

PRODUCTION ON A BUDGET

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UrbanFox Ltd

All of this presentation is on our website

www.urbanfox.tv/seminar



WHAT KIT SHOULD I BUY ?

What is your budget?

BUDGET

Whatever your budget – don't forget you'll need to set aside some money for a tripod, mics, lights, editing.....

Think about 50:50

So if you spend £3,000 on the camera – you could easily spend £3,000 on all the other stuff.

HOW WILL YOU USE IT?

- Internet broadcasting, podcast, vodcast?
- Weddings, special interest videos (SIV)?
- Corporate, broadcast and stock footage?
- Documentary?
- Drama?



What makes a good camera?

- The lens
- The imaging system (sensor)
- The recording format
- The operator



LENSES

- Cheaper cameras tend to have fixed lenses.
- Focus lag
- Probably won't zoom out wide enough

LENSES

Cameras with interchangeable lenses, include:

- Panasonic AF101
- Canon DSLRs, C300
- JVC HD range
- Sony FS100, F3 or EX3...



But, check your budget...

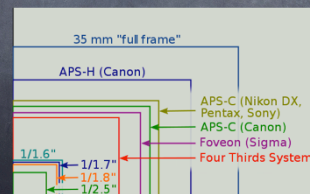
...can you afford a second lens?

THE IMAGING SYSTEM

- Bigger = better = more expensive
- Depth of Field
- More = better (max of 3)
- CCD and CMOS

THE IMAGING SYSTEM

- Big - AF101 (Micro Four Thirds)
- Bigger - Super35mm (APS-C)
- Biggest - Full Frame 35mm (5DMII)



DSLRs are not a cheap option

- Zacuto Z-finder - £200-500
- Monitor - £600
- Variable ND filter - £100-200
- Follow focus - £400+ (and focus puller?)
- Lenses
- Rig



- Vincent Laforet
- <http://bit.ly/eO04h7> - different configurations
- <http://bit.ly/i0BMP5> - his gear

THE IMAGING SYSTEM

CMOS problems - The rolling shutter
- Flash Banding



-skew and wobble

THE IMAGING SYSTEM

CMOS problems - The rolling shutter



Sony Z1 - CCD

RECORDING

- DV/DVCAM/HDV (25 Mbps)
- XDCAM EX (25 + 35 Mbps)
- AVCHD (up to 24 Mbs [or 28 Mbps])
- AVC-I (50 + 100 Mbps)
- Canon XF (50 Mbps)
- ProRes or DNxHD (100Mbps+)
- Uncompressed HD (about 1.5Gbps)
- 50Mbps is the magic number

RECORDING

Colour Sampling

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

- 4:2:0 sampling - everyday shooting
- 4:2:2 sampling - green screen
- 4:4:4 - compositing and lots of post production manipulation

...SOLID STATE...

- Keeps getting cheaper
- Re-usable
- No moving parts
- Pretty reliable
- Pretty resilient too (washing machine safe)
- So, good for hostile environments

...Card Formats...

32GB card

- Panasonic P2 (AVC-I) £320-£500
- Sony SxS (Arri + JVC) £320-£450
- Compact Flash (Canon) £100-200
- SD cards £100

Camera outputs

HDMI and/or HD-SDI

- Both uncompressed
- HD-SDI professional video connection
- HDMI pulls out easily
- DSLRs only have HDMI



...EXTERNAL RECORDER...

- Atomos Ninja - £640
- Atomos Samurai - £900
- AJA Ki-Pro Mini - £1,500
- Convergent Design Gemini 444 - £5,000
- Blackmagic Design HyperDeck Shuttle 2 (uncompressed + DNxHD)



...EXTERNAL RECORDER...

- Where do you put it?
- Higher bitrate recording
- Good back-up
- Longer record times
- Faster workflow (ProRes/DNxHD)

CAMERA CHOICES

what to look out for
at BVE2012

CAMERA CHOICES

Small Sensor

- Panasonic 900 series 'semi pro' camcorder
- 1920x1080 @ 50i and 50p
 - AVCHD 4:2:0 @ 28Mbps
 - 3xMOS sensors
 - SDHC/SDXC cards
 - 5.1 surround sound...
 - No XLR audio



HDC-SD900 under £600



CAMERA CHOICES

Small Sensor

- GoPro HD Hero2
- 1080p, 960p, or 720p
 - up to 120 frames per second
 - ten 11 megapixel stills photos per second
 - time lapse
 - choice of 170°, 127° or 90° field of view
 - £240 [versions for motorsport, watersports, etc.]



CAMERA CHOICES

Medium Sensor

- Canon XF100/XF105
- 50Mbps recording (CF cards)
 - Professional features
 - Infrared night-time shooting
 - XF105 one of cheapest camcorders with HDSDI and Genlock (suitable for studio use)
 - Useful features for 3D
 - £2,200/£2,700



CAMERA CHOICES

Medium Sensor

- Canon XF300/XF305
- 3x 1/3-inch CMOS sensors
 - 50Mbps MXF MPEG2 recording
 - 2x Compact Flash cards
 - Approved by BBC for HD
 - XF305 has HD-SDI Genlock and timecode sync

£4,400/£5,100
[Hire about £150 per day]



CAMERA CHOICES

Medium Sensor

- Panasonic HPX250
- three 1/3-inch sensors
 - FBC - Flash Band Compensation
 - 2x P2 cards, AVC-Intra 100Mbps, 10-bit, 4:2:2
 - Approved by BBC for HD
 - about £3,800 or £4,300 inc 2x 32GB P2 cards



CAMERA CHOICES

Medium Sensor

- JVC HM750
- 3x 1/3-inch CCDs (no rolling shutter)
 - Shoulder mounted, comfortable
 - Records at up to 35Mbps, AVI or QuickTime for instant editing on FCP
 - SDHC and SxS cards
 - up to 20 sec pre-record
 - Interchangeable lenses
 - £4,500 inc Canon 14x lens



CAMERA CHOICES

Medium Sensor

- Panasonic HPX371
- DVCPRO HD and AVC-Intra 50/100Mbps
 - 10-bit 4:2:2 recording to P2 cards
 - Shoulder mounted
 - Interchangeable lenses
 - BBC HD approved
 - £7,500
 - inc Fujinon 17x zoom lens



CAMERA CHOICES

Medium Sensor

- Sony PMW500
- 3x 2/3-inch sensors, shoulder mounted
 - Records 50Mbps 4:2:2 on SxS cards
 - approved for BBC HD
 - £16,500, not inc lens
 - [Hire about £250 per day]



CAMERA CHOICES

Large Sensor

- Panasonic GH2
- Micro-Four Thirds sensor (4x size of 2/3-inch broadcast sensors)
 - with Driftwood hack can record up to 176Mbps intraframe codec at 1080p/24p/4:2:0
 - about £600 inc 14-42mm lens

<http://vimeo.com/32563119>



CAMERA CHOICES

Large Sensor

Panasonic AG-AF101

- Micro-Four Thirds sensor
- Interchangeable lenses
- Wide range of video features
- Variable frame rates
- Records AVCHD 24Mbps on to SD cards
- approved for BBC HD only with external recorder at 50Mbps+
- HDMI + HD-SDI outputs
- about £3,000 – not inc lens
- [£85 per day hire]



CAMERA CHOICES

Large Sensor

Sony NEX-FS100

- Single sensor Super 35mm (APS-C)
- AVCHD 4:2:0 at up to 28Mbps
- no built-in ND filters (unlike AF101)
- BBC HD only with external recorder 50Mbps+
- about £4,300 inc 18-200mm lens
- [hire £220-£400 a day]



CAMERA CHOICES

Large Sensor

Canon EOS C300

- Super 35mm
- 50Mbps recording on Compact Flash
- very good in low light
- approved for BBC HD
- £10,000, not inc lens
- [hire £260-£400 a day]



CAMERA CHOICES

Large Sensor

Sony PMW-F3

- Super35mm sensor
- Interchangeable lenses
- SxS 35Mbps 8-bit 4:2:0 (XDCAM EX)
- BBC HD only with external recorder 50Mbps+
- Full 10-bit 4:4:4 output option...
- £10,000, or £14,000 inc three prime lenses

[hire £400-£700 a day]



CAMERA CHOICES

Large Sensor

Arri Alexa

- Super35mm
- records ProRes or DNxHD on SxS cards
- up to 120fps
- hire £850-£1,200 a day



CAMERA CHOICES

Large Sensor/Higher Frame Rate

P+S Technik PS-Cam X35

- Super 35mm sensor
- from 1-450 frames per second
- about €58,000



CAMERA CHOICES

Large Sensor/Higher Frame Rate

Red Epic
-Super35mm sensor
-up to 120fps
-complex
-\$58,000
[hire £1,200 a day]



CAMERA CHOICES

Even Larger Sensor

Canon EOS-1D X
-Full frame 35mm
-Manual control of audio, exposure, focus and frame rate while recording video
-1920x1080 at 30, 25 + 24p,
or 1280x720 at 60 + 50p,
-SMPTE Timecode.
-about \$6,800 (ships in March)



CAMERA CHOICES

Even Larger Sensor

Canon 5D MkII
-Full Frame 35mm sensor
-Wonderful choice of lenses
-Good in low light
-Compact Flash
-Takes photos too...



-£1,500 (body only) - needs lots of accessories

Also EOS 7D, 60D, 600D or 550D (Or Nikon D7000)

CAMERA CHOICES

Higher Resolution

JVC HMQ10
-handheld 4K camera
-1/2-inch CMOS sensor
-3840x2160 pixels
(8.3 million active pixels)
24p, 50p or 60p.
-about £4,000 (coming soon)



CAMERA CHOICES

Higher Resolution

Red Epic (up to 5K) + HDR
http://www.youtube.com/watch?v=LTzinI_kYrI
<http://vimeo.com/24636714>

or Sony F65 (up to 4K)



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