

FantasyCam

Rather like Jon Brady in the previous article, GTC member Mark Langton has been wondering why, with all the options around, the perfect 'cameraman's camera' doesn't exist at the moment... so he set about building his very own, virtual 'FantasyCam' for Zerb.

With so many new formats, codecs and sensors appearing all the time it's a nightmare for any cameraperson looking to buy a camcorder that won't be obsolete in a year's time. Long gone are the DigiBeta days of one dominant broadcast format; we are awash with all manner of compression schemes and storage formats, and now, just to add to the confusion, TV programmes are being shot on different size sensors too. Disappointingly, no camera manufacturer has yet built a camera I actually want to spend my hard-earned cash on because each new model that comes out – however amazing – is heavily geared towards one or another type of filming: either it's a large-sensor camera that produces wonderful, filmic images via a selection of cine and stills lenses, or it's a 2/3" ENG-style camera with a B4 mounted lens that is fast and versatile but usually with some creative compromise.

And that got me thinking. If I could sit in the big, comfy head-designer's chair and scribble out my ideas for a multi-purpose broadcast camera what would I want to build? Probably something like this: a light and compact, affordable, upgradeable, expandable,



shoulder-mounted camera. It would be future-proof and able to accept most professional lenses via an interchangeable, fully functional lens adaptor, with a scaleable sensor to take full advantage of each lens's full field of view. It would not be restricted to one codec and not locked into a single proprietary recording media.

This is based on my own personal wish list. During my relatively short 20 years behind the lens, I've had to get to grips with all sorts of camera designs; some good, some not so good. I have yet to find my perfect camera, but while I'm waiting, I thought I'd throw some ideas into the mix. It's only a concept – but not an impossible one. Far from it, because all the technologies in this fantasy camera already exist in some form or other; all I've done is cherry-pick the best and roll them into one tantalising machine.

Fact File
3D artwork by lighting cameramen Mark Langton
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ARTWORK BY MARK LANGTON

- 1 **CAMERA BODY:** inspired by the JVC GY-HD700 series. Lightweight and compact with operator-friendly ergonomics and logical control layout. The outboard earphone speaker and dual mini-jack socket is also a JVC design.
- 2 **HANDLE:** inspired by the JVC GY HD100 series. A detachable, padded handle allowing the camera to be stripped down for use in a 3D rig, drama accessory cage or to reduce the camera's dimensions for transport in a backpack or travel case.
- 3 **EVF:** inspired by all professional 2/3" ENG/PSC cameras. A high-resolution CRT electronic viewfinder capable of displaying either colour or B/W image. Everyone is going LCD mad these days, with incredible e-IPS and AMOLED screens everywhere – and these are great for most situations, but they still can't handle fast motion as well as a CRT. As well as the proprietary EVF connector it has a dedicated Composite/SDI/HDSI connector and an HDMI connector for use with third-party EVFs or LCD monitors.
- 4 **POP-UP LIGHT:** inspired by consumer DSLR camera flash units. An integrated, flip-up, onboard light containing three dimmable 1-watt bicolour LEDs with a fully controllable range of 3000k–6000k via rotary dials. The light also contains Infrared LEDs for use in night vision mode.
- 5 **MULTI-FORMAT SENSOR:** inspired by the RED One and Nikon D800 DSLR. Both cameras use a 'crop mode' to resize the effective number of pixels on the sensor, thus allowing different lenses to be used without compromising their field of view. The sensor itself is the same dimensions as a full-frame DSLR at 36 x 24mm. The mode would be software-driven, so any size and aspect ratio would be theoretically possible including APS-H, Super 35mm, DX, APS-C, 4/3" and 2/3" for use with B4 ENG mount lenses (at this size the resolution would still be at least 1920 x 1080 pixels).
GLOBAL SHUTTER: inspired by the Sony F5/F55 cameras. New CMOS sensor technology that eliminates the problems of rolling shutter artefacts.
NIGHT VISION: inspired by Sony's consumer camcorders. For some reason the remarkably effective 'Night Vision' function hasn't made it into professional cameras – so it is included here. The entire function can be assigned to a USER button for a one-touch 'Night Vision' mode.
- 6 **INTERCHANGEABLE LENS MOUNT:** inspired by RED Epic/Scarlet: fully active, interchangeable lens mounts that the camera can auto-recognise and so suggest optimum sensor settings. The range would include: Canon EOS, Nikon, 4/3", PL and B4 mounts. The Canon EOS mount on our camera is of particular interest: it features a tactile iris control ring that sits right behind the lens where it ought to be, rather than a scroll wheel at the back of the camera.
- 7 **DOCKABLE RECORDER MODULE:** inspired by the Sony F5/F55 common recording memory compatibility, including: hard disk drive (HDD)/solid state drive (SSD) storage, based on Blackmagic design's Cinema Camera and Hyperdeck Shuttle, who have shown that HDD and SSD are a reliable and cost-effective option for compressed and RAW files. Secure
- 8 **MATTEBOX RAILS:** inspired by the ARRI ALEXA. These 15mm rails run the length of the camera body and can accommodate different size lenses. They can extend beyond the rear of the camera and be used to mount non-standard equipment without a V-Lock fitting, like recording devices etc. The support bracket itself is integrated with the camera body.
- 9 **BUTTONS:** weatherproof, rubberised buttons and toggle switches are recessed to prevent accidental alteration of key settings e.g. white balance and gain. These are also gently backlit to allow the operator to read them in a dark studio. Rather than scrolling through menus and submenus our camera has dedicated buttons for key functions like white/black balance, shutter, gain, timecode set.
- 10 **ND & COLOUR TEMPERATURE WHEELS:** inspired by traditional Sony and Panasonic 2/3" camera familiar rotary controls. Separate wheels for colour temperature and neutral density control.
- 11 **SECONDARY SCREEN:** inspired by the ARRI ALEXA. Having a second LCD display solves a lot of problems for the sound recordist: no more jostling for a single flip-out screen that's trying to be monitor, menu and audio display. A live picture can be displayed with audio or info overlays, allowing the soundie to see framing. Vital information for a digital information technician (DIT) is also displayed on this screen.
- 12 **HANDGRIP:** when using DSLR or cine lenses in handheld mode, instead of moose bars the camera has an adjustable, removeable hand grip with a support strap like those on existing ENG lenses, providing greater support during one-man operation.
- 13 **WIRELESS LCD SCREEN:** inspired by the Samsung Galaxy Note 2. A rechargeable 5.5" 1280 x 720 AMOLED touch screen that can be removed from its 180° swivel cradle and provide a stable picture up to 100ft. Information including camera, lens, audio and timecode data can be overlaid. The vertical part of the cradle also contains the aerial. This monitor is useful to a DoP tweaking lighting, director watching the action or PA noting scenes.
- 14 **AUDIO:** The audio controls have been placed on the right side of the camera body where the sound recordist can easily access them. Ch1 and ch2 use industry-standard XLRs while ch3 and ch4 use mini XLRs.
- 15 **AUDIO CHANNELS:** The rotary controls for channels 1 and 2 are at the top rear of the camera for easy adjustment from either side.

FantasyCam Key