuilder failure modes. (GuideBuilder and Triveni Digital are trademarks of Triveni Digital, Inc., a wholly-owned subsidiary of Korea's LG Electronics, the 'wonderful' folks who also gave us 8-VSB.)

EtherGuide Emissary ATSC – This unit may be explicitly identified when Electronic Program Guide entries are missing for a period of time and no "Default Program Title" has been specified for that particular virtual channel. In such cases, the phrase "EtherGuide Emissary" appears in the program listing along with instructions on how to set the default title for a virtual channel. In cases where the generation of Extended Event Text Tables has been specified, but there is no data to create the description for a particular event or time period covered in the EPG, and when no "Default Event Description" has been specified for that virtual channel, EtherGuide Emissary ATSC will describe the event as "indescribable" in English and Spanish. EtherGuide Emissary ATSC is a trademark of John M. Willkie

“Static” PSIP can be spotted as the events listed in the Electronic Program Guide only give generic titles. Static PSIP doesn’t seem to ever offer ‘descriptions’ for the default events, nor do the virtual channels ever have their own ‘descriptions’

Happy hunting!

John Willkie jwillkie@etherguidesystems.com
www.EtherGuidesystems.com / www.OurEPG.com
Skype jmwillkie / Lab ++52 664 290-7526 / Mobile +1 619 770-5760

This article was adapted from an initial posting on the free-wheeling ‘PSIP’ email list hosted by John Willkie. Nobody is permitted to post their own PR material to the PSIP list, even the host. If you would like to subscribe to the PSIP list, send an email message to EtherguideCallSign-subscribe@topica.com.

CBS 150 ohms

From: Barry Victor barrythevic@mac.com

Why CBS standardized on 150 ohms for audio. I worked for CBS TV at both TV City and Channel 2 the local O & O in Los Angeles in the 70's.

My understanding was that 150 ohms was chosen back in the 40's as the audio standard impedance so that they could send audio farther down an audio cable than you can with 600 ohms.

This is true for balanced matching audio transmission systems. 150 ohms will allow a longer piece of copper before high frequency roll off as compared to 600 ohms.

The telephone company has been doing this since the beginning of audio transmissions over their network. The impedance between customer and the telephone drop is 600 ohms. The phone company transformers convert to 150 ohms through most of their transmission path and re convert at the customers end path back to 600 ohms.

Of course these days with analog transmission paths pretty much history as almost everything is now digitally encoded if not at the customer dmarc, then at the first CO, this is just a bit of historical trivia.

Most audio plants these days have moved away from balanced matching transmission systems to balanced bridging transmission systems which do not suffer the same high frequency rolloff problems that a matching system does. Most bridging transmission systems use 50 to 110 ohm transmission amps with the receiving bridging side at 2,000 to 20,000 ohms input depending on the equipment.

CBS, Can't Buy Standard also only allowed 3 colors for anything installed in their facilities. Black, White and LGBK (light grey baked enamel). Everything had to be repainted to match the corporate color standards.

You have to admit everything looked the same, no matter who made it.

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Reader Input

Subject: Power Point
From: Norine Fisher norfish@hotmail.com

Here's another viewpoint on PowerPoint presentations... They do tend to drive me crazy, but they are all the rage. I really think home slide shows of international travel are often better done.

http://www.thecontentwrangler.com/article/death_by_powerpoint_practical_advice_for_improving_presentations/

Norine

Order of the Iron Test Pattern

For those of you don't know, here's what the Order of the Iron Test Pattern (OITP) is all about:

Order of The Iron Test Pattern

Creed of The Order

Through snow and glitches, dropouts, ghosts and now cliff-effect, we survive - undaunted.

Dedicated to "hanging in" under all circumstances, we unsung heroes of the broadcast and cable industries are on the working end of the "show-must-go-on" button -- even if it means using our own finger in place of the fuse (ouch!).

Our association serves no purpose other than to recognize one another for what we are - ***survivors!***

The Order of the Iron Test Pattern will have their annual gathering and awards ceremonies during NAB 2007 this year in the ESE booth, C1839, in the upper part of the Central Hall at 4:30 PM on Tuesday, April 17th. In case you have a hot date, things should be over with by 5 PM. (Thanks to OITP General Brian Way of ESE).

The Sagacious Pixel, the somewhat *dubious* leader of this **august** group, is asking for any ideas on who to nominate for one of their most prestigious and also somewhat dubious awards to please submit them to awards@oitp.org no later than Saturday, March 31st. (You know the Iron This, the Iron That or the Iron Whatever award – you make it up.) Membership is free. Check out their website at; http://www.oitp.org

Parting Shots

By Larry Bloomfield

I have always said that we have the finest broadcast community in the world, be they from the commercial sector or otherwise; and I've said that of the FCC in their earlier days as well. Today, I would never include the FCC in this accolade. What was once a find group of engineers with the broadcast community's best interests at heart and in mind has evolved into an under-paid, under-staffed political football that should be disbanded in favor of an engineer-drive and run organization that doesn't try to change the laws of physics! Want to know how I really feel? ☺

I could take this off in so many different directions to prove my point, but I won't! Many of you already have your own issues with this body, so permit me to focus on the transition from analog television to digital.

Before I focus on this edition's rant, permit me to address the need to get rid of attorneys running the FCC and replace them with the majority of the commissioners being communications engineers who are guided by the legal community and not the other way around. It boggles the mind to see some of the NPRMs that have been issued that completely violate and ignore the laws of physics. Are the FCC engineers supposed to review this stuff? Yes! Do they? Probably. Does it make any difference? In this day and age, probably not. ☹

If I'm wrong, please let me know. Congress, in their desire to create new/additional sources of revenue, became aware that we could get more TV channels in the currently allocated band of frequencies with digital transmission and current technology than we can with analog.

Several things had to happen to make the transition to digital happen: each analog station had to have a companion channel they could operate on during this transition period – one for their legacy analog programming and a new and different one for their new digital programming. At the end of the transition period, now set for February 17, 2009 (the first drop dead date for analog was abandoned and pushed to this 2/17/09 date), broadcasters would have to give up or abandon one of the two frequencies they have been using, leaving only a digital signal on the air either on their old analog frequency (flash cut) or just abandon the legacy frequency in favor of the new digital frequency. Why? So the newly vacated frequencies or channels could be auctioned off to pay for one or more of congresses' boondoggles.

Education of the public to all this happening has been minimal, at best, and misinformation abounds. Don't bother to ask any of the salesmen at any of the major outlet stores as they are, for the most part clueless! If you think the answers to Leno's "Jay Walking" skit-questions are embarrassing, just ask anyone about this transition and you'll get a look akin to that of the priest in the confessional with Paris Hilton telling her story.

Despite efforts by the National Association of Broadcasters, a founding member of the DTV Transition Coalition, and others, efforts to inform and educate the public just don't seem to be making much headway or having much of an impact. If you have any say so at your television facility (or not), you should join forces with the DTV Transition Coalition to help get the word out. I joined!

The Department of Commerce has come up with the National Telecommunications and Information Administration or NTIA for short. Under the umbrella of this government agency is the Digital Television Transition and Public Safety Act of 2005. You can get as confused over the legalese as I was by visiting their webpage at: http://www.ntia.doc.gov/otiahome/dtv/index.html.

Seeing the obvious issues of some poor old lady in Elephant-breath, WY not being able to see "As The Stomach Turns," on her old analog TV after 2/17/09, and living on a limited income, with in this bureaucracy, funds have been allocated for as many as two coupons (worth $40 each) to "qualifying households" that can be used toward the purchase of converter boxes that would help ease this transition.

That all said, talk about your mixed messages to the public! Here's where the FCC, Congress and the rest of those people futzing with our industry in Washington, DC have really screwed up and royally with respect to all this DTV business and its transition!

So far, what I've said only applies to full power television stations: Low Power, Class A and Translators/Boosters (for sake of brevity, I'll lump these together and call them "translators & low power TV"), although given the opportunity to apply for a companion channel like their big brothers, are not governed by this 2/17/09 analog drop-dead date. In fact, as of this writing, there is no drop-dead for these television services delivering analog television.

Yes, the Dept. of Commerce has, through the NTIA, made funds available to help translators & low power TV facilities. One provides funds for digital to analog converts, much like the converter boxes "qualified households" will use after 2/17/09 to continue service in analog to the translators & low power TV broadcasters, perpetuating analog service long after 2/17/09. The other program provides funds for equipment to these translators & low power TV facilities so they may more easily make the transition to totally digital inputs and outputs.

What makes matters worse, when I called the folks at NTIA about these two grants for translators etc., I was told that even they didn't understand the wording of the laws governing them and they will need clarification. In the meantime, things are on hold.

Why should those of us, and yes, I do get my FREE – OVER THE AIR television from Eugene, OR via translators (www.w-l-t.org), be made to wait to receive all the enhancements that the switch to digital will bring with it?

Translators & low power TV is a major factor in many television markets. Ten states (only one being east of the Mississippi River) have over 300 translators & low power TV extending the range of their primary broadcast stations. Three of those ten states have over 600 translators & low power TV doing the job.

Since broadcasters base the cost of their advertising spots on the number of households they reach, this is a very important factor. I do know that our community here in Florence, OR comprises no less than 15 % of Eugene's viewing audience. While on the Taste of NAB Road Show, I was told that if it were not for the translators & low power TVs that serve the Albuquerque, NM, market, it would be around market #100 instead of #49 and I understand that over a quarter of a million viewers see television via translators & low power TV in El Paso, TX.

If our government wants to totally confuse the hundreds of thousands of folks who watch these over 7,327 translators & low power TV facilities, they've gotten off to a very good start! Why in God's name did they ever do such a foolish thing as not addressing in the same breath all television's transition? This total lack of consistency on this topic to an uninformed, uneducated; and even to those who have even a modicum of knowledge about the cutover to totally digital transmission, does nothing more than to completely compound and confuse them with these mixed signals. It would appear that if the government could come up with a more confusing way of making the transition to digital, they'd have laid it on us by now.

ENOUGH ALREADY!

Make one date for all aspects of the television service to transition to digital and abide by it. Is that too much to ask?

So finally: Whose fault is all of this anyway? Is it really the government? – those mindless bureaucrats with their attorneys who are ignorant of technology or is it corporate America with their high priced lobbyists jockeying for an advantage, who hardly ever consult their own technical folks for what will work and what won't? Then perhaps it's us – the engineers who are so overloaded with work that we don't have time to look at these things and bitch as loud as we can to stop the insanity.

As wishful as some of the thinking I've expressed here, do I expect any of this to change? – I would hope so, but it probably won't, so put on your seatbelts – we're in for one hell of a ride.

So What do you think?

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***Note**: Some of the material in this edition was gleaned from one or more of the following internet mailing lists: broadcast@radiolists.net, radio-tech@broadcast.net, opendtv@freelists.org, TV-tech@broadcast.net.*

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