



**Chapter 24, Inc.  
Madison, Wisconsin**

**Society of Broadcast Engineers**

**January 2004**

## Next Meeting:

**Thursday,  
January 15, 2004**

**Sound Devices  
Field Production  
Audio**

**Dutch Treat Dinner  
at 5:30 PM**

**at the Nitty Gritty  
223 N. Frances Street**

**Meeting and Program  
at 7:00 PM**

**WHA-TV/Vilas Hall  
821 University Ave.**

## In This Issue:

**Minutes ..... page 2**

**SBE Short Circuits ..... page 2**

**Amateur Radio News .... page 3**

**Localism Hearing ..... page 7**

**FCC Rulemakings ..... page 8**

### Video at 78 RPM!

*By Kevin Ruppert*

You'd probably think that the first television recordings were made on videotape, maybe by Ampex, RCA, or Sony. Well, guess again! The first television recordings were actually made on 78 RPM records! That's right, on good old 78s!

In 1926 the British television pioneer John Logie Baird devised a system to record and playback television pictures on disc which he called "Phonovision." The idea was initially not much more than a lab experiment, however. Although he released several press reports and aroused considerable public interest in the system, we know that he never publicly demonstrated pictures replayed from the Phonovision discs. As Baird was well aware of the publicity value of these demonstrations, and normally never failed to show the results of his work to the widest possible audience, we must assume that he was unable to reproduce pictures of sufficient quality from the system.

#### Mechanical Television

Remember that Baird's 1920s TV system was mechanical. It used spinning discs with holes drilled in them to scan the image and display it at the receiver. The standard of the Baird system was 30 lines scanned vertically (top to bottom) at a frame rate of 12.5 pictures per second. While he was experimenting with the system, Baird realized that the bandwidth of the system was small enough that he could record it on the state of the art audio medium of the time, the 78 RPM record! With some help from the British Columbia Graphophone Company (later to become part of EMI) Baird cut some discs using this system.

The two main problems Baird faced were poor recording quality and lack of synchronization. As we have mentioned in previous articles, 78s are known (continued on page 9)

## PDA is a Gadget Worth Owning

*By Vicki W. Kipp*

If you've attended any meetings lately, you may have noticed other attendees whipping out recipe card size appliances. Not just the status symbol toy of business executives anymore, Personal Data Assistants (better known as PDAs) are becoming a popular tool for all kinds of workers, students, and parents. PDAs range from personal organizers to industrial tools. When I switched from my baseball card size paper planner to a PDA, I felt like I had a calendar/phone book with super powers. (Figure 1) Not only can a PDA hold fantastic amounts of text data, but

it can also hold photos, and in some cases audio and video files.

#### Fundamentals

The best and worst thing about a PDA is that it requires electrical power to operate. While older PDAs ran on AAA batteries, newer PDAs have internal rechargeable batteries. Battery life isn't a problem if you're able to place your PDA in its sync/recharge cradle each night, but can be limiting if you run your PDA for more than a day without having a chance to recharge. The power limitation can be addressed by buying a disposable external PDA

battery, a portable recharge cable, or a car charger cable. Preserving battery life is the easiest way to manage power needs. You can set the time parameter for how long the PDA remains lit up when not in use before going into standby mode. You can stretch battery life by decreasing the brightness and contrast of your PDA's display.

Application hard buttons are the buttons at the bottom of the PDA that you can push, and are labeled with an icon of the application that they represent. Typical application hard buttons include calendar, address book,

(continued on page 4)

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## December Business Meeting Minutes

The SBE Chapter 24 Holiday Celebration Dinner was held on Wednesday, December 17 at the Timber Lodge Steak House in Madison, Wisconsin. We did not hold a business meeting. The holiday event was attended by 7 members and 3 guests. Fine fellowship and fare were enjoyed by all.

*Submitted by Vicki Kipp on behalf of Jim Magee*

## SBE Short Circuits – January 2004

*By John L. Poray, CAE  
SBE Executive Director*

### SBE SIGNAL WINS AWARD

The SBE Signal, the bi-monthly membership publication of the Society, recently was recognized by the Indiana Society of Association Executives (ISAE) as Indiana's best association-published newsletter. ISAE cited the Signal for its appearance, content and profitability, producing non-dues income to help offset the Society's expenses. Angel Bates, SBE's Membership Services Director, is responsible for the production and advertising sales of the Signal. Angel and John Poray were present to accept the award from ISAE at that organization's awards dinner held last month in Indianapolis.

### SBE EXECUTIVE COMMITTEE TO MEET IN TUCSON

The regular winter meeting of the SBE Executive Committee will be held Saturday, January 24 in Tucson, Arizona. The meeting will be held at the Doubletree Hotel at Reid Park. Members of SBE who live in Tucson or may be visiting the area are invited to attend the meeting. For more information, contact John Poray at the National Office.

### ENNES WORKSHOP PLANNED FOR NAB2004

SBE and the Ennes Educational Foundation Trust will once again present a special Ennes Workshop during the NAB spring convention in Las Vegas. Fred Baumgartner, Ennes Trustee, has organized this great educational event and will be the lead moderator. Assisting him will be Andrea Cummis of Oxygen Network and Bill Hayes of Iowa Public TV.

The program is titled, "It's an IT World. Converting Broadcast Operations to an Information Technology Platform." Watch for details of the program in the next issue of the SBE Signal and at the SBE web site, [www.sbe.org](http://www.sbe.org).

Attendees must be full-conference registrants to attend. SBE members receive a \$200 discount off of the NAB Non-member, full conference registration cost (the registration form with the discount will be available later in January of the SBE web site).

## FCC MAKES BROADCAST PLANT SECURITY RECOMMENDATIONS

By Tom Smith

The FCC's Media Security and Reliability Council (MSRC) adopted a list of 49 best practices for broadcasters to take to ensure security and continued operation in times of a national emergency.

The key recommendations include having appropriate physical security at their key facilities, have back-up power, stations with news operations should have robust and redundant methods of communicating with external news services and remote news teams, have the ability to access alternate telecommunication capabilities (access to cable headends, etc.), and have written disaster recovery plans with regular updates and yearly drills.

The FCC would like all media in a market to collaborate to increase their collective geographic diversity and create redundant interconnection systems to support emergency operations. The full text can be found at <http://www.fcc.gov/MSRC>. This release was issued on December 9, 2003.

From FCC Release ([www.fcc.gov](http://www.fcc.gov))

The schedule of EAS RWT and RMT times to be sent on Wisconsin Public Radio is listed on the web. It can be found at: [www.wpr.org/eas](http://www.wpr.org/eas)



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## AMATEUR RADIO NEWS

By Tom Weeden, WJ9H

- Amateur radio operators from Turkey are assisting in relief operations in the city of Bam, Iran, devastated by an earthquake December 26 that killed more than 20,000 people. Turkey Amateur Radio Club President Aziz Sasa, TA1E, reports that the Turkish Relief Team departed for Bam, 600 miles south of Tehran, from Istanbul December 27 aboard a military aircraft. Local communications will be carried out on 2-meter simplex with HF operation on 14.270 MHz during the day and on 7092 kHz or 3777 kHz during hours of darkness.

- The oldest working amateur radio satellite, AO-7, will mark its 30th year in space during 2004. The satellite was launched November 15, 1974, and it remained operational until 1981, when it went dark due to battery failure. It remained dormant—and largely forgotten—until it suddenly and unexpectedly sprang back to life in 2002. AO-7 is in a 1460 km orbit, and the Amateur Satellite Corporation-North America (AMSAT-NA) considers the satellite “semi-operational.” AO-7 is running solely off its solar panels, so it will only work when in sunlight.

- Two organizations have filed comments with the FCC about potential interference from and to Broadband over Power Line (BPL) systems. The nonprofit Disaster Preparedness and Emergency Response Association (DERA) is calling on the FCC to require impartial BPL field testing as well as additional public comment and full and open public hearings. DERA said proposed BPL systems already been shown to “actually cause harmful interference to licensed radio services.”

The Amateur Radio Research and Development Corporation (AMRAD) filed additional test data with the FCC to support its preliminary comments suggesting that BPL systems are susceptible to interference from even modest amateur radio HF signals. AMRAD found that at a distance of just over one-half mile, data transfer ceased in the face of a 100-watt signal on 3980 kHz from a mobile transmitter. Adjacent to the test property in Potomac, Maryland, AMRAD said data transfer ceased in all but one instance at a transmitter power of just 4 W in the BPL operating band of from 4 to 21 MHz.

The Washington, DC, suburb of Manassas, Virginia, indicates it will go ahead with plans to inaugurate BPL service in four subdivisions of 2100 homes this month. However, the city council in Lompoc, California—a community of 42,000—opted December 16 to go with a wireless and fiber optic cable-based broadband network, rejecting BPL and other possible options.

(Excerpts from the [www.arrl.org](http://www.arrl.org) web site)

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## PDA is a Gadget Worth Owning (continued from page 1)

“To Do” list, and Notepad applications. You can customize the application hard buttons to provide a different shortcut than the default application stamped on the button. For example, if you play Solitaire more often than you write memos, you could reassign the Memo hard button to Solitaire.

All PDAs have a scroll up and scroll down button. Newer PDAs come equipped with a 5-way navigation scroll bar layout that allows you to conveniently move up, down, left, or right, or select “Enter” by pushing the center. Older PDAs require you to tap the left or right button on the screen with the stylus for horizontal mobility.

Silk-screened soft buttons are located around the perimeter of a rectangular area at the bottom of the PDA screen. They only function when a PDA is turned on. Silk-screened buttons need to be clicked on with the stylus to function. There are also silk-screened buttons for the alphabet keyboard and a numeric keyboard. When you tap the ABC button, an alphabet keyboard pops up on the screen. A tap on the 123 button brings up the number and symbol keypads. You can reassign other programs to the silk-screened buttons, as with the application hard buttons.

The rectangular area bordered by the silkscreen buttons is called the Graffiti area. To use graffiti, you must position your stylus on the ABC half or the 123 half of the graffiti area to indicate whether you are writing a letter or number. When you make strokes on the graffiti area with your stylus, the PDA recognizes this mark as a short cut for a particular character and prints the corresponding character on the PDA screen. Learning the language of graffiti strokes takes some time but those who become efficient at writing graffiti claim

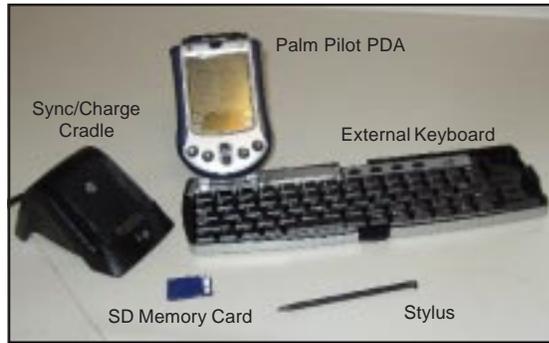


Figure 1. Palm PDA with accessories.

to achieve very fast data entry speeds. If you don't enter a graffiti stroke accurately, you may not see any character appear, or you may get a typo. Some people love Graffiti and its enhanced version, Graffiti 2.0, but I find it quicker to tap the desired character on the on-screen keyboard or my PDA-compatible external keyboard.

Although PDAs are very stable compared to a typical computer, PDAs can become locked up. This is most likely to happen if you've loaded new software that conflicts with the PDA operating system (OS) or configuration. In my opinion, freeware PDA applications are more likely to lock up your PDA than well-established purchased applications, due to limited investment in debugging the free products. If your PDA becomes locked up, you may notice that it displays the OS Splash Screen and it locks up. Rebooting the PDA may not fix the problem since the PDA will face the same conflict when it completes the restart process. In the event of a serious lockup or “Fatal error”, a hard reset may be required. The PDA will return to the factory default settings. If you then sync the PDA with the desktop syncing software on your computer, you can restore the PDA to the its condition the last time you synced. You will lose data that changed since the previous sync.

Set the PDA in its cradle and connect the cradle to your computer via a USB port to sync.

### Brands

PalmPilot is the best known brand of PDA, but more companies are entering the PDA market all the time. PDAs that run the Palm OS include PalmPilot, the Sony Clie,

and the recently discontinued Handspring Visor. PocketPCs, sold by Toshiba, HP, and Compaq, run a Windows OS.

The number of competing brands in the PDA market just decreased by one. The Handspring Visor was conceived in 1999 by the parents of the original PalmPilot: Jeff Hawkins, Ed Colligan, and Donna Dubinsky. The Visor is similar to the PalmPilot and uses the same software. Handspring also sold the Trio PDA. In 2003, Palm, Inc. acquired Handspring. With this business deal, Colligan and Dubinsky returned to their original company, Palm, Inc. The reunion of Palm, Inc. and Handspring resulted in a new company name of PalmOne, Inc. PalmOne, Inc is selling three subbrands: Zire for consumer and multimedia use, Tungsten for mobile business, and the Treo brand PDA smartphone.

### Operating Systems

Just like a computer, PDAs come loaded with an operating system (OS). There are two main operating systems in the PDA world. Resembling the familiar Macintosh vs. Windows competition, a PDA has either a Palm or Windows OS.

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## PDA is a Gadget Worth Owning (continued)

The Palm OS is fairly intuitive and easy to master. Settings are accessed and changed by tapping the drop down menu silk-screened button. When I sync my PalmPilot with my Windows computer, I've found the Palm Desktop software to be compatible. I've not had any problems loading MS-Word or MS-Excel files on my PalmPilot.

Microsoft WinCE OS is loaded on most Pocket PCs sold in the past few years. This pint-sized version of Windows for desktop has a start button, some familiar menus, and the hourglass to indicate when the system is running slow. New PocketPCs come loaded with the Windows MS Pocket PC 2003 OS.

PDA software must be purchased in the version that corresponds to your PDA operating system. In my observation, more Palm-compatible software is available than PocketPC Windows-compatible software. I've also noticed that some applications are developed for the Palm OS first, and then converted to a Pocket PC version.

### Beam on!

Much like the hot holiday toy of 1999 –the Furby– a PDA is able to communicate with other PDAs with an infrared (IR) beam. I can beam my electronic business card, files, and programs to other PDAs, if the PDA's owner has their IR port turned on to receive. With the purchase of remote control software, a PDA can be trained to use its IR port to remotely control A/V devices.

### PDA Recreation

Besides being useful for organizational tasks, a PDA can be a source of fun and entertainment.

If you enjoy playing computer games, you will have plenty of choices. There are free games available for download such as Blackjack, Gammon, Hardball, MineHunt, Puzzle, Solitaire, and SubHunt. You can purchase popular games such as EverQuest for PocketPC, and PDAPacMan for your PDA. PDA games tend to be mentally challenging, as opposed to the reflex

challenging sound and graphic-intensive video games played on computers.

Easter eggs, whimsical effects intentionally hidden in software by the developers, are included in some PDA OSs. In fact, I can make a drawing of an Easter egg, inchworm, taxi, photo Palm OS developers Bob Haitiani and Chris Raff, and the DOS error message "Not ready reading drive C Abort, Retry, Fail?" appear on my PalmPilot. It is worth notice that the PalmPilot does not have a C drive. Easter Eggs are also present in HandSpring and Pocket PC PDAs.

### Accessories

Purchasing a handheld is just the beginning of your PDA expenditures. Once you become comfortable with your PDA, you may be tempted by the rich assortment of software and hardware add-ons available for our handheld. The tricked-out PDA should include a case, screen protector, external keyboard, deluxe stylus, cables, memory card, printer, modem, wireless area network card, and PDA-compatible clothing for the PDA owner.

While I've found the plastic stylus that came with my PDA perfectly adequate, there are plenty of styli to choose from if you desire something fancier. There are metal styli, combination writing pen/stylus utensils, and even a Belkin stylus that contains a laser pointer and a bright LED lamp.

Should you desire to buy a PDA case for protection, function, or fashion, you will have many choices. Cases for various PDA models are available in leather soft cases, or metal or plastic hard cases. For extreme PDA users, Otterbox makes airtight, waterproof, crushproof cases that float in water, can be fastened to a lanyard, and can be attached to a vehicle exterior with a magnet rated for 85 pounds. Generic model cases are cheaper, but can be a hassle to use because the case blocks your PDA's sync/charge, external memory, and IR ports so you have to remove the case frequently.

It is smart to purchase screen protectors for your PDA to protect the screen from scratches and the risk of using a pen tip instead of a stylus to select an icon. Resembling a combination of Scotch™ tape and Saran™ wrap, screen protectors are self-healing and can be used for months at a time.

With the exception of the Palm Tungsten C, most PDAs do not include a touchable keyboard. All PDAs come equipped with the capability to read Graffiti, on-screen keyboards that can be summoned with a stylus tap, or the option of typing data on a computer and syncing the data to the PDA. However, if you wish to enter any significant amount of text to your PDA while away from a computer, a PDA keyboard is a nice thing to have. Keyboard choices range from near full-size keyboards to thumb boards. If you buy a keyboard, you need to ensure that it is compatible with your particular model of PDA. Keyboards connect into your PDA's sync port or by sending an IR signal to your IR port.

For those who spend an extensive amount of time in their vehicle or those who use their GPS-enabled PDAs to navigate, powered PDA dashboard mounts are available to charge your PDA battery while giving you convenient access.

Although most new PDAs come with 8 – 64 MB of RAM, memory gets used up quickly, especially if you add software, and audio or graphic files. Memory can be supplemented by adding a memory to the PDA expansion slot. PalmPilots accept a Secure Digital (SD) memory card while Pocket PCs use either a Compact Flash (CF) card or a Memory Stick. I recommend buying a PDA based on how much internal memory it has. Internal memory is preferable to external expansion slot memory because some programs and file types cannot be stored on external memory. The driver for the external memory that I'm using on my PDA leaves much to be desired. I must switch between using the internal memory and external memory

(continued on page 6)

## PDA is a Gadget Worth Owning (continued)

whenever I want to access something stored on my memory card. This very slow switch is finite- you can use internal or external memory, but not at the same time. Applications on the internal RAM load much faster than applications on the external add-on memory. Launcher software can help a PDA's external memory interact more seamlessly with internal RAM, but can make the PDA less stable.

Although most PDAs are sold with a bulky cradle that both recharges the PDA and lets it connect to a computer for syncing, it might be worth investing in a car charger and/or a streamlined USB charge/sync cable for when you travel.

If you need to print from your PDA, you can use a PDA printer to print receipt size documents or you can attach a PDA print server with an IR receiver to an input port of a traditional printer. The print server receives an IR print command from the PDA's IR port, and submits the print request to the printer.

Newer PDAs may come equipped with 802.11B Wi-Fi and/or Bluetooth wireless communications capability. Some new PDAs can be made Wi-Fi or Bluetooth capable if you purchase the respective wireless adapter for the expansion slot. There are Wi-Fi hot spots in Madison at the UW, MATC, and some public venues. Some older PDAs can connect using dial up networking with POTS or a cellular phone if you buy an external PDA modem. An external phone dialer device allows PDA users to have their PDAs dial the telephone for them.

Most PDAs can be equipped as a navigation tool once outfitted with direction-finding software and connected to a GPS.

Now more than ever, there are many electronic devices to carry with us. It is not uncommon for people to carry a PDA, cell phone, digital camera, mp3 player, GPS, ham radio, USB flash drive, and other accessories on our person. So many devices, so few pockets... Two competing products, SCOTTeVEST (scottevest.com) and Band-O-Gear (Band-O-Gear.com) can

help us to distribute our devices more comfortably. SCOTTeVEST's (Figure 2) new Version Three.0 clothing contains a Personal Area Network (PAN) by Technology Enabled Clothing, LLC within the garment to connect all electrical devices that you're storing in the 16-22 pockets of your SCOTTeVEST. Modeled after the artillery bandolier for bullets, the Band-O-Gear has five device-sized pockets and a two-liter insulated hydration reservoir with a drink tube. (Figure 3)

### Applications

There are more than a hundred software titles sold for PDAs. Typically, PDA users purchase and download an application from a web site, unzip the application, and then set the new application to be loaded on the PDA the next time the PDA is synced. Adding a new application to a PDA can cause the PDA to lock up, develop a fatal error, or lose its ability to sync with the computer.

I was intrigued by the concept of eBooks, an application that allows you to purchase and load entire books on your PDA, so I bought a recent release fiction book for my PDA. Although good in theory, reading a book on my PDA has not been an enjoyable practice. The great part of eBooks is that I can carry a lengthy novel around with me without having to carry a heavy hardcover book. Also, the free eReader software on my PDA sets a bookmark whenever I finish a reading session. It's also helpful to be able to write notes

about the text and mark various points in the text, which the eReader saves for me. The drawbacks of an eBook are that it's not real comfortable on the eyes, I can't loan the book to a friend when I'm done, and the time of day that I read is the same time that I normally place my PDA on its cradle for battery charging.

To date, no PDA viruses have been reported. However, that hasn't stopped Symantec from developing AntiVirus software for the PDA. Whether or not it is necessary to purchase AntiVirus software is debatable. Since there hasn't been a PDA virus yet, some people feel that AntiVirus software is unnecessary. Other believe that buying AntiVirus software encourages hackers to develop a PDA virus to defeat the PDA AntiVirus software.

### Broadcast Specific

Acknowledging that many broadcast engineers carry PDAs, the NAB staff created a NAB 2003 "FASTtrack" Exhibit Map that attendees could download to their Palm OS PDA.

The Rohde & Schwarz EFA-NET Television Receiver is a Sharp PDA that allows you to monitor your transmitter parameters. You can view an echo plot, 3-D I histogram, VSB constellation, RF amplitude and group delay response, CCDF envelope, pilot phase noise, and RF spectrum. In a similar vein, several transmitters have the ability to send readings to a PDA. This feature is not widely used because of security concerns.

Developers Marty Martin and Josef Hallermeier have developed a digital  
(continued on next page)



**Figure 2.** An x-Ray view of the SCOTTeVEST jacket reveals device pockets connected to form a PAN.



**Figure 3.** The Band-O-Gear holds five devices and two liters of liquid including ice cubes.

## PDA is a Gadget Worth Owning (conclusion)

audio recorder for the Pocket PC PDA that lets you use your Pocket PC as a Digital Audio Workstation (DAW). This useful application, called Pocketrec, allows you to record at various sample rates. In fact, you can record broadcast quality audio if you record at the 16 bit, 44.1 kHz linear rate. The microphone input level is -44 dB, with 0.25% THD and 47 kHz frequency response.

I'm disappointed that the Pocketrec has been developed only for Pocket PC PDAs, not for PalmOne PDAs, but the developers have their reasons. They feel that the Palm processor is too slow, the Palm PDA doesn't have an equivalent desktop OS such as Pocket PC does with Windows, and the Palm PDA doesn't have audio input and output jacks.

Pocketrec is Windows-based, but unique enough that it requires 600,000 lines of code. Pocketrec works on the MS Pocket PC 2002 and Win CE 2003 OS. Pocketrec has certified that their product will work on Compaq and HP iPAQ 5400 and 5500 series PDAs. Harris Corporation, the exclusive North American reseller of Pocketrec, is now shipping the HP iPAQ 5550 PDA. You can purchase the Pocketrec software on an iPAQ 5500 series PDA, nicely equipped with accessories, for about \$1,500. If you already own one of the Pocket PCs just listed, you can purchase the purchase the software and accessories from Harris Corporation to add to your existing PDA. Pocketrec software takes up 600 kB of memory on your PDA. The Pocketrec PDA contains all standard PDA features. You can even load additional unrelated software and data on the Pocketrec PDA, but must realize that any third party software could negatively impact other applications on your PDA.

Purchasing your own external

microphone is recommended over using the microphone built in to the PDA. The PDA uses a microphone-to-XLR adapter cable for audio in, and has a headphone level audio output for monitoring. The PDA will display warnings if its internal battery is getting low. With the internal PDA battery, you get three hours of Pocketrec use with the PDA screen on or seven hours of use with the screen off.

Pocketrec records audio at the selected sample rate, which ranges from 8–48 kHz. Users can storyboard on the Pocketrec. Pocketrec allows users to set in-points and out-points for editing on the Pocket PC. Audio fade ins and fade outs can be edited. Pocketrec uses non-destructive editing, meaning that the original file is kept until it is manually deleted. Users can label Pocketrec content with industry standard metadata. Pocketrec records audio files to an external memory module, such as a CF or SD card. Recording 16-bit audio at 44.1 kHz, you can store 2 hours and 57 minutes of audio on a 1 GB CF card.

Pocketrec uses on-screen PDA buttons that are large enough to be selected with a finger instead of requiring a stylus. All critical functions have a button. The thoughtful design of Pocketrec spares users the hassle of using a stylus to access a command within a drop down menu.

When a user finishes editing a story, all elements of the story are packaged by Pocketrec into a single container for deliver. This Windows-compatible file can be sent to the station in one of three ways: via the Internet, remote access, or by placing the PDA in the station docking cradle and syncing. You can do wired file transfer to the station via a dial up modem or wireless access over the Internet. At the same time, you

have the capability to send email from the PDA.

### Conclusion

PDAs are becoming a ubiquitous life tool not only because they are helpful for everyday life tasks, but also useful in our work as broadcast engineers. If I had to choose one electronic device to carry in my pocket, it would be a PDA.

References: Tom Harle and John Stevens of Harris Corporation; Broadcast Communications Division; Handheld Computing magazine, and Pocket PC magazine.

## FCC ANNOUNCES SECOND LOCALISM HEARING

By Tom Smith

The FCC has set the date for its second hearing on localism in broadcasting. The hearing will be held in the City Council Chamber at the Municipal Plaza Building in San Antonio, TX on Wednesday, January 28, 2004. It will be held from 5:30-9:30 PM. Chairman Michael Powell will preside and Commissioners Kathleen Abernathy, Michael Copps and Jonathan Adelstein will attend. This hearing was to be held last December, but was delayed due to other conflicts.

Information is available at [www.fcc.gov/localism](http://www.fcc.gov/localism). This announcement was made on December 11, 2003. The FCC also released the transcript of the first localism hearing in Charlotte, NC last October. It is available on the Localism website.

From FCC Release ([www.fcc.gov](http://www.fcc.gov))



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 **FCC Rulemakings**

Compiled by Tom Smith

**PROPOSED RULEMAKINGS**

**ET Docket No. 03-108  
Facilitating Opportunities For  
Flexible, Efficient, and Reliable  
Spectrum Use Employing  
Cognitive Radio Technologies**

**ET Docket No. 00-47  
Authorization and Use of Software  
Defined Radios**

The FCC has released a Notice of Proposed Rulemaking concerning the use of cognitive or "smart" radio systems. This are systems in which the receiver will search and listen for an open spot in a radio band to transmit on. These radios could also use a GPS locator to determine the unit location and then look up a database to determine other users and their operating frequency, and then select an open frequency. Similar listening technology is used in Wi-Fi data links, some cordless phones, and some commercial mobile wireless services.

The Commission wishes to extend this technology to unlicensed devices that would share spectrum with certain licensed users, along with other unlicensed users.

There is a second Notice which seeks comment on software defined radios and their use in aiding interoperability in the public service bands. These are highly frequency agile radios in which software could be loaded at anytime to change the frequency, modulation type, and bandwidth that the receiver and transmitter operate on.

This action was taken on December 17, 2003 and the press release was

issued on that date, as were comments by several of the Commissioners.

**FINAL RULEMAKING**

**WT Docket No. 01-90  
In re: Amendment of the  
Commission's Rules Regarding  
Dedicated Short-Range  
Communications Services in The  
5.850-5.925 GHz Band;**

**ET Docket No. 98-95, RM-9096  
And Amendment of Parts 2 and 90  
of the Commission's Rules to  
Allocate the 5.850-5.925 GHz Band  
to the Mobile Service For  
Dedicated Short Range  
Communications of Intelligent  
Transportation Services**

The Commission adopted licensing and service rules for the 5.850-5.925 GHz band. This band is to be used for Dedicated Short-Range Communications (DSRC) in the Intelligent Transportation Systems (ITS) Radio Service. The basic technical rules were adopted for this service in 1999. In July of 2002, an advisory committee of the Department of Transportation made its recommendations to the FCC, and the Commission started a proceeding to establish the final rules in November of 2002. They decided at that time that the band would be used for public safety.

The DSRC systems would allow for vehicles traveling at high speed to have short-range communications with roadside units and other vehicles. Applications of DSRC systems would allow for work zone and traffic condition warnings, intersection collision avoidance, electronic toll collection, and electronic payment for gas, fast food, and parking.

There are a number of specifics concerning the new rules that were issued in the press release. The specifics include the following: the band would be used mainly for public safety users with limited non-public safety uses, would have open eligibility for licensing to encourage intensive use of the band along with the development of new services, would adopt the standards developed by the American Society for Testing and Materials and the Federal Highway Administration, and would adopt non-exclusive geographic-area licenses with registration of site and band segment. There are coordination requirements in which coordination would be done through the National Telecommunications and Information Administration with resolution of prior coordination deferred between DSRC users and Fixed Satellite Systems until an agreement is reached.

This action was taken on December 17, 2003 with the press release issued the same day.

From FCC Press Releases  
(www.fcc.gov)

**SBE CHAPTER OF THE  
AIR:**

HamNet meets the second Sunday of each month at 0000 GMT on 14.205 MHz. Hal Hostetler WA7BGX is the Control Station. Any amateur operator is welcome and encouraged to participate.

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## Video at 78 RPM! (continued from page 1)

for their hiss and crackle. When used to record video, the result is a very noisy picture covered with a pattern of moving spots. In addition, the Phonovision system had no synchronizing information and relied on mechanical synchronization to replay the picture. To achieve this, the scanning disc of the receiver and phonograph turntable had to be linked together and driven from the same motor. Once the record was cut and removed from the turntable, it was impossible to replace it in exactly the same position. This meant that it was only possible to replay the record on the same equipment that the recording was made on. Given these obstacles, experts say, chances are that Baird was never able to reproduce the discs with enough clarity for public demonstration.

### Expert help needed

Over the last 30 years there have been several attempts to recover pictures from the Phonovision records by several parties, including the BBC and British recording expert Don McLean. The National Museum of Photography, Film and Television of Britain undertook a project in 1996 to make archive copies of the six known surviving records, all of which were in a fragile state. Over a period of several days, the records were carefully transcribed and recorded on CD for archive purposes.

These digital recordings were then processed by McLean to produce stable images. Don is the world's leading expert on Phonovision. During the last 15 years he has developed sophisticated computer programs to recover the Phonovision images that Baird never saw. The program calculated the start and end of each line and frame to produce stable images

in much the same way a frame synchronizer does. The line lengths were then made equal to overcome the wow and flutter of the recording system. Distortions in the signal such as poor low frequency response, phase errors, power supply hum, cutter head resonance, surface noise and scratches were all reduced by the digital filtering.

Most of these cleaning up techniques were not possible by any analog means and had to wait until the later part of the twentieth century for McLean's efforts to unlock them from the discs!

You can see examples of the images recovered by McLean on his web site [www.tvdawn.com/homepage.htm](http://www.tvdawn.com/homepage.htm).

Thanks to the National Museum of Photography, Film & Television (of Britain) for permission to reprint part of their web site for the information on Phonovision. ([www.nmpft.org.uk](http://www.nmpft.org.uk))

### Happy Birthday B-sides

This is the 100<sup>th</sup> anniversary of the "double-faced sound record". Patented in January of 1904 by Ademor Petit, who proudly claimed that the two sides with opposing grooves "yield better sound quality than earlier one sided disks and offer twice as much music."

Another source used for information in this article was *Smithsonian Magazine*, January 2004.

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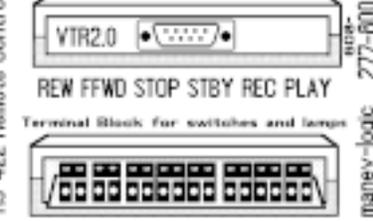


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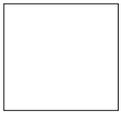
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**FIRST CLASS MAIL**

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 Thanks to Leonard Charles for his work on the Chapter 24 WWW page.

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# JANUARY MEETING and PROGRAM



## Society of Broadcast Engineers CHAPTER 24 MADISON, WISCONSIN Thursday, January 15, 2004

### Sound Devices – Field Production Audio

Jon Tatoes from Sound Devices will discuss new technology and best practices for field production audio. Topics covered will include how to vastly improve production audio, new products for field production, and the transition to digital ENG.

Dutch Treat Dinner  
at 5:30 PM  
at the Nitty Gritty Restaraunt and Bar  
223 N. Frances Street

Meeting and Program  
at 7:00 PM  
WHA-TV studios/Vilas Hall  
821 University Avenue

Paid parking and meters are available at Granger Hall (across from Vilas Hall); metered parking by the University Square and in the Lot 46 ramp; paid parking in the Lake Street ramp. Enter WHA by the corner of Park Street and University Avenue, take the stairs at the right of the garage doors, then follow the signs.

**Visitors and guests are welcome at all of our SBE meetings!**

#### 2004 UPCOMING MEETING/PROGRAM DATES:

| <u>Day</u> | <u>Date</u>       | <u>Program</u>     |
|------------|-------------------|--------------------|
| Tuesday    | February 17, 2004 | T.B.D./Nominations |
| Wednesday  | March 17, 2004    | T.B.D./Nominations |
| Thursday   | April 15, 2004    | Elections          |

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