

macCompanion

YOUR GUIDE TO ALL THINGS MACINTOSH

Electromagnetic Interference and Radiation Emission



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Our special thanks to all those who have allowed us to review their products!
In addition, thanks to you, our readers, who make this effort all possible.

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Columns



Letter from the CEO

Multitasking Mind or Scatterbrained?

By Robert L Pritchett

Creatives apparently are mostly left-handed

http://www.anythingleft-handed.co.uk/lefty_research.html and have an innate need to be actively doing things. I'd at least like to believe that. I have always had a mind that goes in a thousand directions and I find it difficult to meditate on just one thing for very long. My synapses keep firing. Apparently I am not unique.

Do you remember the Batman-like utility geekbelt that had all the latest communication gadgets attached? It was endemic of constant-connectedness. I personally never went that far.

Sandra Blakeslee wrote back in July 2001, *Multitasking drains brain* in the *New York Times News Service* <http://www.ccbi.cmu.edu/news/SanDiegoUnionTribune-dualtask.html> showing that magnetic resonance imaging indicating that the human brain has a finite amount of space for tasks requiring attention. I can relate!

Walter Kern wrote a comical piece, *The Autumn of Multitaskers* in *The Atlantic Wire* back in November of 2007 <http://www.theatlantic.com/200711/multitasking> stating that multitasking is dumbing us down and driving us crazy. Only it is true. I'm feeling a bit scatterbrained. <http://thesaurus.reference.com/browse/scatterbrained>

Sanders Keinfeld tripped in with *The Multitasking Mind* over on *O'Reilly* back in February 2008 <http://blogs.oreilly.com/headfirst/2008/02/the-multitasking-mind.html> and Aaron the ITGroundhog, commented that he was a serial multitasker. Natch.

Constance Holden wrote *Multitasking Muddles the Mind?* in *ScienceNow* (August 2009) <http://news.sciencemag.org/sciencenow/2009/08/25-02.html> and concluded that it may not necessarily be a bad thing, but those who are heavy multitaskers *think* they are good at it, when in fact, that may not be the case. I've found as I get older I have to cut back on trying to do too many things at once. However, it seems that the younger generations have been born into it with short attention span training via Sesame Street, multiple social networking activities online, handheld electronics i.e., smart phones and texting, eMailing, blogging, listening to music, etc.

Naomi Kenner and Russell Poldrack picked up on the theme by publishing their findings in *Portrait of a Multitasking Mind* in *Scientific American* (December 2009) <http://www.scientificamerican.com/article.cfm?id=multitasking-mind> They called the conditioned kids, “Generation M2” for Media, because they are spending more time with computers, Internet, video games, and less time on TV, print and music. The Henry J. Kaiser Family Foundation published their report in January 2010 on *Generation M2: Media in the Lives of 8-to 18 Year –Olds* <http://www.kff.org/entmedia/mh012010pkg.cfm> stating that they pack in nearly 11 hours of media content into 7.5 hours.

Is it any wonder we see a climb in so-called Attention Deficit Syndrome? Are we prone to being reactive instead of proactive? Do we suffer from lack of self-control? Are we easily distracted from tasks at hand? Can you live without the electronics and feeling it is so important to be constantly connected? What if the power was turned off? Could you live with yourself?

This month we look deeply into electronic interference in our lives and how it affects our physiology. There may be something to that noddin’ noggin effect after all! We really are being overcommitted, overworked and inundated with information. Being scatterbrained may actually be a good trait of highly imaginative people. I’d like to think so... http://www.livescience.com/health/051123_thought_bouncer.html

Sincerely,

Robert L. Pritchett
Nodding Nogginness Expert



According to Hoyle...

C++0x Part 6: Final Thoughts

March 2010

by Jonathan Hoyle

jhoyle@maccompanion.com

<http://www.jonhoyle.com>

This month we conclude our series on the upcoming changes in the C++ language (known as C++0x). For those who have missed the previous installments, feel free to visit these links:

- Part 1

<http://www.maccompanion.com/macc/archives/October2009/Columns/AccordingtoHoyle.htm>

- Part 2

<http://www.maccompanion.com/macc/archives/November2009/Columns/AccordingtoHoyle.htm>

- Part 3

<http://www.maccompanion.com/macc/archives/December2009/Columns/AccordingtoHoyle.htm>

- Part 4

<http://www.maccompanion.com/macc/archives/January2010/Columns/AccordingtoHoyle.htm>

- Part 5

<http://www.maccompanion.com/macc/archives/February2010/Columns/AccordingtoHoyle.htm>

In these previous articles, we have discussed some of the technical details for these changes and some of the pros and cons for them. This month, I want to focus on where the C++0x draft currently stands, and what it means for the future of C++.

Where We Are Now

The original ANSI C++ specification was ratified in 1998, although the 1997 draft was fairly complete. Even before that however, most C++ compiler vendors were continually trying to keep up with the latest versions of the specification draft, marketing their compliance with the draft as it stood. You may recall that *Metrowerks CodeWarrior* at the time was being released four times a year, with C++ improvements each quarter. Despite Microsoft's penchant for dismissing industry standards, even *Visual C++* continued to be improved during this period. When the spec went final, most vendors - and consumers - were already for it.

(Although scandalously, it took Microsoft until Visual Studio 2005 before their C++ tools were finally ANSI/ISO compliant.) Even the last minute surprising inclusion of the Standard Template Library (STL)

http://en.wikipedia.org/wiki/Standard_Template_Library did not hold up for long the final ratification of the standard.

Fast forward 10 years, and it is the rare software developer who has even heard that there is a new specification in the making. The C++0x initiative began in 2003, being named such since it was unknown when in 200x this new standard would be finalized (presuming C++09 being the worst case scenario). Well, here we are in early 2010, and even with the most optimistic of assumptions, we will not see it ratified prior to the end of 2011 (more likely 2012 or 2013).

What Happened ???

I think that the ISO committee has been affected too much by both *feature creep* [http://en.wikipedia.org/wiki/Feature_creep] as well as *scope creep* http://en.wikipedia.org/wiki/Scope_creep . In attempting to keep C++ comparable with newer languages, the committee has entertained a number of changes that are just not appropriate for C++. And even with features that are theoretically good ideas, some of the implementations (designed by committee) were just syntactically awful. Case in Point: Concepts [http://en.wikipedia.org/wiki/Concepts_\(C%2B%2B\)](http://en.wikipedia.org/wiki/Concepts_(C%2B%2B)). The idea with C++ Concepts is to help limit the range of types in a template class (a laudable goal for simplification). This would be great. However, I found the syntax that was proposed simply awful. It was verbose and clunky, and I can't imagine anyone really using it. At the Frankfurt meeting of the standards committee last July, Concepts was finally dropped from C++0x (to which I said "Thank God!").

The only "big" feature that (in my opinion) should have been tackled by the C++0x committee was Garbage Collection [http://en.wikipedia.org/wiki/Garbage_collection_\(computer_science\)](http://en.wikipedia.org/wiki/Garbage_collection_(computer_science)), as this is sorely lacking in C++, and found in all of the newer languages. C++'s defect in not having it has been one of the chief reasons that software developers have jumped to other languages, such as C# and Java. Microsoft has incorporated Garbage Collection in its own C++ language variant called C++/CLI <http://en.wikipedia.org/wiki/C%2B%2B/CLI> (although did so in its usually clumsy way). I had hoped that the ISO committee could have done a better job, but they instead dropped it. Sigh.

And as the committee spins its wheels, delays just keep pushing out the ratification date. When I first wrote about C++0x in a column exactly three years ago <http://www.macompanion.com/macc/archives/March2007/Columns/AccordingtoHoyle.htm> , the committee timeline was expected to have the draft completed by the end of 2007, the general review in 2008, and ratification in 2009.

Today, the timeline reads exactly the same with the dates moved up exactly three years: the draft completed by the end of 2010, the general review in 2011, and ratification in 2012. And there's no guarantee that this won't slip yet another year.

To see an online presentation of C++0x, got to:

<http://www.jonhoyle.com/Presentations/ansiupdate/>. Note that this presentation was written in mid-2007, and some of the information contained therein is no longer operative (such as the timeline and the inclusion of Concepts).

Conclusion

The obvious question remains: What value is there in updating C++ in today's world? After all, Apple is pushing its developers onto Objective-C whilst Microsoft is pushing theirs to C#. Aside from the Unix/Linux community (and many of them are either old C programmers, or skipped C++ completely and jumped to Java), is it even useful to have a new C++ specification? Well yes, it is very useful. Despite the missed opportunities of Garbage Collecting, an updated specification is needed to keep C++ fresh and alive today, moving into the new decade of the 2010's. The changes in the language will make C++ both easier and more powerful than it ever was before. Longtime C++ developers may not universally embrace every change coming down the pike, but they will certainly take advantage of some of them, even most of them. It now remains to the ISO C++0x committee members to buckle down and focus at the task at hand to deliver this much needed update.

To see a list of all the According to Hoyle columns, visit:

<http://www.jonhoyle.com/macompanion>



Electromagnetic Interference and Radiation Emissions: Cell phones, Apple Computers and Tinfoil Hats

By Robert L. Pritchett

With all the things to worry about, this is probably the least of your worries, but this is important, in light of recent revelations regarding electronic things that go bump in the night.

Personally, as far as I know, I do not suffer from electromagnetic over-sensitivity. However, I have been very familiar with “dirty power” (non-political) and its consequences for years. And yes, I do have a Ham Radio License. However, I do *not* live inside either a grounded Faraday cage or use an anechoic chamber <http://www.faradaycages.com> or wear an Aluminum Foil Deflector Beanie <http://zapatopi.net/afdb>, but hopefully you will find that my research so far, is well-grounded (pun intended).

I did however once own and use an electric lawnmower. This wasn't it ;^)
http://www.metacafe.com/watch/3388942/runaway_mower/

Another aspect to look at is security. Think “Tempest” and “Teapot” and “compromising emanations”. If it has an antenna, it is not secure.

What I have found on the Apple Discussion

<http://discussions.apple.com/thread.jspa?threadID=2329390&tstart=0> and Ars Technica <http://episteme.arstechnica.com/eve/forums/a/tpc/f/8300945231/m/189005133041> Forums is a nearly universal dismissal of this topic as even being an issue. The majority of the participants seem to assume this all disappeared with the advent of LCD displays. The responses to my requests so far have been, shall I say, underwhelmingly funny. I think it behooves us to be safer than sorrier. But wouldn't it be nice if we had some actual data on which to base our concerns?

We are discussing two areas; Electromagnetic Radiation (low frequency interference through electromagnetism) and Radio Frequency Interference (higher frequencies from electrical sources).

Electric Fields

Electric fields arise from voltage.
Their strength is measured in Volts per metre (V/m)
An electric field can be present even when a device is switched off.
Field strength decreases with distance from the source.
Most building materials shield electric fields to some extent.
Think Voltage (V/m).

Magnetic Fields

Electromagnetic fields arise from current flows.
Their strength is measured in amperes per meter (A/m). Commonly, EMF investigators use a related measure, flux density (in microtesla (μ T) or millitesla (mT) instead.
Electromagnetic fields exist as soon as a device is switched on and current flows.
Field strength decreases with distance from the source.
Magnetic fields are not attenuated by most materials.
Think Current (A/m).

<http://www.who.int/peh-emf/about/WhatisEMF/en/>

Just for fun, here is something you can experiment with to find hotspots in a microwave oven;

Leftover Valentine's Chocolate? Use It to Measure the Speed of Light

<http://www.wired.com/geekdad/2010/02/leftover-valentines-chocolate-use-it-to-measure-the-speed-of-light>

You already knew that microwave ovens operate at 2.45 GHz, right?

<http://www.aaimedicine.com/jaaim/apr06/hazards.php> Well, do you know what *else* operates at that frequency? Cellphones and computers. That becomes an engineering, health and safety issue.

Do you know at which frequencies radar operates? http://www.aewa.org/Library/rf_bands.html
Remember what happened to the police officers that had radar guns in their laps? This is just another thing to be aware of. http://en.wikipedia.org/wiki/Radar_gun

There is a "Microwave Syndrome", which is another label for health issues associated with electromagnetic frequencies (EMFs).

Extremely Low Frequencies (ELF) fields were once classified to be a "possibly Class B carcinogen". The EPA had to retract the statement under pressure from utility, military and even computer lobbyists. Don't you just love politics?

<http://www.who.int/mediacentre/factsheet/fs205/en>

There are three areas that need to be addressed in electronics when discussing Radio Frequency Interference (RFI); Design, Filtering and Shielding. For Electromagnetic Frequency Interference, the areas that need to be addressed are Grounding, Bonding and Shielding. Kind of hard to do with wireless systems, eh?

http://www.repairfaq.org/REPAIR/F_CompRFI.html

Boris Schusterman and Dr. William E. Kunz wrote;

“With clock frequencies and processors running from a few hundred megahertz to several gigahertz, today’s electronic systems are using pulse edges in the sub-nanosecond range. Networking interfaces deliver data rates beyond 1000 Mbits/s (Gigabit Ethernet and FDDI - fiber distributed data interface) and 155 and 622 Mbits/s (ATM - Asynchronous Transfer Mode). High definition video circuits also use pixel rates at sub-nanosecond rates. Television is now broadcast digitally, and analog transmission is a thing of the past. The resulting higher processing speeds present never-ending engineering challenges.

One such challenge is RF interference, which originates from a fast change of electromagnetic energy. The faster the slew rate (rise/fall times) and the higher the voltage/current amplitude, the more problematic a circuit becomes. As a result, electromagnetic compatibility (EMC) is harder to achieve today than ever before.

While fast changing pulses of current between two nodes of a circuit represent the so-called differential noise source, the fields surrounding this circuit can couple into other components and etch connections. The noise induced via inductive or capacitive coupling represents common-mode interference. The RF interference currents are in phase with each other, and the system can be modeled as one, which connects the source, “victim circuits” or “recipients” and the return path, which in many cases is represented by a chassis. Several factors are critical in defining the amount of the interference:

- Strength of the source
- Size of the area encircled by the culprit current
- Slew rate of the change

Thus, despite many possible causes of unwanted interference in a circuit, the noise is almost always the common-mode type. Once there is some RF voltage present between a cable plugged into an I/O (input/output) connector and the enclosure or the ground plane, the resulting RF current of a few mA can be enough to exceed the allowable emission levels.” http://www.regalusa.com/how_to_solve_emission_problems.html

Beside frequency issues, there are also electromagnetic challenges for electronics engineers that also have to be overcome. <http://www.metlabs.com/pages/EMC.html#DOSDONTs>

FAQ: The 411 on radio frequency interference (from 2007)

http://news.cnet.com/FAQ-The-411-on-radio-frequency-interference/2100-1033_3-6199149.html

The earth produces an electromagnetic frequency (EMF) of anywhere from 300 to 500 milliGauss in a static field (direct current), depending on location and ebb and flow of ocean tides, but these do not cause the conditions associated with alternating currents and milliGauss.

<http://www.ngdc.noaa.gov/geomag/>
http://en.wikipedia.org/wiki/Earth%27s_Magnetic_field

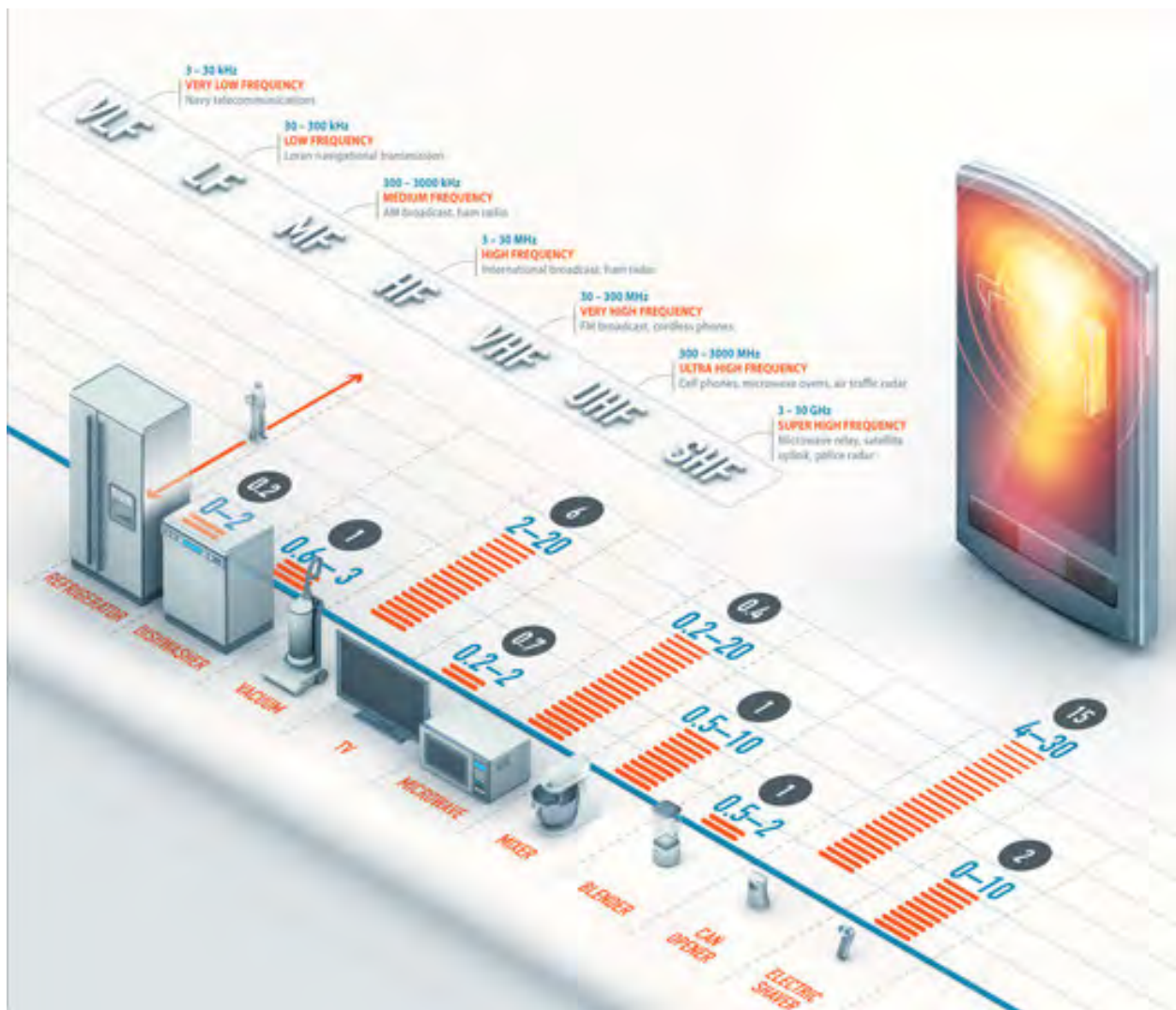
Gauss's Law states that the electric flux is an electric field, multiplied by the area of a surface projected in a plane that is perpendicular to the field.

<http://hyperphysics.phy-astr.gsu.edu/hbase/electric/gaulaw.html>

Just for fun, read James M. Atkinson's *Cordless Telephones: Telephone Eavsdropping Risk* (2009)

http://www.tscm.com/Cordless_Phones_2009_Briefing/CordlessPhoneTalk2009a.htm

Is there a Problem?



Source: <http://www.popsci.com/science/article/2010-02/disconnected>

Short answer; Yes.

The naysayers have said for years that “there is no problem”, providing conflicting information and sometimes just plain bad data. We saw similar activities with the dangers of smoking in the ‘50s and ‘60’s and more recently with ClimateGate fiasco with so-called Global Warming <http://www.macompanion.com/macc/archives/December2009/Greenware/ClimateGate.htm>. We see similar inaction here; <http://www.quackwatch.org/01QuackeryRelatedTopics/emf.html>, here - Electric and Magnetic Fields (EMF) and Health <http://www.powerlinefacts.com/Expert%20Testimony/Valberg%20testimony.htm> and here - The revenge of cell phones and cancer strikes back yet again in the never-ending controversy... http://scienceblogs.com/insolence/2009/12/the_revenge_of_cell_phones_and_cancer_st.php

This is the most recent “don’t worry, be happy” statement - *COMAR Technical Information Statement: Expert Reviews on Potential Health Effects of Radiofrequency Electromagnetic Fields and Comments on the BioInitiative Report* <http://www.arpansa.gov.au/radiationprotection/emr/literature/september09.cfm>

Maybe they just didn’t look hard enough? Maybe they were attempting to get us to listen to the Jedi Knights who waved their hands and said “Move on, there is nothing here...”?

Read *Invisible Hazards in the Wireless Age* by Dr. George Carlo – <http://www.ahappyhabitat.com/georgecarlo.html> And then read *The Biological Effects of Weak Electromagnetic Fields*, by Andrew Goldsworthy (2007) – <http://www.ahappyhabitat.com/emfbio2007.html>

Danger Zones – Adverse Biological Effects at 2.5 mG

Source	Up to 4 Inches	At 3 Feet
Blender	50-220	.3-3
Clothes Washer	8-200	.1-4
Coffee Maker	6-29	.1
Computer	4-20	2-5
Fluorescent Lamp (non-CFL)	400-4,000	.1-5
Hair Dryer	60-20,000	.1-6
Microwave Oven	100-500	1.0-25
TV	5-100	.1-6
Vacuum Cleaner	20-1,300	3-40
Airplane	50 mG average on 747	

Source: <http://altered-states.net/barry/newsletter336/index.htm>

There is a Problem – obviously with Cellphones

I learned of an experiment that really opened my eyes and ears. Take an AM radio, move the dial to a “white noise” area on the spectrum (low end is more revealing than the high end) and then move it close to your iPhone or MacBook and be surprised like I was. Think of the AM radio as being a poorboy RF meter.

Cellphones and other wireless equipment *traffic* in **microwave radiation** that is detrimental to our physical health and well-being, exaggerations and other misinformation notwithstanding. And there seems to be a lot of misinformation from vested interests going around.

A while ago there was the hoax perpetrated by a certain cellphone accessory company that showed a few cellphones popping popcorn. Then that exaggeration was exposed - http://www.metacafe.com/watch/1399627/cell_phone_popcorn_hoax_revealed/

Study Reveals How Much Cellphone Radiation You're Getting (2009)
<http://www.wired.com/gadgetlab/2009/09/cellphone-radiation/>

Best and Worst Cellphones
<http://www.ewg.org/cellphoneradiation/Get-a-Safer-Phone?>

Top-rated cell phones also rank high in radiation emissions (February 24, 2010)
<http://www.infoworld.com/d/mobilize/top-rated-cell-phones-also-rank-high-in-radiation-emissions-749>

Mobile Phone Safety News
<http://www.sarshield.com/english/news.htm>

Regarding SARs

Measurements regarding radiation from mobile phones is measured in SARs.

“SAR stands for "specific absorption rate", basically the amount of radiation a human body will absorb from a cell phone. The lower the rate, the less radiation will be absorbed. There are basically 2 different standards which are;

North American Standard. The SAR limit for mobile phones used by the public is 1.6 watts/kilogram (W/kg) averaged over one gram of body tissue.

Partial-body exposure (head): up to 1.6 W/kg, averaged over 1 gram of tissue;

Whole-body exposure: up to 0.08 W/kg, averaged over 1 gram of tissue.

Hands, wrists, feet, and ankles: up to 4 W/kg, averaged over 10 grams of tissue.

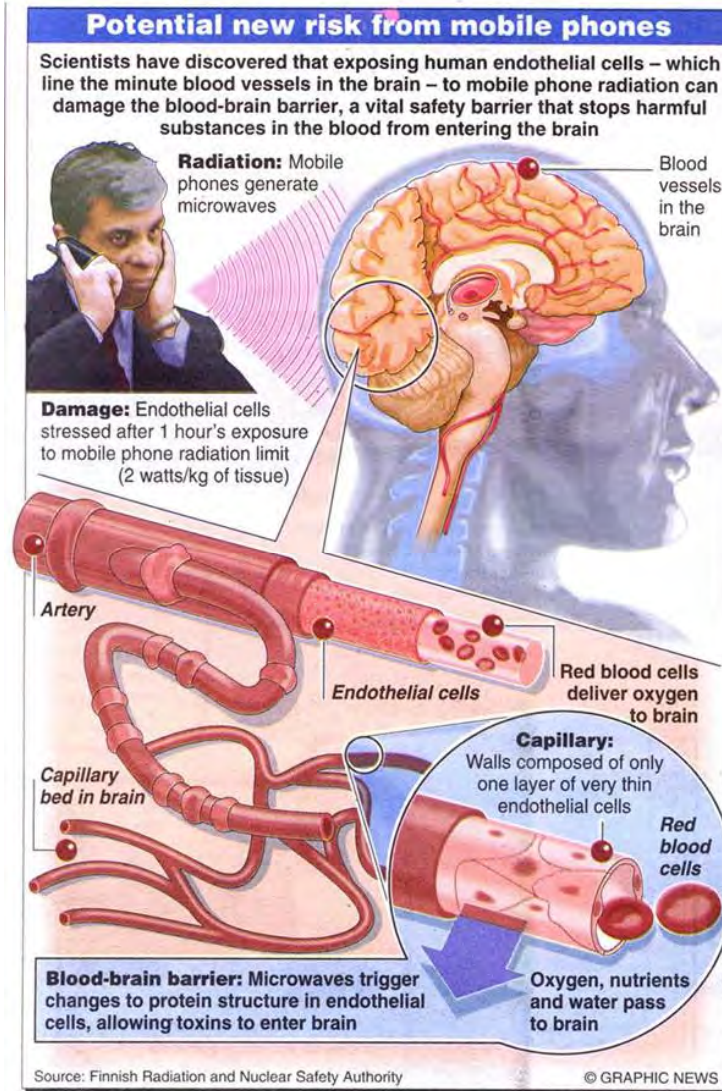
European Standard. The SAR limit for mobile phones used by the public is 2.0 watts/kilogram (W/kg) averaged over ten grams of body tissue.”

<http://www.sarshield.com/english/faqs.htm>

Find the SAR of your cellphone; <http://www.fcc.gov/oet/rfsafety/sar.html>

Campaign for Safer Cellphones
<http://environmentalhealthtrust.org/content/campaign-safer-cell-phones#attachments>

Biologic Health Conditions



Source: Finnish Radiation and Nuclear Safety Authority June 20, 2002, SCIENCE

Cellphones may not pop popcorn, but we do know for certain today, that constant exposure to electromagnetic fields (EMFs) is carcinogenic, usually resulting in leukemia, spontaneous abortions, damaged DNA, depression, migraine, lassitude, irritability, nervous disorders, difficulty with concentration, blurred vision, memory loss, dizziness and acoustic neuroma, tremors, insomnia and neuroses, hypertension and vertigo. There is also a known association with risk ratios for asthma, arthritis, type II diabetes, fatigue and reductions in the immune system and EMFs affect the adrenal, pituitary, salivary and pineal gland function. We also now know that low frequency radiation crosses the blood brain barrier and is associated with Attention Deficit Disorder, Alzheimer's, Parkinson's and motor neuron diseases like Amyotrophic Lateral Sclerosis and causes lymphomas and brain tumors or gliomas. Exposure to EMFs also accelerates aging.

So now I can possibly say that my iPhone is causing me to experience difficulty with concentration, blurred vision, memory loss and dizziness and interesting subcutaneous skin growths, instead of just checking it off as something to do with the natural aging process. ;^)

Mobile Phones: It's Not Just About Brain Tumors!

http://www.magdahavas.com/wordpress/wp-content/uploads/2009/12/Mobile_Phones-not_just_about_brain_tumors1.pdf

Electromagnetic Hypersensitivity and Electrosmog

There is a condition (disability) that affects part of the human population known as **Electromagnetic Hypersensitivity** (EHS). Folks that suffer from EHS have to live in an electrically clean environment to alleviate the pain and suffering they go through.

http://en.wikipedia.org/wiki/Electromagnetic_hypersensitivity

We now know that people suffering from disorders such as chronic fatigue syndrome, Type I and Type II diabetes, multiple sclerosis, tinnitus, electrical sensitivity and a host of other disorders, had reduction of symptoms when EMFs were removed from their environments." Dr. Magda Havas and David Stetzer, "*Dirty Electricity and Electrical Hypersensitivity*"

http://www.electricalpollution.com/documents/Havas&Stetzer_WHO.pdf

Take the *EHS Quiz* -

<http://www.magdahavas.com/2009/10/05/ehs-quiz/>

I can bet that wireless power chargers probably drive these people crazy. Those systems either use supercapacitors or magnetic induction systems to provide power to various electronic devices.

<http://www.tomsguide.com/us/wireless-power-powermat,review-1188.html>

The other devices that will probably drive the EHS sufferers batty will be Femtocells that guarantee 5-bar coverage in homes and small businesses for cellphones -

<http://en.wikipedia.org/wiki/Femtocell>

Electrosmog is electrical pollution and it has become widespread -

<http://www.electricalpollution.com/intro.html>

Our Own Auras

We produce our own electricity, but we are influenced by frequencies around us. Michael Triggs has compiled a list, based on what happens to us at each frequency garnered from various sources. These frequencies range anywhere from .1 Hertz up to 10 Petahertz. Truly fascinating information! He calls the webpage *Brainwave/Cymatic Frequency Listing* -

<http://www.lunarsight.com/freq.htm>

In Electroencephalography, there are 5 frequency bands that have been categorized by brain function, known as Delta .5-4 Hz, Theta from 4-7 Hz, Alpha from 8-12 Hz, Beta from 12-30 Hz and Gamma between 30 and over 100 Hz.

<http://en.wikipedia.org/wiki/Electroencephalography>

The brain is a terrible thing to waste! <http://faculty.washington.edu/chudler/facts.html>

Transcranial Magnetic Stimulation is inductive brain stimulation using eddie currents. There are over 3,000 scientific studies on the use of this method to affect the brain in humans.

http://en.wikipedia.org/wiki/Transcranial_magnetic_stimulation

We physically emit electromagnetic radiation mostly in the infrared region and we have a peak wavelength of around 9,500 nanometers.

http://en.wikipedia.org/wiki/Black_body

Barbara Hero once mapped out the musical tones, frequencies and chakra energy centers of our bodies. (1998)

<http://www.vortexmaps.com/hero-cor.php>

Bruce Tainio has also developed equipment to measure biofrequencies. (1992)

Normal brain frequency (head)	72-78 Hz
Visionary Range	120 MHz
Bone	38-43 MHz
Brain frequency at 80-82 MHz	indicates a genius
Healthy body (neck down)	62-68 Hz
Thyroid and Parathyroid glands	62-68 Hz
Thymus Gland	65-68 Hz
Heart	67-70 Hz
Human cells start to mutate when their frequency drops below	62 Hz
Lungs	58-65 Hz
Liver	55-60 Hz
Pancreas	60-80 Hz
Disease begins, colds invade	59-60 Hz
Stomach	58-65 Hz
Ascending Colon	58-60 Hz
Descending Colon	58-63 Hz
If the frequency drops just 4 points this is when a headache will start	58 Hz
Disease begins, Like the cold symptoms	58 Hz
Flu invades the body	57 Hz
Viral Infection	55 Hz
when more serious problems come about like pneumonia, Epstein Barr and etc.	52 Hz
Tissue breakdown from disease	48 Hz
Cancer can set in	42 Hz
Death begins at	20 Hz

Source: <http://www.newwayclinic.com/frequency.html>

Human Tolerances to Sinusoidal Vibration

Head Pain	13-30Hz
Impaired Speech	13-20Hz
Jaw Pain	6-8Hz
Chest Pain	5-7Hz
Abdominal Pain	4.5 - 10 Hz
Human Body Cell	1,520,000 to 9,460,000 Hz
Upper Limit of Human Hearing	15,000 Hz

<http://www.starstuffs.com/physcon2/freqamp.html>

I find it interesting that ghosthunters have grabbed gaussmeters for their own investigations into paranormal activities on the *assumed belief* that ghosts are EMF emitters too. So are those who suffer from EHS haunted? <http://home.comcast.net/~parainvestigator/Articles/EMFbasices.html>

It is also interesting that EFI and milliGauss are not so much issues with magnets themselves, but with electromagnetism, radiowaves and non-ionizing radiation.

Dowsers understand the importance of the aura we generate around our own bodies. EMFs as electrosmog, interfere with our auras and are considered to be detrimental energies.

<http://www.greatdreams.com/dowsing.htm>

<http://www.dowsers.com/page58.html>

Little-known Dangers of EMFs and How to Protect Your Family

<http://bodyecology.com/archive/little-known-dangers-of-emf.php>

Non-Ionizing Radiation Exposure Limits

Blessed Geek wrote on June 5, 2009;

“Microwave radiation is a range of radio frequencies categorized between 300 MHz and 300 GHz.

Of essential importance is the cooking range of microwaves, which is between 2.3 GHz and 2.5 GHz. This “cooking frequency” is actually an ingenious exploitation of the resonance frequency of the dipole formed in the OH bond. The OH bond is found in most organic materials, water and oil.

As CPUs creep up in operating frequencies, what Intel, AMD and computer makers have failed to notify us is, that the radiation from these processors are emanating cooking frequencies. This microwave radiation is leaked into the grounding around the processor board. The grounding is meant to help stabilize the electronic signals on the circuits but since it helps absorb any “signal turbulence”, the grounding also helps in propagating the microwave radiation.

Full sized desktop computers are enclosed in metal casing hence forming a gaussian shield like in a microwave oven shielding. Laptop manufacturers – in order to make the laptop attractive by lessening weight would not put metal enclosure around the laptop. Because, would you rather buy a 2 lb laptop or an 8 lb laptop?

Even if your laptop operates at 1.6 GHz, it is still capable of half amplitude resonance cooking up your lap and guts, gradually. ***A high performance laptop is an unshielded traveling microwave oven.*** <http://www.geekwithlaptop.com/laptop-radiation>

Some documents strongly suggest that the safe ambient energy level in a 60 MHz environment should be .5 milliGauss (mG) [http://en.wikipedia.org/wiki/Gauss_\(unit\)](http://en.wikipedia.org/wiki/Gauss_(unit)) or less, however, Russian researchers claim 1/1000 of a mG as standard. Why so low? Sweden and the US EPA only suggest 1 mG, while at my location, the background so far has been around 2 mG.

“Radiation as given off by x-rays is called ionizing radiation, and EMF radiation (radiation given off by any component carrying an electrical current) is called non-ionizing. Essentially the difference between the two is the wavelength of each. The wavelength of ionizing radiation is very short, and thus its frequency much higher. That high frequency packs a very high amount of energy, and can destroy the nucleus of an atom. Non-ionizing radiation has a much longer wavelength, and therefore lower frequency. There is less energy in this radiation, but that does not make it completely safe. What this lower frequency does, in living organisms, is vibrate cells and causes instability within their contained environment. Frictional characteristics of this vibration also increases heat within them. Both instances are harmful to cells, and in many cases, have been shown to mutate. Among those mutations most concerning to scientists: cancer cells. While a direct correlation between cancer and non-ionizing radiation has yet to be solidly proven, it has been witnessed.” Russ W, <http://www.geekwithlaptop.com/laptop-radiation>

“Symptoms of electromagnetic radiation sickness are for example sleep disturbances, dizziness, heart palpitations, headache, blurry sight, swelling, nausea, a burning skin, vibrations, electrical currents in the body, pressure on the breast, cramps, high blood pressure and general unwell-being. According to many testimonies of victims the symptoms appear in the vicinity of sources of electromagnetic radiation, like GSM- and 3G (UMTS) - antennas, cellphones, DECT wireless telephones and WIFI wireless networks. Many times the experiences are blind[ness]. Radiation measurements taken afterwards and investigations show, that the radiation density indeed is increased. Many sufferers find out the relationship with the radiation, when they stay for a while elsewhere, where the symptoms diminish or disappear. When they return home the symptoms immediately appear again. Many of the patients decide to move to another place. Others try to shield themselves against the radiation, for example building a Faraday cage of fine wire mesh.” Frans van Velden (2005)
<http://www.medicalnewstoday.com/articles/30499.php>

Computers for the Electrically Sensitive looks at roll-your-own solutions designed to reduce influences from extraneous emissions from computer equipment.
<http://www.ctaz.com/~bhima/emfcomp.htm>

How well do Apple Products Rate?

We are told that Apple's products comply with all international Electromagnetic Compatibility (EMC) emissions standards. In the US, the standards are generally referred to as "FCC Class A" (residential) and "FCC Class B" (commercial).
<http://www.cclab.com/fcc-part-15.htm>

http://en.wikipedia.org/wiki/Title_47_CFR_Part_15

Cliff Wildes, former CEO and President of MicroTech International (long since acquired by SCM Microsystems), once wrote back in April 1992 in a letter to *TidBITS*;

“Recent articles and discussions in the Macintosh community have focused on safety concerns related to the marvelous machinery we rely on for our work and enjoyment. As a manufacturer of peripherals for the Macintosh market I've been surprised to see a crucial safety and quality standard missing from the demands we make of our industry. I'm referring to the importance of strict adherence to FCC (Federal Communications Commission) Part 15. This federal regulation governs the release of radio frequency interference (RFI) generated by computer hardware. For many of us the words "FCC certified" have simply meant that our systems won't stumble when we turn on a radio or our neighbors won't complain that each time we fire up our Macs, their TV goes scrambly. But the real issue is far more serious....”

Our own research has shown that the majority of Macintosh subsystem manufacturers are shipping hard drives, optical drives and tape systems that are uncertified. Manufacturers fail to do the required testing or fraudulently use old or fictitious FCC registration numbers. As noncompliance has become more commonplace, so has the potential for problems. With the growth of ever more complex business networks, the risk of serious interference problems explodes with so many different computer peripherals interfacing throughout our systems.

The publications which test and review products in the marketplace have themselves been slow to require authentic proof of certification as a qualification for hardware reviews. All too often, benchmark tests and "best buy" recommendations lead consumers to products which manage a lower price point by sidestepping the admittedly expensive but legally and morally essential RFI review process. And those of us who take the time and expense to meet these critical safety standards often cannot match pricing based on such unethical practices....”

<http://db.tidbits.com/article/3127>

The FCC has not been kind to Apple:

“In this Notice of Apparent Liability for Forfeiture ("NAL"), we find that Apple, Inc. ("Apple") apparently willfully violated the wireless handset hearing aid compatibility status report filing requirements set forth in Section 20.19(i)(1) of the Commission's Rules ("Rules"). For this apparent violation, we propose a forfeiture in the amount of five thousand dollars (\$5,000).”

<http://www.fcc.gov/eb/Orders/2009/DA-09-2507A1.html>

Apple 's FCC Declaration and Self-Testing

“Apple Computer's EMC test facilities have been accredited through the United States National Institute of Standards NVLAP program since 1996-08. This accreditation allows Apple Computer to test and self declare products meeting the requirements as compliant for the U.S. market. This self-declaration process only applies to unintentional radiating devices, not devices that intentionally transmit signals, such as Apple's wireless products.

Apple products that display the FCC logo are marketed through the self declaration process. These products do not have, and are not required to have, an FCC ID number. Instead of an FCC ID number, an FCC DOC logo will appear with the statement: "Tested To Comply With FCC Standards For Home Or Office Use." An FCC ID number is present on the wireless part of Apple's product, as required by the FCC.

You may be required to complete an FCC 740 form for products entering the United States through customs. For products displaying the FCC logo, box 2 should be checked on the FCC 740 form. In the field titled "FCC ID" on the form, write in "DOC".

A radio frequency (RF) device is defined as a product that emits RF energy either intentionally in the case of a transmitter, or unintentionally as in the case of a computer, or computer peripheral products. An FCC 740 Form must be provided for each type of non-U.S.-manufactured RF device in your shipment. Commodity examples typically regulated by the FCC are cordless telephones, microwave ovens, radio/tape recorder combinations, cassette cartridge type, video games used with TV, radio transmitters/receivers, and color/monochrome TV receivers, ADP display units/printers, and electronic musical instruments.”

<http://support.apple.com/kb/TA23059>

Cellphone Radiation Chart for the iPhone

Manufacturer / Model number	SAR rating (1.6W/kg)	SAR rating (2.0W/kg)
Apple iPhone	0.974	
Apple iPhone 3G	1.388	0.878
Apple iPhone 3GS	1.19	1.10

<http://www.sarshield.com/english/radiationchart.htm>

On the Environmental Working Group research on cell phone radiation limits, the iPhone 3G rates down at 17 for 1.03 W/kg. This is a good thing. It means that there are at least 16 other cell/smart phones that are higher emitters. (February 2010)

<http://www.ewg.org/cellphoneradiation/newcellphonesin2010?showall=1&order=sarrev#row0>

iPhone SAR Chart

	Band	Body	Ear	FCC & IC 1g SAR Limit
iPhone 3G	GSM	1.03	.521	1.6
	GSM 1900	.522	1.29	1.6
	UMTS II 900	.402	1.388	1.6
	UMTS V 850	.733	.516	1.6
	Wi-Fi	.088	.779	1.6
				EU 10g SAR Limit
	GSM 900	.559	.235	2.0
	GSM 1800	.369	.78	2.0
iPhone 3GS	GSM 850	.52	.63	1.6
	GSM 1900	.26	.79	1.6
	UMTS II 1900	.33	1.19	1.6
	UMTS V 850	.67	.56	1.6
	Wi-Fi	.06	.52	1.6
				EU 10g SAR limit
	EGSM 900	.45	.40	2.0
	GSM 1800	.19	.72	2.0
	UMTS I 2100	.42	1.10	2.0
	Wi-Fi	.04	.24	2.0

In order for you to be safe from the adverse effects of SAR, you have to **keep the iPhone at least 5/8 inch (15mm) away from your body at all times**. iPhone User Guides – <http://support.apple.com/manuals/#iphone>

Also, when the iPhone is in sleep mode it generates up to 2 milliGauss, awake, up to 8 milliGauss and during a phone call, between 50 and 100 milliGauss. With Wi-Fi, 0 milliGauss. <http://www.tau.com/2008/11/25/gift-guide-for-the-new-parent/>

Apple addresses EMF by pointing us to World Health Organization: Electromagnetic Fields in its documentation. <http://www.who.int/peh-emf/en/>

Inside a Cellphone Radiation Testing Lab <http://www.wired.com/gadgetlab/2009/10/cellphone-radiation-testing/>

With the AM Radio test, I found the iPhone is never ever really “off”. And it gets noisier with each service that is turned on, Bluetooth, 3G network, Phone with the Airplane mode off, Wi-Fi, Location, Safari, Email, etc. Wait until you get it close to your MacBook Pro though...

iPhone’s RFI is Harsh! http://www.gearlog.com/2007/06/iphone_rfi_interference_is_har.php

Here is a DIY solution to resolving iPhone interference with other electronics;
How to Stop iPhone Interference in Speakers - Foiled Again!

<http://www.50leaves.com/apple/apple-hardware/how-to-stop-iphone-interference-in-speakers/>

If you hold the iPhone in your hand, normally, you block signals with your hand for EDGE connectivity. The hand covers the antenna. <http://cre.ations.net/blog/post/iphone-tip---want-better-edge-speeds--take-your-hand-off-the-ant>

I do have a skin growth developing, that is beginning to enlarge and itch on my right thigh, and it is where I have been pocketing my iPhone. I have stopped pocketing my iPhone. I'm treating the skin area that has been adversely affected.

Apple Computers and Emissions



Apple Corporation does an excellent job discussing how they have addressed life cycle, product stage, impacts and environmental footprints and commitment and enjoys presenting their latest achievements. <http://www.apple.com/environment>. They have achieved this by addressing power consumption, efficient power supplies and using power management software. As a result, they have been able to obtain the Gold award for EPEAT across all computers in 2009. No other computer manufacturer has been able to do this yet.



All Apple computers are also Energy Star 5.0 compliant as of 2009. Again, so far, no other computer manufacturer can lay this claim.

I also found their page that itemizes each product and its environmental impact. <http://www.apple.com/environment/reports>.

It looks like Apple Corporation has been able to get all of its latest Macs revamped, so they meet the highest rating of the Electronic Product Environmental Assessment Tool (EPEAT) Gold. However, if the Mac Pro has either a RAID card or Fibre Channel card installed, it does not meet the requirements.

Regarding Apple's MagSafe Adapter



I have read that the MagSafe adapter has an overvoltage protection circuit that senses ground noise and protects itself accordingly. I think it is better to just use the 3-prong cable that comes with the MagSafe and be done with it. I've been using the 2-prong unit for about 2 years. I recently discovered I had the 3-prong grounded cable and I am now using it instead, as a result of this research.

<http://support.apple.com/kb/TS1713>

If you go to the Apple Store online and look at the MBP charger, you will see a lot of nasty comments about the power adapter. It has had issues.

<http://www.appledefects.com/wiki/index.php?title=Magsafe> So far, mine has functioned properly. <http://support.apple.com/kb/HT1453>

The MagSafe adapter lasts longer if it is treated with kid gloves. *How to Unplug an Apple MagSafe Power Adapter* demonstrates how to couple and decouple the magnetic connector properly.

<http://www.youtube.com/watch?v=-qGbOC26Wko>

For emissions, the MagSafe pulses around 50 mG (using the TriField 100XE meter) at the magnet connector when plugged in and pulses around 100 mG at the adapter when using the 3-prong power cord. When it is not connected to the MacBook Pro, the adapter jumps around 8 mG and there is no electromagnetic field around the connector.

Apple's AirPort

Charles W. Moore wrote in "*Cellphone And Wireless Computer Networking Safety Revisited*";



"Apple's AirPort networking system operates in the 2.4 GHz Frequency an output power of 15 dBm, while cellphones use the 800 MHz to 1,990 range. The power output level of cellular phones can range from 0.006 of a 0.6 of a watt for handheld units and three to six watts for portable units. 2.4 even farther into microwave territory than the cellphone frequencies. Microwave ovens operate at 2.45 gigahertz -- a frequency that causes water, glucose, and fat molecules to rub together and heat up."

http://www.macopinion.com/index.php/site/more/cellphone_and_wireless_computer_networking_safety_revisited/ (February 19, 2008)

He also wrote in "*The PowerBook Mystique - How Safe Is Your Wireless-Networked Laptop?*";

"An Apple KnowledgeBase article entitled: AirPort Base Station: Minimum Safe Operating Distance (which has apparently been taken down as the URL no longer works) noted:

"To operate within safety guidelines established by the FCC, you should locate an AirPort Base Station such that users are always at least 20 cm (about 8 inches) from the device.

"You should use wireless equipment in a way that minimizes human contact during normal operation. The AirPort Base Station is designed to be used at a distance greater than 20 cm.

Well, who uses an AirPort base Station within eight inches of their body? Not very many people, I imagine. However, if eight inches is a problem, what about nine inches, or a foot, or two feet. It seems implausible that any danger magically cuts off at the eight inch threshold...

Bluetooth also operates in the range of 2.4 GHz to 2.4835 GHz. However, as Wikipedia notes, "the radiated output power of Bluetooth devices is very low in spectrum and in time, so a possibility of posing risks to health is low, too. Bluetooth devices can operate continuously or sporadically (on demand), so total exposure to EMF radiation is very variable..."

http://www.pbcentral.com/columns/hildreth_moore/wifisaf.shtml

The latest AirPort Extreme Base Station router and switch, boasts that it runs dual-band Wi-Fi, uses 802.11n technology for 5 times the performance and twice the range of 802.11g, 50% better performance and 25% better range than the earlier unit. It puts out 20dBm at 2.4 GHz and 5 GHz simultaneously.

<http://www.apple.com/airportextreme/specs.html>

The Airport Express that I use, also operates at 20 dBm and 2.4 GHz and 5 GHz simultaneously.

<http://www.apple.com/airportexpress/specsO.html>

Apple Support Discussion: Radiation Emission

<http://discussions.apple.com/thread.jspa?threadID=1287470>



Of MacBooks and Emissions

Many portable computers exude around 150 mG of electromagnetic radiation.

I still remember the MacWorld issue (July 1990) dedicated to VDT radiation, researched by Paul Brodeur. Back then the High Res Apple monitors emitted around 2 milliGauss at 12 inches in front, 15.86 mG at the sides and the recommendation then was to not sit any closer than 4 feet to the sides or backs of these units. Where I worked at the time, we ended up installing retrofit shields around the yokes in the CRTs. Since then, Apple has gone to all LCD screens.

<http://en.wikipedia.org/wiki/LCD>

The claim was that both active and passive matrix LCD displays used in PowerBooks and iBooks were non-emissive (no extra-low or very low frequency emissions). Well, I found that to not be true. <http://support.apple.com/kb/TA21582>

Apple's stance today is that they have "lowered the exposure levels" to electromagnetic fields. Apple states it meets all regulatory requirements worldwide. But what was it before? We do not know. We do know it was higher than it is now with new equipment.

Apple has prepared the series of “Declaration of Conformity” for Apple Accessories, iPods, iPhones, Displays, Desktops, Portables and the Xserve server. Each of these PDFs show product specifications for conducted and radiated emissions, power-line harmonics and flicker, an immunity amendment, safety standards, and EMC and Low Voltage directives for the European Community.

<http://www.apple.com/euro/compliance/>

For North American consumption, Apple Corporation has added the following to just about all of the User Guides;

“Compliance Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. See instructions if interference to radio or television reception is suspected.

L’utilisation de ce dispositif est autorisée seulement aux conditions suivantes : (1) il ne doit pas produire de brouillage et (2) l’utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

Radio and Television Interference

This computer equipment generates, uses, and can radiate radio-frequency energy. If it is not installed and used properly—that is, in strict accordance with Apple’s instructions—it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

You can determine whether your computer system is causing interference by turning it off. If the interference stops, it was probably caused by the computer or one of the peripheral devices.

If your computer system does cause interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the computer to one side or the other of the television or radio.
- Move the computer farther away from the television or radio.
- Plug the computer into an outlet that is on a different circuit from the television or radio. (That is, make certain the computer and the television or radio are on circuits controlled by different circuit breakers or fuses.)

If necessary, consult an Apple-authorized service provider or Apple. See the service and support information that came with your Apple product. Or, consult an experienced radio/television technician for additional suggestions.

Important: Changes or modifications to this product not authorized by Apple Computer, Inc., could void the EMC compliance and negate your authority to operate the product. This product has demonstrated EMC compliance under conditions that included the use of compliant peripheral devices and shielded cables between system components. It is important that you use compliant peripheral devices and shielded cables between system components to reduce the possibility of causing interference to radios, television sets, and other electronic devices.

131Responsible party (contact for FCC matters only): Apple Computer, Inc. Product Compliance, 1 Infinite Loop M/S 26-A, Cupertino, CA 95014-2084, 408-974-2000.

Wireless Radio Use

This device is restricted to indoor use due to its operation in the 5.15 to 5.25 GHz frequency range to reduce the potential for harmful interference to co-channel Mobile Satellite systems.

Cet appareil doit être utilisé à l'intérieur.

Exposure to Radio Frequency Energy

The radiated output power of the AirPort Extreme technology is below the FCC radio frequency exposure limits. Nevertheless, it is advised to use the wireless equipment in such a manner that the potential for human contact during normal operation is minimized.

FCC Bluetooth Wireless Compliance

The antenna used with this transmitter must not be colocated or operated in conjunction with any other antenna or transmitter subject to the conditions of the FCC Grant.

Bluetooth Industry Canada Statement

This Class B device meets all requirements of the Canadian interference-causing equipment regulations.

Cet appareil numérique de la Class B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Industry Canada Statement

Complies with the Canadian ICES-003 Class B specifications. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada. This device complies with RSS 210 of Industry Canada.

Bluetooth Europe—EU Declaration of Conformity This wireless device complies with the specifications EN 300 328, EN 301-489, and EN 60950 following the provisions of the R&TTE Directive.

Europe - EU Declaration of Conformity

The equipment complies with the RF Exposure Requirement 1999/519/EC, Council Recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz. This equipment meets the following conformance standards: EN300 328, EN301 893, EN301 489-17, EN60950 Hereby, Apple Computer, Inc., declares that this 802.11a/ b/g Mini-PCie card is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Complies with European Directives 72/23/EEC, 89/336/EEC, 1999/5/EC.

...Korea Statements
VCCI Class B Statement
Singapore Wireless Certification
Taiwan Wireless Statements
Taiwan Class B Statement...

External USB Modem Information

When connecting your MacBook Pro to the phone line using an external USB modem, refer to the telecommunications agency information in the documentation that came with your modem.

ENERGY STAR® Compliance As an ENERGY STAR® partner, Apple has determined that standard configurations of this product meet the ENERGY STAR® guidelines for energy efficiency. The ENERGY STAR® program is a partnership with office product equipment manufacturers to promote energy- efficiency. Reducing energy consumption of office products saves money and reduces pollution by eliminating wasted energy.”

http://manuals.info.apple.com/en/macbook_pro_users_guide.pdf

I noticed the “standards” keep changing and it probably takes an awful lot of effort just to keep current, as these standards change over time and continue to tighten up as we discover how loose they are, when it comes to impacting our physiology.

Below is what I have been able to piece together so far, regarding Apple products emissions. The FCC ID for items that do not have a BCG at the beginning, are in parenthesis after the name of the product. The test results are garnered from the FCC Test Reports and show the MHz range and maximum power emitted by the devices. Some have multiple emission tables and I did not include those. The FCC links for the reports have very detailed information. I wish they had made all of them public. Or perhaps I just have not unearthed them yet. My MBP has an FCC ID of BRC M1029. To find the data on it, I went to <http://www.fcc.gov/oet/ea/fccid/>.

There are no applications on file that match the search criteria specified. The other webpage “Declarations of Conformity”, that describes each current Apple Corporation product is located at <http://images.apple.com/euro/compliance>.

FCC ID

Test Results

Accessories

BCG A1354 AirPort Extreme Base Station 2412 – 5825 MHz, 13.07-16.97 dBm, 20.28-49.77 mW

https://fjallfoss.fcc.gov/prod/oet/forms/blobs/retrieve.cgi?attachment_id=1185853&native_or_pdf=pdf

BCG A1264 AirPort Express Base Station 2412 - 5825 MHz

https://fjallfoss.fcc.gov/prod/oet/forms/blobs/retrieve.cgi?attachment_id=906107&native_or_pdf=pdf

Apple Remote (A1294)

Mini Display port to DVI adapter (A1305)

Mini Display port to VGA adapter (A1307)

BCG A1296 Magic Mouse 2402 – 2480 MHz, 4.53 dBm, 2.84 mW

https://fjallfoss.fcc.gov/prod/oet/forms/blobs/retrieve.cgi?attachment_id=1179303&native_or_pdf=pdf

BCG A1355 Time Capsule 2412 – 5805 MHz

https://fjallfoss.fcc.gov/prod/oet/forms/blobs/retrieve.cgi?attachment_id=1185724&native_or_pdf=pdf

USB 2.0 Keyboard

BCG A1314 Wireless Keyboard 2402 – 2480 MHz, 2.22 - 3.16 dBm, 2.07 mW

https://fjallfoss.fcc.gov/prod/oet/forms/blobs/retrieve.cgi?attachment_id=1179315&native_or_pdf=pdf

Wired Mouse (A1152)

Displays/Apple TV

AppleTV (A1218)

24" Led Cinema Display (A1267)

30" HD Cinema Display (A1083)

iPods

iPod classic (A1238)

iPod nano (A1320)

iPod shuffle Aluminum (A1271)

iPod shuffle polished stainless steel (A1271)

iPod touch (A1318)

BCG A1288 iPod touch 2402 -2480 MHz, 9.37-10.3 dBm
https://fjallfoss.fcc.gov/prod/oet/forms/blobs/retrieve.cgi?attachment_id=997380&native_or_pdf=pdf

BCG A1191 Nike + iPod Sports Kit
https://fjallfoss.fcc.gov/prod/oet/forms/blobs/retrieve.cgi?attachment_id=661286&native_or_pdf=pdf

BCG A1193 Nike + iPod Sensor 2425 MHz
https://fjallfoss.fcc.gov/prod/oet/forms/blobs/retrieve.cgi?attachment_id=661453&native_or_pdf=pdf

iPhones

BCG A1241 iPhone 3G 824.2 – 2462 MHz, 16.87 dBm @ 2462 MHz
https://fjallfoss.fcc.gov/prod/oet/forms/blobs/retrieve.cgi?attachment_id=952907&native_or_pdf=pdf

BCG A1303 iPhone 3GS 824.2 – 2480 MHz, 11.2 dBm, 13.18 mW
https://fjallfoss.fcc.gov/prod/oet/forms/blobs/retrieve.cgi?attachment_id=1121427&native_or_pdf=pdf

BCG A1221 iPhone Bluetooth Headset 2402-2480 MHz, .4-1.41 dBm, 1.10-1.38 mW
https://fjallfoss.fcc.gov/prod/oet/forms/blobs/retrieve.cgi?attachment_id=808104&native_or_pdf=pdf

Russia Certificates
iPhone 3G (A1241) Russian Certificates

Macintosh Computers

Desktops

- Mac mini (A1283)
- Mac Pro (A1289)
- 20" iMac Education (A1224)
- 21.5" iMac (A1311)
- 27" iMac (A1312)
- 27" iMac QuadCore (A1312)

Portables

- MacBook Air (A1304)
- MacBook Pro Aluminum 13" (A1278)
- MacBook 13" white (A1342)
- 15" MacBook Pro (A1286)
- 17" MacBook Pro (A1297)

Xserve
Xserve (A1279)

Energy Efficiency – Reduced Emissions

Apple has answered the call to energy efficiency, thus reducing emissions in the process. They advertised how much more efficient the White MacBook was, compared to the first MacBook, in that it consumes 32% less power. http://images.apple.com/environment/reports/docs/MacBook-White_Environmental_Report_20091020.pdf



http://www.ubergizmo.com/15/archives/2007/09/macbook_pro_plated_in_gold.html

(I wish this gold-plated MacBook Pro were mine. ;^)

They also demonstrated that the later 17” MacBook Pro used 25% less energy than the original 17” MacBook Pro.

<http://images.apple.com/environment/reports/docs/MacBook-Pro-17-inch-Environmental-Report.pdf>

The earlier MacBook Pro had a lot of other issues, however related to swollen batteries, squeals, hissing, ticking, clicking, mooing and humming, warping, corrosion, network connectivity issues, various video issues, the infamous thermal paste issues and those first MagSafe power supplies.

http://www.appledefects.com/wiki/index.php?title=MacBook_Pro

I bought my MBP later and, knock on real wood, have not experienced any of those documented issues above. My MacBook Pro has been very good to me.

The latest 21.5" iMac boasts of using 73% less power in off mode (?) and a 39% smaller carbon footprint than the 15" iMac. 73% less in off mode? Somebody is straining a bit with that one aren't they?

http://images.apple.com/environment/reports/docs/iMac_21_5_inch_Environmental_Report_2009.pdf

What is it in "on mode"? With the display off, 37.3 Watts and with it on, 90.5 Watts at 115 Volts. Oh, and then it adjusts the power between keystrokes too, with constant power monitoring software.

<http://www.apple.com/imac/environment.html>

The 27" iMac also plays the off mode game at 67% less power, yet having only a 3% smaller carbon footprint than the 15" iMac. It also consumes 49 Watts in idle-Display off and 153 Watts at 115 Volts when fully on.

http://images.apple.com/environment/reports/docs/iMac_27_inch_Environmental_Report_2009.pdf

Maximum continuous power for the 21" iMac is 241 Watts and the 27" runs hot at 365 Watts.

The latest Mac Pro, using the latest power management software has reduced its consumption by 15% less than the previous version.

<http://www.apple.com/macpro/environment.html>

The Mac mini uses 14 Watts when idle and uses the same power management software as the other Macs. When on, it uses 110 Watts.

<http://www.apple.com/macmini/specs.html>

Which Mac uses the least amount of power? The iPad, probably, but because it is not shipping yet, we can ignore it at the moment. The MacBook Air holds that distinction. In sleep mode, it uses .98 Watts and in idle-display off, 6.3 Watts and when on, 10.9 Watts.

<http://images.apple.com/au/environment/reports/docs/MacBook-Air-Environmental-Report.pdf>

Kneejerk Testing

If you want to really hear some noise, go put the AM radio tester next to the AirPort Express or Extreme. If you are asleep, you won't be for long!

The MagSafe Adapter is quite noisy, because of the transformer inside it. The unshielded twisted pair cables between it and the Linksys switch carries that noise as well back to the Linksys router and cable modem. The Canon multi-purpose printer also is rather electronically noisy. The iMac however seems to be rather well shielded. The 17" MacBook Pro, which I use all the time, however scares the heck out of me. It is *incredibly* electronically noisy!

And it doesn't seem to matter if I have it connected or disconnected to the MagSafe or if I have it connected or not to the AirPort network. The metal casing only shields a little bit, but what blew me away was the LCD screen. I have to be nearly 4 feet away from the screen before the AM radio quiets down. In other words, I am really dosing myself with this MacBook Pro. A lot of the noise comes from the touchpad and keyboard.

What I personally have experienced is buzzing interference in proximity to a landline (we still use those) when I was talking on the phone and the MacBook Pro was near it with the MagSafe power supply plugged in.

Real Testing Using the TriField 100XE Meter



Remember that the safe mG threshold is below 2 mG and most portable computers exceed that amount by around 150 mG. Yes, you read that right.

My MacBook Pro 17" has an aluminum case. I assumed the metal case helps reduce emissions, but I didn't know by how much. The TriField 100XE meter revealed by how much.

The 2.6 GHz MacBook Pro I am using pulses around 50 mG between the battery and the rear of the unit underneath with the MagSafe adapter running. The touchpad produces around 5 mG, while the middle of the keyboard pumps well over 100 mG. The back of the unit produces around 75 mG below the Apple logo when the light is on and the MagSafe is connected. Without it connected, the touchpad jumps up to around 50 mG. The keyboard stays the same, but the area below the Apple logo drops down to 15 mG.

There are no emissions above background levels (below 2 mG) at any of the I/O connectors with the MagSafe adapter disconnected. This indicates to me that Apple engineering is using proper shielding at those locations.

I'm guessing that the keyboard emissions are coming from the hard drive underneath. I am surprised at the jump with the touchpad though, between having the MagSafe connected versus it not being connected.

Other Macs Tested



The white eMac was incredibly noisy, mostly in the upper left of the screen, and obviously around the speakers, but also in the back of the teardrop area, topside. All around 100 mG or higher.



The iMac 21” was a lot cleaner, even next to the large TV that was throwing out 150+ mG. After the TV went off, the left speaker on it was still throwing out a lot of noise, but the tethered mouse and cabled keyboard with iMac were okay, except for the right side of the extended keyboard. It was very noisy in the mG arena. The other area was the upper left quadrant of the screen on the iMac. This iMac was the older system just prior to transition to Snow Leopard (in other words, it won’t load Snow Leopard). The mG was pulsing around 75.



Using the RF Strength Meter

While the iPhone drove this Radio/Microwave meter crazy, I do not get the same experience when running the MacBook Pro in AirPort mode. The readings I’ve seen so far, are below the threshold levels.

What about Touch Screens?



Touch screen electronics put out EMI/RFI. On the Mac, there are overlays that can be connected to a USB port.

<http://www.mactouch.com.au> But guess what? Apple has preempted/postempted(?) all touchscreen technologies for Macintosh computers by creating the iPad. What are its EMI/RFI emissions? Apple isn’t saying yet.

Emissions Controls

Thankfully, there are retrofits that make our wireless devices less of a threat to our health and they do not cost that much. I would think the equipment manufacturers would add these to their boxes, just to avoid the liability/litigation issues associated with brain tumors and cancers caused by overuse of such equipment on a daily basis.

The MRET Noise Field polymer™ created by Dr. Igor Smirnov, is supposedly able to “generate a noise field: random, low frequency electromagnetic waves that will superimpose themselves onto damaging electromagnetic radiation waves, compensating their adverse effect or even rendering them harmless to biological systems such as humans, animals and plants.” I have a hard time believing that adding a noise field eliminates the electromagnetic waves, instead of amplifying the adverse effect. http://www.bioprotechnology.com/MRET_Technology.aspx

Apparently, I am not alone in my estimation (by the way, I never got one sent to me either for evaluation).

Caution!

Dr. Richard Conrad worked on this article back in March, 2009; *EMF Scams Provide a Dangerous Sense of Security* – <http://www.conradbiologic.com/articles/EMFScams.html>

Barry Green wrote in *Ottawa Skeptics*, this article in July 2008; *It is Unbelievable What a Tub of Soil Can Do*. <http://www.ottawaskeptics.org/topics/alternative-medicine/48-alt-med/148-it-is-unbelievable-what-a-tub-of-soil-can-do> It involves “EMF Balancers”. Follow-up on *The Reality Check*. <http://www.ottawaskeptics.org/local-investigations/211-barry-to-appear-on-ron-corbett-unscripted>

Robert Todd Carroll wrote in the July 2006 issue of the *Skeptic's Dictionary* Newsletter 69, Scams of the Minute. <http://www.skeptdic.com/news/newsletter69.html#5> He disses metaphysical tools, energy blockers, body voltage regulators and (surprise!) EMF jewelry.

Here are some links to other possible retrofit solutions for controlling emissions;

Bio-Protection – Compensatory Magnetic Oscillator
<http://www.wddyhealthshop.com/main.asp?aitepages=CMOHome>

Debbie Bird creates an EMF-free Zone in her home (2007)
<http://www.thisislondon.co.uk/article-23389839-woman-allergic-to-mobiles-and-microwaves-paints-her-house-black.do>

Electrosmog: What can be done to protect yourself?
<http://www.foxnews.com/search-results/m/27816462/electrosmog.htm>

11 Ways to Protect Yourself from Dirty Electricity
<http://www.prevention.com/electroshocker/index.shtml>

Electrical Pollution Solutions
<http://www.electricalpollution.com/solutions.html>

Electromagnetic Field Protection for the Electrically Sensitive
<http://www.ctaz.com/~bhima/emf.htm>

EMF-BioShield (for CRTs and possibly LCDs)
<http://www.emfbioshield/arecrt.html>

EMR Safety Kit (Australia)
<http://www.emraustralia.com.eau/>

EMF Safety SuperStore
<http://www.lessemf.com/>

Gigahertz Solutions (Germany) Electrosmog Measuring Kits
http://www.gigahertz-solutions.de/media/downloads/brochures/123-121_Main-catalogue-08_EN.pdf

Low Emission Computers
<http://www.asilo.com/aztap1/>

Low EMF Emissions Office Equipment
<http://www.lowemfoffice.com/>

Magnetic Shielding
<http://viatech.net/magneticshielding.php4>

Magnetic Shield Corporation
<http://www.magnetic-shield.com/>

Power Cord Tests
http://www.lowemfoffice.com/power_cord_tests.htm

Power Cord Emissions
http://www.lowemfoffice.com/power_cord_emissions.htm

Regal Electronics – EMI/RFI emission reduction connectors and components
http://www.regalusa.com/emi-rfi_solutions.html

Regal Electronics – How to Solve Emission Problems
http://www.regalusa.com/how_to_solve_emission_problems.html

Westek Electronics (Australia)
<http://www.westek.com.au>

Recommendations for Reducing Electromagnetic Frequency Interference (EFI) with Cellphones

- With the iPhone, having it in “Airplane mode” shut offs its ability to receive or send calls.
- Use a headset instead of speaking directly into the cellphone with a low-power Bluetooth and hands-free system. It reduces exposure by a factor of 8. Corded headsets do increase the SAR of the cellphone, however.
- Add a ferrite bead to the earphone cable from the cellphone to stop radio waves traveling up the wire and into the head.

- Limit use of cell phones inside buildings or rural areas (signal boost issues).
- Keep calls short and text-message when possible.
- Use a cellphone with low SAR ratings.
- Hold the phone away from the body when in use.
- Switch off when not in use.
- Keep the cellphones at least 30 cm (just under 12 inches) away from medical implants.
- Radiation shields may in fact cause the cellphone to transmit at a higher power.
- Use a landline whenever available.

Environmental Working Group, “8 Safety Tips” <http://www.ewg.org/cellphoneradiation/8-Safety-Tips>

Recommendations for Reducing EFI with Computers

Dr. Howard W. Fisher recommends that we create radiation-free environments:

Stay at least 2 feet away from computer monitors, with large monitors being better than small ones. Run laptops on battery power and turn off when not in use. Make sure all appliances are properly grounded and surge-protected. Reduce use of fluorescent lighting and lamps (ballasts are the problem). If bedside clocks are used, use ones that have a battery, otherwise, put the clock at least 6 feet away from the bedside. Devices that use remote controls are constantly giving off EMFs. “*The Invisible Threat III*”, eBook <http://theinvisiblethreat.com/>

- Keep your distance. Some computers need 30” in front and 40” in back for “safe” readings.
- Swap out a Cathode Ray Tube for a flat screen display (desktop). (I used to get “screen burn” on my face from these.)
- With computers, use cables to the network whenever possible. Ditto with routers.
- Use ferrite EMI filters (chokes) on electrical cords.
- Use shielded cabling.
- Make sure the electrical outlets are properly grounded.
- Shut off electronics when not in use.
- Install magnetic flux reduction devices. <http://www.stetzerelectric.com/> and/or <http://www.harapad.com>
- With new computers, remember to let them air out (off-gas) if you are chemically sensitive (not all issues are electronic). <http://www.dld123.com/q&a/index.php?cid=6436>

Read what was done by Eli Schunkewitz (EHS sensitive) with Dell equipment to reduce emissions using shielding for the computer, keyboard, trackball, and power supply – <http://www.ahappyhabitat.com/computer.html> Here is what was done to reduce the effects with his LCD monitor – <http://www.ahappyhabitat.com/LCDTutorial/LCDTutorial.html>

Reducing Radio Frequency Interference (RFI) with Computers

Computers emit RFI. If the motherboards have been designed correctly, they may have ferrite cores soldered on board near the I/O ports. They also have shields around those ports. This may be more of an issue with FireWire ports than with USB ports. Why are the ports shielded? They reduce “noise”. This used to be a problem with using multiple FireWire devices with the Mac – including the original external iSight cameras. Apple fixed that particular problem by internalizing the iSight camera in later Macs and shielding the electronics.

http://reviews.cnet.com/8301-13727_7-10335078-263-.html

James Wiebe (WiebeTech) even produced a whitepaper back in 2003 to discuss FireWire port failures, including electrostatic discharge, over/under voltage, voltage transients and what Apple did to rework the boards with ferrite beads, etc. They also added self-repairing FireWire fuses.

<http://www.wiebetech.com/whitepapers/FireWirePortFailures.php>

Did you know that voltage rises and falls, creating “noise” when you add or detach cables to a computer? Apple engineering later added circuit protection.

<http://www.medicalmac.com/mac98e.html>



You’ve perhaps seen those cables that look like a mini-python that ate a mouse? Those are inline resistors designed to reduce high frequency interference up to 1000 MHz. TVs, computers, telephones, burglar alarms, recording equipment, etc. may have power cords with these on them near the equipment end. Some USB cables have them. They are known as Radio Frequency (RF) chokes. Cables act as antennas. Chokes inhibit that natural tendency. These types of chokes are also known as ferrite beads. Radio Shack has them. Each wrap of cords in these ferrous oxide donuts, improves their effectiveness. They absorb heat too.

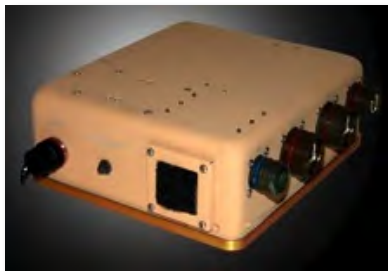
<http://www.antennex.com/shack/Dec99/beads.htm>

Dealing with Computer generated RFI/EMI (from 1994)

http://www.repairfaq.org/REPAIR/F_CompRFI.html

More EMF Safety Tips

http://www.safelivingtechnologies.ca/EMF_Safety_Tips.htm



Then again, if you really want a ruggedized Mac, you can get one from Victor Systems – only it is a Mac mini in Desert colors.

http://www.victorsystems.biz/VictorSystems/Ruggedized_Mini_Computer.html It is designed for airborne use, but try getting that onto a commercial airline and using it in coach!



Conclusion

“Prudent Avoidance”, similar to the Nuclear Field ALARA (As Low As Reasonably Achievable) seems to be the cry word for protecting ourselves from the physiological effects of being too close and exposed for too long to electronic and electromagnetic alternating fields. In other words, arms length.

As we’ve seen, there are things that can be done at the electronic board level, inside facilities and residences, as well as outside on

the ground, on poles, towers and in the air. Many solutions are simple and inexpensive.

Because electrical energy is all around us, no single “solution” will help us protect ourselves in an ever-increasing and invasive electronic age. We have to take a shotgun approach to the issue and act as if each and every one of us are electro-sensitive, because in fact, collectively, we are. And that has nothing to do with tin hats. We were built that way.

Or we wait for the next wave of systems Apple Corporation is going to release “real soon now”. I fully expect that they will do more with less at about the same price.

Apple Product Disassembly Videos

These videos provide clues as to what the internal structures of these products look like;

iPhone 3GS Disassembly

<http://www.youtube.com/watch?v=CsfP8GWOR8s>

iPod nano Disassembly

http://www.youtube.com/watch?v=tX9K35MuO_8

Time Capsule Disassembly

<http://www.youtube.com/watch?v=Or05-Czl7oU>

The Time Capsule operates between 5.15 and 5.25 GHz.

Apple TV Disassembly

<http://www.youtube.com/watch?v=K4fWJrGx44E>

The Apple TV operates between 5.15 and 5.25 GHz.

MacBook Air Dissection

<http://www.youtube.com/watch?v=7cTXf06M8y4>

MacBook Pro Disassembly

<http://www.youtube.com/watch?v=IYJuANmXnVw>

Digging Deeper

Conformity Standards

These standards are constantly being updated as more knowledge is being obtained on how electronics affect the human body and on how devices can affect other electronics.

Functional Safety: Understanding the New EMF and EMC Requirements

<http://www.ce-mag.com/archive/06/ARG/zombolas.htm>

Final draft ETSI EN 300 328 V1.7.1 (2006-05)

Candidate Harmonized European Standard (Telecommunications series)

Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive

http://www.cs.berkeley.edu/~culler/AIIT/papers/standards/EC%20en_300328v010701o.pdf

ETSI EN 301 489-1 V1.8.1 (2008-04)

Harmonized European Standard (Telecommunications series)

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

http://www.radiometrix.co.uk/test_report/emc/en_30148901v010801p.pdf

Changes to EN61000-3-2:2006/EN61000-4-7:2002 Power-line Harmonics

<http://www.feebel.be/files/Feebel->

[Web/files/2008electronics/presentations/3A_Changes_to_EN61000-3-2.pdf](http://www.feebel.be/files/2008electronics/presentations/3A_Changes_to_EN61000-3-2.pdf)

The Development of CISPR 22 as the Basic International EMI Standard for Information Technology Equipment

http://www.conformity.com/artman/publish/printer_208.shtml

Emissions Testing for Information Technology Equipment – EN 55022:2006 and Requirements for Measurements above 1 GHz

http://www.elliottlabs.com/documents/55022_requirements_above_1GHz.pdf

Guide for the EMC Directive 2004/108/EC (21st May 2007)

http://ec.europa.eu/enterprise/sectors/electrical/files/emcguide_may2007_en.pdf

Guidelines accompanying Commission Regulation (EC) No 1275/2008 of 17 December 2008 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for standby and off-mode electric power consumption of electrical and electronic household equipment (October 2009)

http://ec.europa.eu/energy/efficiency/ecodesign/doc/legislation/guidelines_for_smes_1275_2008_0kt_09.pdf

DIRECTIVE 2006/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

<http://www.hs-compliance.com/uploaded/documents/LVD%20Directive%202006-95-EC.pdf>

Anechoic Chambers

Here are some facilities that do testing. Government organizations also do this as will as most major electronics manufacturing firms;

A Padded Cell for Notebooks

<http://www.trustedreviews.com/laptops/review/2007/02/06/Zen-And-The-Art-Of-ToughBooks/p7>

Anechoic Chamber Architecture

<http://www.oobject.com/category/anechoic-chamber-architecture>

Celltech Labs (Canada)

http://www.celltechlabs.com/EMC_Test%20Facility.html

Cetecom

<http://www.cetecomusa.com>

D.L.S. Electronic Systems

<http://www.dlsemc.com/index.htm?emc/emc.htm>

Eckel Industries

<http://www.eckelusa.com>

Emerson & Cuming (Europe)

<http://www.ecosorb.com/pages/91/Chamber+Types>

Global EMC

<http://www.globalemco.uk>

Goddard Environmental Integration and Testing Facility

<http://techtransfer.gfsc.nasa.gov/Env-IntTsg-fac1.html>

Institute for Satellite and Software Applications (South Africa)

<http://www.issa.org/emc.html>

MET Laboratories, Inc.

<http://www.metlabs.com/pages/EMC.html>

Microsoft

<http://gizmodo.com/5372268/anachioic-chamber-the-place-where-sound-goes-to-die>

Panashield <http://www.panashield.com>

Safety and EMC Compliance Testing Directory

http://www.google.com/alpha/Top/Business/Electronics_and_Electrical/Safety_and_Compliance_Testing/

Southwest Research Institute (SwRI)

<http://www.swri.edu/4org/d18/struceng/prodassur/emcr/emcr/facilit0.htm>

Telcordia NEBS

<http://www.telcordia.com/services/testing/nebs/facilities.html?info=EXLINK#electromagnetic>

Tempest, Inc.

<http://www.tempest-inc.com>

TRAC Global

<http://www.tracglobal.com>

TUV

http://www.tuv.com/aus/en/emc_service.html

EMF/RFI

These are some links that discuss issues related to EMF, EMI and RF;

A Happy Habitat – Eli Schunkewitz, Biomedical Engineer

<http://www.ahappyhabitat.com>

AlphaLab Gauss Meter and EMF Detectors

<http://www.trifield.com/>

BioElectromagnetics

<http://www.bioelectromagnetics.org>

BioInitiative Report Links

<http://www.bioinitiative.org/links/index.htm>

Biological effects of electromagnetic radiation

<http://www.microwaves101.com/encyclopedia/biological.cfm>

Burgerwelle (Deutsch/Suisse/English)

<http://www.buergerwelle.de/>

Cellphone Radiation eBook

<http://www.emfnews.org/cell-phone-radiation-book.html>

Conrad Biologic – Richard Conrad Ph.D.

<http://www.conradbiologic.com/articles.html>

Gauss's Law

http://en.wikipedia.org/wiki/Gauss's_law

Reduce Computer EMF

http://www.ehow.com/how_5076376_reduce-computer-emf.html

Block EMF

<http://www.blockemf.com>

Digital Enhanced Cordless Telecommunications

<http://en.wikipedia.org/wiki/DECT>

DYI: Milligauss Meter

<http://www.free-circuit-diagrams.com/tools/page-1/295/milligauss-meter>

Dynamic Frequency Selection (DFS) and the 5 GHz Unlicensed Band

http://www.elliottlabs.com/documents/dynamic_frequency_selection_combined.pdf

The DX Zone: Radio Frequency Interference Links

http://www.dxzone.com/catalog/Technical_Reference/Radio_Frequency_Interference/

Electromagnetic Fields and Health Concerns (2001)

<http://www.nontoxic.com/electromagnetic/powerlines.htm>

Electromagnetic Fields: The Dark Side of Technology

<http://altered-states.net/barry/newsletter336/index.htm>

Electromagnetic Health

<http://www.electromagnetichealth.org>

Electromagnetic Radiation

<http://electromagnetic-radiation.love.com>

Electromagnetic Waves

<http://pages.prodigy.net/unohu/electro.htm>

Electronic Smog

<http://www.independent.co.uk/environment/electronic-smog-477191.html>

Electrosensible (French)

<http://www.electrosensible.org>

EM Facts

<http://www.emfacts.com>

EM Facts Links

http://www.emfacts.com/weblog/?page_id=97

EMC Directory

<http://www.emcdirectory.com>

EMF Dangers

http://www.mercola.com/article/emf/emf_dangers.htm

EMF Ratings for Cars

<http://www.ahappyhabitat.com/cars.html>

EMF RAPID's EMF Measurements Database (2000)

<http://www.emf-data.org>

EMF Health Effects Database (1975 to the present)

<http://infoventures.com/EMF>

EMFs Info

<http://www.emfs.info>

EMF in the Workplace ((September 1996) NIOSH, NIEHS and DOE

<http://altered-states.net/barry/newsletter143/booklet.htm>

EMF Journal

<http://emfjournal.com>

EMR Literature Survey

<http://www.arpansa.gov.au/radiationprotection/emr/literature/september09.cfm>

EMF Measurements

http://en.wikipedia.org/wiki/EMF_measurements

EMF/EMR Meters

<http://www.microwavenews.com/emf1.html>

EMR Network

<http://www.emrnetwork.org>

EMF News & Links

<http://www.lessemf.com/emf-news.html>

EMF News Articles

<http://www.emfnews.org/articles.html>

EMFs and Oxalates

http://www.coljoe.com/emf_info.htm

EMF Portal

<http://www.emf-portal.org/motivation.php?l=e>

EMF Protection

<http://emfprotection.wordpress.com>

EM Radiation Research Trust

<http://www.radiationresearch.org>

EMF Readings From Various Devices We Use Every Day

<http://www.naturalnews.com/023307.html>

EMF Shielding FAQs

<http://www.lessemf.com/faq-shie.html>

Emission Security

http://sarwiki.informatik.hu.berlin.de/Emission_Security

EMI Shielding Solutions

<http://www.electronics-manufacturers.com/info/electronic-components/emi-shielding-solutions.html>

EMF/EMR Web Directory

<http://www.microwavenews.com/www.html>

EnergyStar

<http://www.energystar.gov/>

ENERTECH Consultants Reports and Publications

http://www.enertech.net/html/emf_publications.html

Environmental EMFs (2009)

<http://www.emfrelief.com/emf.htm>

EPEAT

<http://www.epeat.net/>

FCC and Compliance Certifications Services FAQ

http://www.ccsemc.com/home_faq/index

FCC and Equipment Authorization Procedures

<http://www.fcc.gov/oet/ea/eameasurements.html>

FCC Mobile and Portable Devices RF Exposure Equipment Authorization Procedures

http://www.fcc.gov/oet/ea/presentations/files/feb08/Mobile_Portable_RFx_Procedures_Updates_Feb_08.pdf

FCC Technical Documents

<http://www.fcc.gov/oet/info/documents/#sec2>

Ferrite Beads

http://en.wikipedia.org/wiki/Ferrite_bead

Fielding a current idea: exploring the public health impact of electromagnetic radiation (April 2007)

<http://www.scribd.com/doc/25413835/Fielding-a-current-idea-exploring-the-public-health-impact-of-EMR>

Grant Island Group – Technical Surveillance Counter Measures

<http://www.tscm.com>

Guidelines for Limiting Exposure to Time-varying Electric, Magnetic and Electromagnetic Fields (Up to 300 GHz)

<http://www.icnirp.org/documents/emfgdl.pdf>

Guide to Solving AC Power EMF Problems (1995)

http://emfsolutions.com/pdf/ENG_GUIDE.pdf

Home Measurement and Analysis (EMFs)

<http://www.ahappyhabitat.com/homes.html>

How Strong is a milligauss?

<http://www.madsci.org/posts/archives/2000-11/974320954.Ph.r.html>

Dr. Magda Havas, MD

<http://www.magdahavas.com/>

Intelligence-gathering sites

<http://www.tscm.com/intelsites.html>

International Commission for Electromagnetic Safety

<http://www.icems.eu>

Magnetic Flux

http://en.wikipedia.org/wiki/Magnetic_flux

Microwave News

<http://www.microwavenews.com>

Mobilephone Radiation and Health

http://en.wikipedia.org/wiki/Mobile_phone_radiation_and_health

NIEHS: Electric & Magnetic Fields

<http://www.niehs.nih.gov/health/topics/agents/emf>

Physics and Consciousness Body Energy Frequency

<http://www.starstuffs.com/physcon2/freqamp.html>

Radiation Talk

<http://www.radiationtalk.com/>

Radio Frequency and Microwave Radiation Safety and Health

<http://www.osha.gov/SLTC/radiofrequencyradiation/>

Radio Frequency Safety - FCC

<http://www.fcc.gov/oet/rfsafety/>

RadTown USA

<http://www.epa.gov/radtown/wirless-tech.html>

Resolutions

<http://www.icems.eu/resolution.htm>

http://www.icems.eu/other_res.htm

RF Exposure Evaluations – ARRL

<http://www.arrl.org/news/rfsafety/eval/>

Stop-Radiation Links (International) by brain-tumor-from-cell-phone survivor, Enrico Francesco Grani

<http://www.stop-radiation.com/main.php>

UK Health Protection Agency – Electromagnetic Fields

<http://www.hpa.org.uk/HPA/Topics/Radiation/UnderstandingRadiation/1158934607698/>

The Unofficial TEMPEST Information Page
<http://www.eskimo.com/~joelm/tempest.html>

World Health Organization: Electromagnetic Fields
<http://www.who.int/peh-emf/en/>

National Institute of Environmental Health Sciences
<http://www.niehs.nih.gov/health/topics/agents/emf/>
<http://www.niehs.nih.gov/health/docs/emf-02.pdf> 65-page document from 2002.

"No Radiation For You" blog - by EHS, about EMR, for everyone!
<http://norad4u.blogspot.com/>

Research on Dangers of EMF
http://www.biotechnology.com/Research_Emf_Dangers.aspx

Hazard symbols
http://en.wikipedia.org/wiki/Hazard_symbol

The Man Who Was Allergic to Radio Waves (February 2010)
<http://www.popsoci.com/science/article/2010-02/disconnected>

The Law of Unintended Consequences – CFLs and Wind Turbines
<http://www.macompanion.com/macc/archives/February2009/Greenware/UnintendedConsequences.htm>

A Ubiquitous Pollutant
<http://www.electricalpollution.com/filter.html>

The Proper Split Beads to Suppress RFI
<http://www.k0bg.com/beads.html>

Protek Devices
<http://www.protekdevices.com>

Radiation from WiFi wireless router (Electromagnetic Radiation)
<http://www.youtube.com/watch?v=IMTjAXPQkTY>

Sabina DeVita - Electromagnetic Pollution, The Silent Invisible Pollutant
<http://www.redicecreations.com/radio/2009/12dec/RIR-091210.php>

SAR Compliance Testing Group - LinkedIn
http://www.linkedin.com/groups?gid=1813850&trk=hb_side_g

Smarter Shelter Resource Files
<http://www.smartershelter.com/RFemfresources.htm>

Stealing Passwords from Radiowaves (October 2008)

http://hothardware.com/News/Researchers-Steal-Passwords_From_Radio_Waves

Tempest 101

<http://www.tscm.com/TSCM101tempest.html>

Tempest Documents

<http://cryptome.info/0001/nsa-tempest.htm>

Tempest in a Teapot: Compromising Reflections Revisited 14-page PDF (2008)

http://www.uni-ulm.de/fileadmin/website_uni_ulm/iui.inst.100/institut/Papers/tempest_teapot.pdf

Transmission Lines – Electric and Magnetic Fields

http://www.dep.state.fl.us/siting/files/application/ppsa/turkey_pt/emf_presentation.pdf

TriboElectric Table

<http://www.trifield.com/triboelectric.htm>

Vibrational Frequency List

<http://justalist.blogspot.com/2008/03/vibrational-frequency-list.html>

Warning: Your Cell Phone May Be Hazardous to Your Health (February 2010)

<http://www.gq.com/cars-gear/gear-and-gadgets/201002/warning-cell-phone-radiation>

EMF-Free Zones

Frivolten (Sweden)

<http://www.frivolten.nu/sidor/engelsk/index.html>

EHS Zone Refuge (France)

http://www.next-up.org/NewsOfTheWorld/EHS_Refuge_Zone.php

Ecology House (Ecology House)

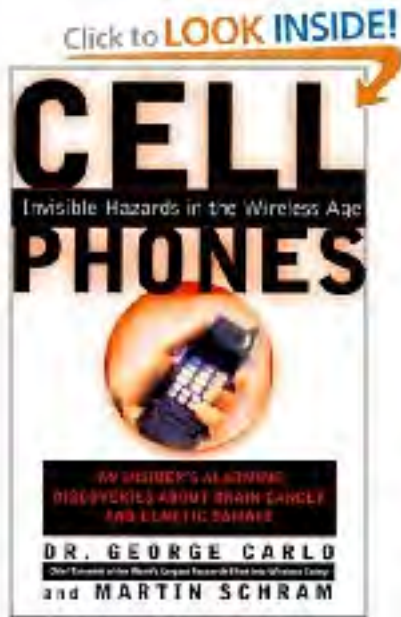
http://www.pacificsun.com/news/show_story.php?id=669

Other Reading Materials

Listed below are some books and other articles as reference materials;

BioInitiative Report: A Rationale for a Biologically-based Public Exposure Standard for Electromagnetic Fields (ELF and RF) 610-page PDF.

<http://www.bioinitiative.org/report/docs/report.pdf> (August 31, 2007)



Cell Phones: Invisible Hazards in the Wireless Age: An Insider's Alarming Discoveries About Cancer and Genetic Damage, George Carlo, Martin Schram (2001)

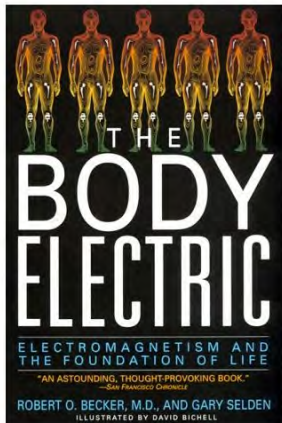
<http://www.amazon.com/dp/0786708182?tag=maccompanionm-20&camp=14573&creative=327641&linkCode=as1&creativeASIN=0786708182>

Cell Phone Radiation: Science Review on Cancer Risks and Children's Health 42-page PDF.

<http://www.ewg.org/project/2009cellphone/cellphoneradiation-fullreport.pdf> (September 2009)

Supplemental Materials on Electromagnetic Fields

http://docs.google.com/viewer?a=v&q=cache%3A2pC_4EZFH0kJ%3Awww.abanet.org%2Frppt%2Fcmtes%2Frp%2Fc4%2Findoor%2Fotto-statz95.pdf+Currents+of+Death+The+Attempt+to+Cover+Up+the+Threat+to+Your+Health&hl=en&gl=us&sig=AHIEtbRkZa0MzjzVziY3ZbdBLWLO-BW0zg&pli=1

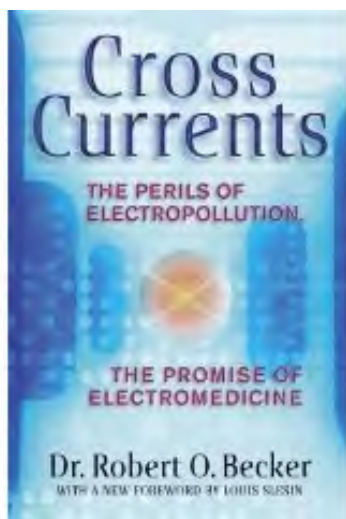


The Body Electric: Electromagnetism and the Foundation of Life, Robert Becker and Gary Selden.

<http://www.amazon.com/gp/product/0688069711?ie=UTF8&tag=maccompanionm-20&linkCode=xm2&camp=1789&creativeASIN=0688069711>

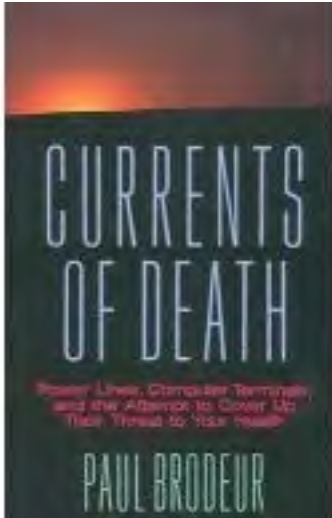
Compromising emanations: eavesdropping risks of computer displays, Markus G Kuhn (2003)
167-page PDF

<http://www.cl.cam.ac.uk/techreports/UCAM-CL-TR-577.pdf>



Cross Currents The Perils of Electropollution. The Promise of Electromedicine, Robert O. Becker, M.D. Jeremy P. Tarcher, Inc., (1990)

<http://www.amazon.com/gp/product/0874775361?ie=UTF8&tag=maccompanionm-20&linkCode=xm2&camp=1789&creativeASIN=0874775361>

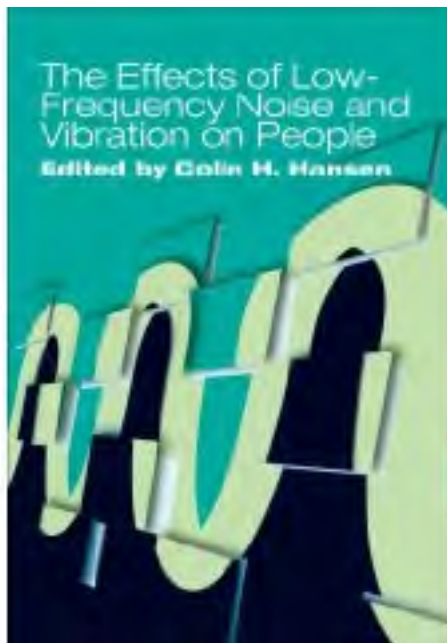


Currents of Death The Attempt to Cover Up the Threat to Your Health Paul Brodeur Simon and Schuster, (1989)

<http://www.amazon.com/gp/product/B000180JGO?ie=UTF8&tag=maccompanionm-20&linkCode=xm2&camp=1789&creativeASIN=B000180JGO>

Prevention Magazine: Is Dirty Electricity Making You Sick?

<http://www.prevention.com/health/health/healthy-lifestyle/is-dirty-electricity-making-you-sick/article/9e60d47569225210VgnVCM10000030281eac>



Effects of Low-Frequency Noise and Vibration on People, Colin Hansen

<http://www.amazon.com/dp/0906522455?tag=maccompanionm-20&camp=14573&creative=327641&linkCode=as1&creativeASIN=0906522>

Electromagnetic Compatibility Engineering, Henry W. Ott
<http://www.amazon.com/dp/0470189304?tag=maccompanionm-20&camp=145738&creative=327641&linkCode=as1&creativeASIN=047018904>

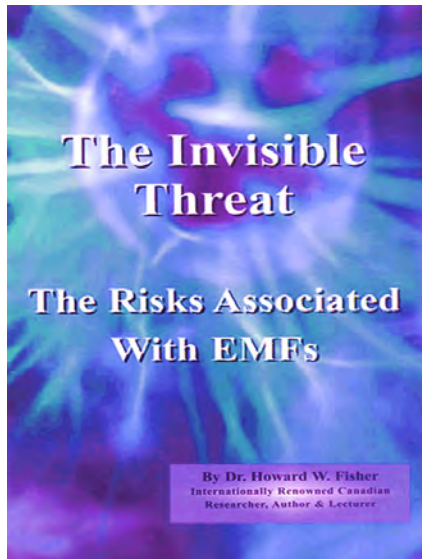


ELECTROMAGNETIC POLLUTION - A Hidden Stress to Your System, Dr. Sabina Devita
<http://www.devitawellness.com/pub/elecpoll.asp>

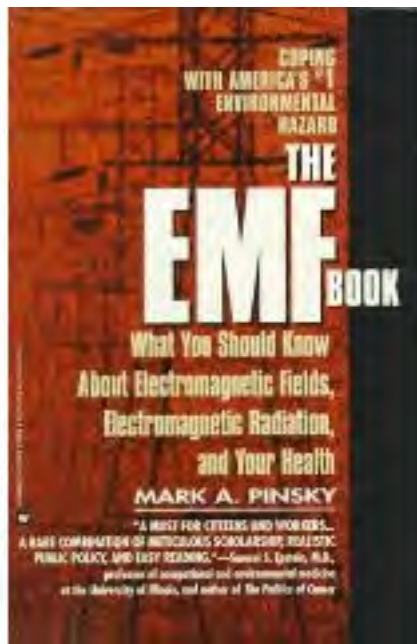
Electromagnetic Interference and the Cable Operator, ARRL
<http://www.arrl.org/tis/info/HTML/catv/index.html>

Electromagnetic Man Health & Hazard in the Electrical Environment, Cyril W. Smith & Simon Best St. Martin's Press. Inc. (1989)

Electricity and Health, an eye opener
http://www.enviroharvest.ca/electricity_and_health.htm

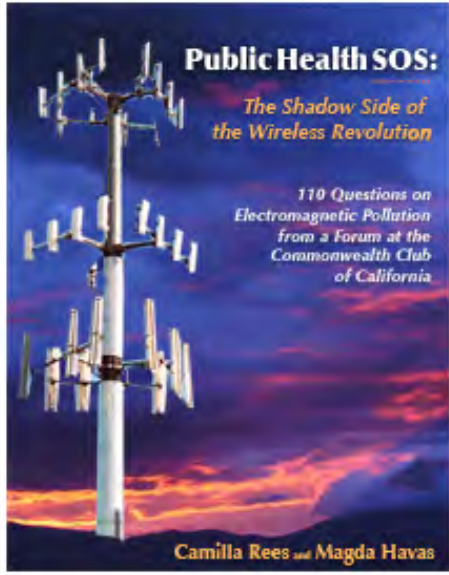


The Invisible Threat III: The Risks Associated With EMFs & Effective Interventions, eBook, Dr. Howard W. Fisher, 2nd Printing, 2010
<http://theinvisiblethreat.com/>



The EMF Book, Mark A. Pinsky
<http://www.amazon.com/dp/0446670049?tag=maccompanionm-20&camp=14573&creative=327641&linkCode=as1&creativeASIN=0446670049>

EMF-Bioshield Publications
<http://www.emfbioshield.com/publications.html>



Public Health SOS: The Shadow Side of the Wireless Revolution, Camilla Rees, Dr. Magda Havas

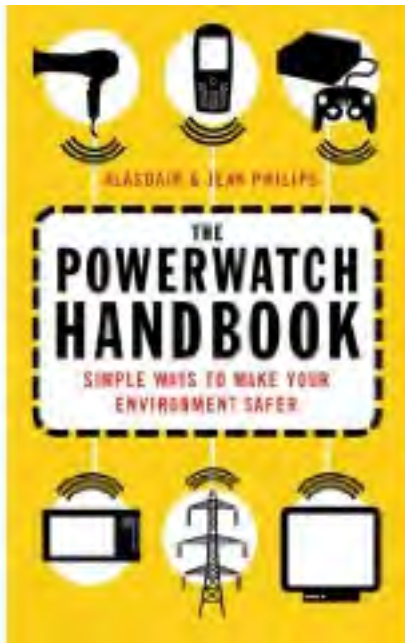
<http://www.amazon.com/Public-Health-Sos-Wireless-Revolution/dp/1441458794>

ReWire Me (28-page PDF on EHS)

<http://www.rewire.me>

Stetzerizer-related Research

<http://www.stetzerelectric.com/researchPaper/list>



The Powerwatch Handbook: Simple Ways to Make Your Environment Safer, Aisdair and Jean Philips.

<http://www.amazon.com/gp/product/0749926864?ie=UTF8&tag=maccompanionm-20&linkCode=xm2&camp=1789&creativeASIN=0749926864>

PubMed – biomedical and life science citations

<http://www.ncbi.nlm.nih.gov/pubmed/>

Videos

Watch some of the movers and shakers who have had their presentations available to the public;

Cell Phones & Wireless Hazards – William Thomas

<http://www.youtube.com/watch?v=CNIREMbzlKM>

Cell Tower Dangers Fact or Fiction?! Dr. Jack Walker

<http://www.youtube.com/watch?v=O3LDzZ1Q8bk>

Cell Transmission Towers and Your Health (1 hour) Dr. Magda Havas

<http://video.google.com/videoplay?docid=6284020723745580379>

CFL Impact

<http://www.cflimpact.com/>

CSI Electromog using Gigahertz meters

<http://www.youtube.com/watch?v=tS4J-RaD6l8>

Electrical pollution from Cell Phones and Cell Towers is increasing dramatically Part 2
<http://www.youtube.com/watch?v=HBjyMtepzT8>

Electricity Untamed (Four fun Audi videos)
<http://www.youtube.com/user/electricityuntamed>

Electromagnetic Pollution Health Risks – Dr. Magda Havas
<http://video.google.ca/videoplay?docid=2549425398606528708&q> and
<http://video.google.ca/videoplay?docid=92257750584598350&q#>

Electrosmog, Wi-Fi, Cellphone Radiation, Microwaves Pt. 1
<http://www.youtube.com/watch?v=TfAzxRcZBEo>

Electrosmog, Wi-Fi, Cellphone Radiation, Microwaves Pt. 2
<http://www.youtube.com/watch?v=u-TWR5g-DLM>

ELF Dangers 1 of 8 - Cindy Sage
<http://www.youtube.com/watch?v=UGoLledQoYE>

EMF
<http://www.youtube.com/watch?v=2bxP0ZVUFUo>

EMF Conspiracy Theories (list of videos)
<http://www.emfct.com>

EMFs: MacBook Pro and Bluetooth: Trifield Meter Field Test
<http://www.youtube.com/watch?v=HjOOZxiUbqc>

Invisible Hazards in the Wireless Age (the cellphone song) by Trillion
<http://www.puppetgov.com/2009/02/15/invisible-hazards-in-the-wireless-age-the-cellphone-song-by-trillion/>

GigaHertz Solutions Multimedia
<http://www.gigahertz-solutions.de/en/Multimedia.html>

What You Don't Know: ElectroSmog 101 1 of 7
<http://www.youtube.com/watch?v=eo-1OEvhrUo>

The Truth about Wired and Wireless Technologies (1.5 hour) Dr. Magda Havas
[Veoh2://veoh.com/?cmd=DA782A7C-3538-4dd9-B28B-90F927E31BF1](http://veoh2://veoh.com/?cmd=DA782A7C-3538-4dd9-B28B-90F927E31BF1) (requires registration)

Bruce Luber, Part 1. What Transcranial Magnetic Stimulation Can say about Self and Self Awareness – Neuropsychanalysis Lecture Series
<http://www.viddler.com/explore/npsa/videos/1/>

Other Stuff

Remember White Noise? http://en.wikipedia.org/wiki/White_noise Or those special earphones designed to produce noise that counteracts higher noise levels? http://en.wikipedia.org/wiki/Noise-cancelling_headphones

Doc_Babad's Macintosh Tips

To Site Search or to Google, That is the question

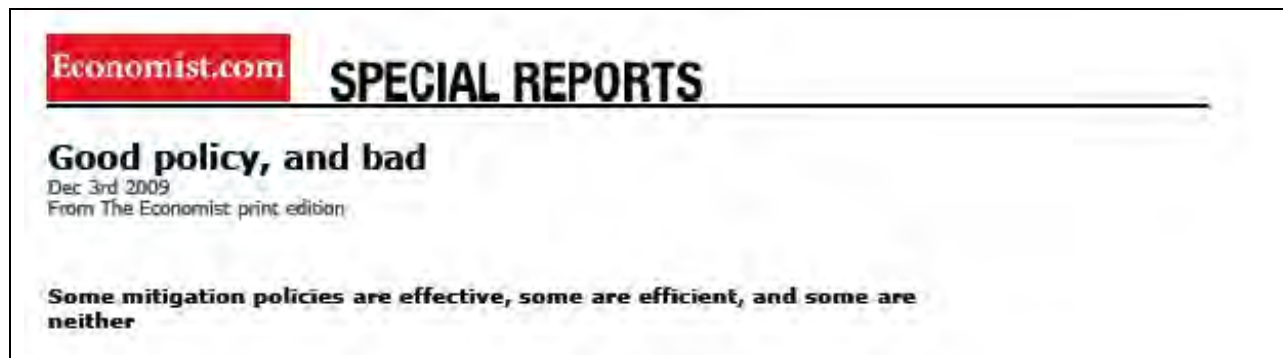
February 2010 Edition

By Harry {doc} Babad © 2010



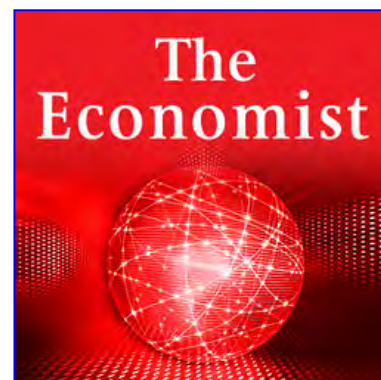
Introduction

In a moment of passing enlightenments, I finally figured out how to speed of my searches for explicitly selected articles I wanted to archive. Those are the items I tabbed for downloading while reading my paper magazine subscriptions. The consolidated information in most downloaded articles appears as illustrated below.



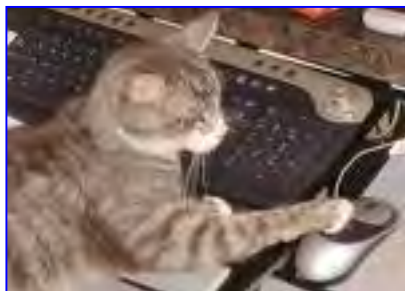
However the articles as published in the paper edition of the Economist had information on the magazine's name, issue date, and page numbers, in the magazine page header or footer. The actual article name or category is exemplified above. The general headlines of the article show up first. A descriptor or perhaps subtitle, is located below the article 'headline.' At times an author's name is listed. Now, readers, what is the real 'searchable' title of the article. We can all, if not in the general listed information, then in an articles first paragraph, figure out its subject.

But for what do search on the publisher's web site. Well, folks, it depends... depends both on the magazine and the mechanics of a site's search engine. If one entry doesn't work, say "Good Policy and Bad" then try another such as "Some mitigation policies are effective, some are efficient, and some are neither". If there's an author listed that the third item I check. Struck Out?



Dig deep and look at all the special reports or whatever the article category lives in, but do so within a range of publication dates. Why a range? An article, initially posted on the web edition of a magazine may have a different date than that listed for the date the paper copy was printed. Sometimes it takes more than three strikes before you get a hit.

Dumb, getting long in the tooth Harry. The solution for me is Google it.



Most of the time any of the three choices I've provided works when googling, and using the find feature of your browser you can skip thought irrelevant items at a click of a mouse. I usually do this by entering the magazine into the pages find field, no not into the search field!

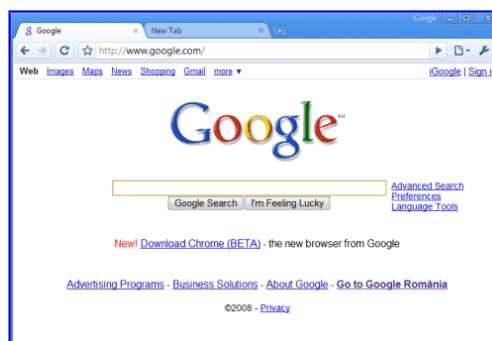
Read on for the rest of the story, I've provided you the punch line. Don't be a kitten on the keys.

Background

As many of you are aware, I spend most of the time, when not actually writing, doing searches on my Macintosh. What I'm looking for is fairly eclectic. My interests range from climate change, nuclear science and energy, folk music, technology especially energy related themes, to all things Macintosh, with side trips for finding obscure widgets and gadgets needed by someone in my family. After burnout usually around 10:00p, I turn toward recipes, cooking related (free) eBooks and on occasion obscure movies that I saw in art deco movie houses in the 50-70's.

I have not yet worked with Microsoft's "Bing" [<http://www.bing.com/>] or the new beta search engine from Wolfram, and will not until I read that its gotten more robust — Its an omission I can live with. I also, for now, have not learned to use data mining software and methods.

I also subscribe and read almost cover-to-cover, a variety to magazine, no e-editions for me, ranging from Time to the economist and Scientific American. As I read these, I mark (PostIt tabs) articles I want to collect for future use, either as references or as a basis for future exploration – most of my curiosity cats are dead, but there's so much of interest out there; so... I keep on truckin'.



A few generalizations — Searching individual websites for information can be either easy or maddening. If a site has opted to use the Google engine to power its search, it is easy to use, tolerant of syntax errors and even forgives my misspelling. But first, I'm from the government and am here to help you! Let us count the ways.

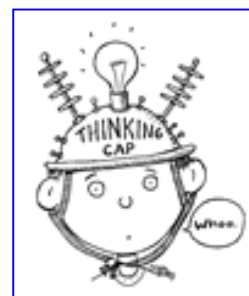
Department of Energy [DOE] Sites

Please note, I have published over 100 documents, papers and articles during my 30-year career as a supporter of DOE's waste management effort. Therefore my criteria for success are "how many of these goodies will a search find. Note this does not include my academic or industry career, or the articles I've written about folk music and the Macintosh. They would be out of scope for most of the Federal databases to which I have free access. (I'm sure big brother is watching me, but I can't check what he's seen.)

The various government sites I need to check for background or reference materials, supposedly peer reviewed or at least check for quality, when writing books and articles is pure horror. I habitually check the DOE, NRC, EPA and IAEA sites and on occasion the NSF and NIH portals.

One of the most exasperating are the two DOE OSTI (Office of Science & Technology Information) on which I can usually find public domain references to R&D and DOE programs, but pot with multiple rephrasing of either search criteria or syntax. Specifically most simple searches, say for instance the publication of Harry Babad (me)

First I tried to work with Science Accelerator — This is 'newish' a gateway to science, including R&D results, project descriptions, accomplishments, and more, via resources made available by the Office of Scientific and Technical Information (OSTI), U.S. Department of Energy. Using the 'Science Accelerator' to do a global database search turned up one item, a shared patent issued in 1980. [<http://www.scienceaccelerator.gov/index>] Checking "Harry Babad:" turned up zilch, as did "Harry Babad" Author and other {thinking cap} input variations.



Okay, the Since Accelerator doesn't do authors. However my search for 'Desalinization' gave me 184 hits, which I could sort by date or even burrow down into by limiting the list by subset subsets; the later did not help because the indexer and I didn't obviously see eye to eye on what a subset limits. There, helpfully links to Wikipedia, which I used to my advantage — a springboard to digging deeper [<http://en.wikipedia.org/wiki/Desalinization>].

Let's try the OSTI Bridge Site. [<http://www.osti.gov/bridge/>] It comes in two flavors, only one of which is accessible by the general public. Although dealing with cleared and released documents, the DOE/DOE contractor option, which also deals with so called Freedom Of Information Act [FOIA] contents such as correspondence or guidance, requires a password, which I not longer had. Wow - Instantly I got 101-matches which I could sort by date or even focus by doing an advanced (field related) search. Great, I've solved my problem and have my citations to guide me to the references I want. Not so fast, Doc.

That's the good news. The bad news is that those 101 hits contained articles by many of my colleagues, in which I was *not* a contributing author. My only relationships to the papers were the fact that some of my work was referenced therein. Only 11 of the papers contained my work. Searching H Babad turned up 991 hits, some of which were clearly mine. A narrower 'field' search [H. Babad] correctly turned up 30 relevant documents, while Harry Babad turned up none. Hmm!

The Mostly Private Sector —_My magazine article collecting experiences

As mentioned earlier in passing, I subscribe and skim/read/study to Consumer Reports, Business Week (now Bloomberg's BW), Chemical and Engineering News (ACS), Chemical Heritage, Discover, Time, Nuclear News (ANS), National Geographic, The Economist, Technology Review (MIT) and Scientific American. Where applicable I have a subscribers access to content. Of course, this does not count other subscription, both electronic and hard copy that are science and technology oriented, including my Macintosh related items.



Periodically, usually every-other month, I recheck the paper copies, go to the publisher's web site and download the articles of interest as well as any other closely associated documents linked the highlighted original. All of this lives in a 40 GB partition collected in nested folders. Although I've developed a database (FileMaker Pro) I'm too busy to do the data entry so live with a combination of title searches (EasyFind by DEVONtechnologies) and contents (Houdah Software's HoudahSpot, a great front end for Spotlight).

Now I can give you a blow by blow of the strengths and weaknesses of doing searches on each of the magazine publisher's web site. Search capability ranges from fair to good, and often require either varying the search terms, or changing the display order (usually by Date.) NO I will not, it is a waste of all our time.

However, I finally made a discovery, after blundering around d individual sites for years. The closer a site has come to adapting or mimicking the Google search engine, the easier it is to find things. Our macCompanion site uses this tool, although the site also provides search by ixquick, which did not meet my needs since its output was broadly focused and mostly irrelevant stuff from the entire WWW. However, the Google engine on the macC site turned up over 200 hits. Searching "Doc Babad" turned up 1580 hits, many more then the 250 or so items I've published. The truth lies somewhere in between, it just takes more time to *ferret* it out.

Conclusion

Okay, this is a little bit like the number of angels on the head of a pin. "To Site Search or to Google, That is the question." *The answer is both!*

If you only need to search a few webs sites, over and over again, consider mastering is search tools. If you stay close, then all the hits or misses are limited to the site you are searching.

If you however have broader multiple-site specific needs... Google them to pieces!



End Note:

Product and company names and logos in this review may be registered trademarks of their respective companies.

Reviews were carried out on my iMac 2.8 GHz Intel Core 2 Duo with 2 GB 667 MHz DDR2 SDRAM running Mac OS X version 10.5.8 —Snow Leopard in March

Doc.



The Northern Spy

Critic! Critic!

By Rick Sutcliffe

Technology News and Views Since 1983

March 2010

Just as there are 10 kinds of people in the world--

those who understand binary notation, and those who do not--so there are two kinds of people in the world, those who build, and those who tear down. The Spy prefers to be one of the former, and on the occasions when he becomes a critic, tries to be constructive about it, even when this is not easy. (There are two kinds of critics, the constructive, and the)

He's also too aware of the ironic paradox inherent in essaying to criticize criticism. After all, he could be said to impugn himself in the effort--note the old saw about finger pointing implying three more are pointing back at the pointer, and also the conclusion at the end of this critical editorial. Still, metaphysically messy and self-referential a task though it may be, someone has to sweep the philosophical Augean stables from time to time.

Remember the days when Apple was so routinely savaged by the GoC (Gang of Critics) that the company was nearly driven into the ground --despite that their products of the day weren't all that bad. (Well marketing was another matter, but....) The Spy's been noticing lately that following a few blissful years' hiatus, membership in the GoC seems to be growing apace. You see this in the number of IT columns along such lines (the motivation for this editorial), for instance in attack comments from the jealous concerning Apple's iPad and other recent products, the percentage of nasty reviews of hardware and software products, the occasional pillorying of companies or their executives, and the infighting between the various open source philosophical camps. Hey, to take an example, iPad.0 in and of itself certainly won't change the world, but the new paradigms it embraces and generates will have a profound affect on aspects of modern society, and not to be ignored, on Apple's bottom line. Deal with it, detractors. You may end up buying one.

For his part, the Spy has often wondered whether Apple's critics merely want to justify the money they misspent on a PC. This would be of the variety: "If I could only make that upstart little company fail, it would prove I was right all along in what I bought." But this is just a suggestion. Only the critics know their real motives.

GoC growth is also apparent in reports coming out of the Vancouver Olympics, particularly by British reporters, who uniquely among their brethren practice "journalism" as the quintessential Fleet Street blood sport. Now, the Spy carries no particular cheer-leading brief for the Olympics, because apart from Hockey, it's mostly a big yawn to him, but it does seem that someone who makes a living out of savaging others' best efforts ought to get a life, or at least a change of career. After all, their targets, unlike them, are trying to do something both positive and well.

With respect to this same event, the Spy notes that hockey is very nearly Canada's state religion. When the national team loses, the whole country are suddenly qualified to critique the goaltending, defence, offence, coaching strategy, management, and team selections. There are other experts, folks. Moreover, losing a game is not, after all, the end of the world as you know it. Perhaps, given similar high feelings about soccer (football) in other parts of the world, there is something to the theory of sport as a surrogate to war. That doesn't make it a good idea.

Unrestrained accusatory criticism is also, unfortunately, endemic in two critical (sic) western institutions that have come to be practised solely in an adversarial manner bordering on total war--politics and the law. In both it is accepted technique to accuse opponents in the strongest available language of every imaginable (imaginary is often more like) fault, failing, or crime in the hopes of making something stick long enough to either move from opposition to government, or get one's client off, either on a technicality or by blaming someone else--anyone else, even society as a whole. This is the "Madame Premier, will you tell this house when are you going to stop beating your husband?" syndrome. Whatever happened to reasoned debate, the weight of evidence, or taking responsibility for one's own actions? Whatever happened to the good old concept (albeit based on a mistaken Bible translation) of "men of good will"?

The Spy has declaimed on this subject before, expressing his concern over the way elections are fought. But when acrimonious criticism and abusive language become the norm in the practice of government, the latter is at risk of drowning in its own cesspool. As they also become endemic in our collective way of thinking, the accepted way to do law, sport, IT, and politics of all kinds, the Spy fears western society is becoming uncivil society, in danger of choking on its own acrimony.

Likewise for the practice of law. In a suit over, say, an accident, opposing lawyers routinely make up out of whole cloth entire collections of vile accusations against witnesses opposing their client--the person was drunk, biased, lying, prejudiced, or ill-motivated in some other way--it all goes into the statement of claim. What if it is all known to be fabrication? The goal in an adversarial system of jurisprudence is not to reveal truth, it is to vindicate, to win--at any cost. Since there are no penalties for lawyers who make outrageous false claims to get their clients off, and they are seldom rebuked, the practice has become accepted. The Spy notes that in his own fiction, it is a capital offence under the laws of Greater Hibernia to accept money for the practice of law, the plot heroes and heroines are builders, the villains destroyers.

Truth was once highly valued--so much so that, for instance, proper parliamentary procedure (a cornerstone of civilized discourse) bans any suggestion being made at a meeting that another person has lied. Since such a charge, speaking to motive as it does, is nearly impossible to prove anyway (how many perjury trials have you ever heard of), this prohibition is reasonable as well as necessary. Yet outside the protected chambers (and within them as much as can be got away with), politics, law, and the conduct of other business, are, like British journalism, often conducted as blood sports.

That fallen men and women are but sinners is an adequate explanation in some quarters as high-level theory, but somehow less than satisfactory in practical terms. (See the Spy's Third Law.) The Spy believes that the foundations of our very culture are crumbling in the face of its failure to deprecate the role of savage critic and re-engage the notion of reasoned and civilized discourse.

Of course, criticism as a way of life is endemic in other registers of the Spy's life--academia, the literary world, even churches.

We academics have an understandable tendency to fall in love with our own learning, particularly with that one big idea that formed the kernel of our dissertation lo these many decades past, and through which we still long to filter our entire discipline. This isn't necessarily a bad thing, until a competing idea comes along. The unfortunate upstart who then dares tilt at the establishment needs a tornado shelter, though not for research grants, equipment, grad student offices, tenure, or promotion, of which there will suddenly be none. Yes this is somewhat a stereotype. No, not all of us are like this. But life in the academy can be that way.

For their part, the literati, able to imbibe deeply from a river of vocabulary well-spiced with vitriol, are capable of raising criticism to heights (taking it to depths?) not dreamed of by mere mortals (unless we use the wrung words to make our pints). Woe betide the aspiring author or artist with new ideas or the provincial publisher or producer with the temerity to offer them exposure. New York and Toronto, firmly fixed as the centres of their respective literary and artistic universes, force the newcomer into the sad choice of either paying to orbit until sucked into the black hole (something akin to a sorority hazing), or suffering the indignity of being emitted as packets of high speed radiation. No, this is not universal--some new ideas do escape into the wild. Besides, though the denizens of these centres have barely noticed, the eBook phenomenon, epitomized by iPad-like devices, is the harbinger of their entropic death, thus relegating this particular critical choke point to the moot dustbin of history once and for all.

It will of course be replaced by their electronic equivalent, for if all the world's a stage, then only a portion of its people constitute the audience. The rest are critics. (There are only two kinds....)

Last, and by no means least of these three supporting examples, deeply religious people passionately desire to be right about doctrine (and there is no shame in this; they are dealing with issues of eternal life and death, and had best get it right). However, they sometimes fail to guard against the errant leakage of this principle into other aspects of this mortal life, thus coming to imagine they are also right about everything else. Of course, that implies everyone else is wrong about the same things.

Critical weapons dressed up in religious language can prove the most harmful of all, ruining friendships, even whole churches. The Spy knows a diverse group of young adults from a variety of church backgrounds, who, asked about the worst experience of their lives thus far, without exception cited a church split.

The reader who quails at relating to a religious experience is free to re-read this last example with the substitution of any other kind of organization--sports, civic, political, hobbyist, musical--they all have their "Church splits", and for comparable reasons of ego. Indeed, and with due respect to Peter, Dilbert, and others, it seems to the Spy that a single dedicated and unrestrained critic--much less an entire local chapter of the GoC--is a greater threat by orders of magnitude to the survival of an organization or a project than competitive pressure, societal change, economics, corruption, government interference, mistakes, or even gross incompetence.

All the latter threaten only the organizational entity's existence, but sustained destructive criticism inevitably brings its people to ruin as well. A thorough GoC is not so much about facts or issues as it is about *ad hominem* attacks that destroy confidence, careers, even lives--all without a pitying look back at the roadkill its juggernaut has flattened, and all without a thought that the drug of criticism, like any other, inevitably and mercilessly destroys the addict even more thoroughly.

And, returning for a moment to that unique organization called the academy, the Spy will put it on record that the University's proper role is NOT to critically deconstruct the student's world view and beliefs so that they can be reconstructed in another pattern--it is, rather, to provide the student with both the knowledge and the techniques to discourse with the world's great ideas in one or more disciplines at sufficient depth both to gain nominal admission to the academy by virtue of graduation, and to become mutually useful in society as a learned and competent practitioner of said discipline(s). We're not there to play critical mind games with our students.

But getting back to IT (what started all this rambling), the GoC here do, unfortunately, have abundant grist for their mill, for our landscape is indeed rife with unsolved problems, the wreckage of attempts to solve same, and the new problems generated thereby.

Granted, commercial software, besides seeming to exist in a semi-permanent alpha state, never catches up even with five year old and already obsolete hardware. Moreover, as our faithful reader well knows, the Spy has always been at best unimpressed by big software's major practitioners such as MS. On the one hand the giant once produced Excel 2004, the best all time software product, not merely in its own (most important) class but in any category. On the other, its other products are mediocre to poor, and more recent versions of Excel for the Mac are crippled. Well, it makes sense to someone, even if not here on the ground. It seems to the Spy, however, that one company's easily documented faults in this respect represent someone else's opportunity to--ahem--excel, if not at least provide a challenge for the GoC to find some ointment in the fly.

The Spy himself has a chequered career as a software reviewer--recalling with shudders the so-called "educational software" of Apple][days, for instance, much of which was so bad in both respects that it wasn't even wrong. Things are orders of magnitude better now, and it is the rare piece of software or book indeed that he cannot say several very good things about, or at least offer constructive criticism toward making it so--and most he actually recommends.

Granted also, he is all too aware of the IT landscape being littered by dozens of multi-million (even multi-billion) dollar projects that ultimately failed, thereby validating the Spy's Fifth Law. But there are well-understood management techniques that, properly applied, do avert most such disasters. Pay attention to your software engineering teacher, kiddies.

Yes, and there's the plethora of cheap hardware put out by the box assemblers, and designed to fail, not in the ten years that are standard for the automotive and large appliance market, but in a mere three, or whenever the next version of W*nd*ws arrives, whichever comes first. But on the plus side, this represents a window (sic) of opportunity for Apple to sell quality. Even bad examples have their good sides.

Moreover, hold your tongue, O critic me. Would you destroy it all to go back to the pre-technological era? Just so. Technology doesn't answer all the questions or meet all society's needs. That doesn't happen in this life. It doesn't even ask the right questions in the first place--people have to do that themselves. But it collectively represents a set of tools we are better off having than not, even though they, like any, can be used for either constructive or destructive purposes. The Spy prefers to do the former, and most of the time does not fully understand the GoC's or other vandals' motivation for the latter.

So, forgive a bit of speculation here. Is the lure of consuming criticism similar to that of just one more drink, another needle to mainline, just one more snort of crack? Does it feel good to put the metaphorical knife into someone else's gizzard and take a good rip? Is the buzz a critic gets fundamentally not so much about being "right", or even about "winning" the debate, but rather about the power to put down (expression used advisably) other people's ideas, words, works, motives, character, and very person?

It seems to the Spy that the GoC typically tends to:

- be desperate to prove the perfect rightness of their own cause in exacting detail (concede nothing),
- lose perspective on relative importance between themselves and what (whom) they criticize,
- be so outwardly focused they cannot scrutinize their own actions (a.k.a. "the log in the eye syndrome"),
- have no concept of going too far (each level of addiction requires a more potent dose of the drug of harsh words and actions to achieve the same high),
- spread the criticism around to add weight to it through the attempt to gain allies,
- instead by that very broadcast create far more enemies for themselves than for those whom they criticize, because most people eventually find constant complaining both arrogant and distasteful,

- be impossible for others to correct even when caught fudging the facts, without the putative corrector becoming a new target of vitriol.

There is a delicious irony in Christ's "blessed are the peacemakers", because the opposite is often more nearly true this side of the transition to another life. This is a blessing those who come between warring factions must await. Also see James 1:26 and 3:5ff.

So where are we going in all this? On the one hand, as in all cases of stupidity necessitating legislation (self-referentially contrary to the Spy's First Law), governments and their agencies have acted to protect at least the workplace from the GoC. Workplace bullying (the new term for harassment) or otherwise creating a poisoned working environment, can now, at least in British Columbia (via WorkSafe BC) and in other jurisdictions, attract fines of up to \$35K for both the perpetrator and the organization that failed to have constraints in place to prevent the savagery from getting out of hand. Criminal charges can also be laid. On the one hand, protection like this is a GT (Good Thing, especially for government job creation and social engineers). It has the potential to reduce the number of victims and the severity of their injuries. On the other hand, the very need for government to intervene in such a manner, especially when it can neither keep its own house nor that of the courts free of the same kind of abuse, illustrates a fundamental social failure. Civilization can only survive a limited number of civility deficits before it becomes something else.

On a more personal level, our reader should take all critics, this one included, with a huge block of salt, no matter how persuasive and eloquent they pretend to be (and even if they seem to successfully wrap themselves in their country's flag or in a religion). Even in the rare event they have the facts right (and a GoC feeds on misdirection) their opinion about software or hardware quality, features and bugs, utility, events, or of the law, politics, and especially the people involved in all these, is not the only word on the subject, no matter how seductive the opinion being pressed. Indeed, the more dedicated the critic to the task, the harder the pressing of the opinion, and the harsher the language, the less useful their views are likely to be.

Now lest anyone imagine the Spy thinks himself an exception, and in case the reader has never noticed the disclaimer at the bottom of the main page of this site, it reads in part:

Furthermore, nothing on this site should be taken as investment advice or product purchase advice. Where they appear, recommendations (for or against) are our *opinions* only, and anyone following them does so at their own risk. Readers should assume Nellie and The Northern Spy are probably mistaken, do their own homework, and take responsibility for their own actions. Anyone who relies on our views and predictions, including us, is right, wrong, foolish, or all three, even when we're right, wise, or both (LOL). Again, any mention of future products coming from Apple or other companies is the result of sheer speculation in The Northern Spy's own twisted mind and does not necessarily imply he or Nellie have inside information, access, or sources, or that they could reveal the latter in the unlikely event they might exist. If we know such a source, we won't use the information.

He tells his adult Bible class similar things: "Don't take my word for this interpretation. Go home, read the Word, and study it for yourself. If it tells you I'm wrong, come back next week and convince me. If you're right, I'll retract". IOW, constructive criticism is welcome here; the other kind does no one any favours. When its nature manifests, the Spy turns his back.

A number of years back, the Spy read an article about a teaching study in which researchers recorded teachers' positive and negative remarks, then interviewed students for their perceptions. They learned that unless the positive comments outweighed the negative by well over a 90-10 ratio, the teacher was viewed as (often overwhelmingly) negative and was therefore entirely ineffective. So, if you're good enough at your profession to consider being a teacher, bring students along and build them up. Don't tear down.

He'll offer such advice to political, legal, and other critics, especially to certain IT and, to the main point here, other columnists in both Canada and the United States: Lighten up and say something positive now and again. Your vitriol affects others all right, but it rots your own soul more than it damages anyone else. The columnist, lawyer, or politician who dies or retires having taken the most scalps doesn't win anything. To put it another way, having a tongue that can cut sheet metal leads only to acid indigestion.

And he'll advise anyone who hears or reads of someone savagely ripping a strip off someone else's face that, regardless of the alleged provocation, the ripper is likely to be far more in the wrong than the rippee, and that the stronger the language used, the greater this likelihood

So, if you routinely believe and follow critics, even if merely for the blood sport spectacle, and particularly if your mentors are the most strident ones, shame on you. The Spy pities you as much as he does them. Why play acolyte to someone who makes a career of being seen as right at others' expense? Can't you see past the person who wraps abusive criticism in the guise of "freedom of the press" or "free speech", when their systematic failure to speak responsibly will surely enchain both? Surely it is obvious when a chapter of the GoC routinely and exclusively dishes out harsh criticism against everyone in positions of authority that they are primarily messaging their own authority problem. (Don't give such persons authority; they inevitably abuse it then, too.) And, in the IT realm specifically, if a columnist never has anything positive to say about others' work and products, surely it is time to read someone else (no columnists' names in Canada or the United States either stated or implied, to protect the...).

To put it constructively, and in deference to the fundamental paradox here, this columnist will exclusively criticize all those critics who fail to criticize themselves. Wait. Should that be taken as self-criticism?

--The Northern Spy

Rick Sutcliffe, (a.k.a. The Northern Spy) is professor and chair of Computing Science and Mathematics as well as Senate Chair at Trinity Western University. He is also on the board of CIRA, operator of .ca. He's written two textbooks and several novels, one named best ePublished SF novel for 2003. His columns have appeared in numerous magazines and newspapers (paper and online), and he's a regular speaker at churches, schools, academic meetings, and conferences. He and his wife Joyce have lived in the Aldergrove/Bradner area of BC since 1972.

Want to discuss this and other Northern Spy columns? Surf on over to ArjayBB.com. Participate and you could win free web hosting from the WebNameHost.net subsidiary of Arjay Web Services. Rick Sutcliffe's fiction can be purchased in various eBook formats from Fictionwise, and in dead tree form from Amazon's Booksurge.

URLs

The Northern Spy Home Page: <http://www.TheNorthernSpy.com>

The Spy's Laws collected: <http://www.thenorthernspy.com/spyslaws.htm>

The Spy's Shareware download site: <http://downloads.thenorthernspy.com/>

WebNameHost: <http://www.WebNameHost.net>

WebNameSource: <http://www.WebNameSource.net>

nameman: <http://nameman.net>

opundo: <http://opundo.com>

Sheaves Christian Resources: <http://sheaves.org>

Arjay Books: <http://www.ArjayBooks.com>

Booksurge: <http://www.booksurge.com>

Fictionwise: <http://www.fictionwise.com>



gene steinberg's
TechNightOwl

TechNightOwl

Apple's Iron Fist

By Gene Steinberg

<http://www.technightowl.com/2010/02/apples-iron-fist/>

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All right you know that Apple Inc. is brilliant when it comes to spin control. They have managed to control their corporate message far better than any other company and, in fact, probably better than many governments. Whether it's all due to the iron fist of Steve Jobs, or it's a cooperative approach formulated by a number of executives, you have to expect that they will make sure things are done their way as much as possible.

When it comes to the products themselves, the situation varies. Mac users have a pretty good amount of freedom to run what they want, even if it screws up their computers. As much as Mac OS X is perceived as a proprietary operating system, it's actually built upon a core consisting of loads of open source apps.

WebKit, the rendering engine for Safari, is open source and thus amenable to contributions from loads of smart programmers. It's also used in Google Chrome, various mobile platforms in addition to the iPhone and, in fact, by any developer who feels they have a better idea for a browser.

But where Apple's iron fist is most evident is the App Store, where they are the gatekeepers. While they are fairly generous about which apps get posted, they can also be extremely arbitrary. That explains why some software companies complain that they feel they have followed the rules, but Apple won't post their apps. Every so often, Apple trots out VP Phil Schiller to explain what a great job they're doing, while still conceding they aren't perfect.

While I understand that some iPhone and iPod touch owners might not like having to go to a single source for all their legal apps, there are some benefits to this sort of setup, the most obvious of which are improved software stability and security.

When you download and install an app for your Mac or PC, you trust that the download repository or software publisher is doing the right thing and isn't trucking in infected or extremely bug-ridden software. If you click on a link that takes you to a phishing site and your bank account gets hacked, well, an innocent error can become catastrophic. Then again, that can happen on the iPhone too, as it did when my wife clicked on a bogus email link and mistakenly logged in while just playing around with the thing the other day. We're still fighting the bank to get our money back.

Update: It appears that this episode was more in the form of a generic hacker attack than the result of phishing. We hope to have things restored once the "investigation" is over, whenever that is.

In any case, as a vendor, Apple has the perfect right to make a final decision about what merchandise to stock. The same is true whether it's a local retail store or a national or multinational chain. They might take suggestions about which products to carry, but at the end of the day, they can't be forced to select one product over another. Would you really want it to be otherwise?

While you may object to the fact that Apple maintains the only legal source for their mobile platform, nobody forces you to buy those gadgets. When it comes to smartphones, there are loads of choices, with the most compelling competitive offerings coming from RIM with their Blackberry and the various devices that support the Google Android platform. Again, you have to weigh the positives and negatives, and that includes the freedom to buy the software and accessories you want.

As I said the other day, you only have to compare the way Apple does things to the approach taken by Google, where they track everything you do in order to serve up targeted ads. That's often the price to pay for free, but even if you use the Google Apps version of Gmail, and upgrade to the professional version that carries an annual fee for every single user, the last time I checked you still had to turn off the option to display ads. They get you wherever you go.

In contrast, Apple may exert strict control over their various platforms, but they aren't watching what you're doing. Sure, they keep your credit card information on file so you can be billed for the stuff you buy from their online stores, but that's no different from any online vendor. None of that extends to how you use their products, or what you do with them. When you pay \$99 a year for a MobileMe subscription, you can rest assured that the contents of your email won't be tracked in order to send you targeted ads.

There are no ads, and the only mailings you might receive from Apple, should you agree to accept them, relate to the company's products and services — and, of course, when your membership will expire.

Now I realize that many of you might chafe at the way Apple controls the medium, the message and the products. However, there is also a fairly decent amount of adherence to international standards rather than proprietary ones, particularly in OS X, and the technologies supported on all their devices. The good, to my way of thinking, far outweighs the bad.

Books

The Invisible Threat III: The Risks Associated With EMFs & Effective Interventions, eBook

Reviewed by Robert L Pritchett



Author: Dr. Howard W. Fisher

Publisher: Parakeet Publishing

<http://parakeetpublishing.com/>

2nd Printing 2010 eBook

http://theinvisiblethreat.com/contact_us.php

<http://theinvisiblethreat.com/>

Pages: 229

\$35 USD “As we are selling information in the form of eBooks, there are no refunds given for our eBooks.”

ISBN: 978-0-9780331-7-0

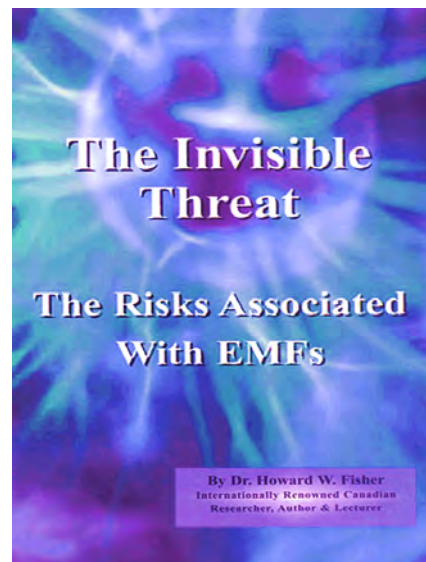
Strengths: Most recent published documentation on the topic of EMFs and Intervention.

Weaknesses: Requires Non-Mac-friendly MobiPocket Reader. No refunds.

<http://www.mobipocket.com/en/downloadSoft/DownloadManualInstall.asp>

Lexcycle has a free reader (Stanza) that opens MobiPocket files -

<http://www.lexcycle.com/download>



Introduction

“Newly revised for 2010, *The Invisible Threat III: The Risks Associated With EMFs & Effective Interventions*, exposes the risks we face from Electromagnetic Fields (EMFs).

Everyone is affected by electromagnetic radiation and radio frequency radiation from all appliances, cell phones, cordless phones, computers, radio waves, and television waves, just to name a few. These are invisible threats to our health. **Prolonged exposure to EMFs has been shown to cause physiological change in human tissues and according to some prominent researchers is linked to cancer. The MRET Noise Field Polymer Disk puts out a Noise Field capable of eliminating the effects of EMFs.**

Dr. Howard W. Fisher has conducted a thorough review of the literature pertaining to electromagnetic fields and brings to light the findings of the researchers as they relate to cancer, leukemia, neuro-degenerative disorders and all manner of disease. More than 400 footnotes demonstrate the validity of the research.

This all new eBook edition of *The Invisible Threat* includes a free cell phone chip. Everyone who purchases *The Invisible Threat eBook* will be mailed one (1) Cell Phone Chip (also known as an MRET Noise Field Polymer Disk) per paid digital download.”

Other Comments

"In summary I believe that there is ample evidence that EMF exposure is associated with increased cancer in humans." Dr. Sam Milham, *Washington State Department of Health*

National Institute for Environmental Health Sciences classified (ELF) EMF as a Group 2B carcinogen under the standards established by the World Health Organization's International Agency for Cancer Research. (DDT and lead are also Group 2B carcinogens).

The California Department of Health Services concluded after a seven year study that EMF exposure is a risk factor for childhood leukemia and other diseases.

"In all my years of looking at chemicals, I have never seen a set of epidemiological studies that remotely approach the weight of evidence that we're seeing with ELF electromagnetic fields. Clearly there is something here." Martin Halper, *Director of Analysis and Support, Environmental Protection Agency (USA)*

"Dr. Fisher's grasp of immunology, and human physiology places him in the vanguard of a select few who can understand MRET technology, gather his own data, publish the results and then explain these findings to the public so that we can benefit.

This book is indispensable to anyone who cares about their health and what the environment is doing to them." Dr. John Haberstroh, D.C., D.A.B.C.N., D.A.C.A.N., F.A.C.F.E., Boston, Massachusetts

What I Learned

My eyes were opened while reading this book. I had not heard of Graham Stetzer Units (GSUs) before and knew something about EMFs.

Dirty Electricity and GS Units

<http://www.magdahavas.com/2009/12/05/gs-units-explained/>

Almost all of the naysayers can go home now. Dr. Fisher has not only seen the smoke, but has uncovered the source and it has caught fire. He has brought together a number of irrefutable facts, figures, charts, etc. showing this is not just tinfoil hat stuff any longer. He found the loose ends, tied the knots. He searched for the data and connected the dots.

The book is heavy on research and lists studies ad infinitum. No longer can the naysayers say there is no evidence to the contrary.

I had no idea so many health issues could be correlated to electrosmog. What has been captured here confirms all of our concerns regarding the magic of electricity and electronics in our lives and the physiological and epidemiological aspects associated thereof.

This book is the new *Body Electric*.

A possible solution is in countering noise with noise using the MRET Noise Field polymer as an EMR shield. Only the company would not send me one for evaluation. Dr. Richard Conrad believes these things are a scam <http://www.conradbiologic.com/articles/EMFscams.html>, and I tend to believe him. How does adding a counter-current negate the source of the emission as far as electromagnetism is concerned? Wouldn't it be additive? This isn't a "noise" issue that can be solved, like using headphones that utilize counteracting audiowaves to stop jet engine sounds at an airport from reaching a person's ears.

The thermography shows beyond doubt the effects caused by the use of cellphones on the head of a person. Thermal effects are only one aspect of radiation damage to humans.

If we want to improve our health in an electronic environment, we need to protect ourselves. It has been proven beyond a shadow of doubt that when EMFs are removed, disorders such as chronic fatigue syndrome, Type I and Type II diabetes, multiple sclerosis, tinnitus, electrical sensitivity and a host of other disorders are dramatically reduced.

The book lists a number of things we can do to reduce our exposure to EMFs.

Conclusion

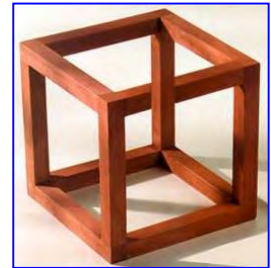
We should adopt a policy of “prudent avoidance”. And maybe scrutinize a little better, so-called technological “solutions” to the problem. ;^) Do noise field devices work? Pendants? Chrystals? I have not found out yet. I’m skeptical. Mu-metal-like materials have been proven effective, however.

The book hosts a variety of recent references, instead of relying only on studies that are decades old.

Greenware

The Greening Continues — The most eclectic of what I read

macCompanion March 2010
By Harry Babad © 2010



Sources & Credits:

A few of these items were located in the newsletter *NewsBridge* of 'articles of interest' to the libraries users. It is electronically published by the Pacific Northwest National Laboratories, in Richland WA. I then followed the provided link to the source of the information and edited the content (abstracted) for our readers. Most this time comes from *Discover Magazine*, and items of interest posted in the American Nuclear Society's news *headlines'* letter.

Much of what I will share comes from the various weekly science and environmental newsletters to which I subscribe. Their selections are obviously, and intentionally biased by my views. The resulting column contains a mini-summary with links to articles I found interesting. I also get technology feeds from the New York Times, Business Week, *Discover Magazine*, and the American Nuclear Society. They are in no particular order so scroll down and enjoy. Click the links if you want to read more.

With A Chip on My Shoulder — I avoid greening sites that equate a demonstration of a concept (e.g., lab test) to having an industrially viable commercial solution; no government subsidies don't make things commercial — all governments have the proven habit of bowing to either lobbyists or homo populous <the loudest voice> and have, International, been shown to pick losers. Supporting R&D, and funding large scale demos — wonderful; subsidizing industry — no way. The fifth or sixth law of technology... if you don't check the whole life cycle of a new process or energy solution; you're going to fail — Its 100% bomb out.

And now the greening news...

Tiny Nuclear Batteries to Power Micro Devices

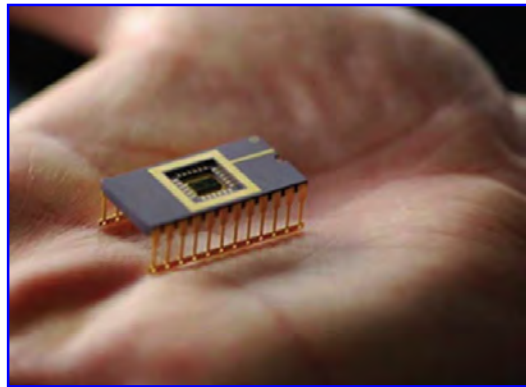
Typical chemical batteries just don't cut it when a device needs to run for years without fail. Enter the betavoltaics, or tiny nuclear batteries that harvest energy from radioactive sources such as tritium.

Now a company called Widetronix has developed new betavoltaics that can run for up to 25 years and perhaps power tiny devices in everything from military hardware to smart phone sensors.

Nuclear in this case does not refer to fission power and splitting atoms, but instead means the natural decay of electrons given off by radioactive sources. A semiconductor such as silicon harvests the electrons in betavoltaics — similar to how semiconductors in photovoltaic cells collect photons from solar energy...

Such tiny power sources could enable a growing swarm of tiny devices in civilian life. Greene said that his company is looking toward "ultra low power implantable devices" that might help physicians monitor the health of patients.

Widetronix has developed tiny betavoltaic batteries that can run for up to 25 years. The next step is increasing their power output to make them useful for Micro-Electro-Mechanical Systems (MEMS) and other tiny, typically wireless devices. Credit: Widetronix



The growing popularity of Micro-Electro-Mechanical Systems (MEMS), which enable "systems-on-a-chip" and other electronic devices on incredibly small scales, could also benefit from betavoltaics. They may help transform smart phones into do-all devices that monitor human health and the environment.



For an alternate radio active material free approach to such long life batteries check out the information about a cantilever battery created at Cornell University – <http://www.news.cornell.edu/releases/Oct02/cantilever.ws.html> I've not has the time to determine whether the Cornell approach was ever commercialized, so feedback is welcome.

By Jeremy Hsu, Special to Live Science —

TopTenREVIEWS 09 December 2009

<http://www.livescience.com/technology/091209-nuclear-batteries.html>

Smog Rules Could Cost Industry \$90B—and Save \$100B on Health Costs — Another Catch-22; can you be the judge?

The Environmental Protection Agency has announced its proposal to toughen up the standards for smog-causing pollutants, which would replace the standards set during the Bush administration.

The Obama administration's proposal sets a primary standard for ground-level ozone of no more than 0.060 to 0.070 parts per million, to be phased in over two decades. Regions with the worst smog pollution, including much of the Northeast, Southern and Central California and the Chicago and Houston areas, would have more time than other areas to come into compliance [*The New York Times*]. The previous standard was 0.075 parts per million, set in 2008 despite government scientists' objection that it was not strict enough. Smog is formed when a stew of nitrogen oxides, volatile organic compounds, carbon monoxide, and methane is baked in sunlight.



The new standard won't be cheap, but proponents say it will save money, and lives, in the long run. The EPA estimates that by 2020 the proposal will cost \$19 billion to \$90 billion to implement and will yield health benefits worth \$13 billion to \$100 billion. The proposal would result in 1,500 to 12,000 avoided premature deaths by 2020, though the precise number depends on what limit the agency adopts [*Washington Post*]. Smog is linked to a wide variety of heart and respiratory diseases. Currently, a majority of the counties that are required to monitor ozone levels would not meet the new standard. If the 0.070 limit is adopted, 515 of the 675 counties that monitor ozone levels would be out of compliance.

Factories, oil and gas refineries, and power companies would be required to clean up their acts. "Coal-burning power plants are the 800-pound gorilla in the room," John Walke, a clean air lawyer at the Natural Resources Defense Council, said about the industry that could get hit hardest. He said airplanes, ships, locomotives and off-road vehicles would also be targeted, perhaps more than automobiles, which have had to cut pollution since the 1970s [*Reuters*]. *This is most of it, but there a bit on the proposed rule left so feel free to do the clickin'.*

Discover Blogs/80 Beats

January 8, 2008

<http://blogs.discovermagazine.com/80beats/2010/01/08/smog-rules-could-cost-industry-90-billion-save-100-billion-on-health/>

Battery that 'charges in seconds' — A new manufacturing method for lithium-ion batteries could lead to smaller, lighter batteries that can be charged in just seconds.

Batteries that discharge just as quickly would be useful for electric and hybrid cars, where a quick jolt of charge is needed for acceleration. The approach only requires simple changes to the production process of a well-known material. The new research is reported in the scientific journal Nature.

Because of the electronic punch that they pack, gram for gram, lithium-ion batteries are the most common rechargeable batteries found in consumer electronics, such as laptops. However, they take a long time to charge; researchers have assumed until now that there was a speed limit on the lithium ions and electrons that pass through the batteries to form an electrochemical circuit.

A prototype battery made using the new technique could be charged in less than 20 seconds - in comparison to six minutes with an untreated sample of the material.

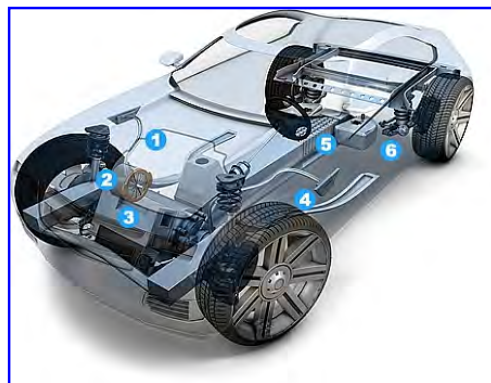
Most commercial batteries use a material made up of lithium and cobalt, but lithium iron phosphate does not suffer from overheating - something that has affected laptop and mp3 player batteries in a number of incidents. There's more, click the link.

BBC News — March 11, 2009

<http://news.bbc.co.uk/2/hi/science/nature/7938001.stm>

E--Transportation Jump-Start: Coalition Seeks to Pave the Way for Electric Vehicles — The Electrification Coalition is made up of carmaker Nissan Co., utilities and tech companies.

Although the widespread adoption of electric vehicles and their related infrastructure has always suffered from chicken-and-egg syndrome, Nissan and FedEx, along with several utilities and technology companies have formed a coalition to break the stalemate. At a press conference Monday in Washington, D.C., the Electrification Coalition announced its formation as well as a new 130-page report on the dangers of oil dependence, the benefits of electric vehicles, and ways to overcome roadblocks that have kept these vehicles from being deployed en masse.



Sixty percent of the petroleum used by the U.S. daily comes from foreign sources, FedEx CEO Fred Smith said at the launch event, adding that 90 percent of all U.S. transportation is petroleum-powered. Smith made clear his position that reliance on foreign oil is "in no small way related" to the wars in Iraq and Afghanistan. This energy mentality has to change because the U.S.'s dependence on foreign oil has created what amounts to a security risk for the country as a whole, said Sen. Byron Dorgan (D-N.D.), who also spoke at Monday's event.

The coalition's position is that a move to electric vehicles would help the U.S. combat the economic, environmental and national security vulnerabilities caused by the country's petroleum dependence. The coalition's "Electrification Roadmap" report predicts that if by 2040, 75 percent of light-duty vehicle miles traveled in the U.S. are covered by electric vehicles, oil consumption in that fleet would be reduced by more than 75 percent, and "U.S. crude oil imports could effectively be reduced to zero." *Click Trough to the links embedded in the article – its worth your time.*

By Larry Greenemeier in Scientific American November 17, 2009

<http://www.scientificamerican.com/article.cfm?id=electrification-coalition&print=true>

Put the Obesity Epidemic at the Top of the {Health} Agenda — If Congress wishes to control costs in health care, they must put the obesity epidemic at the top of the agenda.

Why? Because as much of a problem as obesity is today -- believe it or not, it is going to get worse -- and we will all be paying more for it.

A new study released today by the UnitedHealth Foundation, American Public Health Association and Partnership for Prevention in conjunction with their annual *America's Health Rankings* report shows us what the world will look like a decade from now if current trends continue.



The study, which was based on my research, finds that:

- By 2018, 103 million American adults -- or 43 percent of the population -- will be considered obese;

- US spending on health care costs attributable to obesity will quadruple - to \$344 billion - over that same period; and,
- By 2018, obesity will account for more than 21 percent of health care spending.

Obesity is historically linked to about one third of the increase in domestic health spending since the mid-1980s and is a key factor in the rise in private insurance premiums, Medicare and Medicaid spending. These new findings show there's no question that as a nation, we need to take action -- and fast -- to control our weight.

While health reform provides us with a great opportunity to consider the obesity epidemic from a national policy perspective, there are things we can do right away that don't necessarily require legislative action. We can meaningfully reduce costs and improve quality of life simply by changing the way we think about and treat obesity. Here are four examples of where to focus our efforts:

Read the four ways to focus our efforts, and save both lives and health dollars.

Ken Thorpe, for the Huffington Post — November 17, 2009
http://www.huffingtonpost.com/kenneth-thorpe/put-the-obesity-epidemic_b_360424.html

Study: Algae Biofuel Production Guzzles Water & Energy

I've reported on algae as highly touted a source of biofuel. Since the law of unintended consequences is part of universal truth, I'm reprinting most of the linked article. But this is the way science and engineering works, if you know the question you can usually figure out a functional cost effective answer, politics aside, of course. — Doc.

When algae is discussed as an alternative source of biofuel, it's often in tones of breathless excitement; many green tech boosters believe that the slimy goo can be turned into fuel superior to that made from corn, canola, or switch grass. You don't need vast tracts of land to cultivate algae for biofuel, the thinking goes, and all you need is the right strain of algae, water, sunlight, and carbon dioxide. Even Exxon and Dow Chemical recently joined the biofuel brigade, and are now investing millions in algae operations.

But a new study [<http://pubs.acs.org/doi/abs/10.1021/es902838n>] suggests that while algae might produce good fuel, the environmental costs involved in the production would be heavy.

A life-cycle assessment published in the journal *Environmental Science and Technology* argues that algae production consumes more water and energy than other biofuel sources like corn, canola, and switch grass, and also has higher greenhouse gas emissions. While the study's results are sobering, they're also being met with harsh criticism from algae-based biofuel companies and their trade group, the Algal Biomass Association.

The culprit, the researchers say, is fertilizer. Growing algae in open ponds is akin to producing them in a shallow swimming pool, [lead researcher Andres] Clarens said, so all of the nutrients — nitrogen and phosphorus — needed to keep them alive and boost their production come from outside sources [*Scientific American*]. The researchers point out that corn can draw at least some of its nutrients naturally from the soil, and that process



can be amplified by rotating crops, whereas algae production draws all of its fertilizer from external sources. Since the fertilizers dumped into the algae pools usually come from petroleum-based feedstocks, the cultivation process has a large carbon footprint. However, Clarens offers one solution to the fertilizer problem: The algae ponds could be placed near wastewater sources, which the algae could use for nutrients.

There's another issue, according to the study. Algae use sunlight and water to convert carbon dioxide into materials that can be easily converted into fuel [*Scientific American*]. But researchers say that even that CO₂ presently comes from external petroleum-based sources, since we don't yet have a cheap way to trap and transport the CO₂ emissions from power plants and factories.

The research, unsurprisingly, has drawn the ire of biofuel companies who allege the researchers used old and outdated data for the study. In response, Andres Clarens the lead author of the study said he used the most recent data that he could, which was about 10 years old. Algae biofuel companies keep their research a closely guarded secret, he said. He invited companies to share any more recent and relevant data they had with him [*The New York Times*]. There is now speculation that Clarens may do a follow-up study if the biofuel companies provide him with more recent data.

Discover Blogs/80 Beats January 27, 2010

<http://blogs.discovermagazine.com/80beats/2010/01/27/study-algae-biofuel-production-guzzles-water-energy/>

Don't Bet On A Hydrogen Car Anytime Soon

Just in time for Thanksgiving, a familiar techno-turkey is back on the national policy table: the hydrogen-powered car. The Obama administration had flatlined funding for President George W. Bush's pet initiative, briefly but heavily touted a few years back as the driving force toward a future "hydrogen economy" in which gas would displace gasoline.

Two wars and a financial sinkhole later, most Americans had managed to forget the whole thing. But then last month the Senate improbably restored \$187 million for H-car research programs to an appropriations bill.

Okay, that's barely enough to cover one year's bonuses on the lower floors at AIG. But why is it there at all? The answer lies in the persistent, hypnotic allure of hydrogen eco-mythology, with its promise of breaking our addiction to fossil fuels and foreign oil while banishing greenhouse pollution from our skies -- a vision most pointedly embodied in the hydrogen car. Or, more accurately, the notion of the hydrogen car.



The prototypical H-car is powered by electrical current from a fuel cell, a device that combines hydrogen and oxygen to produce electricity. The principle involved is a schoolroom classic: If you stick two electrodes into a beaker of water, the electrical energy breaks H₂O apart into its ingredients, H and O, in a process called electrolysis. A fuel cell does the same thing in reverse, putting separate H's and O's back together into water molecules and thereby producing electrical energy, which can be used to run a motor.

It is this reaction that allows H-car proponents to state (in a mantra repeated so often that is accepted as gizmo gospel by many intelligent adults) that a fuel-cell vehicle's "only emission is water vapor." That is true, but only in a trivial and thoroughly misleading sense.

To understand why, you need to recall two fundamental facts. The first is that, unlike oxygen, hydrogen doesn't grow on trees. Although it's the most common element in the cosmos, it isn't found in a pure state on our planet. There are no subterranean "hydrogen pockets" equivalent to coal beds or natural gas deposits. Hydrogen has to be extracted from compounds into which it is firmly bound and which it really doesn't want to leave. *Click for the rest of the story!*

The Washington Post

By Curt Suplee, Tuesday, November 17, 2009

http://www.washingtonpost.com/wp-dyn/content/article/2009/11/16/AR2009111602668_pf.html

Whole Body Scanners Ignite Debate Over Radiation

The dose of radiation from an airport's full-body scanner would be no more than people already get in a high-altitude jet, a U.S. radiation expert said. Doses delivered by so-called backscatter scanners are tiny and the same as delivered at high altitudes from naturally occurring cosmic rays, Robert Barish, a New York radiation consultant, told The New York Times in a story published Saturday.

President Barack Obama this week called for greater use of scanners and Congress has appropriated funds for 450 scanners for U.S. airports. The heightened concern followed the Dec. 25 attempted bombing of a plane en route from the Netherlands to Detroit.

Full-body scanners used in some airports now use a less powerful, non-ionizing radiation, but produce fuzzier images than backscatter scanners, U.S. Transportation Security Administration officials said.

Critics of backscatter scanners argue the radiation dose may be tiny, but it still means added exposure to radiation and an increased risk of cancer, the Times reported.

Doc Sez, perhaps we should give up on Cat Scans and the use of radioisotopes to screen for disease? They too provide an additional dose. Indeed CAT scans are the biggest contribution to so called background exposure for many Americans,

United Press International — New York, Jan. 9 (UPI)

http://www.upi.com/Top_News/US/2010/01/09/Scanners-ignite-debate-over-radiation/UPI-71301263058670/

Europeans Eye Underground Nuclear Waste Repositories — Three European countries will within 15 years begin disposing of their nuclear waste deep underground, even though the public is not solidly behind the move, officials said here Friday.

In Finland, a deep geological repository where spent nuclear fuel will be disposed of is due to come on stream in 2020, said experts who addressed a forum at the annual meeting of the American Association for the Advancement of Science (AAAS).



An unprepossessing tunnel entrance set in low forest on the western coast of Finland marks the probable final resting place of the country's most dangerous nuclear waste.

Sweden will follow three years after its Nordic neighbor, and "France plans to start operating a deep geological repository for vitrified high-level waste from reprocessing in 2025," Roland Schenkel, deputy director general of the European Commission's Joint Research Center, said.

France, along with Britain, Japan and Russia, currently reprocess their nuclear waste and then hold it in an interim storage facility, before the "intended disposal in deep geological repositories," which is the final resting place for high-level radioactive waste, Schenkel said.

But according to Allison Macfarlane of George Mason University in Virginia and Klaus Luetzenkirchen of the Joint Research Center in Karlsruhe, Germany, storing nuclear waste directly in deep underground repositories without reprocessing it is the best and safest way to go.

There's just a bit more so feel free to click the link.

Agence France-Presse — In the Taiwan News Online 02-21- 2010
<http://www.etaiwannews.com/etn/print.php>

Isn't It Ironic: Green Tech Relies on Dirty Mining in China

Wind turbines, energy-efficient light bulbs, and hybrid cars and three of the most iconic products in the lineup of [green technologies](#) that can help us build a cleaner world. But in an ironic twist, these technologies all rely on elements called rare earths, which are primarily extracted from environmentally destructive mines in China.

The environmental damage can be seen in the red-brown scars of barren clay that run down narrow valleys and the dead lands below, where emerald rice fields once grew. Miners scrape off the topsoil and shovel golden-flecked clay into dirt pits, using acids to extract the rare earths. The acids ultimately wash into streams and rivers, destroying rice paddies and fish farms and tainting water supplies [[The New York Times](#)].



Despite the name, many of the 17 rare earth elements are not actually that scarce, but two heavy rare earths that are vitally important to many green technologies, dysprosium and terbium, do live up to their name. More than 99 percent of the world's supply of these two elements is currently mined in China. Companies want to expand production outside China, but most rare-earth deposits, unlike those in southern China, are accompanied by radioactive uranium and thorium that complicate mining [[The New York Times](#)].

Putting small amounts of **dysprosium** in the magnets used in electric motors can make the magnets 90 percent lighter; that's a boon for both hybrid electric cars and large wind turbines, where heavy turbines are placed at the tops of tall towers. Meanwhile, terbium is used in lighting systems that are dramatically more energy-efficient than traditional incandescent lighting. But as prices of these elements have soared in recent years, and as concerns about China's mines are increasing, companies are beginning to investigate other ways to build the technologies of the future.

by Eliza Strickland Discover Online December 28th, 2009

<http://mblogs.discovermagazine.com/80beats/2009/12/28/isnt-it-ironic-green-tech-relies-on-dirty-mining-in-china/>

Microbes Build Better Batteries — Microbes can help wind and solar by storing energy as methane; viruses make clean and cheap batteries

In the never-ending search for improved ways to store energy, two groups are looking to biology, enlisting microbes to produce methane and viruses to build batteries. Penn State environmental engineer Bruce Logan and his colleagues identified microorganisms called methanogens that efficiently reduce carbon dioxide to methane. When the microbes receive an electric jolt, Logan reported in March, they use the electrons to combine CO₂ and protons, creating methane gas. Methane can be stored and later used to fuel a vehicle or run a generator. Exploiting the microbes' chemistry might be a way to make inconsistent energy sources like wind and solar more practical.

Along the same lines, MIT materials scientist Angela Belcher has engineered viruses to help store electricity. Her genetically modified bacteriophages (viruses that infect bacteria) cloak themselves in iron phosphate, a metal salt, then attach to carbon nanotubes to produce a framework of microscopic conductive wires that can hold a charge just like a car battery. Genetic tweaks enabled the virus to bind tightly to the carbon nanotube, creating a high-powered battery, as she described in a May issue of *Science*. Unlike traditional battery manufacturing, the process requires no toxic chemicals and can be set up very cheaply. Belcher is working to improve the batteries' storage capacity further by experimenting with different virus-coat materials.

by Elizabeth Svoboda

From the January-February special issue; published online December 17, 2009

<http://discovermagazine.com/2010/jan-feb/096>

More next month.

Harry aka doc_Babad

Hardware

HARApad Elite, Stops 100% Non-ionizing Electromagnetic Radiation

Reviewed by Robert L Pritchett



HARApad, LLC
Grandhaven, Michigan



HARApad@gmail.com
<http://www.harapad.com/contact.html>
<http://www.harapad.com/>
<http://harapad.blogspot.com/>

Released: January 2010.

\$40, \$50 or \$60 USD (depending on pad size) Comes in various colors.

<http://www.harapad.com/products.html>

Strengths: Provides an attractive and efficient barrier between your lap and a laptop for reducing electromagnetic frequencies from entering your body through the bottom of the computer. For reducing Extremely Low Frequencies (ELF) in close proximity to the human body.

Weaknesses: Not intended to stop radio frequency emissions from antennas. It only reduces Electromagnetic Radiation (EMR) from one direction.

Discussions: <http://forums.canadiancontent.net/science-environment/81236-laptop-radiation.html>

Introduction

“HARApad, LLC is a homegrown business based in Grand Haven, Michigan, started by 3 mechanical engineering graduates.

When one of the co-founders' mothers was diagnosed with breast cancer in 2006, it hit a place close to home. This event inspired a large personal research endeavor to learn more about cancer. Through further research on several suspected causes of cancer, he found a recurring topic in electromagnetic radiation (EMR). He then assembled a team of two additional engineers to further his cause, and attempt to find what devices were producing this EMR. This group began meeting several times a week pouring over research and testing in their spare time.

Armed with a Gaussmeter and pages of doctoral reports, the team found in their research a significant amount of electromagnetic radiation generated from laptops. The idea to develop a radiation reducing product grew into a design, and the design into a verified product right in the home of the co-founder. After 2 years of extensive testing, idea conceptualizing, result verification, and design optimization, the Heat And Radiation Attenuating pad, or HARApad, was born.

Declared an officially recognized LLC in March 2009, HARApad, LLC achieved global sales in its first week and has become the benchmark in laptop electromagnetic radiation protection. Today, the HARApad is managed and manufactured at the headquarters facility in Grand Haven, Michigan.”

“The HARApad is designed to act as a shield between harmful electromagnetic radiation and your body. It uses a state-of-the art lead- and tungsten-free material to safely deflect EMR away from your lap. The HARApad tucks easily into most laptop cases, making it as portable as your notebook computer. Its versatility allows a safe surface on which to work when your lap is your only option, like in the airport, the car, library, or dorm room.

The layer of EMF shielding material in every HARApad acts similar to the ground wire in your house’s electrical system. Whereas the ground wire catches stray electrical current and brings it harmlessly into the ground outside your house, the EMF shield in every HARApad catches the stray electromagnetic fields and returns it safely to the laptop to complete the circuit. Since EMF follows the path of least resistance, the HARApad essentially diverts the EMF through the shielding material instead of through your body tissue. Using a HARApad will reduce the EMR absorbed by your body by up to 80%.”

“Professionals recommend limiting your exposure to any electromagnetic fields of 2.5 mG or higher, though zero exposure is ideal. Notebook computers can often emit fields of 150 mG; that's 60 times higher than the recommended level!! This radiation may be linked to cancer, infertility, birth defects to unborn children, and other health complications.

The heat generated by notebook computers is also a concern. Bodily functions are carried out at tightly-controlled temperatures. When outside heat is applied, these functions will begin to occur irregularly and may lead to cellular mutations. When cells mutate, they can transform into cancerous cells, and spread across the body, and cancerous tissue is developed.”

HARApad in action - 80% reduction in laptop EMF radiation

<http://www.youtube.com/watch?v=YWWuVY-0kO8>

HARApad - 80% Reduction in Electromagnetic Radiation from laptop

http://www.youtube.com/watch?v=-_o4tblj_7c

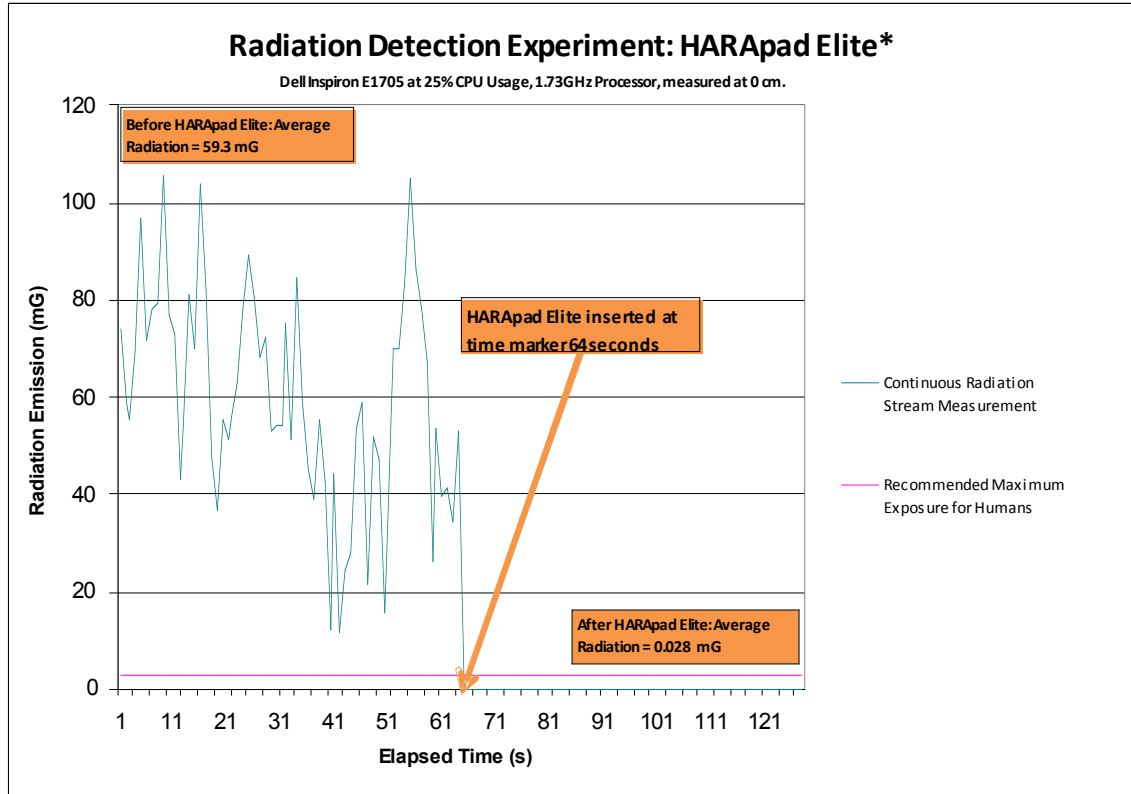
The following chart and graph have been reprinted with permission:

HARApad Elite Test Data

HARApad Elite shielding performance on a typical laptop, magnetic field readings below the laptop			
Distance from bottom of laptop	Laptop without HARApad Elite	Laptop with HARApad Elite	% reduction*
At ½ inch	12 mG	1.0 mG	>100%**
At 1 inch	8 mG	2.0 mG	100%
At 3 inch	3 mG	1.9 mG	100%

*with 2 mG background, testing done with frequency weighted 3-axis meter

**% reduction greater than 100% means that the HARApad Elite reduced the radiation to levels *below* the ambient/background level.



*Ambient/background radiation level = .02 mG, resulting in 99.99% HARApad Elite reduction

A HARApad will function correctly regardless of which side faces up. The adhesive used in the HARApads are able to withstand any and all normal operating temperatures. The plastic material does scratch and attracts dust. A soft towel and glass cleaner or water can be used to clean the surface.

Electromagnetic Radiation from TVs and Computers

<http://www.youtube.com/watch?v=dQH9y0np7iM>

Radiation from Laptop (Electromagnetic Radiation)

<http://www.youtube.com/watch?v=rFkPXndKFh0>

What I Learned

When I asked about the shielding inside the HARApad Elite, I was told that was a proprietary trade secret. In reality, it is probably one of the various magnetic shielding foils such as MuMetal®, METGLAS®, FINEMET® or GIRON, <http://www.lessemf.com/mag-shld.html#276> designed as magnetic barriers, usually a nickel alloy (about 80%).

The Elite version of the HARApad product line specifies that it is nearly 100% effective, while the earlier versions are 80% effective.

HARApad would like to make the distinction between EMI and EMR. EMI http://en.wikipedia.org/wiki/Electromagnetic_interference is a disturbance that affects electrical circuits via electromagnetic conduction or electromagnetic radiation from an external source. It can also be used for electronic jamming.

Electromagnetic Radiation (EMR) http://en.wikipedia.org/wiki/Electromagnetic_radiation carries self-propagating waves of energy through matter, depending on the frequency up through the electromagnetic spectrum http://en.wikipedia.org/wiki/Electromagnetic_spectrum from radio waves to gamma rays.

I could tell immediately that something was different when I put the HARApad between me and my MBP 17". And it wasn't just the heat, which, instead of being localized, now spread over the breadth and width of the HARApad.

Instead of absorbing the radiation, the HARApad deflects it back to the source at the Extremely Low Frequency (0-300 Hertz) and Very Low Frequency (3-30 Kilohertz) levels. http://en.wikipedia.org/wiki/Extremely_low_frequency
http://en.wikipedia.org/wiki/Very_Low_Frequency

The Schumann resonances (SR) http://en.wikipedia.org/wiki/Schumann_resonance works in the ELF spectrum, which coincides with the electromagnetic spectrum associated with the human body (3-69 Hertz).

It sure beats wearing a lead apron.

Conclusion

There are different sizes to fit the various footprints of portables. If you believe that protecting yourself from heating your private parts is valid or that EMFs affect your world, as I do, the HARApad may help.

Like the Mac, it just works.

TriField Meter 100XE - All-in-one tester for Magnetic, Electrical, Microwave and Radio Waves

Reviewed by Robert L Pritchett



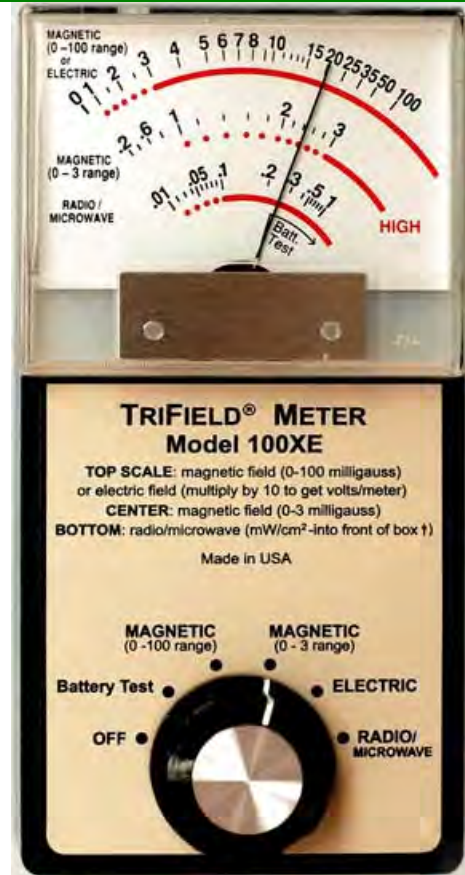
AlphaLab, Inc.
3005 South 300
West Salt Lake City, Utah 84115 USA
(801) 487-9492
1-800-658-7030
<https://www.trifield.com/ContactUs.php>
<http://www.trifieldmeter.com/TriField100XE.html>
\$155 USD

Strengths: Frequency-weighted, 3-function, analog meter, comparatively low cost. 1-year warranty. Scalable (add-ons).

Weaknesses: None.

Other Reviews:
<http://www.trifieldmeter.com/TriField100XE.html#reviews>

Tested with iPhone, Mc Book Pro 17" and everything else in the house and at the office (HP, Hyundai LCD screen), etc.



Introduction

ALPHALAB INC.'S TRIFIELD METER is the most versatile meter priced under \$1,000. It comes ready-to-use with battery, instructions and a limited one-year warranty.

Use it to measure high **MAGNETIC** fields around TV screens, clock radios, computer monitors/disk drives, electric typewriters, and many other common appliances in the home, car and office... AND power lines near the home.

Measure high **ELECTRIC** fields around such sources as computer monitors, TV's, fluorescent lights, improperly grounded electrical equipment, and electric blankets (especially if the AC plug polarity is reversed) - even when in the OFF position if plugged in!

Detect and measure **RADIO/MICROWAVE** fields around CEL cellular phones, microwave ovens (check for leaks, door sealing, etc.), CB radio transmitters, etc. A reading of .2 mW/cm² at a distance of six feet suggests a leaking microwave door seal.

Depending on the position of the knob, the meter detects either frequency-weighted magnetic fields (two separate scales) or frequency-weighted electric fields in the ELF and VLF range. The device has significant sensitivity at 100,000 Hz, well past the 17,000 Hz horizontal scan of video displays. The radio / microwave setting can detect up to three billion Hz (3 Ghz), which lets you gauge radio-wave power, CB and cellular phone equipment, as well as many types of radars.

If you hold the meter in the center of a room and tip it to various angles, the magnetic reading will stay approximately the same regardless of which way you tip or rotate it. The electric reading is similar, although the presence of your body alters the actual electric field, so readings will vary more. The radio / microwave setting reads the full power of radiowaves when the meter is pointed toward the source.

Most of the meters priced below \$500.00 read only low-frequency magnetic fields and only in one direction (not true magnitude). The magnetic section of the TriField meter has three field-detecting coils pointing in the X, Y, and Z directions.

A circuit amplifies these signals and gives them the proper frequency-weighting (sensitivity increase linearly from 30 Hz to 500 Hz, with some residual sensitivity up to 100 MHz). A unique network combines the three coil outputs nonlinearly to approximate a true magnitude. The meter is sensitive from 0.2 to 100 milligauss full scale at 60 Hz (or 0.1 to 50 milligauss full scale at 120 Hz, etc.) with a resolution of 0.2 milligauss in the sensitive range. Accuracy is + / - 20% at mid-range. A version with flat frequency response (instead of linear sensitivity increase) is also available for the same price.

Magnetic Field Detection

The magnetic section consists of three ferrite-core coils pointing in the X, Y, and Z directions and located in the geometric center of the meter. Non-linear circuitry combines the signals of these three into a true magnitude of the field strength, independent of which direction the meter is pointed. In most homes and offices, a large fraction of the total magnetic field is at frequencies above 60 Hz. A TriField meter, when exposed to a 3 milligauss field, will read "3" if the frequency of the field is 60 Hz, but it will read "6" if the 3 milligauss field is at 120 Hz. In contrast, a non-frequency-weighted (the flat response version of the TriField) meter will read "3" in both cases, and a 60 Hz-only meter will read "3" and "0" respectively (even though in the 120 Hz case, the current induced in a conductive body is twice as much.)

Electric Field Detection

The electric section consists of three metal plates under the meter face. Because the meter housing is plastic, the electric fields can penetrate through to the plates, which are also arranged to detect AC electric fields in the X, Y, and Z directions. Circuitry similar to the magnetic section converts the signals into an electric field signal which is frequency-weighted. Sensitivity is 0.5-100 kilovolts per meter (KV/m) at 60 Hz, with resolution of 0.5 KV/m (1 KV/m = 1000 V/m). Accuracy at mid-range is +/-30%.

Radio And Microwave Detection

Radio and microwaves are composed of a particular combination of electric fields and magnetic fields that is self-sustaining. For frequencies below about 100 MHz (100 million Hz) the principle effect on a conducting body is from the magnetic field part only. This is because the electric field component of radio waves produces much weaker currents in the body than does the magnetic field unless the wavelength of the waves is smaller than the height of the body. Low-frequency electric fields by themselves can be strong enough to create significant current, but only if they are from sources other than true radio waves.

The radio/microwave section has a small L-shaped antenna in the front. The signal is amplified and converted to a power density magnitude, calibrated at typical home microwave oven frequency (2 GHz). It reads 0 to 1 milliwatt/square centimeter. The resolution at the bottom of the range is 0.01 mW/cm², which is the Russian standard for maximum exposure, and is the most conservative standard of any country. In contrast the US legal maximum is 1000 times higher, at 10 mW/cm², but only brief exposure is allowed at this level. As mentioned, a true radio wave is a particular combination of electric and magnetic fields. A radio wave strength of 0.01 mW/cm² has 0.006 KV/m and 0.2 milligauss, respectively, of electric and magnetic field (RMS averaged), while a strength of 1 mW/cm² corresponds to 0.06 KV/m and 2 milligauss. Typical accuracy is within a factor of two. Variations are caused by reflections off the user's hand and body.

Using The Trifield Meter

A knob on the front has six positions: OFF, BATTERY TEST, two MAGNETIC field sensitivities (0.5-100 milligauss at 60 Hz, and 0.2-3 milligauss at 60 Hz, the second sensitivity to measure weak fields more accurately), ELECTRIC field and RADIO/MICROWAVE power density. The meter face is analog (needle type). A needle reading of one-third of full scale corresponds to either 3 milligauss (or 0.6 milligauss) @ 60 Hz, 3 kilovolts/meter @ 60 Hz, or 0.04 mW/cm² respectively in the magnetic, electric, and radio/microwave field settings. Average magnetic field strength in North American homes and offices is 1-3 milligauss, so the meter is labeled "HIGH" above these levels.

Magnetic Field Detection

In most homes or offices, some areas are "hot" spots with readings in the HIGH range. Most often, this is caused by magnetic fields, which come largely from unpaired internal wiring. (Contrary to popular belief, power transmission lines and transformers do not generally contribute as much magnetic field as does internal wiring.) Other magnetic sources include video displays, motorized clocks and other equipment, electric blankets and heaters, fluorescent lights and light dimmers, and the transformers that are inside consumer devices. Much of the total field strength is from frequencies that are harmonics or multiples of 60 Hz (120 Hz, 180 Hz, etc.) and 17,000 Hz of video displays. Cars (especially near the front floorboard of electronic ignition cars) and motorcycles have fairly strong fields that are at frequencies higher than 60 Hz. Magnetic field is difficult to shield, but sheet steel is somewhat effective.

Electric Field Detection

A few areas in most homes read HIGH in the electric field setting. These include areas near improperly grounded equipment, the front of video screens, and fluorescent lights. Most of these fields can be easily shielded using a grounded metal screen or foil; VDT screens of this type are readily available. You can greatly reduce the strength of an electric field just by placing your hand in front of the source. This effect can be seen using a TriField meter.

Microwave Detection

Occasionally, certain areas read HIGH in the radio/microwave setting. These include door seals around microwave ovens, and cellular phones (but not regular radio phones, which are very low-power). Radio/microwaves can be shielded in the same way as electric fields, although the lower frequency radio waves are not shielded by your hand as easily as microwaves are. (Metal screens will shield both.) In the United States, radars and FM transmitters can legally expose residents to moderately high power levels (as high as 10 mW/cm² briefly or .57 mW/cm² near cellular towers), but such exposure is not common.

Reducing Field Exposure

Some equipment is sensitive to magnetic fields (ie, a high resolution color monitor may not function properly above 30 milligauss). By seeing "hot" spots in your home and office, you can move equipment or furniture to reduce exposure. If a room has a "hot" spot, fields are generally much weaker elsewhere in that same room.

Unique Advantages & Features Of The TriField 100 Xe - Extended Electric Range Meter

The TriField 100XE is unique in that it can measure magnetic fields, electric fields, and radio/microwave fields. Previously you would require three different test meters, one for each field measurement.

An improved version of the standard TriField Meter. This meter has identical specifications to the TriField Meter, except that the Electric Field detection capability has 100 times more sensitivity to AC electric fields for weaker Electric Field detection (typical of house wiring, etc.).

TriField 100 XE Meter - Extended Range version of the TriField Meter - Features mega expansion of Electric Field detection capability to cover Single-Axis Measurements from 5 V/m to 1000 V/m (volts per meter) which is 100x the Electric Field detection range, at 60 Hz, of the standard TriField Meter! - Minimum Electric Field measurement resolution is 5 V/m (available as either a 50 Hz or 60 Hz model).

This meter is useful for tracing the position of wires inside walls, and for determining the effectiveness of electric field shielding equipment. The indicator is rapid response (< 1/2 second) and the electric and magnetic section are unaltered by DC fields or AC below 30 Hz.

With these EXTENDED Ranges, you can detect SLOW moving Static Electric and Magnetic Fields, concealed RF Transmitters, Cellular Phone Radiation, VERY WEAK AC. Electric Fields from Wall Switches and Concealed Wiring, and lots of other EMF sources you might have MISSED, as well as FINE tuning your Shielding Efforts!

The TriField detects more frequencies than most other gaussmeters. It detects both the "ELF" frequencies (from power lines, wiring, lights, appliances) and the higher "VLF" frequencies (from TVs, computers, fluorescent lights).

Detects an unusually wide range of frequencies, including those from televisions, computers, adding machines, electric alarm clocks, and fluorescent lights..nearly all man made appliances!

This instrument is a 3-Axis (triple-axis) meter. It has three built-in sensors which measure the fields in all possible directions and calculate the total field strength for you, when the control knob is set on MAGNETIC.

The TriField 100XE Meter features 3-Axis measurement (three dimensional) & detection of magnetic fields and high sensitivity, single-axis measurement of electric fields, which allows QUICK scanning of offices, homes, hallways, powerlines and vehicles, etc.

AlphaLab, Inc. has manufactured the original TriField Meter for over 18 years, though it is still the only EMF meter which combines magnetic, electric and radio / microwave detectors in one handheld, compact, portable, time saving, easy to use instrument, allowing fast & accurate coverage of the entire nonionizing electromagnetic spectrum!

Independently measures / detects electric field as well as magnetic fields and is properly scaled to indicate the full magnitude of currents produced inside a conductive body via it's frequency weighted measurement capabilities.

Continuous sampling analog display / readout (non-digital, for a Digital display meter, click on the AC Gaussmeter button on the mainpage of this website)

Detects either frequency-weighted magnetic fields (two separate scales) or frequency-weighted electric fields in the ELF and VLF range. It has significant sensitivity at 100,000 Hz, well past the 17,000 Hz horizontal scan of video displays.

Magnetic and Electric settings measure TRUE magnitude (RMS) a feature usually only found on very expensive meters.

Shipped directly from the manufacturing facility at AlphaLab, Inc. - Located in Salt Lake City, Utah, U.S.A.

One-Year limited warranty covers parts and labor - AlphaLab prides itself on it's superior quality control, so with reasonable care not to drop the meter on hard surfaces, immerse it in water, expose it to extremes in temperature for extended periods of time, the meter should continue to operate for many years beyond the warranty period - Abusing the meter in any way voids the warranty.

A 50 Hz Version of the TriField 100XE Meter is available for the Special Internet Sale Price of \$146.50, plus shipping charges - The electrical wiring / output voltage of non-US countries may require a 50 Hz TriField model for simpler

Specifications

MAGNETIC: 0 - 100 milligauss range (at 60 Hz)
0 - 3 milligauss range (at 60 Hz)

ELECTRIC: 0 - 1000 V/m = 1 kV/m range (at 50 Hz or 60 Hz)
RADIO / MICROWAVE: 0 - 1 mW/cm² (at 3 Ghz)

MAGNETIC - Scale: 0 to 100 mG (milligauss) - Minimum Sensitivity = 1 mG - Accuracy: + or - 20% - Frequency Range: 50 Hz to 100 kHz
MAGNETIC / EXPANDED SENSITIVITY SETTING - Scale: 0 to 3 mG - Minimum Sensitivity = .2 mG - Accuracy: + or - 20% - Frequency Range: 50 Hz to 100 kHz
ELECTRIC - Scale: 0 to 1000 V / m (Volts per Meter) at 60 Hz with resolution of 5 V / m - Minimum Sensitivity = 5 V / m - Accuracy: + or - 30% - Frequency Range: 50 Hz to 2 kHz
RADIO / MICROWAVE - Scale: 0 to 1 mW / cm² (milliwatts per centimeter squared) - Minimum Sensitivity = .01 mW/cm² - Accuracy: -50% or +100% due to reflections off the room and / or user - 50 MHz to 3 GHz - At this setting, the meter is sensitive from 50 MHz to 3 GHz and is calibrated at home microwave oven frequency (2 GHz).

At 60 Hz, Magnetic and Electric field settings are respectively 0-100 milligauss and 5 V/m to 1000 V/m. For frequencies above 1000 Hz, the magnetic and electric sensitivities of the meter slowly decrease with increasing frequency, falling to near zero near 100 KHz, though with some residual sensitivity up to 100 MHz. In theory, the body's sensitivity to fields should begin to decrease at frequencies above about 500 Hz. Accuracy is at +/- 20% of scale reading for the "MAGNETIC" setting, and +/- 30% for the "ELECTRIC" setting (RMS @ 60 Hz) - (Note: An electric technician will tell you this accuracy is a "liveable" variation for nearly all common applications.)

It is important to note that the magnetic and electric field settings of this meter are frequency weighted from 30 to 500 Hz, and calibrated at 60 Hz (a 50 Hz calibrated unit is available as a special order). What this means is that a 2 mG magnetic field at 60 Hz will read "2" on the meter, but 2 mG at 120 Hz will read "4". From 500 Hz to 1000 Hz, the response is flat $\pm 20\%$. Above 1000 Hz, sensitivity decreases with increasing frequency.

This Meter will respond to a 1 mG. Magnetic Field, or a 1 V/m Electric Field, at various Frequencies.

Measures RF/Microwave Fields: emitted from cordless and cellular phones, radio and TV towers, microwave ovens, and wireless systems. Sensitivity is from 0.01 to 1.0 milliWatt per square centimeter (mW/cm²). Frequency response is 50 MHz to 3 GHz. Calibrated for accuracy at 2 GHz (microwave oven frequency). Accuracy is -50% to +100% due to the unpredictable effect of reflections off the room and user.

Optional Custom Features Menu

OUTPUT JACK / Analog Plug Option - Enables analog readout capability - Allows interfacing the meter to voltmeters, computers, or any device capable of interpreting an analog output. Maximum voltage is approximately 300 mV and the output impedance is 10 KOHM - An Analog Digital Card (available at computer stores) is a necessary item for meter / computer linkage via the output jack - Available for an additional \$9.50 USD

TONE ALARM - Adjustable volume tone alarm - Can be switched off or set anywhere between low and high volumes and used as an "Alarm" feature to warn the user of an existing exposure to a field - Add \$50.00 USD

AC ADAPTER with Connector - Allows one to plug in the meter as an alternate power supply / source to the 9-Volt battery - Add \$30.00 USD (Customers located outside of North America inquire for Connector only rates, since Adapters for your country are not available in the US) - Shipping dimensional weight & cost are increased with the addition of this feature.

RED LEDs Option - 2 red LEDs installed on the meter face for simple nighttime readings when utilizing a flashlight for illumination is inconvenient - Available for an additional \$50.00 (USD)

ON/OFF Switch for LEDs Option - The LED "backlighting" can be switched on or off while meter is set to the ON position - This custom feature is available for an additional \$9.50 (USD)

UNIDIRECTIONAL SWITCH OPTION - Available for an additional \$35.00 (USD) - Narrows the meter's three dimensional (3-axis) detection capability down to single axis to isolate vertical magnitude sources.

TRIFIELD 100XE FLAT FREQUENCY METER - A Non-Frequency Weighted Version of the TriField Meter is available for the same Special Internet Sale Price of \$146.50, plus shipping charges. This modified version of the standard Trifield 100XE Meter has all the same specifications as the original meter, with the one significant difference being magnetic field response is NOT frequency weighted, and thus there is no need to specify 50 or 60 Hz calibration.

* **BATTERY** - Included 9-Volt battery allows 10 hours of total measurement time - An Alkaline battery allows approximately 50 hours of use.

What I Learned

It would appear that ghost hunters like using EMF meters for tracking paranormal anomalies and maybe some ectoplasm. <http://www.trifieldmeter.com/TriFieldNat.html> and <http://www.ghostvillage.com/>. But you see, I'm interested in tracking ghosts of a different kind. I wanted to discover what kind of emissions are coming from Apple Corporation products. After all, the tool is for debunking and not really intended for ghost hunting. And I could not just use an AM radio and get more than just anecdotal data by waving it near equipment. I needed numbers. After asking a number of companies for meters, AlphaLab responded.

James Hann wrote on June 18, 2009;

“In the United States and Canada we use electric current that alternates at a rate (AC) 60 times per second, or at 60 hertz (Hz). This falls into the extremely low frequency (ELF) below 3,000 hertz (3 kHz), range on the electromagnetic spectrum. All modern electronic devices including computers, TVs, stereos equipment and CFL and low-voltage lighting, etc. use transformers and power supplies to convert our "relatively clean" 60 Hz AC current to the low voltage power used to power all of our modern electronic devices. To save energy these devices use power supplies that "chop-up" our conventional AC voltages, using it in short bursts as opposed to a smooth continuous flow of current. This constant stopping and starting of the electrical current causes a combination of what electronic engineers call "electrical transients and harmonics".

These sudden voltage fluctuations are predominantly a result of the operation of switching power supplies in computers, energy-efficient (low voltage) lighting and other electronic devices. In layman's term's it's referred to as "electrical feedback" or "electrical noise".

If the current flowing through a conductor (wire) is made to oscillate at a very rapid rate (3 KHz or greater) the floating electromagnetic field will break free and be launched into space and is now considered to be a radio frequency - this phenomena is know as electromagnetic radiation.

A typical CFL bulb operates at a frequency of 50 to 100 kHz, so this falls into the radio frequency range of the electromagnetic spectrum. In essence these lights chop-up the 60 Hz voltage 50-100 thousand times a second producing radio waves. These radio frequency pulses go down the wire and this high frequency energy "radiates" from wires and any electrical and electronic devices plugged into dirty circuits.”

http://www.cbc.ca/news/sixmontreal/begreen/2009/06/the_dark_side_of_the_cfl.html

AlphaLab also has done a nice job explaining what magnetic and electrical fields are on their TriField website http://www.trifield.com/magnetic_fields.htm

EMF Meter FAQs

<http://www.emfmeters.biz/category/emf-meters-faq/>

When I got the TriField 100XE, I immediately began running around the house and checking out readings. Before I could begin however, I got a call on my iPhone and as I was listening to the conversation, the meter went wild, pegging the magnetic range, and throwing the Radio/Microwave scale up over 180 mW/cm² on the separate RF Field Strength meter I also was given to review. Even as we talked, the RD Field Strength meter went up and down rapidly. On the TriField 100XE, the scale just pegged.

Of course, I checked out the microwave oven and found leakage around the door, but most of the signal was coming from the control panel. On the TVs, the electric meter would peg when the screens went to white and would drop way down when the screens went to darker colors. The TV screens throw out a lot of voltage into the rooms.

I found a very strong field on the HVAC power cables on the Magnetic scale and also on 4 walls down the center of our home upstairs and downstairs. On one wall by the stairs from the top of wall to ½ way down in the center. It dropped by the light switch.

On another wall by the stairs above the HVAC equipment the closet wall pegs the meter. Downstairs as I go further away down the hallway from the HVAC equipment room, it lessens, but gains strength by the inner garage door in one section, from the floor to the ceiling. I think I may have a grounding problem. Either that or somebody use electromagnetic paint on the walls? Along the carpeted floor on both sides of the hallway to the bedrooms, I also get the meter to peg. In one area, the signal is strong across the floor. I believe that is where the electrical cable for the HVAC runs to the outside between the floors. Frankly this surprised the heck out of me. I was expecting issues with electronics, not with bare walls, ceilings and floors in our home. Of course I could just say the house is haunted in a few locations, but I doubt the ghosts would be hiding behind gypsum boards. Having sections of walls giving off fields over 100 mG bothers me.

A Smart strip power strip also pushed the meter to the top of the range on the electric mode on one part of the strip. Not so much on the power cords going to the computer and LCD screen.

ON the LCD screen (Hyundai), the magnetic meter pulses midrange right in the middle of the screen and pegs on white screens. Ditto on the MacBook Pro 17" screen. I get a higher reading from the middle of the keyboard and less from the bottom of the MacBook Pro. When I added the HARApad to the bottom of the MacBook Pro, there was no reading.

On the HP7900, I only got a reading by the power outlet on the magnetic meter (10-15 mG). Looks like I need to add a ferrite bead to the power cord or get a shielded power cord for it.

On the MagSafe power adapter, I get around 35 mG on the unit itself and also at the connector when it is live, at the computer pulsing between 20 and 50 mG. The touchpad on the MacBook Pro pulses at 5 mG while the center of the keyboard throws it up over 100 mG. On the backside of the MacBook Pro, I got a reading of 20 mg below the Apple light and when I disconnected the MagSafe, it drops to 10 mG after the Apple logo light goes out. I got the same effect (with and without the MagSafe connected) below the computer. The screen dropped about 5 mG when I disconnected the MagSafe (the contrast dims).

Back to the house high mG mystery; No ghosts! I turned off all the switches in the electrical panel one by one, after figuring I might need to reground it and the telephone line and bought equipment to do so, but I found the culprits – the TV, Stereo system and DVD player and HP Printer and iMac were additive circuits, causing the walls to be charged well over 150 mG. As I shut each unit down, the meter reading dropped on two separate circuits. The suggestions to turn off the power to the devices when not needed, is valid. The walls that were electromagnetized went to zero when I powered off the devices. Other circuits with computers and other equipment did not act this way, so I think I will need to add filters to those two circuits, so the walls and the offensive electronics don't continue to adversely affect us.

Conclusion

I can see why so many people over the years have gotten excited about the TriField meter. Now that the TriField 100XE is here, they should be even more excited.

Software

Quicken Essentials

Reviewed by Ted Bade

Intuit

<http://www.intuit.com/>

\$70 USD

System Requirements: Intel®-based Apple® Mac, Mac OS v10.5 (Leopard) and Mac OS v10.6 (Snow Leopard); 1 GB free hard disk space.

Product Information web space: Quicken Essentials.

Strengths: Nice look and feel, easy manipulation of data view, nice charting of data.

Weaknesses: Investment accounts cannot be done manually, only through the internet, import process is iffy, doesn't import any custom reports or much information about investment accounts. Automatically accepts all credit card transactions downloaded.



Demo: There is no demo, but the product comes with a 60 Day Satisfaction Guarantee.

Review of Quicken Essentials for Macintosh

Intuit has released a new version of Quicken for the Macintosh, called Quicken Essentials. With a name including the word “Essentials”, I instantly got this feeling that I would be getting less in this new version. While this is essentially correct, there is a nice look and feel to this new program. It does the MacOS X thing right, and I would highly recommend it, if it weren't a step back. However, Quicken Essential's clean look and feel, effective searching, and ease of adjusting windows to suit one's whims are a nice change from the rigid boxy structure of earlier versions.

In a lot of ways, Quicken Essentials (QE) adds a lot of nice features. Most of them are in how easy it is to look at your financial data and improvements in the areas of reminders and alerts. There is also a new feature that lets you tag a transaction in different ways, allowing you to more easily track where your money goes.

However, when doing this review, I spent a lot of time trying to get my personal data to work and consequently spent very little time trying new features.

Let me begin by saying that I use Quicken 2006 to do my finances, there might be a few things about the version between 2006 and QE that differ, so I apologize in advance to those readers for my not keeping current! When you open QE, you realize that the look of this program has changed. Gone are the various windows and tabbed areas, as is the calendar view, that I have become so used to. The look has changed to the standard MacOS X, main window with a side bar. The side bar is sectioned into Tools, Accounts, and reports. Click on an item on the side bar and the main window opens to provide information concerning this option. While I miss the calendar motif of the older version, this system does provide a larger uncluttered area to look at information you want to see.

In the tools section there is first an “Overview” which when selected gives an overview of your finances. On the top is this cool pie chart that graphs your financial flows into Major outflows (ie things like taxes, the house, entertainment, and so forth. When you mouse over an area of the pie chart it displays the name of the item it is representing, next to the chart is a list showing these accounts and their totals. You can change the time this chart looks at, from month to date all the way to last 12 months. Below this section is a list of upcoming bills (obviously those you have set up Quicken to remind you of). Below that is a feature new to QE, financial help. On my display, this section will provide me with a 3 minute presentation designed to help me with savings. I am sure there are others.

The next tool section is called transactions. This is simply a big list of all your transactions shown chronologically, over the period of time you choose. There are several choices of time as well as custom. You can also filter the transactions listed here by account, type (income or expense), and status. As with all the QE main window views, there is a search bar in which you can enter information you want to find. For instance, if you want to see what you spent on vacations in the last 12 months in all accounts, use “vacation” as the search criteria, QE will show every transaction in any account that includes this term. The list shows several columns of information for each transaction and you can add, delete, or rearrange them to suit your style and needs. One of the things I liked most about QE is its ease of arranging information the way you like it. Arranging columns is an easy drag and place, while adding a new column of information takes only a quick right click and select what you like. This makes working with QE a real treat.

The next two items on the tool list are scheduled transactions and last download, which are pretty explanatory. This is followed by Account Summary and Category explorer. Accounts summary displays the total values of your various accounts, assets and liabilities, arranged into groups such as checking, investing, and retirements. At the top of the screen is the big overview, assets versus liabilities with a number and bar chart, followed by a list of all the account organized by group. This is a nice, easy to access, overview of your financial picture, if you manage to get all your investment accounts to work within the restrictions of QE.

After this, all your accounts are listed. Clicking on any account name opens the main window to this account. Again, you can search and arrange this view to suit your needs. This is also the window you use to work with transactions and events with this account.

QE organizes your various accounts into types. Rather than including a word as to what type accounts are in each section, accounts each get an icon, and this icon sits just before the name of the account. You can find the explanation of these icons in the short, "Getting started manual". Icons are nice, but this method didn't resonate with me. YMMV!

The last section is reports. QE makes creating a report relatively easy. The first on the list is "Spending cloud". Okay, here QE gets a little syrupy. What you see is a window, with the cloud motif of many of the other QE windows, "floating" on this cloud are the names of various things you spend money on. Mouse over a word, say cell phone, and it lists how many transactions and the total spend during the time period selected. The default is all dates in the database, but you can change this to any period that makes sense. Click on a word and it provides a window listing these transactions. Very cute, but I am not sure if it has any real value, at least to my way of doing business. The other reports are "Category Summary", "This Month", and "Last Month". You can change settings to see whatever it is that you want to. I didn't care for the interface for choosing which category to include in a report. Rather than a list, you see a window of word in side of bubbles, arranged in three columns. The window is small enough that you get to see only a portion of the categories available and I found trying to locate a specific category awkward. I was surprised to find there is no time category of "year-to-date" or simply all transactions for a year. One thing I use Quicken for at the end of the year is to give me a list of all my charitable transactions when I am doing my taxes. I can choose the "Last year" option to easily generate the list I want. With QE, I need to enter the dates. Not a big issue, but it opens the potential for a LOT more error. The final two reports, "This Month" and "Last Month", simply provide a list of where your money went. The QE import process doesn't import any custom reports you might have created, so if you have some favorite ones, you will have to re-create them within QE.

QE adds a new item to transactions called tags. Tags are similar to categories, except, you can have more than one tag associated with a transaction. I could see tags as very useful to people who like to see where their money is going. A lot of times, money spent on an item is actually for more than one reason. For instance, when I go on vacation and use a car, I of course need to buy gas. Purchases of gas come under the category of Automotive: fuel, however, on vacation, this gas is a vacation expense. With tags, I can tag a particular gas purchase as part of a vacation expense as well as being in the category of automotive expenses. If a transaction comes under more than one reason, you could add multiple tags. The example that Intuit gives is a person who tracks the costs of his boating hobby, and while on vacation rents a boat. The boat rental is tagged as both a vacation item and as part of his boating hobby. I think tags are a valuable addition and will be a real benefit for those who like to see where their money is really going.

Now let's look at how QE worked for my personal financial situation. I provide a word of caution. I am not a trained financier, as far as finances go, I am the average Joe who just wants to keep track of his checkbooks, credit cards, investments, and likes to see where his money goes. I never took really good care of making older versions of Quicken perform to perfection. I say this because I had some real troubles with the import process from my saved Quicken 2006 file. I believe that at least part of my import issues are due to issues with my back up file as well as with the import process itself.

The import process is very simple. You make a copy of your current Quicken save file, and run an import utility. It goes through the data and creates a new file for QE, containing what it found there. The import process went pretty badly for me. Apparently the import process has significant issues with what the people at Intuit call “orphan transactions”. These are transactions that, for some reason or another, have only one side. Normally money comes from somewhere and goes somewhere. If you ever did anything that removes one side of the transaction, the import process goes bonkers. (Also, I think that transactions that involve investment accounts might have issues, since investment accounts aren’t imported and would thus create orphaned transactions). My checking account, the bread and butter of my finances, went from a nice positive balance to a negative balance in tens of thousands of dollars! Seeing that big a negative number immediately raises the hairs on the back of one’s neck.

I believe that the cause of this negative balance was the fact that I moved money from the sale of my condo, about ten years ago, temporarily into my checking account, before moving it to savings and eventually moving it into the new house. I am not entirely sure why this transaction got orphaned. There is a distinct possibility that I changed versions of Quicken around that time, which somehow caused the loss of some data at that time. Which means this error becomes one of “error carried forward”. However, another savings account I have also went deeply into the red, and I have done nothing with this account other than have money taken out of my pay check to save for vacations and once in a while cutting a check to pay for said vacation. I looked over the orphaned transactions and there were some involving an investment account that I know never interacted with this savings account. Of the six checking and saving accounts I actively use, one of them was imported correctly. Not very satisfactory.

I was going to take the time to try to repair these accounts, until I started working with my investments accounts. Here we begin to see why the word: “Essential” is included in the name of this version of Quicken. It provides only very basic support of investment accounts.

Unlike earlier versions of Quicken, QE doesn’t let you enter transactions associated with your investments accounts. Everything has to be done via the Internet. The import process only brings over information about the account, no totals, no transactions, nothing. What they expect you to do is to set up an account with your investment company and let QE download the information from them. As far as I can see, there is no way to even put a total value into one of the investments that are imported. This might be an issue for people who are concerned about the security of the Internet. I have a friend that is so concerned about Internet security that he runs Quicken on a computer that is never connected to the Internet. (He actually bought a second machine to do his Internet stuff). While that is the extreme case, there are reasons to be concerned.

The second issue with this is what do you do when the investment firm isn’t included in those that QE can download? Now I will admit, I have shares in two mutual funds that invest in green energy companies, which might be somewhat esoteric, but I was very disappointed to find several of my more traditional mutual funds not available in QE. According to the material included with QE, there are lots and lots of financial institutions (over 13,000) that are available for use with QE.

But here is the really bad news, Quicken Essentials doesn't even have the ability to allow you to manually enter information about those investments that cannot be downloaded! Talk about a giant leap in the wrong direction.

I don't know why Intuit expects anyone will be happy to pay for a product that won't even let you do manual entry. Frankly, I would be totally happy to simply enter a balance from statements, whenever they are sent to me. I am not the type of person who keeps track of investments that closely. But this program doesn't even give you that. So I have to say that QE completely fails for anyone who has a handful of investments that they want to keep track of, and that are not supported by Intuit.

QE does a fair job with credit cards. As a matter of fact, the credit card I use most is with a company that recently had some issues with how Intuit did downloaded transactions and stopped allowing me to download transactions to Quicken. I can use QE to download from this company again, which I am happy about. However, I am not so happy with how QE handles downloaded transactions. It simply downloads and accepts everything from your card company.

In the version I am used to, when a credit card transactions are downloaded, you need to go through and accept them. While this is an extra step, I found it a very important extra step. Let me give you two examples as to why this is so for me. First of all there is credit card theft. I have been hit twice in the past decade by someone managing to make a transaction on my credit card. In both cases, because I download my cards every other day or so, I caught the event just a day after it happened, and immediately cancelled that card. I have no idea if acting this quickly prevented further such transactions by this person, but I do think it is important to review transactions to be sure they are mine!

The second such thing is a real transaction that is in some way incorrect. In the past years I have seen restaurant tips not recorded or recorded incorrectly, a transaction incorrectly being run twice, and even ones that were for some reason forgotten to be submitted (yes, I followed up and corrected those as well). I wouldn't have caught these events as readily if I wasn't reviewing the transactions I download.

In my test of QE, I set up one card to do downloads. For some reason, it didn't add categories to those downloaded transactions. Using this, I was able to see which were downloaded and compare the downloaded items to my receipts. But handling the transactions this way makes this a more difficult process.

Overall, I am not completely happy with this new version of Quicken. One would think that a company as large as Intuit would have the resources and the business sense to create a completely re-written application that at least includes all the basics. Leaving out the ability to even manually enter a total on an investment is a major oversight. I expect that in the long run, QE will eventually get everything that the standard version of Quicken has. How long this will take, I have no idea.

Personally, a financial program has become an important part of my life. I like to have a balanced checkbook, keep an eye on my credit card and know that it is being used only by me, and have some idea of what my investments are doing. When I move to another program, or version of a program, I am always very concerned and critical of results. For me, QE didn't even come close to meeting my expectations.

Conclusion

While I am still trying to decide if I will actually use this new version or not, you the reader needs to decide whether or not to spend your money on this product. Intuit is asking \$70, which I feel is excessive for a product that feels like it isn't finished. Overall it is an okay program, I liked the look and feel, I just didn't like how it responded to my ancient and cruddy financial database or how it simply dissed those financial institutions that are not in it's database. You may find that none of these issues even affect you. There is also a 60 day money back Satisfaction Guarantee, so if you decide the program doesn't meet your needs, you have 60 days to give it a try.

If any of you readers buy it, I would be very interested to hear your import and usage experiences. Because a financial program is such an important part of everyone's digital life, and Quicken is the only commercial option for Mac users, it is very important that we get Intuit to repair all the issues with this program. Mac users are not second rate computer users and should not have to remain satisfied with second rate software. So email me with your thoughts.

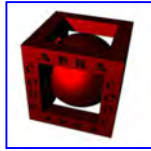
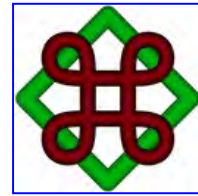
Other Reviews:

Rob Griffiths –

http://www.macworld.com/article/146729/2010/02/essentialsfirstlook.html?lsrc=nl_mwweek_h_cbstories

Shortcuts 2.0.1 - Assign hot keys to (some) contextual menu items

Reviewed by Harry {doc} Babad © 2010



Developer: Abracode, Inc.
Link: <http://www.abracode.com>
eMail: abra@abracode.com

System Requirements: Mac OS X 10.5 or later (10.6-compatible), some useful contextual menu plug-ins highly recommended; PPC/Intel Macintosh's with Leopard.
Release Date: 29 August 2009 Download Size 1.3 MB

Cost: Free/Donationware.



4.5 macCs Mostly for power users and programmers.

Audience: Only users who are either fanatical about keeping some of their CM's working in Snow Leopard, rodent adverse mouse users who could get along with only their keyboards most of the time, and those who want to take advantage of programs like "OnMyCommand" to more readily execute UNIX command with a minimal amount of keyboarding or mousing around.

Strengths: It works just fine, after you check out the read me file to guide the non-standard installation.

Weaknesses: It does not meet my computing needs — I only checked it out because I make as much use as I can of conceptual menus, a feature broken in OS X Snow Leopard. It comes in two versions, associated with 32 Bit and 64 Bit CMs. The documentation is well written and more or less easy to follow, albeit was far too complex for the casual reader, namely me!

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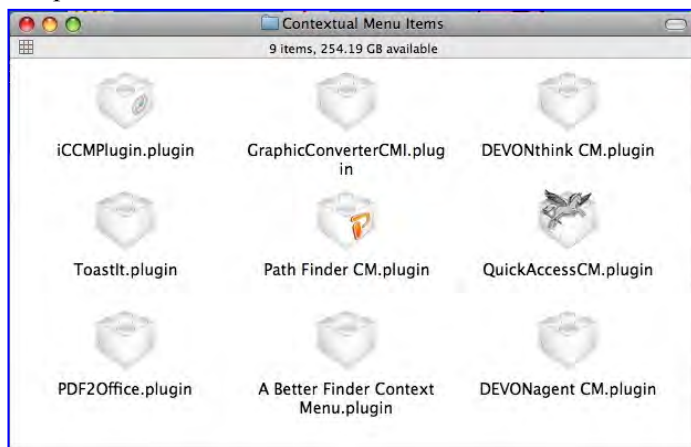
Sidebar #1: Reviews were carried out on my iMac 2.8 GHz Intel Core 2 Duo with 2 GB 667 MHz DDR2 SDRAM running Mac OS X version 10.5.8

Sidebar #2: Honors and Tribute: This review would have been much more difficult to write if I hadn't stumbled upon a Macworld GEM: *Contextual menu shortcuts*, by Dan Frakes, in the May 26, 2006 Macworld. Although I am not putting quotation marks around the material I used, Dan, I owe what clarity this review contains to you. This is not a doc_Babad type of program, but many of our readers both are more sophisticated and demanding than I am about the Macintosh's OS X features.

Sidebar #3: Contextual Menu Defined — When using an application or an operating system, the menu that appears when you click on the right-hand button of a two-button mouse (also called right clicking). Single-button mouse users can bring up the contextual menu by holding down the ctrl key while clicking. The contextual menu appears at the cursor or where the pointer was placed when clicked and often contains alternate ways to use the options in the system's toolbars.

Introduction Including Publisher's Summary

Background of the Software Topic — Since I neither script or automate and many shareware application to use shortcuts and ease access don't do my thing, I love to try our contextual menu items to see if they have the stuff to become permanent parts of my application s tools, at least until I switch to Snow Leopard. Whenever an application allows it, I explore and soon learn most of the shortcuts associated with using CM items. Although I have only nine conceptual menu plugins on my computer, many of which appear to work in the background and are associated with my browsers. This product seemed different enough, and off the beaten track, that I took a quick look at it. However working with it, I soon determined that (a) it did not a priori work with my application installed CMs, and (b) there was more complexity here than I wanted to deal with. Therefore I recommend this product to others, but not for my personal use. *As always it's a matter of style and functional needs.*



Publishers Description — Shortcuts is a Mac OS X application to assign hot keys to contextual menu items. Version 2.0 also allows you to display a menu with items added by CM plug-ins. There are two ways to use it. In first mode, it allows you to assign a hot key combination to chosen menu item so you can select some object (file in Finder or text) and hit keyboard combination to execute the task normally performed by choosing that menu item. In second mode, Shortcuts displays the menu with items populated by contextual menu plug-ins. It can be triggered by a keyboard hot key or from services item

Getting Started

This is a well-developed Macintosh application, *but* uses a non-standard installation mode — don't worry its easy. Run the "Install QuickAccessCM" script first and then copy "*QuickAccessSetup.app*" to your applications folder.

Its freeware so start using. Decide which preference settings you prefer if your setting up destination folders for the folders that store 'accessible' items. I put them in my <Users > Harry > Documents Folder>. Check out any readme files. You're good to go. If you're new to this kind of software, genre, check out one or more of the following:

- A Getting Started File
- A Users Manual, sometimes called Documentation, often included in the vendor help files and easily downloaded for reference purposes.
- Start to Mac-around and see what you get. For this product, I'd skip this alternative. It would be both counter productive and frustrating ——— So read the instructions.

Using the Software

As Macworld's Dan Frakes noted in his review of Shortcuts 1.0, this tool will further relieve you phobia of mousing around. Try it; see if it meets your computing style needs.

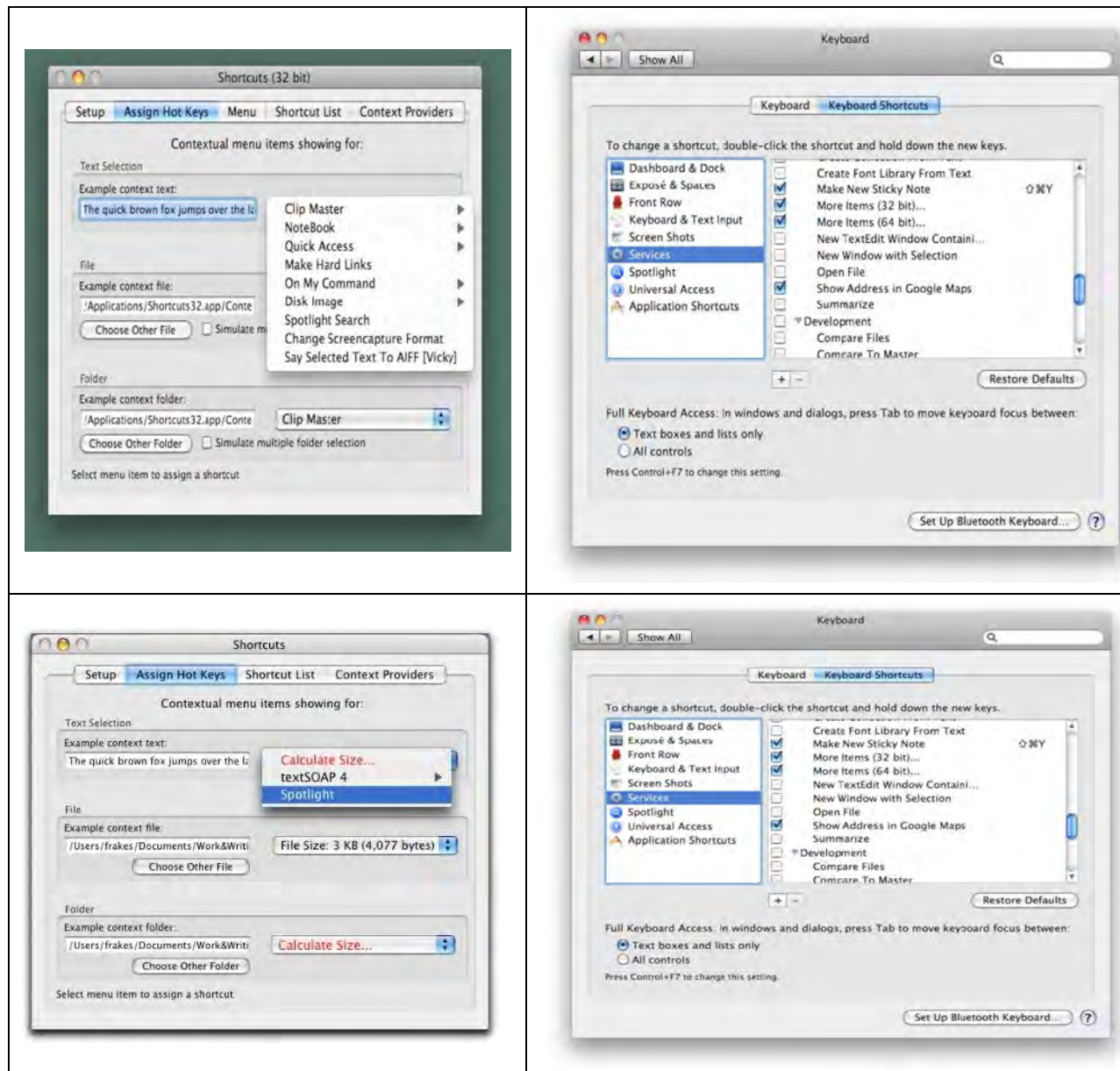
“After launching Shortcuts, its Assign Hot Keys screen presents you with a list of current contextual menu items, divided into the type of action each performs: actions on text (Spotlight searches, third-party text-*munging* {distortion} tools), on files (Automator actions, third-party file manipulation tasks), or on folders (in a manner similar to files). To assign a keyboard shortcut to a contextual menu action, you simply choose it from the pop-up menu; a dialog will appear asking you to press the desired shortcut. (An item displayed in red in one of the pop-up menus means you've already assigned a shortcut to that item.)”

[“Contextual menu shortcuts?” Macworld, May 26, 2006,
<http://www.macworld.com/article/51062/2006/05/shortcuts.html>]

Dan further notes: “that, like contextual menus themselves, Shortcuts' options are also contextual, and are based on the Example files on the Assign Hot Keys screen. For example, by default, the File example file is a PNG image; the contextual menu options available from File pop-up menu are thus actions available for image files. If you use the Choose Other File button to choose a different type of file, the options may change.

“Finally, when you're done assigning shortcuts, clicking the Start button on the Setup screen makes them available. (The Add button adds Shortcuts' background process to your Login Items so your shortcuts are available each time you log in.) A list of your assigned shortcuts is available on the Shortcut List screen.” There's more, but becoming expert with this tool is not my dish of tea.

To share the software's complexity, I offer four screen shots, that are only loosely identified, taken from the developers documentation. No explanations offered by me, I'm in over my head or perhaps interest level.



Conclusions and Recommendation

Some reviewers have said that this is {for now} the absolute best productivity feature restorer for Snow Leopard. Many of the users work with it and “OnMyCommand” also by Abracode, **Inc.**, which executes command line ‘calls’ via contextual menu. I however have no need for another system-tweaking toolbox; but you many have. If so download the product and play, but after reading the provided instructions.

The big limitation to Shortcuts, is that it works only with contextual menu plugins. That is, it doesn’t work with contextual menu items added by individual applications themselves. The later form most of my regularly used CM Items. As Dan Frakes pointed out and I’ve verified, long before trying out Shortcuts, The good news is that many of these application-specific items are also available via the application’s own menus, so you can assign keyboard shortcuts to them via Mac OS X’s own Keyboard & Mouse preference pane.

The instruction manual that accompanies Shortcut 2.0 provided enough examples of t=what works and what doesn't that power users will soon accommodate its limitations.

Certainly, for those who would use it, is **macC** 4.5 product.

PS

Learn more about contextual menus check out:

Wikipedia — http://en.wikipedia.org/wiki/Context_menu

Indiana University — <http://kb.iu.edu/data/aeHQ.html>

Abracode Site — <http://free.abracode.com/cmworkshop/>

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