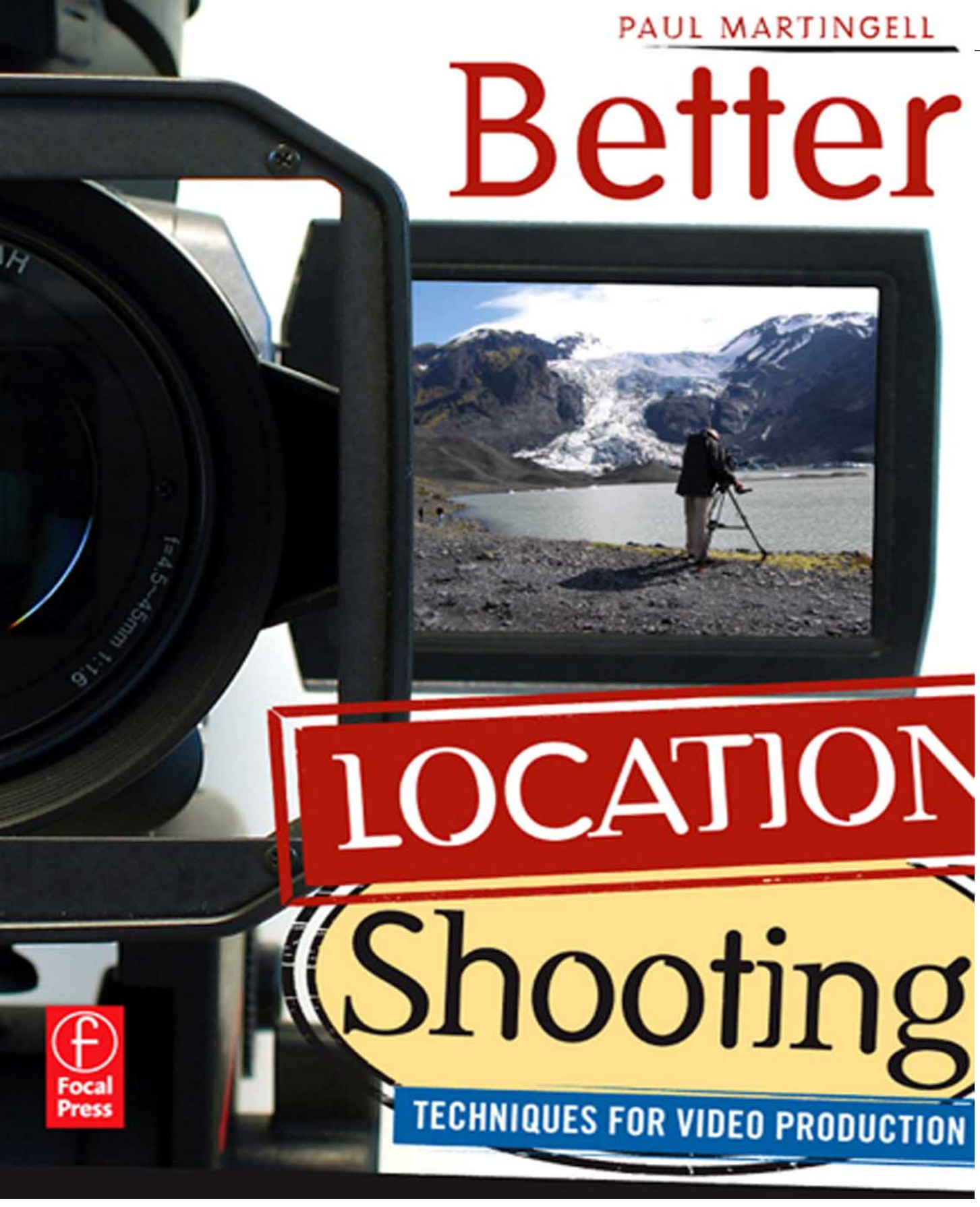
PAUL MARTINGELL

Better



LOCATION Shooting

TECHNIQUES FOR VIDEO PRODUCTION

Focal Press

Better Location Shooting

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Better Location Shooting

Techniques for Video Production

Paul Martingell

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Introduction

This book has been written because I have seen many video training manuals and self-help books which do not seem to have anything to do with a video cameraman's normal working day in the real world. There are a lot of good training books for video camera work with a leaning toward the technical side of the job. Focal Press have quite a few to choose from by well-respected

NARRATION
"Location shooting at its best, the author in Iceland shooting on DigiBetacam.

authors and they will help supplement your studies or if you are already in the TV business, it will give you more information about areas you are not sure of.

But there's no point knowing everything technical about CCDs (charged couple devices), pixels and color temperatures when you can't shoot a sequence that will edit together neatly or don't know how to light a good interview or scene or get decent audio in a difficult location. And if you are under pressure to get the job done in a short amount of time then that's when mistakes happen.

The book gives you information about the tips and techniques that professional camera people use day in and day out in order to get consistently good video, and solve location problems, whatever camera they are using, and also get you to the next stage of shooting. It is a practical guide to video shooting and production.

Hopefully, it will make location shooting on video more enjoyable for you as well. After all if you're not enjoying yourself when shooting then when are you…

No matter what camera you use, from a palmcorder to HDCam-SR, this book will help you develop a practical, consistent way of working by identifying the important jobs and tasks to be done on location and concentrating on these. By simplifying the way you shoot and creating a routine you will get better results so that even the busiest of location shoots can go well and leave you confident that your rushes will be fine and make a great final cut. You'll learn how to solve many location shooting problems and also have some tricks up your sleeve to show you can add value and quality to any shoot. After all the camera is only the hardware, but you, the cameraperson, are the important part, you are the software that brings it to life…

From students to journalists shooting on SONY's HVR-Z1e (or simply the Z1 as it's becoming fondly known as) to camera assistants moving up, sound recordists, editors or production staff changing roles and people who want to improve their video location shooting techniques, better location shooting aims to increase your knowledge of the day-by-day tips and techniques needed to survive in today's shooting environment. Perhaps you are thinking of becoming a freelance cameraperson and want to find out more about how best to handle different and sometimes difficult location shoots, if so then I hope this book will give you many answers and some inspiration as well.

All the solutions are taken from professional people shooting in the real world who have worked out the hard way how best to solve video shooting problems on location.

About the Author

In the film and TV business your CV is your calling card and the best way I can introduce myself is by giving you a glance at my CV which stretches from 1972 to today. I started my career in TV at the age of 18 as a junior studio cameraman and have worked up through many grades since then, running two production companies on the way and have shot on most types of cameras, video and film,

NARRATION
"Shooting skidoos for GMTV on location with sound recordist Ian Birch."

all on location since the 1970s. I'm still a working cameraman and director today and spend 4 days a week shooting for the BBC at Westminster London on location shoots. I've put the CV at the end of this chapter, make of it what you will, hopefully it shows that I've done a fair bit of shooting and tackled a few challenges over the years, and you'll know me a bit better from having seen it.

Most of my adult life has been spent filming on location for TV programs, film commercials and corporate programs over a period of 26 years during which time I've shot on many formats, from 35 mm for cinema commercials, 16 mm for fashion, music and docs, Beta and DigiBeta for TV series, DVCAM for current affairs and corporate. During this period I've been lucky enough to also produce and direct many broadcast TV series and other commercial video projects and have run two production companies for this purpose.

But I actually started my TV career as a studio cameraman at ATV studios in London, where each camera trainee went through 1 year probation training period, to see if you were up to the mark and then a further 3 years of on-the-job experience before becoming a substantive cameraman. It's sounds old-fashioned now in an age where media colleges and university courses in TV seem to be the way to start a career, but back then in the 1970s, when cheesecloth shirts and loon pants were (mistakenly) regarded as great fashion items, this was the only way to get started in TV, film and video. This was a typical apprenticeship you would find many other industries. The joy of learning camera work this way was twofold, firstly you were actually being paid whilst you learnt, so you could buy more cheesecloth shirts and flared pants in strange colors, and secondly you could make all your mistakes in the apprenticeship period with experienced people around to help you sort them out. And because of this you were far more willing to take chances and try out different ideas. It was a good way to explore TV and find out how best to do your job without being overly worried about making career threatening mistakes.

My location filming work started when the new generation of lightweight portable cameras came along in the mid-1970s, although they still had an umbilical cable that needed to be attached to a portable VTR machine. For the first time you could simply pick up the video camera and shoot somewhere other than a studio. A simple step you might think, but back then it was revolutionary and would put TV cameramen on an equal footing as film cameramen whose 16 mm Arri's and Aaton's were widely used for location shooting.

These new video TV cameras would change the working lives of most video cameramen throughout the world.

Then came the breakthrough of the SONY Betacam which had the VTR included into its body and things changed once again for video cameramen. Using this kit I went on to film in most parts of the world and was then asked to direct and produce programs for U.K. TV stations, on location. These opportunities would never have come my way if the new cameras had not been introduced.

I have now filmed, directed and produced over 98 broadcast TV shows, most of which are location based. One lovely TV series called "Go Fishing" took me filming in India, Northwest territories of Canada, U.S.A., Kenya, Zimbabwe and most of Europe. Again it would not have been possible for a video cameraman to do this work without the new location style cameras; it would most certainly have gone to a film operator without this development.

Back in the 1980s it was difficult for a video cameraman to get jobs on film shoots, which were closely guarded by long-standing film crews who closed ranks on video people trying to shoot film. However with a bit of perseverance I managed to get a few small jobs on 16 mm shoots and learnt about lighting for film mainly through good hearted film lighting cameramen who patiently answered my barrage of questions on their lighting rigs and setups. Eventually after a lot of small film jobs, I was asked to shoot and light 35 mm productions and this again was a great period of learning about different techniques – how film stocks varied, how processing and colorizing can affect your lighting and how film editors worked.

I changed my way of working forever after this.

It was obvious from the film work that a shoot could go spectacularly wrong if the cameraman did not plan everything in advance and also find out exactly how the editor was going to edit the job. Some producers had very limited technical knowledge and would not explain properly how they were going to treat the film after shooting. The more planning I put into the pre-filming stages, the less chance there was of problems in the edit stage, and producers using the well-worn phrase "but I thought you knew we were going to do x, y and z for the final cut."

I now apply the same process to video shoots and pre-shooting I talk to everyone in the production chain and make copious notes about what they want and how the finished production will look. By doing this any conflicts between the filming stage and the editing style, look, content, amount of shots needed will be spotted before the camera has been taken out of the bag and everyone then has a good idea of what the rushes will contain before they are viewed.

Now we have cameras which are so small and light, with picture quality that is to die for and access to locations around the globe simply by jumping on a plane. So life for camera people and VJs must be easier than it has been 20 years ago? You can even put the camera on auto and it will be fine? Shooting is now simpler? The new cameras have ironed out many location filming problems.

Er not quite…

This is why I wanted to write a book which explained the best way to solve location filming problems and help beginners and intermediate camera people, VJ's, students, journalists and video enthusiasts learn the easiest way to better results.

Directed the successful pilot for OKTV! (ITV & Carlton). Created a series for Carlton. Worked on interactive and streamed video projects.

Worked for most of the major TV stations, and production companies; fast worker with a good reputation. Can edit on AVID and FCP.

CHAPTER 1 

Location Filming Equipment

The choice of equipment available today for location filming is simply huge, ranging from small prosumer units capable of HDV (high definition video) and AVCHD (advanced codec high definition, capable of storing full HD, and 1920 × 1080 resolution onto memory cards and hard disk drives). Then through to SONY's DigiBetacams, XDCAM with its HD resolution and hard disk storage, Panasonic P2, up to top ranging HDCAM-SR cameras with 14-bit multiframe rate and either 4:4:4 or 4:2:2 output rates. Whether you are in the market to purchase a kit or are hiring on a regular basis, you can spend many, many hours looking at different cameras and audio gear and then comparing specifications, prices, weights, etc. Reaching a decision on what is best for you and whether this choice will then retain its value and usefulness over the coming years is a major job in itself and very time consuming.

In this chapter, I'll help you define some basics about video kits that will help narrow down how you make that choice. As far as possible we'll categorize types of cameras and kits and highlight the types of shooting they are best at, so that the choice is again made a bit easier. We'll be looking at the types of cameras from a camera operator's point of view to see what benefits each camera brings to everyday working.

It's impossible to list all video cameras in this book as new ones will soon be out in the marketplace, but the ones here are used consistently and probably will be for a long time to come, and therefore there is a good chance that we will be either buying them or hiring them at some point of time.

FIG 1.1
SONY HVR-Z1e, Ikegami HL-DV7w, SONY DSR 450WSPL pack shot. "Location video cameras, big and small. SONY HVR-Z1e, Ikegami HL-DV7w DVCAM plus SONY's DVCAM the DSR 450WSPL."

In Chapter 6, we'll talk about standardizing the way you work with any and every camera from the humblest palmcorder to mighty ENG kits (Figure 1.2) and the point of this is to prove that it's not the camera that matters so much but the operator and that you will work faster making less mistakes with this process in mind. Armed with this knowledge you'll be able to pick up any new kit that's just appeared and soon be able to film as confidently with it as you were with your old kit.

If you work for a TV station or any large production company, then there is a good chance that your kit has been provided for you, possibly without your input. If this is so then jump ahead to the sections about the kit that is relevant to you. If you are freelance or take contract work, then it's crucial that your kit suits the video work you intend to do and has a good shelf life; you don't want to be repurchasing after a short period if your kit doesn't do the job correctly or it records in a format that is to be replaced in the near future.

If you hire or use other people's kits, then it will be important for you to know the fundamentals about each individual camera and how the important functions are located and accessed, and this will make your life easier when you come to use them.

If you are in the process of choosing a new camera system, then the following list may help you decide the priorities that will affect your purchase. There are so

FIG 1.2
Cameraman at 10 Downing Street. "Location shooting comes in all forms, here its news and current affairs in London."

many decisions to be made before buying a new location shooting kit that it's worthwhile trying to look objectively at the main points that matter. It applies to most types and levels of video cameras from semi-pro up to full blown HD:

- Firstly and most importantly you need to check out the post-shooting workflow taking you all the way from video gathering and editing to graphics and sound dubbing (if you use this facility). There are now multiple systems and ways to take in camera rushes, edit, and then package the final cut that it will almost always affect the camera and format you shoot on. The main point here is that you don't want to end up with a shooting kit that makes the editing long and difficult. So check and recheck that the format you are choosing has a smooth, sensible progress through editing, and don't choose a format on the basis that "it will soon be supported with edit software." Go for a tried and tested route and ask the retailers hard direct questions about the level of support for that format.
- What tape/disk format does the camera kit use? Can your existing decks and software handle it?
- Will your existing clients be happy to use this camera format or do they only want to work with their existing decks and formats?

- Will the rushes digitize/transfer quickly and efficiently with your existing edit software?
- Will you need to buy new lenses or can your existing lenses be used on the new camera? Can it accept third party lenses from pro makers such as Canon and Fujinon?
- Check any lens coming with a new camera to see what maximum aperture it works at. Does this stated aperture change when the lens zooms into its tight end? If it does alter aperture (ramping down) then decide if this will affect your day-by-day shooting as a few less stop of light could mean you end up having to use extra lighting on your locations.
- What batteries will it take and can you use an existing battery system or will new ones be needed? A new battery system always seems to work out as an expensive option after you've bought new chargers and a few battery units.
- What audio capabilities does the new unit have, how many tracks, what bit rate, and are the connectors industry standard? Will your existing audio gear work correctly with this kit?
- What digital compression does the camera provide for its tapes? DigiBetacam is a mild 2:1 compression, whereas all DVCAMs are 5:1. Getting technical for a brief instance it's worth noting that the DV system uses a different compression system than DigiBetacam, which is more efficient. As DV editing is now very common, DigiBetacam tapes are often compressed to DV for postproduction work. HD compression takes its starting point from the DV system, which is a modern technique.
- And then you'll have to look at the camera's performance: Is it 3 CCDs? What size are they? Larger sensors mean less noise. How does it handle its luminance, chrominance, and color signals, and what sampling ration is used?

Sampling is the description of how many times each second a signal is looked at. A DV camera will sample the Y (luminance part of the signal or brightness) at 13.5 MHz (13.5 million times per second). It then compares this to the other two main video components, R − Y (red minus the luminance) and B − Y (blue minus the luminance) and expresses it as a ratio. While DV is 4:2:0 in PAL (Phase Alternating Line) or 4:1:1 in NTSC (National Television System Committee), DigiBeta is 4:2:2.

However Panasonic DVC Pro is 4:1:1 and is DV compression, and DVC Pro 50 and Pro 100 are also DV compressions and used on HD cameras.

A very good description of sampling and how it can be compared can be found in Jon Fauer's Focal Press book *Shooting Digital Video*. This book is not overly technical and you can quickly see how the whole system works.

So let's take a look at the smaller kits first.

The latest generation of prosumer/semi-pro cameras such as SONY HVR-Z1e, Canon XL-H1, and JVC 251 all offer versions of high definition video known as HDV. This was a joint development by SONY, Canon, JVC, and Sharp and was introduced in 2003. Its basic purpose is to take the line resolutions of HD at 1080i or 720p and encode them onto DV tape. SONY used the 1080i, whereas others used 720p. Canon also uses 1080i and Panasonic can shoot both (full HD for TV is 1920 × 1080). These cameras are smaller than a full blown ENG camera, such as a SONY DVCAM DSR 570 or 450, and if you believe the manufacturers' marketing releases, they will do everything perfectly well for 100.1% of the time.

So that's sorted out then…

These are the kits that TV companies are giving out to staff in order to shoot their own shows, packages, and clips. These are also being used for mainstream TV more and more, and in their own way they are fantastic tools. But they are not ideal for every type of shooting, as they will not perform as perfectly as ENG cameras (electronic newsgathering cameras is a generic term for the larger, portable cameras that you see shooting TV news, sport, and features material). These are of broadcast quality, with high picture resolution, many manual functions, separate lenses, plus a high price tag. And at times the smaller video cameras will simply make your working life harder. The key is to find out as much about the kit and what it can/can't do before using it and avoid being tempted by endless menu functions that are not going to help you or functions that only have a limited benefit on your day's work. It must be relevant and useful and not just a gimmick.

In these new prosumer cameras, many functions are hidden in the camera's menu systems making them slow to access and increasing the chance of having the wrong function switched on in a menu somewhere and the operator not being aware of it. Other major functions such as aperture control are sometimes in strange positions, not where you expect them to be, and work slightly differently than the ENG kits. The original SONY HVR-Z1e has a small silver aperture wheel mounted on the front of the camera's body, which is awkward if you want to adjust it quickly while shooting, and you can easily go the wrong way, stopping the camera down when you meant to open it up and vice versa (Figures 1.3 and 1.4).

FIG 1.3
SONY Z1 camera. “Sony HVR-Z1e”.

FIG 1.4
SONY Z1 aperture wheel close-up. “Someone at SONY decided to put the aperture ring down here…why I wonder?”

Why didn't they leave the aperture ring on the lens, where every camera person in the world has been used to finding it and where it works best? If a car manufacturer decided to put the steering wheel in the back seats, everyone would be totally bewildered. I want my steering wheel in front of the driver's seat please, and as a cameraman the aperture control back on the lens…

Audio outputs and inputs on these prosumer cameras are now starting to be XLR as standard instead of phonos, which are much better and easier to use as the XLR is balanced and most mics accept XLR leads and which makes adding extension cables easy as well (Figure 1.5). Another good point from a location point of view is that the XLR connectors are tough and will withstand a lot of hard work compared to the smaller phono setup. And if you

TIP

SONY HVR-Z1e…When filming in standard definition, the viewfinder does not show the whole frame, and therefore when you play back the tape on another source machine, things like microphones and other items that you thought were out of frame while shooting have suddenly appeared in the shot. In HDV mode this doesn't happen: what you see is what you get. Some people film in HDV and then down convert back to DV so they are not bothered by this annoying problem…Beware.

FIG 1.5
"Inputs for proper audio… XLRs on the SONY HVR-Z1e."