

THIS ISSUE I AM GOING TO SEPARATE HARD FACT FROM PULP fiction, in an attempt to debunk some of the more common misconceptions about monitor accuracy and quality. We'll focus on the higher end 17 and 21 inch monitors — since so many GRAPHIC EXCHANGE readers make their living staring at these big screens.

I'm also going to pepper you with practical buying tips designed to prevent you from being misled by overly-hyped reviews and entrancing manufactures' ads. While we're at it, let's also appease those of you who are infatuated with neo-nerdal concepts such as Invar Shadow Mask, video bandwidth, PCC-phase and clamp pulse position.

LORNE'S FAMOUS 3-MINUTE MONITOR TEST

Although not nearly as good as my famous almond Caesar salad, this test has less calories and will demonstrate just how accurate (or inaccurate) your monitor is at monitoring what you want it to monitor. So take three minutes and try this simple, yet humbling exercise:

Create any word with 6 point type using *Illustrator* or *Quark* and paste the word into the centre of your monitor, which you've set at 1024 x 768 resolution @ 75Hz (preferably 1152 x 884 or 1280 x 1024, if it's a quality 17" or 21" screen). Now copy and paste the word to each of the four extreme corners of the monitor. Next, draw three identical 7" long by 2" wide rectangles filled with PMS 485 or some other very bright color and position the three rectangles in the left, centre and right portions of your screen respectively.

Now for the moment of truth.

Is the type in the corner as sharp as the type in the middle of the screen? Try fiddling with your horizontal and vertical convergence controls for a while. Still looks fuzzier in the corners? Are all five red rectangles uniform in brightness, intensity, saturation and hue? Are the horizontal and vertical lines of the rectangle straight and parallel?

Don't be too discouraged, few monitors pass these two tests with flying colors. Although no substitute for *Tech Tools Pro* (a good set of diagnostic software for your Mac) these two simple tests uncover minor (and sometimes major) flaws in a monitor, as well as production variances between screens of the same make and model. Best of all, you can perform these tests at your computer store before you buy.

MONITOR MYTHS AND LEGENDS REVEALED

The limits of entrancing technical reviews. Many monitor purchases are motivated by reviews in trade publications alone. Problem is, these publications rarely test the things that are most important to color publishing.

For example, how well does a monitor calibrate to 5000K — a standard viewing color temperature? In addition, publications rarely test for factors such as "drift": your monitor's inability to maintain calibrated settings and brightness over a period of time. That's why your four year old monitor looks

Making a The Big

Practical monitor buying tips for

BY LORNE

dull and fuzzy, and is annoying to stare at for any length of time. (*I'm sure you have some clients with similar characteristics.*) And do those so-called "expert" reviewers let each monitor warm up for 30 minutes before testing? (*35 minutes in Newfoundland.*)

Don't be a dot pitch sucker. Too many perspective monitor purchasers buy by dot pitch alone. Although a fine dot pitch is very desirable, it is only one important factor in determining the quality and suitability of a particular monitor to color-accurate design and publishing. There are some 21" monitors with a .28 dot pitch that are clearly superior to some with .25 or .26 dot pitch.

Invar shadow mask, Trinitron, DiamondTron or SonicTronic? The jury is still out on which is better. Most designers prefer the aperture grille technology of the Sony Trinitron or Mitsubishi DiamondTron screens. (DiamondTron technology is very similar to Trinitron in dot shape and construction, yet the DiamondTron has some of the anti-glare and contrast features of Invar shadow mask.) ViewSonic's iteration, called SonicTronic, is also a perennial favourite, with their 17" PT775 and 21" PT813, used by many designers and color shops. (*If you're beginning to notice my partiality to Trinitron technology, you're correct — I find it superior in brightness and sharpness at high resolutions.*)

That said, we use an Invar shadow mask tube monitor at

Living on Screen

the professional pixel pusher

CHERRY

home (ViewSonic GT771) and I find that horizontal lines and vertical lines are straighter around the edges than with an aperture grille monitor — and the superior geometry matters most in word processing and alien ship blasting — the two main tasks of the Windows '95 system I have at home. (*Quit screaming, you Mac folks, I actually like Win 95! And besides, if it makes you feel any better, I use a PowerBook for really serious stuff.*)

Tier 1, 2, 3 and 4. These are industry terms that rank monitor manufacturers by popularity and performance. Typically, Tier 1 refers to such household names as Sony, NEC and Hitachi. Tier 2 manufacturers like ViewSonic and Goldstar often employ the same tube quality, features and warranty as their Tier 1 counterparts — without a premium price.

A sub-category that is important to serious pixel pushers consists of low-volume specialty manufacturers such as Radius, RasterOps and LaCie. These three companies specialize in high end color monitors targeted at the design and publishing professional. And they use industry standard tubes from Mitsubishi and Hitachi.

WILL IT WORK? HOW LONG WILL IT WORK?

Warranty warnings. What is the warranty? One year or three? More important: *where* is the warranty? Never buy any monitor that has to be shipped back to the U.S. (*Sorry,*

Radius.) I've encountered too many horror stories of damaged shipments, improperly filled out Canada Customs forms, ridiculous shipping costs (monitors are heavy) and eons of downtime. Many larger monitor manufacturers have Canadian warranty depots. Ask before you buy; *not* when you need service.

Always test, and if in doubt, test again. Whichever monitor you are buying, make sure that you see it working before you lay down your cash. Due to production variables or even a knock during shipping, your particular monitor may look vastly different from the demo monitor on the store shelf — something you don't want to discover after you get home. If you're buying mail order or direct, ask to have the monitor checked out by a technician before it is shipped — if they're unwilling or unable to do that, take your business elsewhere.

They don't last forever. Electron beams and the three color guns that fire them are not a static constant, and just like the people that use them, monitors get older, lose color and drift off more often. Brightness levels can fade dramatically over the years — expect four to five years of "life" from your monitor — and less if it's left on 24 hours a day. But those older "lifeless" monitors can be retired to word processing, accounting or other non-color-critical tasks.

A FEW NOTES ABOUT NOTEBOOKS

Are you passive or active? Notebooks come in two flavours: passive matrix (often referred to as dual scanning) and active matrix. Like good grammar structure, active is better. They're brighter, show truer, deeper colors, and can be viewed from a sharper angle. Of course they're more expensive — but improved manufacturing yields have narrowed the gap between passive and active matrix costs to well under \$1,000.

A would-be word of caution to you commuters. Always practice safe mobile computing by using a screen saver — your notebook's LCD screen is more susceptible to burn-in and should not be left on for extended periods with the same screen image.

Whose in charge of ergonomics? Do any of you remember those late 80s GM cars with the electronic dashes and the talking reminder that your "door was ajar"? They were cool for about two minutes, after which they distracted and annoyed you worse than the neighborhood brats who ring your doorbell at dinner time and demand that you sponsor them for some unknown cause.

Same goes for flashy, one-button, on-screen, "I do everything" monitor controls. One-touch controls may look elegant, but require more fiddling and are less user-friendly than multiple controls. Industry reps I've talked to insist that the one-touch controls make the monitors more user-friendly, or as one said, "more human". I just think they're wrong. Industrial designers should learn that machines will never be human and humans will never be machines.

CONTINUED

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"Captain, I've got no control!" Many low end, mid-range, and even some high end monitors lack sufficient geometry and electron gun convergence controls. Make sure your monitor has at least the following: pincushioning, tilt, keystone adjustment, and both horizontal and vertical convergence. Monitors with Mitsubishi's 21" tube feature five pincushioning adjustments and over 40 other geometry and focus adjustments, letting you correct almost any screen distortion.

Refreshing news is important.

Refresh rate refers to the ability of the monitor to redraw the screen many times in one second, thus avoiding flicker. Anything below a 72Hz refresh rate is totally unacceptable. Look for at least 75Hz at the resolution you will work with, and preferably 85Hz or more. A monitor rated at 1280 x 1024 @ 60Hz is useless at that resolution; 60Hz will have you reaching for the Tylenol in a matter of minutes.

LORNE'S PICKS

Any monitor with a 17" Mitsubishi tube including: the Mag DiamondTron,

Goldstar 78i and ViewSonic PT775 (*my favourite*). LaCie's new 19" with a .22 dot Hitachi tube is sharper than the Barber of Seville's razor. ViewSonic GT 771 and GT773 are inexpensive and perform well.

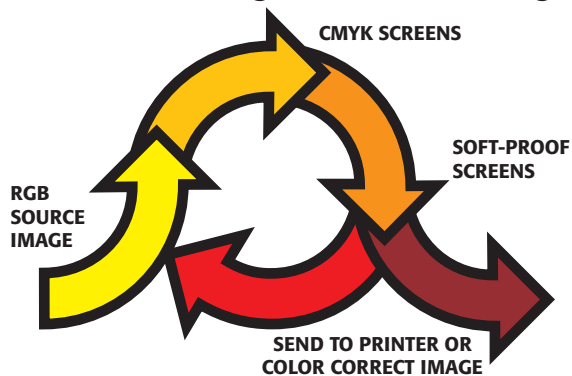
With respect to the 21" flavour variety, ViewSonic's PT813 is the class leader in the sub-\$2,000 category, while the LaCie Electron 21" with its DiamondTron tube is the best sub-\$3,000 monitor and may even be a better choice than the expensive (\$4,600) Radius PressView, which can't be repaired in Canada. Sony's SF and SE series are also excellent choices in both a 17" and 21" size.

Finally, don't overlook Apple's 750 and 850 series of 17" and 20". The new Apple Trinitron monitors have a self-calibration utility that constantly corrects colors. This feature, exclusive to Apple, is designed to correct color drift, maintain brightness and white point settings, and avoid spontaneous combustion. (*Don't worry, I'm kidding about the spontaneous combustion.*)

Now that you know how to buy a monitor, what video card do you

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select? How about a Glint chip 3D accelerated 128 bit graphics card with 250 MHz RamDac and 8 MB of dual-ported WRAM, or will 6MB of VRAM on a 64 bit card be good enough? And we haven't even talked about how to calibrate for accurate color. Stay tuned, I'll talk about that stuff in upcoming issues.

For now, stop fiddling with the controls on your monitor — you'll probably just make things worse.

And don't worry about the clamp pulse position and PCC phase — some things in life just aren't important, and those are two of them.

And as for what neo-nerdal means? — I made it up. *
—Lorne

LORNE CHERRY IS PRESIDENT OF COMPUTER BUYER'S WAREHOUSE DIRECT AS WELL AS A WRITER WHO SOMETIMES FINDS TIME TO WRITE ABOUT HOW TECHNOLOGY AFFECTS OUR LIVES.

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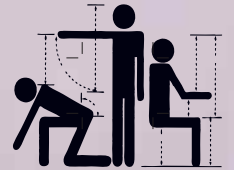
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Ergo-what?

Ergonomics. Simply put, it means sitting the way your body was designed to sit, and working with the kind of office furnishings that let you feel comfortable, relaxed and productive — all the time. It means reducing repetitive stress injuries, like carpal tunnel syndrome, caused by bad posture and poorly designed chairs, work tables and accessories.

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