

Video Basics



3

Suranaree University of Technology



31051000649521

Zettl

Contents

Production Processes and People

CHAPTER 1	The Production Process	4
	THE EFFECT-TO-CAUSE PRODUCTION MODEL	6
	Basic Idea	8
	Desired Effect: Defined Process Message	8
	Cause: Medium Requirements	10
	Script Formats	12
	Real Effect: Actual Process Message	16
	Evaluation	16
	GENERATING IDEAS	19
	Clustering	20
	Brainstorming	20
CHAPTER 2	The Production Team: Who Does What When?	26
	TEAM MEMBERS	28
	Preproduction Team	28
	Production Team	30
	Postproduction Team	30
	PASSING THE BUCK	32
	TAKING AND SHARING RESPONSIBILITY	36
	PRODUCTION SCHEDULE	38
	INTERVIEW TIME LINE	38
	PRODUCTION SCHEDULE: MAY 25—INTERVIEW (STUDIO 1)	39

Image Creation and Control

43

CHAPTER 3	Digital Video	46
	BASIC IMAGE FORMATION	47
	Scanning Process	48
	Digital Television Scanning Systems	51
	PRIMARY COLORS OF VIDEO	51
	WHAT IS DIGITAL?	52
	The Difference Between Analog and Digital	52
	WHY DIGITAL?	54
	Quality	54
	Compression and Signal Transport	54
	Effects and Picture Manipulation	55
CHAPTER 4	The Video Camera	58
	BASIC CAMERA FUNCTION AND ELEMENTS	59
	Function	60
	The Lens	61
	Beam Splitter	65
	Imaging Device	66
	Viewfinder	67
	TYPES OF CAMERAS	68
	Studio Cameras	69
	HDTV Cameras	71
	ENG/EFP Cameras	72
	Consumer Camcorder	73
	What's the Difference?	75

CHAPTER 5	Looking Through the Viewfinder	78
	FRAMING A SHOT	80
	Aspect Ratio	80
	Field of View	82
	Vectors	84
	Composition	85
	Psychological Closure	92
	MANIPULATING PICTURE DEPTH	95
	Defining the Z-axis	96
	Lenses and Z-axis Length	97
	Lenses and Depth of Field	97
	Lenses and Z-axis Speed	99
	CONTROLLING CAMERA AND OBJECT MOTION	100
	Controlling Camera Movement and Zooms	100
	Controlling Object Motion	102
CHAPTER 6	Operating the Camera	108
	BASIC CAMERA MOVEMENTS	110
	CAMERA MOUNTS AND HOW TO USE THEM	114
	The Handheld and Shoulder-Mounted Camera	114
	The Tripod-Supported Camera	117
	The Studio Pedestal	121
	Special Camera Mounts	123
	OPERATIONAL FEATURES	126
	White-balancing	126
	Focusing	127
	Zooming	130
	GENERAL GUIDELINES	131
	CHECKLIST: CAMCORDERS AND ENG/EFP CAMERAS	132
	CHECKLIST: STUDIO CAMERAS	133

CHAPTER 7 **Light, Color, Lighting** 138

LIGHT 140

Types of Light 140

Light Intensity 140

Contrast 141

SHADOWS 142

Attached Shadows 142

Cast Shadows 145

Falloff 146

COLOR 147

Additive and Subtractive Color Mixing 147

The Color Television Receiver and Generated Colors 148

Color Temperature and White-Balancing 148

LIGHTING INSTRUMENTS 150

Spotlights 151

Floodlights 154

LIGHTING TECHNIQUES 158

Operation of Lights 158

CHECKLIST: LIGHTING SAFETY 158

Studio Lighting 160

Field Lighting 165

GUIDELINES: FIELD LIGHTING 169

Measuring Illumination 170

CHAPTER 8 **Audio and Sound Control** 176

SOUND PICKUP PRINCIPLE 178

MICROPHONES 179

How Well They Can Hear: Sound Pickup 179

How They Are Made 181

How They Are Used 183

SOUND CONTROL 194

The Audio Mixer 194

The Audio Console 196

Cables and Patch Panel 197

SOUND RECORDING 200
Analog Recording Equipment 200
Digital Recording Equipment 202

SYNTHESIZED SOUND 205

SOUND AESTHETICS 206
Environment 206
Figure-Ground 206
Perspective 207
Continuity 207
Energy 208

CHAPTER 9 Video Effects 212

STANDARD ELECTRONIC VIDEO EFFECTS 214

Superimposition 214
Key 215
Wipe 218

DIGITAL EFFECTS 220

Digital Image Manipulation Equipment 220
Common Digital Video Effects 221
Synthetic Image Creation 223
Animation 226

Video Recording, Switching, and Editing

CHAPTER 10 Video Recording 230

VIDEOTAPE-RECORDING SYSTEMS 232

Tape- and Disk-Based Recording Systems 232
Basic Videotape Tracks 232
Composite, Y/C Component, and RGB Component Systems 235
Types of Videotape Recorders 237
Time Base Corrector 238
Tape Formats 239

VIDEOTAPE-RECORDING PROCESS 240

THE "BEFORE" CHECKLIST 240
THE "DURING" CHECKLIST 243
THE "AFTER" CHECKLIST 246

NONLINEAR STORAGE SYSTEMS 247

- Computer Disks 247
- Electronic Still Store System 248
- Read/Write Optical Discs 248
- CD-ROMs and DVDs 248

USE OF VIDEO RECORDING 249

- Interactive Video 249
- Multimedia 250

CHAPTER 11 Switching and Postproduction Editing 254

SWITCHING, OR INSTANTANEOUS EDITING 256

- Basic Switcher Layout 256
- Multifunction Switchers 258
- Switcher Operation 260

POSTPRODUCTION EDITING 265

- Linear Editing Systems 265
- Nonlinear Editing Systems 274
- Editing Preparations 276
- PRODUCTION TIPS TO MAKE POSTPRODUCTION EASIER 278*
- Off-line and On-line Editing 282

CHAPTER 12 Editing Principles 290

EDITING PURPOSE 291

EDITING FUNCTIONS 292

- Combine 292
- Condense 292
- Correct 293
- Build 293

AESTHETIC PRINCIPLES OF CONTINUITY EDITING 294

- Mental Map 294
- Vectors 298
- On- and Off-screen Positions 303

AESTHETIC PRINCIPLES OF COMPLEXITY EDITING 309

- Intensifying the Event 309
- Supplying Meaning 311

Talent and the Production Environment

316

CHAPTER 13 Talent, Clothing, and Makeup

318

PERFORMING TECHNIQUES 320

Performer and Camera 320

Audio and Lighting 322

Timing and Prompting 323

ACTING TECHNIQUES 330

Environment and Audience 331

Small Screen and Close-ups 332

Repeating Action 332

AUDITIONS 333

CLOTHING 333

Texture and Detail 334

Color 334

MAKEUP 335

Technical Requirements 335

Close-ups 335

Materials 336

**CHAPTER 14 Production Environment:
The Studio**

340

THE VIDEO PRODUCTION STUDIO 342

Physical Layout 342

Major Installations 345

THE STUDIO CONTROL ROOM 346

Image Control 347

Sound Control 351

MASTER CONTROL 352

STUDIO SUPPORT AREAS 353

Scenery and Property Storage 353

Makeup 354

SCENERY, PROPERTIES, AND SET DRESSINGS 354

- Scenery 354
- Properties 358
- Set Dressings 359

SET DESIGN 359

- Process Message 359
- Floor Plan 360
- Prop List 362
- Using the Floor Plan for Setup 362
- Evaluating the Floor Plan 363

CHAPTER 15 Field Production and Synthetic Environments 368**ELECTRONIC NEWS GATHERING 370**

- News Gathering 370
- Transmission 371

ELECTRONIC FIELD PRODUCTION 373

- EFP Preproduction: Remote Survey 373
- Production 377
- CHECKLIST: FIELD PRODUCTION EQUIPMENT* 377
- Postproduction: Wrap-up 382

BIG REMOTES 383**SYNTHETIC ENVIRONMENTS 385**

- Computer-Generated Settings 385
- Virtual Reality 386
- Interactive Video 386

Epilogue 390

Selected Readings 391

Glossary 395

Index 407

Photo Credits 414