

SIX THINGS TO DO BEFORE BUYING A DIGITAL CINEMA CAMERA



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PLEASE NOTE: This advice can be used or misused however you like, but it's targeted at anyone considering purchasing a motion-picture capture device (video, digital film, whatever you want to call it) in the very near future. While you can apply it to still cameras as well, and some of this definitely does apply, this is meant for motion picture shooting.

Links in the document will go directly to a Craft Truck Tech Bite video on the product mentioned or a product link. There are no affiliate links.

So you've decided to get a(nother) motion picture camera. Whether you're just tooling around for YouTube clips or you're shooting a feature in two weeks, these are our essential buying tips.

1 IT HAS TO FEEL GOOD IN YOUR HANDS

First things first, get away from the specs, numbers, test charts, pixels, and everything else that has nothing to do with using the camera.

Using a camera is physical. You need to go and spend time evaluating the actual camera with your hands before you evaluate the image it produces with your eyes.

“The store you are buying from needs to let you feel it, hold it, and use the camera”

Why? It won't matter if it's 5000 pixels across or 2000 if you can't practically use the camera. If your plan is to

- stuff the camera in the car and shoot the protagonist driving
- hide in a bathroom
- run down the street holding the camera
- find a working rig that allows you to shoot where you want to shoot

Or if

- the camera is too heavy for the project you plan on hand-holding all day
- it just feels uncomfortable
- it takes too long to start up...

All of these factors are extremely real and consequential. The practical application of the gear matters far more than a presumed better image quality based on specs.

In order to evaluate this you must go and use the camera. The store you are buying from needs to let you feel it, hold it, use it. If you can't get ahold of one nearby,

then we recommend actually travelling to test it out. The cost of your trip is ultimately going to be much less of a burden in the long run when you take into account the hundreds or thousands of dollars you're about to spend.

Make no mistake, the way you relate to the camera—the ease with which you personally pick it up and are able to treat it as a fifth limb, connected, immediate, controlled, smooth—makes a way bigger impact on the quality of your pictures than do the technical specs.

You may come to regret getting increased image quality when you couldn't get half the shots you wanted because the camera was just too cumbersome. You have to make videos with your hands and eyes and mind. The quality of your work will suffer if your camera hasn't become an extension of yourself. It has to feel good in your hands. You have to look forward to shooting with it.

2 BE REALISTIC IN PRICING THE BUILD

Anyone who has bought a prosumer model could write you the same advice on this concept: The price of the body is not the price you will pay.

The price you will pay is what it takes to get every last little bit of that camera up and running in the realistic situations you will be using it in.

You might need a matte box, rails, support, hand-held rig or rigs, lenses, eyepieces, more eyepieces, filters, tripods, monitors, cables, caps, ends, bits, odds and sods, gook, and gak. And this costs a lot of money.

Don't lie to yourself.

Don't stare at that spreadsheet your friend has done and say, "Ah, I can get away without that piece." Because you can't, and you won't, and you'll end up buying it anyway and the prices don't lie.

Does this mean that you shouldn't reach for that camera that's at the top of your range, after you've stretched your budget? No. Go ahead and reach. But it means more than that....

It means that camera support and accessories and lenses may very well end up being more than the price of your camera, and that's okay.

Both this tip and the prior one are about the realistic usage of a camera as opposed to believing that your results are contingent on the camera's specific sensor/elec-

"The price you pay is what it takes to get every last piece of that camera running in the realistic situation you will be using it in."

tronics/compression system. You won't be staring at test charts. You'll be shooting people, in the field, and you have to operate the camera. It's no good having an M60 assault rifle if you can't hold it up to shoot the target.

By testing how it feels to use the camera and pricing out the actual build you need to make your real-world project(s), you may very well change your mind on what camera you wish to buy.

3 KNOW YOUR LENSES

So you've decided that you like the [Arri Alexa](#) (duh), the [RED SCARLET](#), the [Blackmagic Cinema Camera](#), the [Canon C300](#), the [Sony F55](#)...whatever. You've made the decision and you're sticking with it. You like the way it feels and you've priced out the build and you know what you need down to the last battery charger.

Hold on... You have to get [lenses](#). And then you have to keep shots in focus.

Focal lengths aren't enough. Focal length equivalents aren't enough. The same advice that applies to lenses applies to camera bodies—you have to know how they actually function. A [Canon 28mm EF lens](#) may work great on a SCARLET but makes for a bit of a challenge when it comes to pulling focus. Remember, in this example, the Canon 28mm EF lens wasn't made for pulling focus, whereas the [Canon cine-primés](#) are made for that purpose. A set of [Cooke S4i](#) minis are great, but they're also \$10k a piece. Perhaps you need a set of cine-primés in a [Nikon mount](#) to put on your [D800](#), and the [Zeiss CPs](#) are great, or perhaps the [Rokinons](#) will work just as well. Or perhaps you realize you can't shoot those wide open and you need T1.3, or something is sharper at T11, or whatever.

“...you can't choose lenses online. You can “purchase” them online, but you choose them by holding and using them.”

But you can't choose lenses online. You can “purchase” them online, but you choose them by holding and using them. (And by the way, if you are re in a store that is gracious enough to let you use them, then consider not saving the five bucks by buying them online; be kind to the retailer giving you the service to purchase them from that retailer).

You have to know the lenses you're using. The new [Blackmagic Pocket Cinema cam](#) (time of writing, October 2013) is fantastic, but those micro 4/3 lenses might be a bit tough to pull iris with if you can't do it manually. Or perhaps they breathe when pulling focus. Perhaps you really need the [Voigtlanders](#), for example. But this goes back to the principle of knowing what you want and what you need.

You have to love using your lenses. If a lens speaks to you, you'll use it. Films are never shot by numbers, they're shot by emotion and physicality and intuition and technical precision. You have to have a connection to the lenses you're using, and that will in turn influence the camera you buy.

Remember: Your lenses will probably hold their value. The body will not. Your lenses are, arguably, more important to the final image than the body's sensor. You will rely more on your lenses than your camera body to "get the shot," presuming the camera works well enough.

"It's o.k. if you're lens set costs more than the camera body."

Any pro can tell you that this is the case. This is nowhere more true than at the high end of the high-end. A full lens set from [Cooke](#) is \$200k+. The [Alexa](#) body is \$60k. Know your lenses:

- Which lengths you will need to feel comfortable
- What look they produce
- How they feel when you work with them in your hands
- Which lenses work the way you want them to and which don't
- How they work on the camera when actually paired together
- Their prices
- Their strengths and weaknesses

Know. Your. Lenses.

4 TEST THE CAMERA

So this is what you really wanted. You wanted that great 4K, 8K, 15K image you've been dreaming about. You wanted that amazing 15 stops of dynamic range. You've been dreaming about the image you'll create after you put that perfect highlight on your lead actor's head, and now you and Bob Richardson are going to be sipping drinks at the Château Marmont, where he commends you for being the best digital cinematographer he's ever seen. But wait, does it actually look that way? The way you have in your head?

“You have to see what happens when you push them in and out of the limits of their dynamic range, latitude, detail, motion and color.”

Don't stare at controlled test charts; they won't necessarily help you. There are many factors that lead to what image a camera's sensor, and subsequent electronics, will actually look like when you are using them in the field. This doesn't necessarily get revealed in the most controlled of circumstances. Or let's put it this way: tests on a test bench don't lie, but perhaps you do.

Perhaps you think you expose perfectly, but you tend to overexpose. Perhaps you underexpose. Perhaps you move the camera a lot and rolling shutter is a real problem. It's like doing up a budget for your annual expenses. Sure, you can claim that you spend x,y,z on your luxuries and food, but the easiest way to judge your real behavior is look at your bank account at the end of the year. That's what you actually tend to do.

So you need to test the camera in the way you will actually be using it, and look at the results.

No two cameras produce the same look. [RED](#), [Sony](#), [Canon](#), and [Blackmagic](#) all make wonderful cameras, but they create different images. You have to see what happens when you push them in and out of the limits of their dynamic range, latitude, detail, motion and color.

Do you need a camera that has a great look at higher ISOs? What about one that's better (for you) outdoors? What about better under certain temperatures of light for reasons you can't quite seem to put a finger on?

What you'll eventually arrive at are qualitative differences between the different cameras you're considering, and that is exactly the point. It's not quantitative. You can only judge what you're looking at and see how it works when you use it. By testing out the various cameras in every way you can, you'll be achieving the look that you like best.

5 TEST THE FOOTAGE VIA GRADING

So you've priced things out, held things in your hand, figured out what you can and can't do, and fit it to a budget that's realistic with a build and accessories. You've looked at footage, in real-world situations, from the camera bodies you're considering and know what you're getting into lens-wise on each option.

And you know what they look like after you've shot.

Or do you?

“You may find that a camera you weren't considering initially helps you achieve the image you want.”

Anyone who has seen a RED RAW file before and after [grading](#) can let you know how incredibly varied the images can be from how they were shot. Same goes for so many other cameras. You need to see how the footage reacts to grading. So you need to put the footage through a grading suite—either one

you know you can use or one you know quite well. Bear in mind, there are two separate issues here:

- How do the files (images) from each camera react to various types of grading manipulations
- Which camera is best suited to help me achieve the look I want to get?

Some cameras and their files just skew a certain way once you get them in the grading suite. They do or don't like being pushed, or pulled. They can handle more saturation or less. Sometimes the camera will actually help you dictate how you use it based on what its tolerances are.

For example, RED MX owners are told to set for ISO 800 to “protect the highlights.” Some do and some don’t, but this advice is based on the sensor’s habitual ways of reacting once you get into the grading suite.

You have to know how the camera’s files react and what are the best- and worst-case scenarios for the images it makes. If an image gets really nasty when saturated and pushed up, you may not be able to shoot for that result to get the grainy over-exposed look you desired. And you might find that the best image out of a given camera means “going with” the strengths that particular camera’s files have to offer.

In the end, you might find that a camera you weren’t considering initially helps you achieve the image you want. Your vision might be best served by a different sensor because when you process and grade the images it results in the look you were going for.

Part of being a filmmaker or cinematographer is being reactive and opening your mind to unintended results. That’s why it’s essential to test the footage in a grading suite to see exactly what you can and cannot do with the cameras you’re considering.

6 FORGET WHATEVER ELSE IS COMING...

You've made your decision.

"But the new 4K RAW..." Forget it.

"Dynamic range model..." Forget it.

"The F567 is almost..." Forget it.

"There will always be something else..."

Use the tools that are available. There will always be something else coming down the line. If you delay, you will delay forever and never be happy.

This is not just about avoiding the "grass is always greener" issue. There is a better reason to ignore whatever is coming out after your camera: proven products are almost always easier to use. There's an ecosystem for them. There are support systems, power systems, lenses, and a ton of advice out there on how to maximize their value. Perhaps you can even get equipment second-hand in great condition and save a bunch of dollars. The point is, let someone else beta-test the next greatest thing and complain on their blog about how their project got messed up because this or that didn't work because the camera was too new. Don't worry about it. It won't help your project. What will? Getting a camera you know how to use, and that's been proven in the field.