

SOUND DESIGN FOR **LOW AND NO** BUDGET FILMS



A Focal Press Book

PATRICK WINTERS



Sound Design for Low and No Budget Films

Don't let your indie film be sabotaged by poor sound! One of the weakest technical aspects of a low or no budget short or feature film is usually the sound, and in *Sound Design for Low and No Budget Films*, author Patrick Winters explains what filmmakers need to do to fix that. Learn how to improve the sound quality of your low budget film with specific tools and practices for achieving a better soundtrack, including detailed, step-by-step explanations of how to edit your production track, create a sound design, record and edit ADR, Foley and sound effects, music, and much more. Focusing on the essential details indie filmmakers need to know, Winters teaches you how to turn a thin and distracting soundtrack into one that makes your film shine.

This practical guide offers:

- In-depth focus on hands-on, step-by-step instruction for achieving great sound in post-production, including recording and editing sound effects, ADR and Foley—even without expensive equipment and software.
- Techniques specifically designed for low and no budget projects, perfect for both students and aspiring indie filmmakers.
- A simple and direct style that any aspiring filmmaker or student can understand without already knowing the industry jargon.

Readers can follow the eResources URL (www.routledge.com/9781138839441) for video interviews from industry professionals, also viewable on YouTube.

Patrick Winters has been working in sound design for 30 years and teaching sound design for 12 years. He has personal experience working on major motion pictures as well as creating his own short films, stretching minimal budgets to get the best soundtracks possible.



Taylor & Francis

Taylor & Francis Group
<http://taylorandfrancis.com>

Sound Design for Low and No Budget Films

Patrick Winters

First published 2017
by Routledge
711 Third Avenue, New York, NY 10017

and by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

Routledge is an imprint of the Taylor & Francis Group, an informa business

© 2017 Patrick Winters

The right of Patrick Winters to be identified as author of this work has been asserted by him in accordance with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

Trademark notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

Library of Congress Cataloging-in-Publication Data

Names: Winters, Patrick (Patrick O.) author.

Title: Sound design for low and no budget films / Patrick Winters.

Description: New York : Focal Press, 2017. | Includes bibliographical references.

Identifiers: LCCN 2016020795 | ISBN 9781138214033 (hardback) |

ISBN 9781138839441 (pbk.) | ISBN 9781315733425 (ebk.)

Subjects: LCSH: Sound motion pictures. | Sound—Recording and reproducing. |

Motion pictures—Sound effects.

Classification: LCC TR897 .W56 2017 | DDC 778.5/344—dc23

LC record available at <https://lcn.loc.gov/2016020795>

ISBN: 978-1-138-21403-3 (hbk)

ISBN: 978-1-138-83944-1 (pbk)

ISBN: 978-1-315-73342-5 (ebk)

Typeset in Giovanni
by Apex CoVantage, LLC

To my life partner, Patti Winters,
whose support and encouragement have made
it possible for me to write this book.



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

Contents

Preface		xiii
Acknowledgments		xv
CHAPTER 1	Introduction	1
	a. Purpose	1
	b. Sound Definition	2
	c. Sound's Abilities	3
	d. Sound Supervisor	3
	e. Contracts, Agreements and Licenses	3
CHAPTER 2	Location Sound: <i>How Was That for Sound?</i>	5
	a. Common Mistakes	5
	b. Single System	7
	c. Double System	7
	d. Timecode	7
	e. Slate	8
	f. Smart Slate	9
	g. Boom and Lavalier	9
	h. Wired and Wireless	10
	i. Wide Shots and Close-Ups	10
	j. Two-Plus Camera Set-Up	10
	k. Exercise	11
	l. Sample Sound Report Form	12
CHAPTER 3	Sound Design	13
	a. Defined	13
	b. Introduction	14
	c. Movie Examples	14
	d. Recording	16
	e. Creating	16
	f. Editing and Processing	17
	g. Mixing	17
	h. Exercises	18
CHAPTER 4	Dialogue Editing: <i>It's Work, Not Magic</i>	21
	a. Introduction	21
	b. Picture Lock	23
	c. Collecting Materials	23
	d. File Management	25
	e. The Process	26

	f. Cleaning	29
	g. Smoothing	29
	h. Editing	29
	i. Splitting Tracks	30
	j. Room Tone	33
	k. Fixing Issues	35
	l. Processing	37
	m. Exercise	38
CHAPTER 5	ADR: <i>What Did They Say?</i>	39
	a. Introduction	40
	b. Spotting	42
	c. Microphones	43
	d. Working with Actors	46
	e. Production ADR Recording	48
	f. Post-Production ADR Recording	48
	g. Editing	50
	h. Exercise	52
	i. ADR Cue Sheet Form	53
CHAPTER 6	Walla/Group/Loop Group/Group ADR/Rhubarb: <i>Why Can't I Hear Them?</i>	55
	a. Introduction	55
	b. Group Leaders	57
	c. Research and Scripting	57
	d. Walla	57
	e. Specifics	59
	f. Callouts	60
	g. Efforts	60
	h. Screams	60
	i. Performing	61
	j. Recording	62
	k. Editing	64
	l. Resources	65
	m. Exercise	67
CHAPTER 7	Narration: <i>It Isn't Dialogue</i>	69
	a. Introduction	69
	b. Purposes	69
	c. Pre-Production	70
	d. Recording	71
	e. Editing	77
	f. Processing	79
	g. Exercise	80

CHAPTER 8	Sound Effects: <i>Creating Reality</i>	81
	a. Sound Effect Functions	82
	b. Types of Sound Effects	82
	c. The Grey Area (Foley and Sound Effects)	83
	d. Production Sound Effects	84
	e. Location Sound Effects	84
	f. Custom-Recorded Sound Effects	84
	g. Foley Sound Effects	84
	h. Library Sound Effects	84
	i. Spotting	85
	j. Creating	86
	k. Recording	86
	l. Editing	90
	m. Processing	94
	n. Exercise	95
CHAPTER 9	Foley: <i>Who or What is Foley?</i>	97
	a. Foley History	97
	b. Overview	98
	c. Spotting and Cueing	102
	d. Synchronized Recording	104
	e. Microphones	112
	f. Performance	115
	g. Moves or Cloth	115
	h. Specifics or Props	116
	i. Pats and Grabs	117
	j. Footsteps	118
	k. Libraries	119
	l. Editing	120
	m. Sound Effect Resources	121
	n. Exercise	122
CHAPTER 10	Backgrounds: <i>What's an Ambience, Atmosphere or Background?</i>	123
	a. Introduction	123
	b. Spotting	124
	c. Production Sound	124
	d. Room Tone	125
	e. Recording	125
	f. Library	129
	g. Editing	130
	h. Layering	133
	i. Processing	133
	j. Exercise	134

CHAPTER 11	Musical Score: <i>In the Mood?</i>	135
	a. Introduction	136
	b. Making Notes	138
	c. Spotting Session	138
	d. Cues	140
	e. Hits or Hit Points	142
	f. Tempo Map	142
	g. Click Tracks and Guide Tracks	144
	h. Temp Scores	145
	i. Music Software	145
	j. Scoring	145
	k. Theme and Motif	147
	l. Titles, Montage and Credits	147
	m. Composing, Arranging, Orchestrating and Instrumentation	148
	n. Mock-Ups	150
	o. Recording Performance (Tracking)	151
	p. Digital Music	151
	q. GarageBand	154
	r. Song Score, Pop Music and Source Music	158
	s. Cue Packages	159
	t. Bands	159
	u. Musicals	159
	v. Library Music: Hard Drives, CDs and Downloads	160
	w. Editing	161
	x. Stems	164
	y. Mixing	164
	z. Deliverables	165
	aa. Exercise	166
CHAPTER 12	Mixing Myself Preparation	167
	a. Introduction	167
	b. Preparing Your Mixing Room	168
	c. Reference Levels	171
	d. Room Monitor Calibration	173
	e. NLE or DAW	177
	f. Mixing In-the-Box by Myself	178
	g. Session Set-Up	179
	h. Stereo, LCR or Surround?	180
CHAPTER 13	Premixing or Predubbing and DSP	183
	a. Introduction	184
	b. Mix Preparation	184
	c. Track Layout	185

d.	Virtual Mixing	186
e.	Mix Tools	188
f.	Levels	188
g.	Gain Staging	189
h.	Fades	189
i.	Panning	191
j.	Constant Gain or Constant Power	192
k.	Equalization	194
l.	Compression	194
m.	Normalizing	196
n.	Noise Gate	197
o.	Expansion	198
p.	Exciter	198
q.	De-Esser	198
r.	Noise Reduction	199
s.	Reverberation and Delays	200
t.	De-Verberation	201
u.	Effects and Filters	202
v.	Limiter	203
w.	Premixing	204
x.	Buses, Auxes, Sends and Returns	205
y.	VCA Faders	208
z.	Master Fader	208
aa.	Metering	209
bb.	2-Pops and Tail Pops	211
cc.	Dialogue and ADR Premix	211
dd.	Foley Premix	217
ee.	Sound Effects Premix	218
ff.	Design Effects Premix	220
gg.	Backgrounds Premix	220
hh.	Music Premix	220
ii.	Temp Mix	221
CHAPTER 14	Mixing Myself	223
a.	Introduction	224
b.	Set-Up	224
c.	Getting Started	225
d.	Dialogue First	226
e.	ADR	226
f.	Sound Effects	227
g.	Ambiences	227
h.	Foley	227
i.	Music	228
j.	DME, Stems and M&E	229

	k. Master Output	230
	l. Quick and Dirty Mix	230
CHAPTER 15	Studio Mix	231
	a. Introduction	231
	b. Mixer Interview	232
	c. Mix Preparation	233
	d. Premixes	236
	e. Stems	236
	f. Mixing	237
	g. Run Through	238
	h. Dialogue Mixing	239
	i. Sound Effects Mixing	239
	j. Foley Mixing	239
	k. Backgrounds Mixing	239
	l. Music Mixing	240
CHAPTER 16	Deliverables	241
	a. Introduction	241
	b. Film	241
	c. DCP	242
	d. DVD/Blu-ray	243
	e. Streaming	244
	f. Broadcast Television	244
	g. Marketing	244
	h. Archiving	245
CHAPTER 17	Summary	247
	a. Clean Production Sound	247
	b. Creating Sound Design	247
	c. Mixing	248
	d. Conclusion	248
	e. Internet Resources	248
	Glossary	249
	Bibliography	257
	Index	259

Preface

Welcome to the wonderful world of sound design. It's a creative art form that's only limited by your imagination. Sound design allows you to apply your imagination to films, television, radio, games, videos, websites, webisodes, commercials and more. Since every project has its own requirements, it forces us to try new things and stretch ourselves in untried ways. As we stretch, we grow and that allows us to apply deeper meaning to the sound designs we create.

This book was written for filmmakers and film students working to bring their vision to life. If you've picked up this book, you already know how important sound is to filmmaking. You already know that it takes a lot of work to create a sound design that serves your film. This book will guide you through the multiple steps that are needed to have the sound design you want for your film.

Reading this book will provide you with lots of worthwhile information, but it's up to you to apply it and learn as you go so that your next sound design is better than your first.

It is my hope that you find this book to be useful and that when you apply its information and lessons, you will be able to create a sound design that makes your film stand out from the crowd.

Patrick Winters



Taylor & Francis

Taylor & Francis Group
<http://taylorandfrancis.com>

Acknowledgments

I would like to thank everyone who offered their support, encouragement and knowledge in the demanding endeavor of writing this book. Just like in the film and television industries, nothing is created solely by the director or author, but by a team of people working together. Every person that I contacted for information or the rights to use a quote or image responded positively. I have listed them and their role in creating the book in the Credits section.

CREDITS

Photographers

Catherine Clark (Foley), Image 9.1

Staff Sergeant Suzanne M. Day, DoD U.S. Air Force photographer, Inserted Images 8.1, 8.2 and 8.6

Nicole Maturo, Image 8.1

Patrick Winters, all other images that were created, captured or photographed

Photography and Video Talent

Jocelyn Barkenhagen, Ryan Barnas, Tyler Dance, Andrew Dessel, Matthew Dezii, Nick Gormack, Keith A. Johnson, Nicholas Jurczak, Riley Irving, Linsey Lack, Caleb Lazenby, Kevin Macchia, Eileen McTiernan, Matthew Mikkelsen, Rachel Morris, Patricia Quijada Salazar, Matt Salib, Jeffery Streeter, Garrett Winters, Riho Yamaguchi

Images

Danijel Daka Milosevic at danijelmilosevic.com, Room Calibration Chart, Image 12.3

Dorrrough Electronics, Dorrough Meter, Image 12.1

Screen Capture Permissions

John Given, Corporate Counsel, Avid® Pro Tools® screen images used with permission of Avid Technology, Inc. Pro Tools screen images © 2015 Avid Technology, Inc. All rights reserved. AVID, the Avid logo, and Pro Tools are either registered trademarks or trademarks of Avid Technology, Inc. in the United States, Canada, European Union and/or other countries.

GarageBand Screen shots reprinted with permission from Apple Inc.

Video Footage

Scenes from Keith A. Johnson's short film, *Fixation*
Scenes from Patrick Winters' short film, *Skin Deep*
Scenes from Patrick Winters' short film, *Vanished*

Video Interviews

Steven Avila, Josh Berger, Terry Boyd Jr., Martin Czembor, Isaac Derfel, Marlena Grzaslewcz,
Jeff Pullman, Ron Riddle, Matt Salib, Ian Shedd, Ben Whitver

Video Interviewers

Jon Hilton, Patrick Winters, Patti Winters

Quotes

Oakley Anderson-Moore (2013, August 25) Nofilmschool article, *Inside the World of Professional ADR with Julie Altus of Todd-SOUNDELUX*. <http://nofilmschool.com/2013/08/inside-adr-julie-altus-of-todd-ao>

Georgia Hilton, MPSE CAS MPE (2014, September 11). <https://www.gearslutz.com/board/video-production-post-production/954125-delivery-specs-vod-itunes-netflix-other-requirements.html>

Derek Jones, Chief Engineer and Production Manager at Megatrax (2010, February 22) blogs a great example of tempo mapping. <http://duc.avid.com/showthread.php?t=267717>

Debra Kaufman and Ron Lindeboom (2013) Creative Cow, John Roesch Article: *The Art of Foley: John Roesch Honored by MPSE*. https://library.creativecow.net/kaufman_debra/John-Roesch_Foley-MPSE/1

William Kallay (2004, September 24) fromscripttodvd.com article, *Avram Gold, M.P.S.E. Behind ADR*, http://www.fromscripttodvd.com/adr_fixed.htm

Tim Prebble, Sound Designer, Hiss and a Roar (2008, March 3) *Recording FX at 96k*, Music of Sound. <http://www.musicofsound.co.nz/blog/recording-fx-at-96k>

Rob Winter, British Film Institute, *The Best Music in Film*, Sight and Sound September 2004 issue. Quote from Lewis Gilbert, Director.

Consultants

Jake Ayres, Sound Engineer
Trip Brock, M.P.S.E., Supervising Sound Editor, Re-Recording Mixer and Founder of Monkeyland Audio
Philip Chatterton M.P.S.E., Foley Artist
Marlena Grzaslewcz, M.P.E.G., Dialogue Editor

Georgia Hilton, M.P.S.E., Post-Production Supervisor
Ron Riddle, Film and Television Composer

Special Thanks

Kelley Baker, Post-Production Sound Supervisor and Angry Filmmaker
Trip Brock and the crew at Monkeyland Audio, Glendale, CA
Philip Chatterton/Philip Rodrigues Singer M.P.S.E. of Marblehead at
<http://www.marblehead.net/foley/>
Jim Cox, Writer and Producer
Madeleine Gentle, Copy Editor
Ron Harris, Vice-President of Production and Sales, DuArt Media Services
John Makowski, Editorial Assistant
Emily McCloskey, Editor
Steven O'Brien, Composer at steven-obrien.net/ & soundcloud.com/StevenOBrien
Zachary Perry, Composer and Producer
Abigail M. Stanley, Production Editor



Taylor & Francis

Taylor & Francis Group
<http://taylorandfrancis.com>

Introduction

- a. Purpose 1
- b. Sound Definition 2
- c. Sound's Abilities 3
- d. Sound Supervisor 3
- e. Contracts, Agreements and Licenses 3

The sound and music are 50% of the entertainment in a movie.

George Lucas

PURPOSE

The idea behind this book is to give low and no budget filmmakers a guide to creating effective sound designs for their films. Sound design includes the dialogue, sound effects and music combined together to create an experience for the audience. Every film is different and has different needs, so although this book can't possibly address every situation, it does give filmmakers useful information that can be applied to nearly every film.

Many of the concepts and approaches in this book will vary according to the software, facility and the personnel. Sound design and mixing are creative endeavors that utilize technology, so there are many opinions on what is the best way to approach each. This book does not attempt to be comprehensive and cover every approach, but it is intended to act as a guide for you to do your sound design for your film.

The reason a filmmaker needs to concentrate on getting the best sound possible is because it will lift up the production value of your film. There's nothing that turns off an audience faster than bad sound. An image can be a bit soft in focus or a bit shaky and the audience is accepting, but when the sound is bad, they're often intolerant. So, in filmmaking, it is said that *the eye forgives and the ear does not*. This means that even if the image is perfect, if the sound is off just a bit, it will pull your audience out of the story.

Sound design can be done on a personal computer, so long as it has enough power, storage and the proper software. With the right equipment, a no or low budget filmmaker can do much of the work at home without having to pay for a studio.

Throughout the book I refer to DAWs and NLEs. I define a DAW (Digital Audio Workstation) as a NLE (Non-Linear Editing) in that you can edit in a non-linear manner. In order to differentiate between a NLE system that is primarily designed for audio and one that is primarily designed for picture, I refer to the audio editor as a DAW and the picture editor as a NLE.

This book is laid out in a way that allows you to work from the first page to the end and you'll have the consecutive steps for creating your soundtrack. During the course of the book, you'll be doing spotting, cueing, recording, editing, processing and mixing for some variation of the following steps:

- Dialogue
- ADR (Automated Dialogue Replacement)
- Group/Walla
- Special effects
- Backgrounds
- Foley
- Sound design
- Music
- Premix
- Stems
- Master
- M&E (Music and Effects)

The software that I use for the examples in the book is Pro Tools; however, the principles will apply to whatever NLE or DAW you choose to use for your sound design.

As you create your sound design, you'll use dialogue and possibly narration to provide information; you'll use sound effects to help make each scene seem real; you'll use music to emotionally affect the audience; and you'll mix all of the sounds together to create a stream of continuity that supports the story.

Sound design is more than creating monster sounds or spaceship sounds; it's about making all of the different aspects of a soundtrack work together to help tell your story. It's telling your story from the audio perspective.

SOUND DEFINITION

There are so many different definitions of the word *sound*. One common definition states that sound is something that can be heard. That's pretty straightforward. Another definition says that sound is vibrations that are heard. Both of these definitions bring up the old question: *If a tree falls in the forest and there is no one there to hear it, does it make a sound?* The answer is that a falling tree sound will exist with or without a listener. The definition that I like the most is: Sound is vibrations that travel thorough a medium such as air or water to a receiver.

There are many laws, rules, theorems, principles and properties of physics and psycho-acoustic phenomena that affect the recording, editing and mixing of sounds. Such laws as the

Nyquist Sampling Theorem, the 3 to 1 Rule, Proximity Effect, Doppler Effect, Inverse Square Law, Equal Loudness Principle, masking, Haas Effect, harmonics and resonance, to name a few. This book is not about the scientific study of sound, but the creative use of it. However, many of these terms are used within the book and the meanings are included in the glossary.

SOUND'S ABILITIES

- Sound in the form of dialogue is great at conveying information and emotions.
- Sound can be used to establish a geographic location.
- Sound is often used to place the story in a historical period.
- Sound, along with picture editing, can be used to set the pace of a story.
- Sound is a great tool to create hyperrealism or simplify realism.
- Sound can be used to draw attention to some detail, person, situation or object.
- Sound is often used to help the audience make connections.
- Sound can be used to emphasize or smooth out a transition.
- Sound can be used to give meaning to the story or to define a character.
- Sound is commonly used to enhance and define a story or plot.

SOUND SUPERVISOR

There needs to be one person who is in charge of the soundtrack. They need to know who is doing what and make sure there is little overlap and that all sounds are created, acquired and edited into the tracks. The sound supervisor does this in addition to overseeing the mixing process as well as the budget and schedule. Some supervisors will create designed sound effects too. All of these responsibilities allow them to guide and maintain oversight of the film's entire sound design.

As a low or no budget filmmaker, you may not have the funds to hire a sound supervisor, but if you can, they'll help you keep organized while overseeing the process of post-sound production. If you can't afford a sound supervisor, then be as organized as you can be.

CONTRACTS, AGREEMENTS AND LICENSES

I am not a lawyer, but I've had experience with contracts, rights and permissions. Because contracts can be tricky, I suggest that you work with an entertainment lawyer should you have any questions or concerns.

I have discovered over many contracts that if you don't have it in writing, it's not valid and you have no recourse.

Some of the types of agreements you might be dealing with are:

- Work for Hire Agreements
- Composer Agreement
- Talent Release

- Deal Memo
- Picture Lock Agreement
- Distribution Agreement
- Deliverables
- Film Synchronization Rights
- Mechanical Rights
- Royalty Free (Full or Limited)
- Music Rights

One of the most common issues I've encountered with no and low budget productions, especially student films, is that of not getting all of the rights necessary to legally use an existing song in a film. The bottom line is that if you are having any kind of public screening of your film and you have music in it, you need to attain all of the appropriate rights first.

There's a lot of music available to filmmakers on CDs and as downloads. The owners of these songs or score cues usually require some form of payment or if offered for free, then acknowledgment in your film credits. Always check out the requirements.

Another common mistake is thinking that a song is in the public domain, but not doing the research to find out if that's true. Sometimes the sheet music is in the public domain, but not the recording. Just because a song was written before January 1, 1923 doesn't mean that the recording made after that date is in the public domain. Since 1923 there have been several changes to the copyrights laws and you'll need to make sure you don't violate any of them.

Now, get on with creating the best sound design you can for your film.

Location Sound

How Was That for Sound?

- a. Common Mistakes 5
- b. Single System 7
- c. Double System 7
- d. Timecode 7
- e. Slate 8
- f. Smart Slate 9
- g. Boom and Lavalier 9
- h. Wired and Wireless 10
- i. Wide Shots and Close-Ups 10
- j. Two-Plus Camera Set-Up 10
- k. Exercise 11
- l. Sample Sound Report Form 12

COMMON MISTAKES

Recording sound without headphones. I always say that you wouldn't shoot picture without looking through the viewfinder, so why would you record sound without listening through headphones? Headphones not only tell you if you are picking up a good dialogue signal, but they also tell you if there are any sounds in the background that are unwanted.

Positioning the microphone too far away from the speaker or sound source. The farther away from the sound source, the poorer the recording level and the greater the noise floor. The noise floor is the sound you hear in a room or outside on location that is outside of your control. It is the wind or distant traffic, air conditioning or machinery. Ideally, the level of the sound source or voice is at least 16dB above the noise floor. The closer to a 30dB difference the better. That's not always possible to achieve, but it's a good goal. If you can achieve at the very least the 16dB difference, then you'll have an easier time editing your dialogue.

Another issue with improper microphone placement is that of excessive reverberation. It's better to have to add a bit of reverberation in post-production than to have to do ADR (Automated Dialogue Replacement) because the dialogue sounds like it's been recorded in a bathroom.

Not recording any room tone or ambience. This makes it harder for the dialogue editor to smooth out the changes in ambience or room tone between each shot in a scene. It also makes it harder to have a long clean background or room tone to edit under any ADR lines.

Using the wrong microphone for the situation. A hyper-cardioid microphone will usually do a great job of recording dialogue on an exterior location, but if you then use it on an interior, especially in a reverberant room, then it will not be the best choice. You'll want to use a cardioid on your boom for the interior. The hyper-cardioid will have a difficult time with all of the reverberations.

Mixing all of the microphones onto one track. If all microphones are recorded onto one track it will bring up the level of the noise floor, because the noise floor from all microphones will be added together. It will also make it very difficult to edit the dialogue since you can't easily separate out what's been recorded together. It's best to keep all tracks discrete or separate from one another. It's common for each microphone to be recorded separately onto its own track and to be included in a mixed track also. The mix can be used in picture editing and the separate tracks can be used in dialogue editing.

Not having a sound report. A sound report has valuable information that the picture editor and the dialogue editor can use (see the sound report form at the end of the chapter).

Sound Conveys Emotion—Picture Conveys Information

Get your location sound recorded well and the rest of the process will be easier and better for it. There are ways to work with poorly recorded sound in post-production, but none of them will give you the quality you could have achieved with properly recorded dialogue. The goal of sound design for your film is to help pull the audience into the story and that becomes harder when the production track sounds bad.

Great Sound will Enhance and Support your Story

The most common problems with location sound recordings are noisy backgrounds, such as people talking or moving around, traffic, dogs barking, sirens going off and aircraft overhead. The more constant problems are traffic, wind, heating and air conditioning systems, elevators, refrigerators, clocks, computers and other office equipment. Some problems come from the talent, especially if they are wearing wireless microphones. The microphone could rub on their clothing, they could bump the microphone, causing a "hit," or they could be heavy breathers or they may make loud mouth noises when they talk. Other issues with wireless microphones are with interference from other radio signals. If the microphone is mounted on a boom pole,

there could be handling noise from the boom operator moving their hands along the pole or the microphone cable hitting the pole.

SINGLE SYSTEM

If you shot your film using a single system sound recording, then you'll not have to synchronize your picture and sound together for editing. Single system means that both the picture and sound were recorded onto the camera itself without a separate sound recorder. This system works well if you only need to have a couple of tracks of dialogue, as most cameras only record two tracks; however, there are some cameras that will record up to four tracks. Having four tracks may allow you to keep all of the microphones discrete, which is what you want for post-production. Single system sound is easier to work with than double system, but it gives you less flexibility in post-production, unless you can keep each microphone on its own track.

DOUBLE SYSTEM

If you shot your film using a double system sound recording, then you'll have to synchronize the sound and picture in your editing system. In order for this to go simply and smoothly, it is helpful if you record the sound on an audio recorder and also onto the camera. This gives the synchronization software a reference for achieving synchronization. The software will compare the sound that comes with the video to the sound that was recorded separately and line up the waveforms. If you have the timecode on both the video and the sound, you can use that to synchronize them. If you used several wireless microphones and a boom microphone all going to discrete or separate tracks, then those will show up in your timeline on their own track. You can then edit the higher quality sound with the picture. Some NLE (Non-Linear Editing) systems allow you to import and synchronize the sound, but only put the mixed track on the timeline. The system maintains a link to the other discrete or ISO (isolated) tracks, should you need them. This is all right if you are doing your sound post-production on a separate system that will allow for multiple tracks.

TIMECODE

The most important thing to know about timecode is that if you used it for both picture and sound, then they need to have an identical timecode in order to be in synchronization. That is, if the video camera is shooting 24 frames per second, then the sound needs to be recording at 24 frames per second too. If the sound is not recorded at the same speed as the picture, then the timecode will be off and the sound will have to be resolved to the proper speed before editing. You'll also want to make sure that your picture and sound are both set at either drop frame or non-drop frame or your timing will be off.

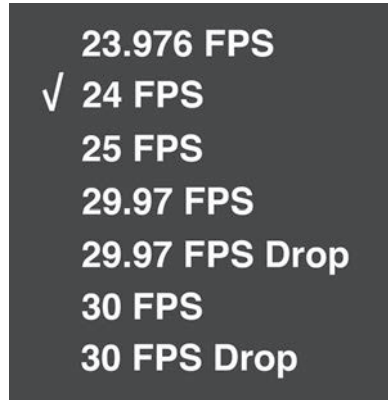


Figure 2.1

SLATE



Figure 2.2

The classic slate does not have the timecode. It requires you to synchronize the sound and picture by sight in the timeline. You'll have synchronization when the first frame in which the two sticks come fully together and the waveform spike where the sound of the two sticks hitting together need to be lined up and linked together.



Figure 2.3

SMART SLATE

Smart Slates display the timecode on an LED screen. That timecode is jam-synchronized with the camera and audio recorder. That means that the audio recorder and the camera are running the same timecode in synchronization. This will allow for easy synchronization in post-production. Also, if there was a problem with the timecode, then you can switch to a manual synchronizing system where there'll be the actual sound and picture of the slate hitting together. This will allow for visually synchronizing the sound and picture in your editing software.

BOOM AND LAVALIERE

The most natural sound is recorded with a boom microphone. It'll pick up the dialogue and also some of the ambience of the location. This gives the dialogue a sense of place. Lavalier microphones are usually hidden under clothing on an actor's body near the sternum. This means that the higher frequencies are being filtered or muffled by the clothing the actor is wearing. It also means that the low frequencies are being boosted because the lavalier microphone is placed above the chest cavity. The chest cavity produces the strongest low frequencies in the actor's voice. So, the recording is missing some of the frequencies that would make the

voice sound more natural. When you're dialogue editing, you'll want to use the best sounding dialogue for each scene. Ideally, this would be the sound from the boom microphone, but if not, then the lavalier can be used, but it will need to be equalized in order to sound more natural.

Lavalieres have an issue with clothing. Since they are buried beneath the actor's clothes, they can easily pick up the sound of the clothing movement and worse have clothes rubbed over them, which can ruin a take. When the placement of a microphone under clothing isn't the best option, then it can be placed in the hairline, under a hat rim, behind a button, or one of many other creative placements. The placement on the outside of the clothing will also remove some of the issues with the high and low frequencies needing to be equalized.

WIRED AND WIRELESS

The general rule of thumb is that a wired microphone is more reliable than a wireless one. One of the main reasons for this is that a wired microphone is much less susceptible to radio interferences than a wireless one. However, wireless microphones may allow for extended movement of the actor beyond what a wired microphone would allow.

WIDE SHOTS AND CLOSE-UPS

There should be a sense of perspective. If the shot is wide, then the dialogue should sound slightly distant. This works well with a boom microphone, but is hard to accomplish with a body mounted lavalier microphone. For a close-up either microphone will work well.

TWO-PLUS CAMERA SET-UP

Some productions choose to shoot their film with two or more cameras. There are valid reasons for doing this, but there are also disadvantages to it too. One disadvantage is that if one camera is on a wide shot and the other is on a close-up, the boom microphone cannot get in close enough on the close-up shot to get good close sounding dialogue. It will have to sound unnatural because there was no room in the framing of the wide shot to allow the microphone to get in close.

This can be overcome by using a lavalier microphone, which always sounds close because it's on the actor's body. The issue that this causes is that the dialogue editor is stuck with the lavalier microphone on the close-up and the boom microphone on the wide shot or with using the lavalier for the entire scene. The dialogue editor's choice will depend on the coverage and the editing. If there's no lavalier sound for some of the lines in the scene, then those lines will either come from the boom microphone or will have to be looped in an ADR session. Either way, there will have to be some processing during the mix to get the dialogue to sound somewhat natural.