



# **MACWORLD 2006** **secrets** *of* **shooting great dv**

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**MACWORLD SF**  
**CONFERENCE & EXPO**

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## Camcorder

### how does it work?

- digitizes picture
- digitizes sound
- records both to tape along with timecode

### Lens/Zoom

- *Focal length & angle of view*
- Short focal length /wide-angle = Wide shot (distant objects appear far away)- exaggerates spatial reference
- Long focal length /narrow-angle = Close shot (distant objects are magnified)- collapses spatial reference
- Zoom lens changes focal length & angle of view

- avoid zooming while tape is rolling
- set up shot first, then roll tape
- zoom = bad for web video
- use variety of shots and angles to add interest rather than zooming
- very slow zoom during interview ok
- fast zoom with angle on products and logos, or people for exciting intro

*Optical Zoom* is created by the lens and is good quality (use this)

*Digital Zoom* is created electronically and is poor quality (don't use this except for "surveillance" or "voyeur" looking shots)

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## Auto/Manual

- Use Manual Mode whenever possible.
- Use Auto Mode in uncontrolled, unpredictable changing circumstances.
- Switch the camera to Auto Mode momentarily to allow the camera to set itself up. Switch back to Manual Mode to "lock in" and retain the settings.

## Focus

- Focus ring gives you manual control (use this when at all possible)
  - Calibrate the lens by zooming all the way in and focusing on the subject before shooting the scene
  - Sets distance to plane of sharpest focus
  - Numbers on ring show distance to focused object
- Auto focus will continually change to try to focus on the central object during a scene and can become confused by changing contrast or objects.
- Switch to auto focus momentarily, then back to manual

## Aperture (Iris)

- Lens *aperture* or *iris* determines image exposure (how much light enters the lens)
  - In low light use large aperture, in bright light use small aperture
- Aperture is measured in "*f-stops*"
  - Large f-stop (16) = small aperture = (less light enters lens- in bright light conditions)
  - Small f-stop (2.8) = large aperture = (more light enters lens- in low light conditions)
- Opening the aperture decreases the depth of field

## Zebra

- Use *zebra* feature to see areas of picture which are overexposed ("*blown out*" or "*clipped*")
- Aperture down and/or increase shutter speed to

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restore detail to overexposed areas

## Gain

- Gain can be increased as a last resort in very low light conditions but otherwise should be set to 0 (zero) or below
- Gain levels above zero will add video noise but in very low light conditions is necessary to get visible detail

## Shutter speed

- Controls how long each frame is exposed (normal speed is 60)
- Increase shutter speed to capture fast motion without blurring on each frame
- Decrease shutter speed to blur fast motion and maximize exposure in low light
- Use to reduce exposure with using iris

## Depth of field

- For deep depth of field (all objects in focus, foreground to background)
  - Use wide-angle (zoom out)
  - Use small aperture (large *f*-stop)
  - Shoot far from subject
- For shallow depth of field (only selected objects in focus)
  - Use narrow-angle (zoom in)
  - Use large aperture (small *f*-stop)
  - Shoot close to subject

Leave distance between foreground and background subjects (general rule is 1/3 distance from camera to foreground subject and 2/3 distance from foreground subject to background subject.)

- Shallow depth of field is better for storytelling, more "filmlike"
- Rack focus changes the object in focus during the shot to shift emphasis from one object to another. Move camera far from subjects and use narrow-angle (zoom in) setting to create

### ***get shallow depth of field by:***

*1. opening the iris all the way*

*2. getting subject far from background (and camera far from subject)*

*3. zooming in all the way*

### ***too much light?***

*1. reduce light*

*2. turn on ND filter and/or add ND screw-on filters*

*3. increase shutter speed*

shallower depth of field

## White balance

- *White balance* adjusts the camera's representation of pure white to the existing light source and color temperature
- Zoom in on white card while in the light you'll be shooting in, then press and hold the white balance button until the indicator stops blinking
- White balance must be set whenever light conditions change
- White balance to pale blue card to warm up Sonys or match to Canons
- Auto white balance only when moving the camera from one light source to another during the scene- i.e. moving indoor to outdoor

## Filters

- Lens filters modify light entering the lens and are used to control or enhance the image
- Diffusion (Tiffen Soft/FX 4 or Black Pro Mist 1) softens the image for a "dreamy" or "film look"

less contrast, compensate with lighting

- Center Spot, soft outer image, sharp (normal)center
- Matte box allows gradient filters
- (UV) Ultra Violet cuts down the amount of UV light reducing haze. Also used to protect the lens from getting scratched or damaged
- Neutral Density (ND) cuts down light and reduces contrast
- Polarization changes angle at which light enters the lens reducing glare and reflection

## Wide angle

- lens, converter, adapter gets more field of view in small rooms, makes shots more dramatic/scarier/funnier

## Clean the lens

- Always make sure the lens is clean before shooting
- Use a good quality blower brush, lens cloth, and/or

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### 3 ways to add depth

1. light and shadow
2. shallow depth-of-field
3. foreground movement against background

### Aesthetics

- **180° rule** – if you have two people in a scene, don't cross the line between them while shooting
- **Jump cuts** – when making an edit from a camera position to the same position- unless that's the effect you want, move the camera 30° or more, or change zoom/dolly position in or out at least 30°
- shoot in a style to suit your subject matter

### Coverage

- have the talent repeat each shot several times
- cover each shot with a wide variety of angles, subject matter, composition, etc.

### 3 ways to make video look like film

1. Use shallow depth of field
2. Use Soft FX or Pro Mist filter
3. Use Frame/Progressive Scan mode (Canon)

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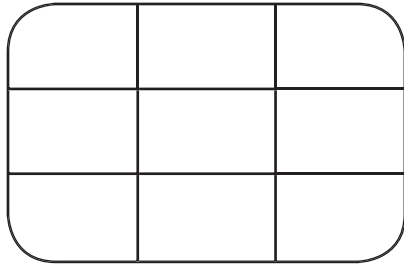
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## Frame the shot

- **Rule of thirds**- put points of interest one third from edge of screen



- **Face space** – frame faces looking into the middle of the screen- not the edge
- **Headroom** – leave space between top of head and top of screen
- **Close-up** – provide energy and detail
- **Background** – avoid distracting objects (tree growing out of head) and complex movement in footage slated for CD-ROM or Web delivery (leaves on trees blowing in wind, etc.)

- Solid background is best for web video, sharp detailed moving background worst.
- Avoid herring-bone and other intricately patterned clothing.

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## Camera angles

- Low angles – make subject stronger, more dominant
- High angles – make subject weaker, more passive
- Angled shots – “dutch” angles for effect

## Moving camera

- Zoom = Changing the focal length while shooting
- Pan = Rotate the camera
- Tilt = Point the camera up or down
- Pedestal = Raise or lower the camera
- Dolly = Move the camera toward or away from the subject
- Truck = Move the camera laterally to follow the action and/or reveal the scene
- Crane = Moving the camera with a combination of the above moves



### ***moving camera***

*bad for web, good for all other*

*jib arm (crane)*

*use tripod for stabilizer*

*foreground and background movement is good*

*steadicam and glidecam camera stabilization options*

## Microphone Types

- On-camera - easiest, run & gun, closeups, usually stereo
- Lavalier - small, close to source without boom and operator- either wired or wireless
- Handheld - good audio control by user (interview)
- Shotgun - focused pickup from farther away
- Wireless - no cables to trip on, subject and cameraperson can freely move around

## Mic Pickup Patterns

- Omnidirectional - hears equally from all directions
- Cardioid (unidirectional) - hears well from one direction
- Hypercardioid - hears well from one tightly focused direction

## Mic Placement

- Know the pickup pattern
- Placing mic close to source increases proximity effect creating warmer sound
- When using two mics in stereo applications they must be twice the distance from each other as they are from the source or placed in X configuration

## Cables, Connectors & Level

- XLR connector - balanced, +4 dB, long cable runs - professional
- RCA connector - unbalanced, -10dB, short cable runs
- 1/4" phone - can also be stereo, -10dB, short cable runs
- Mini - can also be stereo, -10dB, short cable runs

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## Lights & Shadows

- *Directional ("hard") light* - defined beam, causes sharp, dense shadows
- *Diffused ("soft") light* - undefined beam, causes soft, transparent shadows
- *"Attached" shadows* - reveal form and texture, controlled by direction of light source
- *"Cast" shadows* - are independent of the objects that cause them, define spatial relationships

## Lighting Instruments

- *Spotlight* - produces a narrow directional beam
- *Floodlight* - produces a wide diffused beam
- *Reflector* - passive reflective device (i.e. umbrella, card, foil)
- *Gel* - translucent plastic film used to change light color, temperature, or intensity

## Color Temperature

- *Color temperature* is measured in degrees Kelvin
- Indoor light has reddish tint - low degrees Kelvin
- Outdoor light has bluish tint - high degrees Kelvin
- Indoor rated light standard = 3200°K
- Fluorescent lights = 4000°K
- Outdoor rated light standard = 5600°K
- Direct sun light = >7000°K - 15,000°K
- Cameras will not accurately white balance in mixed color temperature conditions
- To control mixed color temperature use gels to match color temperature to the most prominent light source

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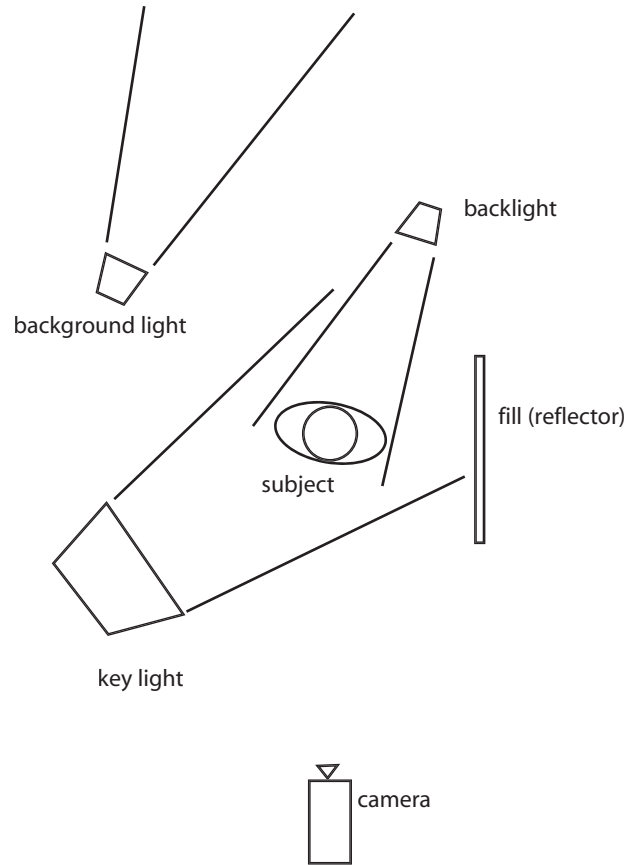
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## 3-Point Lighting

- **Key** - primary light source-generally a spot placed above and to the left or right of the camera, or direct sunlight if outdoors
- **Fill** - controls falloff, contrast, and attached shadows-generally a flood placed on the opposite side of camera from key light, or a reflector if outdoors
- **Back light** ("halo light" or "kicker" - provides separation between subject and background- generally a spot placed behind subject opposite camera
- (4th light) **Background light** - adds drama and interest to background-generally placed on same side of camera as key light



**basic interview  
lighting setup**

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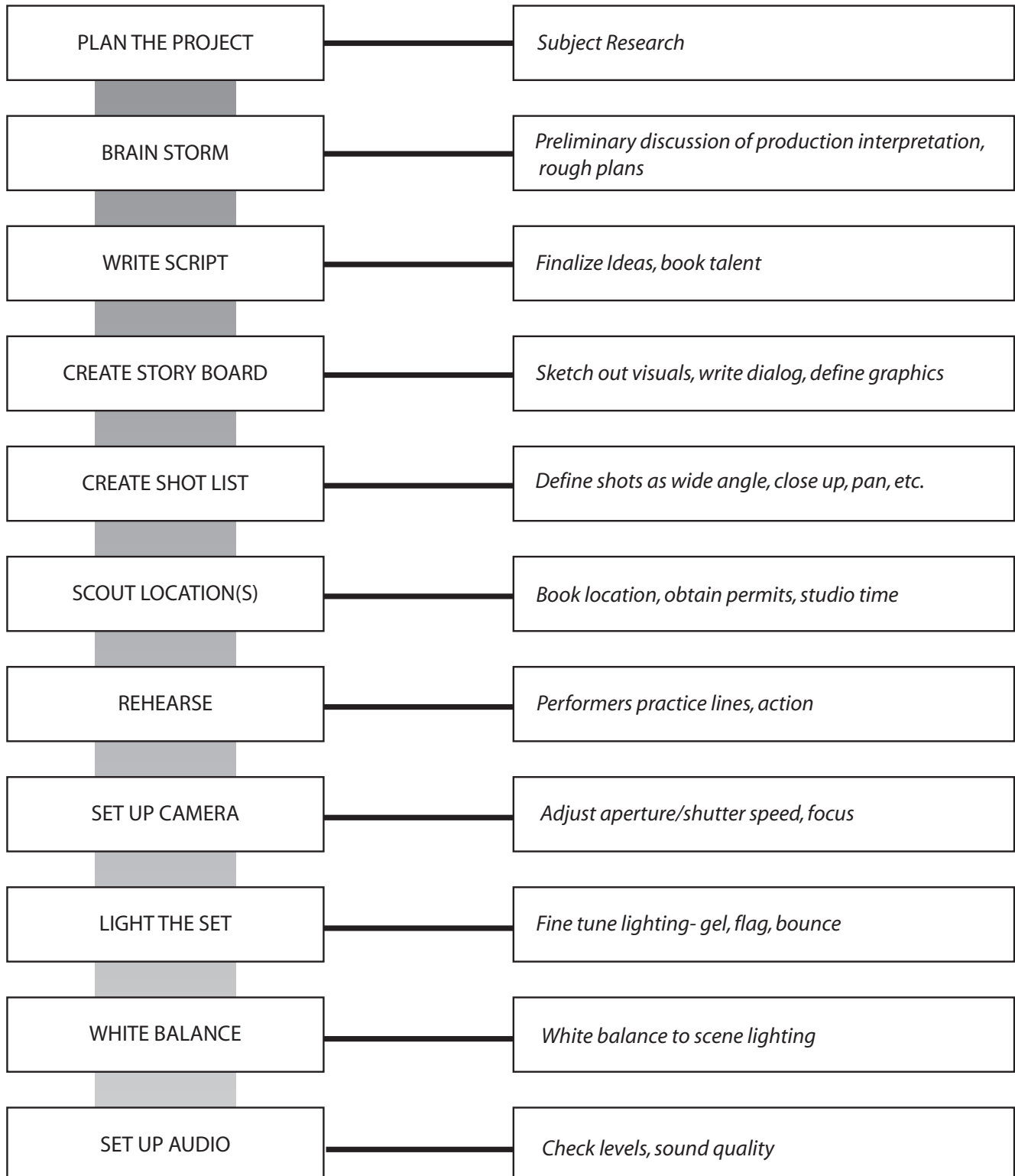
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### Intent

What is the *purpose* of the project? Which of the below is the primary purpose?

**entertain**

**educate**

**persuade**

**inspire**

### Visualization

Close your eyes and try to watch your entire production from beginning to end in your imagination first. Then grab a pen and paper and jot down as many ideas as you remember from your visualization.

### Style

- Keep the style consistent
- Camera angles/composition/technique
- Lighting • sets • graphics • fonts • colors • music • pacing/editing style
- What film, show, commercial, or work will serve as the model for this production?

### Target

- The purpose of defining a style and target viewer is not to exclude viewers, but to create a stylistically coherent piece that will make an impact and be memorable
- Age • motivation • priorities • interests • music • preferred environment

### Project outline

Contains elements above plus rough description of project sections

### Story Board

Contains illustrations of shots, script/narration, and denotes music, sound effects, and graphics

### Shot List

Defines shots as wide angle, close up, pan, etc.

### Scheduling

Take the absolute maximum time you think each task will take and multiply by 3

## **Producer**

- Obtains financing, hires crew and casting, responsible for overseeing entire project

## **Director**

- Directs shoot – makes sure everyone is on task
- Communicates to talent what is needed before each shot
- Explains to DP what type of shot is needed
- Directs each shot – “quiet on set!”, “roll camera!”, after sufficient pre-roll, “annnd...action!”
- If MOS, verbally directs talent and camera during shot
- After sufficient post-roll “cut!”
- Determines whether retake is needed

## **DP - Director of Photography**

- Operates camera- responsible for making sure footage is high quality and fits project
- Determines with director where camera goes and how shot is framed
- Communicates to director whether shot felt good and if retake is needed

## **Audio Engineer**

- Wears headphones, is responsible for testing audio and making sure audio goes onto tape perfectly
- Sets up mics, mixer, operates boom

## **Gaffer/Lighting Designer**

- LD works with director and DP to design lighting to establish mood for each shot- sets up and operates lights and reflectors

## **PA - Production Assistant**

- General purpose assistant - may assist any of the crew or talent if needed
- Responsible for carrying storyboard and script
- Times shots to make sure they match VO (voiceover)
- Logs camera timecode onto storyboard
- Keeps an eye out for continuity problems, extraneous noises or interference with shot, keeps track of which shots are done

## **Talent**

- Acts!

## **Editor**

- Edits footage, works with director and producer

## **CG Artist**

- Creates computer graphics, 3D and/or composite sequences for project

## **Music Supervisor/Composer**

- Chooses and/or composes music for project



<i>client:</i> _____	<i>date:</i> _____
<i>producer:</i> _____	<i>page:</i> _____

<b>visual</b>	<b>script/narration</b>	<b>music/sfx</b>
<div style="border: 1px solid black; border-radius: 15px; height: 150px; margin-bottom: 5px;"></div> <p><b>location/set:</b> _____</p>	<div style="border: 1px solid black; height: 150px;"></div>	<div style="border: 1px solid black; height: 50px; margin-bottom: 5px;"></div> <p style="text-align: center; margin: 0;"><b>graphics/fx/shot notes</b></p> <div style="border: 1px solid black; height: 50px;"></div>

<b>visual</b>	<b>script/narration</b>	<b>music/sfx</b>
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I hereby grant to \_\_\_\_\_ (hereafter referred to as Company) permission and consent to photograph, (by video photography or still photography and with or without sound track) my image, voice and name for use in media products as they see fit, and to use such images and recorded sounds in the exhibition, advertising, editorial use and publicizing thereof as Company, its assigns, successors and licensees may elect.

I understand I am not entitled to any compensation for work performed on the date below. I affirm that I am 18 years of age or older.

Talent Info:

Date: \_\_\_\_\_

Print Name: \_\_\_\_\_

Contact Info: (       ) \_\_\_\_\_

Signature: \_\_\_\_\_

(This form not to be construed as legal advice, consult a lawyer if in doubt)

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DVcreators.net	<a href="http://www.dvcreators.net">www.dvcreators.net</a>
DV KnowledgeBase	<a href="http://www.dvcreators.net/dvkb/">www.dvcreators.net/dvkb/</a>
Final Cut Pro 411	<a href="http://www.fcp411.net">www.fcp411.net</a>
Apple Computer	<a href="http://www.apple.com">www.apple.com</a>
Canon	<a href="http://www.canondv.com">www.canondv.com</a>
Tiffen	<a href="http://www.tiffen.com">www.tiffen.com</a>
Lowel Lighting	<a href="http://www.lowel.com">www.lowel.com</a>
PhotoFlex	<a href="http://www.photoflex.com">www.photoflex.com</a>
Audio Technica	<a href="http://www.audio technica.com">www.audio technica.com</a>
Samson Audio	<a href="http://www.samsontech.com">www.samsontech.com</a>
Mackie Designs	<a href="http://www.mackie.com">www.mackie.com</a>
BeachTek	<a href="http://www.beachtek.com">www.beachtek.com</a>
Studio 1	<a href="http://www.studio1productions.com">www.studio1productions.com</a>
Bogen	<a href="http://www.bogenphoto.com">www.bogenphoto.com</a>
VariZoom	<a href="http://www.varizoom.com">www.varizoom.com</a>
Sony	<a href="http://www.sony.com">www.sony.com</a>
2-pop	<a href="http://www.2-pop.com">www.2-pop.com</a>
DV & Firewire Central	<a href="http://www.DVCentral.org">www.DVCentral.org</a>
ZGC	<a href="http://www.zgc.com">www.zgc.com</a>

The Final Cut Pro PowerStart (CD-ROM)  
dvcreators.net

Shooting Awesome Video (CD-ROM)  
dvcreators.net

The iFilm Digital Filmmaker's Handbook  
by Maxie D. Collier

Producing Great Soundtracks for Digital Video  
by Jay Rose

Matters of Light & Depth  
by Ross Lowell

Desktop Digital Video  
by Ron Grebler

Digital Filmmaking : The Changing Art and Craft of Making Motion Pictures  
by Thomas A. Ohanian, Michael E. Phillips

Feature Filmmaking at Used Car Prices: How to Write, Produce, Direct, Film, Edit,  
and Promote a Feature-Length Film for Less Than \$10,000  
by Rick Schmidt