PRODUCTION ON A BUDGET

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WHAT CAMERA SHALL I BUY?

- What is your budget?
- What are you going to use the kit for?
- What features must you have?

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 have £3,000 to spend on the camera - you could easily spend £3,000 on all the other stuff.

WHAT WILL YOU USE IT FOR?

- Internet broadcasting, podcast, vodcast
  £500 - £2,000

- Weddings, special interest videos (SIV)
  £500 - £3,000

WHAT WILL YOU USE IT FOR?

- Corporate, broadcast and stock footage
  £3,000 - £??

- Documentary or drama
  £3,000 - £????????
BUDGET

I’m assuming you’ve got a £3,000 - £6,000 total budget.

FEATURES...

THERE ARE 5 THINGS THAT MAKE CAMERAS GOOD

- The lens
- The imaging system
- The recording format
- Audio
- Lighting

LENSES

• With the cheaper cameras you will have to put up with fixed lenses
• Focus lag
• Probably won’t zoom out wide enough

LENSES

• If you spend more you can get a camera with interchangeable lenses. Canon XL range, JVC HD range, Sony DSR... EX3 and Z7, Panasonic HPX301
• But, check your budget… …will you be able to afford a second lens?

THE IMAGING SYSTEM

The imaging system

- CCD and CMOS
- More = better (max of 3)
- Bigger = better = more expensive
**THE IMAGING SYSTEM**

- Sony HVR-A1 => 1/3inch CMOS £1,800
- Sony HVR-Z5 => 1/3inch 3CMOS £3,350
- Panasonic HPX301 => 1/3inch 3CMOS £7,000
- Sony PMW-EX1 => 1/2inch 3CMOS £4,795
- Sony DSR-450 => 2/3inch 3CCD £10,500
- Arri Alexa => 35mm CMOS £42,000

(all prices ex UK VAT)

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**THE IMAGING SYSTEM**

- Standard Definition or High Definition?
- SD is fine for internet stuff
- SD is often better in low light than HD equivalent

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**THE IMAGING SYSTEM**

- CCD better for interlaced pictures
- CMOS better for progressive
- True progressive? 25f or 25p
- 24p anyone?

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**THE IMAGING SYSTEM**

- CMOS - No smearing
  - Rolling shutter
  - Skew
  - Wobble
  - Partial exposure - flash
  - Banding - fluorescent lights

- http://tinyurl.com/3oa6s2

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**ROLLING SHUTTER**

![Sony Z1 - CCD](image)

**The Recording Format**
THE RECORDING FORMAT

- Tape
- External hard drive
- Internal hard drive
- Optical disc recording
- Solid state recording

TAPE

- Cheap
- Very reliable
- Proven to be archive-able (>60 years?)
- Comes in edit friendly formats

EXTERNAL HARD DRIVE

- Great as a back-up device
- 40GB = 3hrs
- Firestore 60Gb - £850
- Sony HVR-DR60 - £500

- Expensive
- Where do you put it?
- Insecure firewire socket
- Good back-up devices
- Great for events longer than 1hour
- Possibility of faster workflow

MEGA BITS

- DV/DVCAM (25 Mbps)
- DVCPro (25 Mbps)
- DVCPro 50
- DVCPro HD (100 Mbps)
- HDV (19 + 25 Mbps)
- XDCAM EX (25 + 35 Mbps)
- AVCHD (various)
- AVC-I (50 + 100 Mbps)

CAMERA OUTPUTS

- FireWire used to be the way to get video and audio into an external hard drive.

- Look out for cameras with:
  - HDMI
  - HDSDI
SOLID STATE RECORDING

- Convergent Design
- Flash XDR - Up to 160Mbps
- nanoFlash
  - HDSDI and HDMI in/out
  - 100 or 160mbps mpeg2
  - 2x Compact flash cards

THE RECORDING FORMAT

...INTERNAL HARD DRIVES...

- Only on lower cost handycams
- AVCHD Format - editable?
- Usually highly compressed video
- Long recording times
- 40GB = 15hours
- You must archive to a separate drive

...OPTICAL DISC...

- Within this budget records to DVD
- Low quality
- Hard to edit
- Avoid?

...SOLID STATE...

- Getting cheaper
- No moving parts - Pretty reliable
- Pretty resilient too
  - (washing machine safe)
- Well supported media

THE RECORDING FORMAT

DSLR cameras

- Canon EOS 5D Mark II - 1920 X1080
- Canon EOS 500D - 1920 X1080
- Nikon D5000 - 1280 X 720
- Olympus E-P1 - 1920 X1080
- Panasonic DMC-GH1 - 1920 X1080
- Pentax K-7 - 1536 X1024

Why use a DSLR?

- Lenses, lenses and more lenses
- But, not for great audio.
You’ll need one of these…

...and something like this

- 4 track audio recording
- XLR and 1/4inch with phantom power
- Mini jack mic input
- Mid-side stereo
- Records to SD & SDHC flash cards

THE RECORDING FORMAT
...SOLID STATE...

- Panasonic P2
- DVCPRO format
- P2 is expensive
- £640 - 64GB card
- 1GB = 1min HD

THE RECORDING FORMAT
...SOLID STATE...

- Sony EX1, EX3 & JVC HM700
- SxS Cards  (S by S)
- 16GB = 50/70mins
- 32GB card = £550
- Again - not cheap

THE RECORDING FORMAT
...SOLID STATE...

- Cheap Kensington reader with
- SD card work around
- 16Gb=£28.99 inc VAT

JVC + QUICKTIME

- JVC GY-HM100 (£2,400)
- 3 1/4inch CCDs
- JVC GY-HM-700 (£4,500)
- 3 1/3inch CCDs
- 35mbps recording
- Native QuickTime .mov files
- SDHC memory card
- 32Gb = £95 = 1hour 40 min

Loads of info including a compatibility list from Guy Barwood
http://tinyurl.com/d4m8wt
THE RECORDING FORMAT

...HYBRIDS...

• Sony HVR-Z5 & Z7
• Mini DV tape…and…
• Compact Flash too - using the HVR-MRC1K

WHAT ELSE WILL YOU NEED?

TRIPODS

• Spend as much as possible (£200 - £700)
• Weight (carbon fibre is expensive)
• Robust - outlive the camera
• Min and Max height
• Easy to use leg adjustments

TRIPODS

• Video NOT a photographic tripod
• Mid level or ground level spreader
• Spirit level
• Quick release hot shoe
• Pan and tilt head
• Separate pan and tilt head frictions

ALTERNATIVE SUPPORT

The Pod  
www.thepod.ca

Double Bean bag  
www.wildlifewatchingsupplies.co.uk

ALTERNATIVE SUPPORT

• Monopod (Manfrotto 560B 561B)
• Magic arm with Superclamp
FEATURES...
THERE ARE 5 THINGS THAT MAKE CAMERAS GOOD

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IF YOU ONLY HAVE A MINIJACK MIC INPUT

Then you may need an XLR adapter...

- A BeachTek box (DXA-4)

Cheap Alternative

BASIC SOUND KIT

- Gun mic (hypercardioid) great for noisy places
- Sennheiser 416
- Sennheiser ME66 (K6)
- Rode NTG1 and 2
- Beyerdynamic MCE 86

BASIC SOUND KIT

- Personal mic (Tie, clip, lavalier)
- Omni directional - good for interviews
- Sony ECM77 or ECM88
- Tram TR-50
- Sanken COS-11
**BASIC SOUND KIT**

- Radio mic
- Sennheiser Evolution (EW112-p G2)

**BASIC SOUND KIT**

- Sony UWP-C1 series
- Diversity System

**EXTRAS**

- XLR-XLR cables 30cm, 1m, 2m, 3m (quad flex)
- Closed Headphones
  - Sennheiser HD25

**LIGHTING**

**LIGHTING KIT**

- Lights are tools. You need the correct light to do a specific job well.

- SO…

- Please don’t buy three identical lamps

**INTERVIEW KIT**

- Hard light
- Dedo aspheric2 (150W)

- Soft Light
- Lowell Rifa 44 (300W)
**INTERVIEW KIT**

- Around £1,000 +VAT

**LED ON-CAMERA LIGHT**

- Cool light
- 0-100% dimmable
- No colour temp change
- Lamp life 10,000 hours
- Very low battery
- Consumption (11W)

**LIGHTING KIT EXTRAS**

- Daylight colour-correction gel
- Extension leads
- Magic arm

**RUN OUT OF MONEY?**

- ...buy a reflector
- 5 in 1 reflector
- Don’t buy one that is too big unless you have an assistant to hold it.

**MIND YOUR BACK**

- Folding sack truck (eBay)
  - Carries 50-90Kg Load
- A good case on wheels
- A rucksack

**FEATURES...**

- THERE ARE 5 THINGS THAT MAKE CAMERAS GOOD...
Actually, can we make that six …

You’re not buying a computer…
…you’re buying an edit suite

BUY A MAC

• Buy a refurbished Mac
• The new Intel models will run Windows too (if you really must)

RAM
Get lots of it

www.crucial.com

Any questions?
All of this presentation will go on our website

www.urbanfox.tv/seminar