Electronic Field Production

Electronic field production (EFP) style encompasses many different types and applications of portable video. An easy definition of EFP is simply that it is professional video shot outside a TV studio and not for electronic media journalism or electronic news gathering (ENG). While this definition tells us what it is not, it does not give us a sense of what EFP is, or of what style is necessary to produce good-quality EFP work. A better approach to understanding EFP style is to look at the various applications of portable video, the conditions under which productions are made, and the audience for whom the video work is intended.

Unlike ENG, where the audience is the general broadcast viewer, much of EFP work, especially corporate work, often has a very specific audience. Whereas ENG concerns an event that is about to or has already occurred, EFP has a very specific purpose, such as a commercial or public service announcement, the promotion of a new product line, or training for a new procedure. However, quite a bit of the programs we see on television are shot in EFP. Specifically, many shows are shot in film style, using one camera in the field that shoots the same shot (or action) several times, each from a different angle or focal length. Some of these show types include reality, music videos, features/magazine, nature, documentary, home improvement/real estate, sports highlight, and other entertainment shows. Although most 60-minute narrative drama shows on network television (e.g., NCIS or Law and Order: SVU) are shot on film, the style is similar to shooting single-camera video. Commercial entertainment is a special category of EFP, because it attempts to attract a large and diverse audience. Nonbroadcast EFP, such as corporate video projects, is produced for a very specific audience.

In EFP, the key is planning. Careful preproduction and scripting help ensure that the final product is purposeful, effective, and affordable. In a corporate setting, the choice of EFP depends on whether it is the best way to get a message across; that is, whether it is cheaper or better than other methods, such as face-to-face communication. There is a sequence of planning in any EFP project that closely follows the sequence of events in writing a script. When the decision is made to embark on a video project, the first questions that must be asked are, “What do we hope to achieve by this project?” and “What are the objectives?”

In corporate work, the objective most often is to inform the audience of something, such as a new or old product, a new benefit to employees, a reiteration of an existing policy, or an introduction of a new corporate executive.

Another very common objective is to help create an attitude or stimulate motivation. A motivational video may be created to inspire salespeople to promote and sell a new line of cosmetics or a new attachment to farm tractors. The project may include sales techniques, product information, or a demonstration of how the product is used. The goal for this type of project is to inform, create, or change an attitude and evoke a certain type of behavior.
Corporate video is aimed at a *specific audience* to achieve a *specific purpose*. Rarely is it produced just for entertainment purposes.

Television programs, performance video, music video, nature and documentary video, and video art are generally produced for entertainment purposes. These styles are often carefully preproduced and scripted, but do not always have very specific objectives beyond entertainment; the audience targeted is often more general. Outlets for exhibition are also more general; this type of video may be shown on broadcast, satellite, or cable TV, in classrooms, theaters, festivals, or contests. In addition, the video may be part of a multimedia presentation or even part of an Internet site or available as a podcast or a video web log, or vlog. The audience often selects itself. The showing of the video is publicized in broadcast TV listings in the newspaper, in a flyer about a festival, on the Internet, or even in a class syllabus. The audience decides whether it wants to view the video.

This chapter covers eight common categories of EFP style:

- Corporate and professional videos
- Entertainment
- Commercials and public service announcements
- Performance videos
- Sports videos
- Music videos
- Nature and documentary videos
- Video art

In addition, video for multimedia and video for use on the Internet will also be discussed.

**CORPORATE AND PROFESSIONAL VIDEOS**

The term *corporate video* became a popular catch-all term for a number of types of EFP video in the 1980s. This category can include almost all professional nonbroadcast users of portable video whose purposes are not entertainment. Some users of this EFP style are not necessarily members of corporations; in fact, many are not, but they are members of educational institutions, governmental agencies, labor unions, professional associations, clubs, and civic organizations.

Numerous types of video fit into the category of corporate video; news, information, and public relations videos are very common. These videos are especially popular in large and/or decentralized organizations where face-to-face contact among members is difficult or unusual. The video is used as a means of disseminating information efficiently and maintaining cohesiveness among members. Another consideration is the availability of information in-house for corporations of which the employees’ computers are tied together with a local area network (LAN). These corporations are making Web-type pages available in-house with information that can be seen by employees only. This is similar to the Internet, except that these pages are not available to people outside the organization. The term for this in-house multimedia use of video is *intranet*.

**Corporate News Show**

Corporate video often takes the form of a company news show. The show consists of several common elements: messages from or profiles of top management; companywide news such as recent achievements in sales, profits, safety, or growth; branch or regional news; and employee news. Although this communication is called news, it almost never includes hard news (e.g., auto wrecks, burglary, or fires) and is never investigative in an adversarial way. This type of video is purely for internal public relations. It is a way of making a large organization seem more personal and familiar.
The host or reporter on an internal company news show conducts on-location interviews, reads news copy over video, or gives lead-ins to packages of stories about the company and its employees. The shooting style is more like a magazine show (with features) than a news show. There is no sense of urgency, and the videographer can usually control what is happening in front of the camera.

Most of the rules mentioned for shooting general news and reporter stand-ups in previous chapters apply to this EFP style. The goal is to make the organization seem friendly and personal. Your style should reflect this goal: Use wide shots to quickly establish your location, but use close-up shots to help convey a friendly mood.

### Instruction, Training, and Demonstration

This general category includes instructional video production in classrooms designed to be viewed by persons other than those physically present in the classroom. This can mean a recorded lecture for absent students, or a recorded production of an entire course for students viewing the recording rather than attending live lectures. It also may mean distance learning, in which TV is used for live, real-time interaction between two classrooms separated by distance. In corporate and other professional settings, training videos have become so common that they are an expected part of employee orientation and training. Using video for training purposes is the singlemost common use of portable video in the corporate world. A good, properly produced training video can save many hours of boring repetition by an instructor. It can also provide location shots and event shots that could not otherwise be viewed by the audience.

While instructional video for distant learning may not have a verbatim script, it most often has a very carefully prepared outline for the instructor to follow, with graphic material specially prepared in a form conducive to good video. For example, graphic material should conform to the 16:9 digital TV aspect ratio.

Instructional corporate video is used to convey very specific information to the intended audience. Its goal is to have the audience learn something specific, such as a procedure, a task, or a safety rule.

Instructional video requires a very accurate and organized script and storyboard. Two shooting rules are standard:

- Each shot must be clear, accurate, and supported by explanatory audio when appropriate.
- Close-up shots are critical for demonstrating procedures and showing small equipment or controls on larger equipment.

**Extreme close-ups (XCU's)** may be necessary. When shooting XCU's, make sure they are rehearsed. Because XCU's require high magnification, slight movement by either the camera or the subject may give your shot an amateurish look. Also, shots at high magnification often have a shallow depth of field. Small movement of the object can cause a loss of focus. During a rehearsal of a shot, mark off the area that defines your sharp focus area, and keep the camera still and the object in the focus area. Handholding small objects for XCU shots is not recommended.
Teleconferencing

Although teleconferencing refers more to a method of distribution than a style of shooting, it became an enormous part of corporate and nonbroadcast TV in the 1990s. There are numerous reasons for this, but the most important are that teleconferencing saved a lot of money by eliminating travel costs, and that the technology was available at a reasonable cost. The methods of distribution for teleconferencing have changed, but the usefulness of teleconferencing remains the same. In the 1980s and 1990s, executives of a given national organization in Boston and San Francisco were able to meet “face to face” through two-way TV, utilizing a satellite-distributed teleconference. A small university campus reached out to employees of an engineering firm off campus with a graduate course in engineering through microwave distribution and audio call-in. Universities also distributed courses to branch campuses by using a two-way microwave TV system. Students at both locations were able to ask the professor questions and get immediate answers. Although microwave distribution of video for this purpose still exists, the vast majority of common uses for teleconferencing now use the World Wide Web to distribute the video. Inexpensive web cameras (webcams) make two-way video cost effective and easy to set up.

The professional or industrial style of this type of video is a hybrid of studio and portable video. Most teleconferences occur in a room or location specially adapted for the purpose or in some type of TV studio. Teleconferences can be shot in various formats that can include elements of a news show, demonstration, motivational video, panel discussion, and lecture.

Sales, Promotion, and Motivation

Public relations videos are shot with the intention of delivering information, but the desired effects are also behavioral and attitudinal. Corporations shoot these videos because they want their salespeople to know about the products and services that they must sell and also because they want to instill in the sales force the positive attitude and energy necessary to get the sales job done. Sales, promotion, and motivational videos are characterized by high energy and dynamism. Enthusiasm is a key ingredient.

**FIGURE 3.2**
This instructional video is being shot in a medical operating room. The surgeon who will be performing the surgery gives an introduction about the procedure about to be performed. (Courtesy of the Arizona Heart Institute)
As with the demonstration video, these videos require tight scripting to allow the control necessary to keep the tempo of the video upbeat. Camera shots are dynamic, showing much movement. Soundtracks are crisp and lively; the music is upbeat. Lighting is usually bright, with strong direction and modeling (not flat). Often, strong backlighting is used to separate the subject or the product from the background. Colors should be bright and lively.

If editing is noticeable at all, it usually consists of quick cuts and other transitions rather than slow dissolves to enhance the dynamic energy. Special effects are often employed to enhance the feeling that the product, service, or concept has special merit. These effects can be as simple as a star effect from a star filter on a camera lens, or sophisticated special effects or animation.

**ENTERTAINMENT**

Many of the shows presented on broadcast, cable, and satellite television are not shot in television studios. Scripted, narrative drama shows like *CSI* and *Law and Order*, or comedies like *The Office* or *Scrubs* were shot in a sound studio (similar to the way feature films are shot) and on location. These shows are shot on film and use the film style, or single-camera style, of shooting. This technique is similar to video shooting in the field: A single camera is used for multiple takes of a shot or scene. The best takes are selected and then combined in the editing process to construct the show. Other shows (e.g., *Reno 911*, a mock documentary) were also shot in this style, but because of budgetary reasons or aesthetic reasons (to give a live feel to the show), they were shot with video cameras instead of film cameras. As video cameras get better, more and more shows will be shot in video instead of film. The newer video cameras that can shoot in a variety of resolutions and frame rates (e.g., 24 frames per second progressive scanning instead of 30 frames per second interlaced) give a picture with filmlike quality and are sometimes used instead of film cameras in some shows. Digital cinema cameras like the RED camera continue to make inroads into projects previously shot on 35 mm film (as in feature films) but are now shot on video.

Many shows are shot in a video documentary style. These shows include reality shows like *Survivor*, the various *Real Housewives* shows, and home remodeling shows such as HGTV’s *House Hunters*. These reality shows use the cameras to record the action. Typically, the cameras just try to capture what is happening in front of the camera, and the directors do not have the luxury of retaking shots. Some primetime entertainment shows are shot inside a television studio with large studio-configured video cameras, but also use a handheld camera so that the director can have the freedom to get unusual angles or extreme close-up shots that add dynamism and excitement to the show.

Many types of performances simply cannot be brought to the TV studio and still retain the mood or energy intended by the performers, directors, or choreographers. Part of the reason for this is that the TV studio is rarely large enough to permit an audience, although most talk shows will have an audience of several hundred people. *Dancing with the Stars* and similar talent shows are shot in a large studio to accommodate a live audience. In these types of shows, the presence of an audience is an important ingredient for the look and sound of the show. Many performers accustomed to having audiences present strongly prefer having the audience there for feedback and energy. Also, TV studios can rarely duplicate the space or specific lighting, floor, or sound characteristics of a theatrical stage or auditorium. Because of these limitations, many performers have been recorded in...
EFP style. With good postproduction, a simple multiple-camera EFP shoot can yield a high-quality performance video suitable for broadcasting or showing to an in-house audience. As mentioned earlier, many television shows in a variety of formats are now being shot EFP style, both in and out of the studio. As the cameras get better and more and more shows are shot on smaller budgets for the cable and satellite program providers like The Travel Channel or HGTV, the use of portable video will continue to increase.

COMMERCIALS AND PUBLIC SERVICE ANNOUNCEMENTS

Commercials and public service announcements (PSAs) for commercial TV include every conceivable style of shooting. Styles vary by market size—usually in relation to the budget, which is directly related to market size and type of product—or by the issue to be discussed. Most videographers who shoot these short-format projects do so on a local level (e.g., a local car dealership or the local United Way campaign).

Commercials

In broadcasting, all TV stations except those with educational or public broadcasting affiliations rely on commercials to pay for their operating costs. All nonpremium cable programming services, such as ESPN, TNT, CNN, or MTV, also rely on paid commercials to help keep them profitable. This presents an enormous opportunity for aspiring videographers to practice their skills. On the local level, tens of thousands of commercials are produced for insertion into these channels.

Formats

Just about every style of video has probably been tried in a commercial. There are, however, a number of standard formats that have been used during the past 60 years that encompass most of the TV commercials produced.

Announcement  In the days before computer graphics and affordable yet powerful character generators, this commercial was of two general types: an announcer doing a stand-up with the product or in front of the store, and a series of still photos, shot on slides and fed through a device called a telecine that created video from the slides. New technology has made this type of commercial more sophisticated by allowing more complicated manipulation of video images through computers.

Demonstration  The introduction of a new product often requires that the use of the product be shown to the audience. Close-up work is common when the product is small or a very close look is needed by the audience, such as a new safety feature on the dashboard of a new model car or a new smart phone. If the shot looks best at a very short object-to-camera distance, the shot may need to be done with the lens in the macro mode. This type of shot also requires special lighting. As the camera lens gets very close to the object, the object size grows, but the lens and camera often block some or all of the light needed for proper exposure. Light aimed at 45-degree angles to the object will illuminate the object without causing harsh shadows.

Testimonial  This type of commercial is often done in a local grocery store, car dealership, or restaurant. Customers (not professional TV performers) are interviewed at the location and asked questions that are intended to yield favorable responses. Often several of these soundbites are edited together to create the main body of the commercial.

Celebrity Spokesperson  Famous people are often paid to go to a new store, attend an event like the county fair, or promote a product or service. The face and voice of the person help the commercial get the desired audience attention. Obviously, medium and close-up shots of the celebrity are needed to make sure that the audience recognizes the person. High-quality
audio in the field is very important in this style, because the audience knows the sound of the famous person’s voice.

**Dialogue** This commercial is often shot on location in familiar settings, such as an ordinary kitchen. Two people might be discussing the pros and cons of an upcoming referendum. An establishing shot of the location is held long enough to show where the discussion is taking place. The technique often includes several over-the-shoulder shots that show the person speaking from over the shoulder of the other person. A child in a conversation with her mother would show shots from the perspective of the listener; a low-angle shot when the mother speaks, a high-angle shot down on the child when the child speaks.

**Dramatization** Often similar to a dialogue, this commercial is often told as a brief story. This type of commercial often uses natural settings and therefore is shot on location. This could take the familiar before-and-after form—before using the product and after using the product. Humor or exaggeration is common with this format.

**Institutional** This format is often semidocumentary in form. It may show what a major oil company is doing to clean up the environment while producing a better grade of gasoline. This format is most often used by large corporations to promote goodwill toward the corporation.

**SHOOTING STYLES**

**Stand-up Presentation** This format is an attempt at interpersonal communication by an announcer; actually, it is usually a simple and direct sales talk. The performer is shot straight on, with direct eye contact with the audience. This can be shot anywhere and is often done in an auto sales lot or grocery store.

**Hidden-Camera Testimonials** This format is the typical “yes, this car is a bargain” spot, in which real people are the stars of the commercial. The camera may not be visible to the real people, thus yielding a more natural response.

**Music Orientation** Often a musical piece is composed to sell a product and becomes almost more important than any other selling points. In this case, the visuals serve to accentuate the music. Producers of these shots hope that the music becomes closely linked to the product. This is especially helpful if the video spots are used in combination with radio spots.

**Visual Orientation** Commercials are sometimes produced with very little, if any, emphasis placed on the audio. In this case, the audio merely supplements the video; the message is almost completely visual. National spots for autos often show the auto on the road and keep the factual information minimal.

**Comparative Demonstration** This style often requires quite a bit of pre- and postproduction. In a very short timeframe, the producer tries to show how a product is used or compares two products’ performance and cost. A typical example would be the grease-cutting ability of two dishwashing liquids. Props such as glass kitchen sinks are needed to show how the product works. Another popular version has a split screen with shots of the two products, for example, Ford versus Chevy trucks. The screens show superimposed facts about price, horsepower, load capacity, or other simple, numerically oriented comparisons over the shots of the trucks. The shots of the products are usually identical, but subtle lighting or other differences might be used to enhance the sponsor’s product.
Animation Animation is used to create a visual not possible in reality, or to draw attention to the product. Toy and cereal manufacturers have long believed that animation attracts and holds children’s attention better than many real announcers. Obviously, this is a time-consuming and expensive approach and therefore is rarely used in small markets. Advances in personal computers and software designed for computer graphics and animation may change this in the near future.

In addition to these general categories, numerous combinations of formats and exotic variations of these are used. A celebrity spokesperson may be joined by an animated spokesperson for a theme park. A slice-of-life commercial may include a family trying two different products for comparison. A stand-up presenter may introduce a strong visually oriented spot.

All of these approaches can be and often are accomplished in the field. Before high-quality, competitively priced ENG/EFP cameras were generally available, on-location local commercials for TV were usually shot on 16 mm movie film or 35 mm slide film. Low-budget commercials were shot on slides. Some slides (usually two to eight) from the shoot were loaded into the slide chain (telecine) at the studio and a soundtrack was added. Many commercials and PSAs are still done in this style, although the slides are replaced with digital photo shots of the sponsor’s business.

It is easy to do better than that. Avoid static shots. Without overusing the zoom, add some dynamics to your shots with camera movement. If you have an on-camera announcer or subject, add interest to the shot by placing the subject in an unusual spot; for example, on a rooftop overlooking the city, start on a close-up shot, then zoom out to reveal the exact location. If you add music, try to make some of your edits coincide with the beat of the music to draw your viewers into the message.

When producing a commercial or PSA, keep your timeframe in mind. You will probably have only 30 or 60 seconds to convey your idea and the necessary product information. This calls for careful scripting and storyboarding. Commercials and PSAs offer excellent ways of sharpening your creative skills, both with the camera and in scriptwriting. Do not settle for the ordinary; use these short-format projects as a challenge to your ability to interest audiences and tell a complete and interesting story in a short timeframe.

Public Service Announcements

Public service announcements (PSAs) are short (usually 30- to 60-second) announcements created and aired for the benefit of the viewing audience. The sponsor is often a local nonprofit agency, such as the library, humane society, or a fundraising effort. Many PSA campaigns are produced for nationwide airing by national groups, such as the Ad Council, American Dental Association, American Cancer Society, religious organizations, and the US government. The national campaigns often discuss themes of national concern, such as drug abuse, literacy, environmental safety, general sustainability, and health issues. Usually well financed and shot on film, these campaigns are placed on a web site and also distributed to broadcast and cable/satellite outlets throughout the country.

On a local level, state agencies and nonprofit institutions often attempt to create and produce PSA campaigns with donated help and small budgets. This type of project can provide students and beginning professionals with an opportunity to produce creative work that will be aired (sometimes repeatedly) on local or regional stations or cable systems.

Budgets

Budgets for PSAs and commercials are usually quite small, limiting your alternatives for creativity and experimentation to those you do not have to buy. Forget about renting the helicopter for your aerial shot, but offer to trade-out with the local emergency health...
helicopter service—offer to shoot a public service spot or commercial for them in exchange for a free ride. If this does not work, try to get your bird’s-eye view from the roof of the tallest adjacent building. Sometimes a wide-angle shot from above gives the desired aerial shot effect. Conveying the notion of acres of gleaming new and used autos may be easier from 100 feet than from a helicopter at 300 feet.

Instead of flashy special effects, low-budget retail commercials that must be aired quickly after production can encourage you to inject excitement and action by using unusual camera angles and some dynamic editing. The point here is that network style and quality commercials require network-sized budgets. Ninety percent of local or small market video commercials are low budget, so this is most likely what you will have to face, especially if you are a beginner. There is hope, however, for the aspiring producer. Laptops equipped with editing and postproduction-effects programs (Final Cut Pro, Color, After Effects) can create video that has a professional look. These programs allow the low-budget producer to perform three-dimensional effects such as rotation, or image-to-image changes such as morphing (e.g., a smooth transition from one shape to another, such as an old, boxy-looking car becoming a sleek race car).

**PERFORMANCE VIDEOS**

Two major types of performance video use EFP. The first is performance video for entertainment purposes, done on location by one or more EFP cameras for later presentation to an audience. The other major type of performance video is shot for historical purposes; an event is captured on video and archived for future reference.

Two methods are used for shooting on-location performance videos: (1) the switchable camera field shoot, and (2) the isolated camera field shoot.

The switchable camera field shoot uses multiple cameras with a field switcher that selects one camera to be the “taking” or online camera. This system mimics the TV studio, where a director makes real-time switching decisions to select which camera will supply the program video for any given shot. This system is convenient if the director is very familiar with the script of the performance and the look that the performance should have as a finished video product.

This configuration of equipment commonly has three cameras tied to one switcher and a recorder connected to the program or outgoing line from the switcher. Because only one recording is made, the director decides on the spot which camera will be online. If the wrong decision is made, or if the technical director pushes the wrong button, the recording usually contains the bad decision or error, with virtually no way to fix it.

Two ways exist to avoid the problem of having to live with your mistakes on a “live-to-tape” (now also known simply as “recorded live”) multiple-camera switched recording. The easiest is to have one “wild” camera not hooked to the switcher that shoots cutaway shots during the show, such as audience reactions, extreme wide shots, extreme tight shots, or any shot that could be considered nonsynchronous. Later these can be inserted to cover any mistakes.
made by the director, technical director (TD), or subject on the master recording, with a minimum of editing time and without a jump cut or loss of continuity.

The second way is to have one of the switched cameras on an isolated line to its own video recorder. Most switchers are capable of feeding an isolated line (ISO) from any of the cameras coming into the switcher. If the switcher cannot do this, then a separate recorder can be hooked up to one of the cameras. This can be a small price to pay and a minor hassle to ensure that the finished product meets the highest standards and does not look amateurish. The ISO camera is generally either the least-used camera, the most stable camera of the group, or the one that gives a good wide shot. Very few big-time experienced directors would work without a safety net (i.e., an ISO camera) unless the production is going to be aired live.

Whenever two or more cameras are brought together in the manner described earlier, they must be timed to avoid a glitch when the picture is cut from one of them to another. This method of timing is called genlock; there are two methods of doing this. Most professional

![Diagram of video setup]

**Figure 3.6**
Three-camera remote shoot for a performance video. Switching is done in real time, yielding one finished project at the end of the performance. An isolated video recorder may also be used for close-up shots taken by one of the cameras.
multiple-camera setups make use of a special camera cable connection on the back of the camera called a *triax* adapter that allows most camera functions to be done at a remote location wherever the cables come together—generally near the switcher. A video control person can shade the cameras (control the iris and manipulate the color so that each camera looks as good as the other) as well as time them to each other. In lower-budget productions, only a coax cable that attaches to the BNC connector on the side or back of the camera is used. Each camera must be matched manually before the shooting starts. To time them, a second coax cable must be run to each camera. This cable is attached to the genlock port on the camera and comes from the switcher, which is feeding a reference signal to each of the cameras that allows the cameras to synchronize their video scan rates. Without this timing function, nothing in a multiple-camera setup will work properly.

**Isolated Camera Field Shoot** The alternative method for a multiple-camera shoot uses the same number of cameras, usually three, but they are not tied to a switcher. Instead, each has its own independent recorder. In this method, the director’s job is more one of guidance, rather than final decision making, until the postproduction stage. This is because the director does not have a camera monitor for each camera. The director suggests certain shots to each camera operator, such as “Camera 1, look for Mr. X to enter from stage left, and make sure you get a CU of his face as he sees Ms. Y.” If camera 1 misses the shot, the other two cameras may get it.

This method relies heavily on postproduction. After the shoot, there are three complete versions of the performance, one from each camera. One version is commonly a master shot from the center camera; the other two versions are from the side cameras situated somewhat closer to the stage.

When two cameras are being used to shoot one scene or event for professional use, it is recommended that the cameras be genlocked. On a two-camera interview, even without a switcher (each camera has its own recorder), a genlock cable should be run between the cameras. One simple coax cable from the genlock-out port of one camera to the genlock-in port of the other will lock the two cameras together. Any number of cameras can be hooked

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**FIGURE 3.7**

Three-camera remote shoot for a performance video. Each camera is isolated and has its own recorder. Video from each camera will be mixed in postproduction to yield a finished product.
PART 1
Shooting Video on Location

One way to synchronize the recordings of a multiple-camera shoot is by using time code (providing the cameras are genlocked), a method called jam sync. A recorder that has a time code—out port, or a standalone time code generator, can be used as the master. A coax cable from the master’s time code–out port can be run to the time code–in port of any recorder. Just like genlock, this process can be done in series so that a separate cable does not have to run from the master to every single machine, but each machine needs to be connected to another. The time code master machine can be set to internal time code, and all slaved machines need to be set to external time code on their control switches. Whatever time code is set on the master, each slave machine will record. If another deck is used as the master and the time code is in the record run position, it must be recording before it will send time code to the slave machines. This setup can make it easy to put a multiple-camera show together in the edit room. This process is becoming simplified because of sophisticated editing programs like Final Cut Pro that provide accurate time line editing of multiple video clips. The more accurate the editing program, the less the need for the genlock or jam-sync process.

Historical Archive

One of the most sensible and efficient uses of video is the historical archive. Unique events, such as celebrations, special performances, and groundbreaking ceremonies, are good reasons to use an inexpensive historical video document that can be provided by a quality recording shot on location. The archive video is not the same as a performance-quality or entertainment video intended for later broadcast. It is a low-budget record of an event, rehearsal, or performance worth keeping for future reference.

Choreographers and Directors

For the dance choreographer, archive video provides a representation of a creation as interpreted by the choreographer at a certain point in time and by the dancers available at that time. Video captures the movement and the staging for the choreographer to use during a later interpretation or reconstruction.

In the same way, the theater director can obtain a record of a particular performance by the cast at a particular time, using the archive video. It creates a point of reference that a written script, review, or summary could never provide. The director can obtain a DVD or flash drive copy and show it just about anywhere on a computer, DVD player, or through YouTube.

Another very common use of video for archiving is done by sports teams. Every college and university varsity team in a major sport uses video in some way to give feedback to the coaches and players. The techniques vary widely, as do the budgets, with budgets often
dictating styles. In college football videographers record practices and games, often from a variety of angles, to provide information for the coaches to use when critiquing player performance and to plan for future opponents. In some cases, the video is used in highlight shows. For example, in a coach’s show, footage of a future star practicing might be used when a coach is explaining why that player got playing time. Footage of a player could also be exhibited to show progress after an injury. High school players who aspire to play at the college level (and win athletic scholarships) often hire video producers to use archival footage of their high school performance and other footage to gain the attention of college recruiters and coaches. Even if archive video is not seen by a large audience, it is often a very important coaching tool. In addition, archive sports video can provide jobs for entry-level videographers.

Event Dictates Style The style of the archive video is dictated by the event being recorded and the desires of the choreographer, director, or interested group that will use the video. Choreographers and directors often want to have the entire stage visible to show not just the performers, but also the relationship between the performers and the space in which they are performing. This requires that the videographer avoid the temptation of zooming in on the action and framing it tightly. For both choreographers and directors, the expression of the performer on stage is not the only important aspect of the performance.

In dance, body positioning and articulation of the extremities should be included in all shots. Since dancers often move quickly, they can dance entirely out of the frame if the shot is too tight. Even cutting off the toes or hands in a shot of a dancer can lose what the choreographer needs to see. Directors often want to see entrances of characters while others are on stage. This also calls for a wide shot.

These types of requirements translate into a simple, static, one-camera style. Use your tripod and set the camera on a wide master shot of the stage. Make sure that your shot is not so wide that it allows any of the stage lights to shine directly into your lens. If you are able to use two cameras, use the first camera for a master shot and the second for following action and close-ups of the main performers. You may want to edit these together into your final project or simply provide two versions, one of the wide shot and one of the close-ups.

This type of video may seem boring to you, or it may seem like unimaginative shooting. But keep in mind that the archive is not a commercial program to be viewed by a large audience; rather, it is a tool used by professionals and scholars to preserve an historically significant event or creative endeavor.

SPORTS VIDEOS

One of the reasons that sports are so popular is that they represent one of the few real live dramas available on television. Keep this in mind when you are planning to shoot any kind of sports coverage. As with any kind of video, make sure that you realize that sports coverage requires that a story be told. Because sports contests can be dramatic, remember the elements of known characters (well-known sports names); conflict (a history of hard-fought battles between two teams); and suspense (the best games are those where the outcome is uncertain). These elements pull the audience into your video story; in this case, it is a story about a competition. This requires some background work, such as a recounting of the events of the last meeting between the two teams or two competitors. One of the best examples of this kind of dramatic buildup can be seen on a pregame show for the National Football League. Often you will see highlights from a previous game (footage usually supplied by NFL Films), and interviews
PART 1
Shooting Video on Location

with the coaches, the players, or even highly partisan fans. This pregame information helps orient the viewer to the drama of the game.

The two main types of sports EFP work are competition and features. Sports features are generally shot for use in pregame or highlight shows. EFP coverage of actual sports competition has two main purposes:

- Live coverage of the event for airing.
- Coverage for replay at a later time, usually in a highlights show.

Live coverage of a sports event is a complex, expensive undertaking that requires numerous cameras; a truck or van with camera control, storage media, switching, and other technical equipment; miles of camera cable; and a group of hardworking professionals.

Each sport has a particular sequence of shots compiled from the various cameras to give the viewer a comprehensive and complete view of the event as it occurs. Features usually consist of four elements:

- Interview with an athlete or participant (e.g., the coach or auto racing pit crew member).
- Shots of the athlete preparing for the sport or event (e.g., lacing running shoes, changing a racing tire, taping a baseball bat, stretching).
- Shots of the athletic performance, competition, or game.
- Shots of some type of previous success or future challenge.

These are all easy to shoot with one portable camera and can be easily edited together.

3D USED FOR COACHES’ VIDEO

Video has been used in sports for many years and has often been in the forefront of innovation. Coaches use video to view highlights, game footage, practice footage, and for recruitment. One university has recently taken its video work to another dimension. Florida State University recently adopted the use of a 3D camera, the Panasonic AG-3DA1 Full HD 3D camcorder, for coaches’ video.

The advantage of HD 3D is that it gives the coaches a better view of the subtleties of players’ performance. Shots of arm rotation and foot movement are seen more clearly in 3D than in conventional 2D, which allows the coaches a better opportunity for review of player performance and instruction for the future. This change might give the team an edge over the competition because it yields a more exact record of what actually happened on the field. As Mark Rodin, the executive director of the production team, states, “It’s like looking through a window at an actual game.” In the future it is expected that universities will be adopting 3D video for other sports like basketball and soccer.
**Competition Coverage**

The basic camera setup for a football game consists of six or more cameras. These cameras and the associated equipment are often brought to a big sports shoot in a large specially designed production trailer.

Cameras 1, 2, and 3 are located in the stands about one-half to two-thirds of the way up to the top of the stadium. These cameras are used to orient the viewer as to the field location and direction.

One of these three cameras will be used for the line of scrimmage, depending on the location of the ball. The camera closest to the line of scrimmage will be used to show the offensive team’s huddle and one wide shot of their lineup at the line of scrimmage. Frame this shot so that about two-thirds to three-quarters of the screen is filled with the offensive team (See Figure 3.13.). This allows screen space for the quarterback to move into when he drops back to pass or hand-off (See Figure 3.14.).

Just before the center snaps the ball to the quarterback, the taking camera zooms in tighter on the quarterback. This camera will zoom in and follow the ball from the time the ball is snapped until the play is over. After the play has stopped and the players start to get back on their feet, the director will usually switch to the truck-mounted camera, which should have a close-up shot
of the ball carrier and the tackler or key defensive person involved in the play. If the play was a good offensive play, the shot will follow the offensive ball carrier. On a good defensive play, the camera might follow the defensive player as he celebrates and returns to his huddle.

At this point, the director can choose one of several alternatives:

- A replay, sometimes with slow motion from the on-air camera or any one of the ISO cameras.
- A graphic superimposed over the real action as the players return to the huddle.
- A special graphic of the key player—his statistics or picture, or a short piece recorded before the game showing the player responding to a question.
- A wide shot from the end-zone camera or one of the other cameras (usually over a wide crowd shot), often used to frame statistics or a promotional graphic that is superimposed over the shot.
- A shot from the sideline camera, either of the coach, key players waiting to come into the game, an injured player, or some other color shot of cheerleaders, fans, mascots, or the typical “Hi Mom” or “We’re Number 1” shot of a player on the sidelines.
- As the end of the half or the game approaches, a shot of the clock or scoreboard.

If normal play is continuing, the sequence begins again with a wide shot from camera 1, 2, or 3.
This sequence changes for each type of sports coverage. Soccer coverage is challenging because it is nonstop. Unlike American football, soccer action is almost continuous, with few interruptions. The director has few stops in the action to replay camera angles that were not shown in the first coverage. Penalty kicks and other actions that cause a stop in the time clock allow the director to show, sometimes repeatedly, the action that caused the stop in play. For the most part, however, all cameras in soccer coverage focus on the ball and the players near it. The technique of camera placement can be very similar to American football, however, because the shape of a soccer field is similar to a football field.

**SKYCAM**

In the past few years, more and more sporting events feature a special camera suspended above the playing field for a bird's-eye view of the action. Most commonly used for football games, the Skycam system is virtually a flying Steadicam, a network-quality, robotic camera suspended from a cable-driven, computerized transport system. Its unique design makes the Skycam a stabilized camera system that can unobtrusively fly anywhere at up to 25 mph in a defined 3D space—above and right in the middle of a sporting event.

**Feature Coverage**

Highlight shows are common to most professional and major college sports teams. These shows consist of past matchups between the teams, a chronology of game footage with replays of key plays, coach and player interviews, and previews of upcoming opponents. You may not have the equipment, personnel, or budget for live coverage of a football game, but one or two EFP cameras with competent camera operators can do a decent job of covering the game for a highlights show.

If only one camera is available for a football game, it should be the one placed at the 50-yard line, one-half to two-thirds of the way up to the top part of the stadium, or even on top of the press box if there is one. Many fields provide a designated space for video cameras. This camera will have a good view of the line of scrimmage for a high percentage of the plays. If the ball is followed closely, a viewer should be able to follow the entire game from the video of that one camera. The trick is to always stay with the ball.
KEEP THE FRAMING LOOSE UNTIL YOU ARE SURE WHERE THE BALL IS AND THE PLAY HAS ALREADY DEVELOPED. THEN YOU CAN ZOOM IN AS THE RUNNING BACK AND THE PLAY HAS ALREADY DEVELOPED. OBVIOUSLY, A CAMERA WITH A HIGH ZOOM RATIO OR RANGE EXTENDER IS BEST. THE BIGGEST MISTAKE YOU CAN MAKE IS TO ZOOM IN TO FOLLOW A RUNNING BACK WHO HAS BEEN FAKE A HAND-OFF AND DOES NOT HAVE THE BALL.

A SECOND CAMERA WOULD BE BEST PLACED ON A TRUCK MOUNT, BUT THAT REQUIRES ADDITIONAL PERSONNEL, A TRUCK, AND LOTS OF EXPENSIVE CABLE. A PLATFORM ABOUT 10 FEET ABOVE THE FIELD AT THE 50-YARD LINE IS A POSSIBLE SECOND CHOICE. MOST LIKELY, THE ONLY ALTERNATIVE FOR A SECOND CAMERA IS A HANDHELD ONE ON THE SIDELINES. THIS CAMERA CAN PROVIDE VERY DRAMATIC CLOSE-UPS OF THE ACTION BUT CAN ALSO BE BLOCKED BY PLAYERS OR REFEREES—OR EVEN BE RUN OVER BY THE PLAY ITSELF. THIS CAMERA IS MOST EFFECTIVE WHEN IT CAN SHOOT FROM THE END ZONE AND GET CLOSE-UPS OF SCORING PLAYS. FOR MIDFIELD COVERAGE, THE CAMERA IS BEST PLACED ABOUT 10 YARDS IN FRONT OF THE LINE OF SCRIMMAGE. THIS IS, HOWEVER, FAR FROM IDEAL, SINCE THE FIELD IS OFTEN CROWNE WITH A CENTER HIGHER THAN THE SIDELINES, YIELDING A LOW CAMERA ANGLE.

OTHER SPORTS HAVE SLIGHTLY DIFFERENT REQUIREMENTS AND CAMERA PLACEMENTS (E.G., GOLF AND TENNIS, WHICH ARE SHOT FROM THE END OF THE GREEN OR COURT), BUT A FEW SIMPLE RULES USUALLY APPLY:

- GET ABOVE AND IN THE MIDDLE OF THE ACTION (E.G., MIDCOURT IN BASKETBALL OR HOCKEY).
- FOLLOW THE BALL (OR PUCK).
- FRAME LOOSELY TO AVOID LOSING THE OBJECT YOU ARE FOLLOWING.

MUSIC VIDEOS

Music videos have been popular since the early 1980s. Since the introduction of MTV (Music Television) in 1981, the viewing world has become highly aware of the mixture of songs with visuals. This radio-to-TV product generated enormous interest in music video style, as evidenced by the industry opinion (from the early 1980s until recently) that a band (unless it is a firmly established popular band) must have a music video to have a hit record. Now bands can get exposure through the Internet in a variety of ways, including podcasts that can be made with small budgets. But in general, the demand for music videos has been a boost to the employment potential of aspiring EFP professionals.

The notion of setting visuals to music has been around for a long time. A viewing of Walt Disney's 1940 classic animated film Fantasia will convince you of that fact. The idea of having the performers act to their own music has also been around for some time. For example, A Hard Day's Night is a mid-1960's Beatles' film in which the Beatles have good-natured fun and sometimes lip-sync to their songs.

Many music videos are still shot on film and then either transferred to video for editing or edited and transferred to video for broadcast. Film, as mentioned earlier, traditionally has a much better contrast ratio than video, and is better in very low light or very bright conditions. This is changing gradually as video cameras produce film-like quality. Many of the striking digital effects in these videos are accomplished during the editing process. Although traditional music videos can sometimes still be seen on MTV or VH1, music videos are easier to find on cable or satellite channels like CMT (Country Music Television) or Fuse TV.

Variety of Settings

Despite the drawbacks of some video cameras for the big-money music videos, the style of music video is perfect for the EFP videographer. Almost all of these videos have shots from locations outside of the studio. (Just imagine how dull they would be if all music videos
only showed the musicians on a stage.) The creativity in music videos comes from the unusual locations, camera angles, costumes, and sophisticated transitions between the major elements. Traditionally, music videos generally are composed of a combination of three elements:

- The musicians in the studio or on stage performing a song.
- The musicians on location (somehow suggested by the song), either with instruments or in some dramatic vignette.
- The musicians in front of a green or white screen with a virtual set or location behind them.

The variety of locations both for the performance and the vignette is virtually infinite, since almost anything is acceptable for a few minutes as an accompaniment to a song. Sometimes animation is used to create new locations and effects. Other times, a mundane location such as a supermarket or basement apartment can provide you with the look or mood that you want for your music video. The biggest factor in changing an average setting into something unusual is creative lighting.

**Style and Technique**

Plan on shooting many more tight shots than long shots because the appearance and personality of the performer(s) are the main interests of a music video. You may use a brief long shot to give the viewer a sense of who is performing and where they are, but close-ups will probably be more interesting to the audience. You should also plan on low camera angles to accentuate the presence of the performers. You can also try shooting a music video in the style of the performance video. Use one camera on a master shot, or use multiple cameras to record a straight performance version of the song. If this is not a real performance and the performers are lip-syncing, make sure you have a master version of the song they are performing recorded on DVD, CD, or MP3. During subsequent takes in various locations, make sure that you play that same version of the song while they lip-sync to it. This allows you to go back to the master version and synchronize your two audio tracks, then insert your video from your location shots.

If you are well organized in keeping track of your various versions, putting together a finished composite music video—even from six versions at six different locations—can be relatively easy. Just make sure that your reference audio is on every recording. If numerous locations are not possible or desirable, use the multiple-take style. When using this style, record multiple takes of the song (or portions of the song) while the performers vary their performance, or while the focal length of the camera varies with each take. This style can yield a very respectable music video from an afternoon’s shooting.

Music videos are an excellent opportunity for the beginning videographer to experiment with camera technique. Videographers and news photographers who usually have professional style restrictions placed on them can use music videos to loosen up and experiment with the camera. This even helps professionals become more familiar with the versatility and capability of their equipment.

**NATURE AND DOCUMENTARY VIDEOS**

Nature and documentary videos are perfectly suited for the portable video camera, just as they have been suited for the portable film camera for almost a century. This style requires a camera to go to where the action is taking place, or where the main events are occurring. The camera views the events as they actually occur and the characters as they appear, not as they are staged in front of the camera. But sometimes editing is used to restructure or recreate
events. Nature programs have created many encounters between wild animals by the use of editing that never took place. Even documentaries will sometimes use editing to create events that occurred but were missed by the camera.

The style of nature and documentary videos dictates that the videographer is a passive observer, not an active participant. It would be easier to shoot nature programs if the videographer had control over the subject in the shots, but wild animals rarely take cues from videographers (or directors). Documentaries are meant to present a reality that enlightens its viewers, not a reality as created by the videographer or director. This style requires an unobtrusive camera to avoid influencing the events that occur in front of the camera. Therefore, retakes of these events are almost impossible, the addition of a large amount of artificial light may be nearly impossible, and getting every shot that you plan is certainly impossible. In addition, the need for safety while shooting becomes very important (See Figure 3.16.)

Satellite and cable television, with their enormous arrays of channels, now offers channels like Documentary Channel with 24/7 showing of independent documentaries. The channel exhibits documentaries of all types, lengths, and styles, both classic and cutting-edge.

Although the market for this type of video program is growing, the beginner should be aware of the fact that documentary or nature video work takes many long hours of shooting and editing. Because of this, the budget for this EFP style is necessarily large—at least in comparison to most commercials, performance videos, and many applications of corporate video. As the number of channels on cable and satellite television increase, with brands like the Discovery Channel continuing to proliferate both in this country and abroad, the market for nature and documentary programs has increased dramatically over the past 10 years. In addition to the Discovery family of channels, numerous outlets like PBS, Animal Planet, The Learning Channel, and the National Geographic channel have employed many videographers who are willing to get up close and personal with nature. The Internet with its limitless capacity for web sites that show video offers a vast opportunity for aspiring documentarians.

**FIGURE 3.16**

(A) Shooting a nature program on location can present numerous problems. Nature shooters often must get up close to “nature.” Sometimes a single camera operator must cope with rough conditions and sometimes very rough subjects. *(Photo courtesy of Ed George)*

(B) Sometimes a video shoot is difficult because the subject is hard to find. This crew is attempting to find the subject of the shoot, a quail equipped with a radio transmitter, in a corn field in the midwest. *(Courtesy of Lee Vogel, Business Video Solutions, Inc.)*
VIDEO ART

This EFP style is still a well-kept secret. The main reason is that the number of outlets for this style is quite small. Video art is not the type of on-location video to choose if you need to earn a living doing one style of video work. Video art serves an important role in a democratic society. It allows diverse views to be expressed, even if they are not the dominant ones in the culture. This diversity of viewpoints has a positive effect on a free society by stimulating people to think.

It is impossible to describe video art as a particular style. It is completely freeform. It may resemble broadcast TV in length and form, while differing greatly in content. It can be a short piece that violates every known rule about pleasing an audience. Video art is the expression of the artist, who looks at the same things that we do, yet sees something different. It is this difference in vision that makes video art an untapped source of creativity—video art has the capacity to show us the world in a new way.

The process of creating video art is different from other EFP work in several respects. First of all, it is not commonly done at a client’s request, but because the video artist has the desire to express a topic or concept in a unique form. This means the timeframe for creating the work is usually longer. It will generally be created in phases, with outside funding sought in the form of grants (from government or arts organizations) often sought for production and postproduction. Because the work is not being done for a client, the video artist usually has complete creative control.

Video art can combine EFP production, studio shoots, and complex postproduction techniques. It often entails use of advanced equipment and special effects software that allows the artist to manipulate the video. This can include digital processing of each pixel of information, varying the frequency of the signal, colorizing and polarizing, using multiple layers of wipes and dissolves, auditory processing, using feedback as a visual effect, and the full range of digital software effects.

In postproduction, the editing rhythm is often a different tempo than conventional TV, either faster, slower, or variable. The video artist has unlimited possibilities. The only constraint is to make choices that stretch and enhance the existing conventions and allow the viewer to experience the world in an imaginative way. Broadcasters show various types of entertainment, nature and documentary programs, commercials, and sports. Corporations use and show training, sales, and demonstration videos. But where do the video artists show their work? Video art is shown in competitions, festivals, art galleries, museums, international festivals, site-specific installations, a few programs on cable or public TV, and most commonly online. Sometimes innovative approaches in video art find their way into the mainstream by influencing approaches used in TV advertising. Many commercials are really a form of applied video art. Other mainstream areas that use video art approaches are promotional IDs used for stations, and the opening graphics and title sequences for all programs.

Visual artists can apply their skills in these areas, as well as in helping create the overall design for these segments. High-quality HD EFP equipment is affordable enough that many college, art school, and university students can gain access to it. But without seeing it themselves, students are often slow in wanting to try this EFP style. The instant gratification of seeing your work on a monitor immediately after it is shot should lure many people to the video art EFP style. Unfortunately, however, with the exception of the very largest cities in this country, video art is virtually unknown as a popular form of video. Perhaps film still attracts so many artistic persons because of its long history and acceptance as an art form. TV, on the other hand, is often regarded as a medium of mediocrity, as evidenced by the constant stream of primetime fare that is usually tasteless, slick, insulting, or all three.

But commercial TV is merely one method of delivering video; the networks and cable/satellite channels are just some of the many programmers out to attract an audience. Other
delivery systems for video exist, and some of them do seek out video art. Web sites offer tremendous potential for video artists. By creating a home page with video, a video artist can have a site that can display the artist’s video work to millions with very little cost to either the artist or the viewing audience. Another growing possibility for video artists are alternative methods of distribution that have just recently become “mainstream.” Podcasts, downloadable video for MP3 players, and “mobile TV” (video for cell phones) are providing new opportunities for video artists to get their video work to the eyes of interested viewers.

There are tens of millions of camcorders in homes in the United States and in other countries. This has led to what some call a “democratization” of portable video. Video has become a form of artistic expression for the masses, not just for the privileged minority with access to professional video equipment and broadcast air time. As today’s young people grow up with YouTube, cell phones with video recording capability, and Flip video and similar video recording devices, shooting and editing video will become more like word processing. Economic barriers to shooting, editing, and exhibiting video that were present just a few years ago are gone. As video shooting, editing, and exhibiting become increasingly easy and accessible, creative individuals will continue to use video as a means of personal expression for art’s sake.

MULTIMEDIA

Since video as a means of conveying information became popular in corporations and other nonbroadcast entities, videotape has been the dominant means of delivering the video to the viewer, although that is now changing to DVD, streaming, and podcasts. During the 1980s, both video disc and CD-ROM emerged as a means to show video to the intended audience, but both required playback equipment that was not as common as videocassette machines were then. Computers designed for either home or office use are commonly equipped with DVD or Blu-Ray players, sound cards, and stereo speakers. The capability built into these machines make them excellent playback machines for material produced on CD-ROM, DVD, and other storage media like flash drives. This capability has further fueled the enormous growth in the use of video for playback in a storage medium other than videotape. Digital video can now be easily loaded onto an iPod or uploaded to a video sharing site like YouTube. Cloud storage, storage on an outside server, is also a way to store video that essentially eliminates the need to keep a physical copy of video.

Multimedia has also grown because of the content of the material. By definition, it is a combination of media: not just video and audio, but all possible media that can be digitally encoded and stored. Digital formats have replaced analog formats because they have high
storage capacity and are capable of high-quality images and sound. Because they are digital, they have random access ability to find information anywhere on the storage medium quickly. Perhaps most importantly, multimedia allows interactivity, so the viewer can easily select information for viewing and input information that prompts the viewing selection. This interactivity can be simple, like a kiosk in a hotel lobby that lists restaurants in the surrounding area. The viewer touches a TV screen to make choices, such as the type of food preferred, from a list of types. The next video that appears on the screen might be a list of restaurants of that type (e.g., Italian or vegetarian). The viewer can then select from that list and be shown a picture of the restaurant and a sample menu. This type of interactivity is called reactive interactivity, where the viewer reacts to questions or choices on the screen.

Another type of interactivity involves the viewer at a higher level. This could be something like game playing, where the viewer is giving feedback to the system regularly. Other videos at this level involve the viewer in complex tasks, such as storytelling, composing, or game-playing. This type of interactivity is known as proactive interactivity.

An even more complex level of interactivity is also gaining popularity. This level is differentiated from others because it requires quite a bit of input from the viewer, and this input results in constant change from the game or program being viewed. An example of this type of interactivity is a virtual reality program. This interactivity is called mutual interactivity.

Multimedia is distributed in a number of formats, including discs (CD-ROM, DVD, Blu-Ray) and flash drives for personal computers and game consoles. The DVD/Blu-Ray format offers storage and playback of an entire movie with high resolution and excellent sound on one disc. Sometimes a second DVD with commentary from the director and actors and/or special features is included. CD-ROM recorders have been common in computer systems since the late 1990s, and DVD recorders have been available since 2001. There was a format war between the high-definition formats HD DVD and Blu-Ray that occurred between 2005 and 2008. Both formats used a typical CD/DVD-sized plastic disc for recording, but were incompatible with each other. In 2008, the HD DVD format was abandoned and the Blu-Ray format became the format of choice for high-definition movies and video recording and playback. As of 2012, editing programs were adapting to facilitate recording video onto Blu-Ray discs for high-definition (1080p) playback.

INTERNET

Another outlet for video and audio production has emerged in the last 20 years. This outlet allows individuals to access information from places all across the world. It has the capability to provide excellent quality audio and video information. Almost all of this information is free to those who seek it, if you have the appropriate computer equipment. This outlet of course is the Internet. Broadly defined, the Internet is a collection of local networks gathered into a global network.

The Internet allows electronic mail (e-mail), a method of sending text information to other individuals who can access the Internet. The speed of sending the message is faster than any kind of regular mail, even Federal Express, but the same as voice mail. One of the best advantages is that e-mail allows for text that can be a word or two, or chapters from a planned book, or results of a recent experiment. Since the information is sent as text, the receivers can capture the text with their computers, insert it into their word processor, and edit it or just store it for future reference. They can also delete the message without ever wasting paper.

Users of the Internet can send, download, or upload programs, documents, pictures, or even video. Essentially, anything that can be digitized and stored can be sent via the Internet. The Internet is a storehouse of information that is almost beyond belief in its diversity and depth. Research on almost any topic that can be described in a few words is easy, quick, and
can lead to voluminous information. Creating your own location on the Internet is relatively easy; searching for other sites is even easier. If you have an interest in the movies of Johnny Depp or Scarlett Johansson, you can go to a search engine featured by one of the popular Internet browsers, type in the name of the actor, and the search engine will list many sites mentioning the name you entered. These sites can be visited through a clever system of links that allows you to travel from site to site by just clicking on your mouse. Your method might involve traveling first to a listing of movies that won Academy Awards and their stars. One of the stars named would be the one you entered for your search. You could scroll down the list and find other stars from that movie. You could click on another movie and that movie site might have a link to a site that has contents of the script for that movie. Clicking on that link will take you to the script site, which would list the name of the scriptwriter and have it as a link to other scripts. It is this method of easy travel that, among other features, makes the Internet so fascinating.

**World Wide Web**

Since 1992, the World Wide Web has become an important part of the way we communicate. The Web offers us the ability for communication with text, high-quality graphics, sound, and video. While audio has been common for over 10 years on the Web at locations like Web radio stations and audio services (e.g., Accuradio), it wasn’t until 2005 that video distribution has become not only accessible, but user friendly as well.

Networks and cable channels are making episodes of popular programs available for streaming. iTunes sells episodes of television programs from a variety of sources (e.g., ABC, Comedy Channel, etc.). Perhaps more interesting, though, is the ability of amateur videographers to upload their video to a site where many people can view it. YouTube, a site that first came online in February 2005, became a favorite for people who like to share video clips, much like the peer-to-peer audio sharing sites for exchanging MP3 audio files. Since that start date, millions have gone to the site to upload their videos and watch videos uploaded by others. Using Adobe Flash technology, video can be uploaded to the site easily. The site recommends using the MPEG4 video format and currently displays video in 320 × 240 pixel size at 30 frames per second. The result is viewable video that can be seen by almost anyone on the Web.

YouTube can also accept video shot on cell phones. As of July 2006, 100 million videos were being viewed daily. The popularity of the site led to it being purchased in October 2006 by Google, for $1.65 billion. Since then, YouTube has grown dramatically. Five years later, three billion YouTube clips are viewed per day and 48 hours of video are uploaded per minute. Obviously, shooting video and placing it where others can see it has become part of everyday life.

**PREPARING AND SHOOTING VIDEO FOR THE WEB**

Video can be placed on the Web and stored for two different types of transfer. The first type of storage is a video file that is downloadable. This file remains on a server’s hard drive until a client requests the file. After a request, the server will send a complete copy of the file to the client. Once the copy of the file is completely received by the client, the client can then play the file for viewing. The second type of file transfer is called streaming. Files that are streamed are sent to the client in a continuous stream of data that can be played just after it is received. At the end of the streaming, however, there is no file stored on the client’s computer. Streaming, like broadcasting before it, does not leave a copy of the program behind for later viewing. Video for streaming requires software that can accomplish several tasks.

Software programs are available on the market and as shareware that can prepare video for streaming. These programs can be standalone programs designed to do the tasks required by streaming. Some video editing programs have features that allow the edited video to
be converted into a streaming file format. These programs generally have a few features in common. All of the programs must be able to take the video information and change the file format from the acquisition format to the streaming format. These programs should also be able to help videographers adapt the video to the smaller size display screen and lower resolution that will be shown on the Web.

The process of converting video into a file format capable of streaming on the Web begins with connecting a camcorder, player, or other video source to the computer that will be performing the encoding procedure. Raw video footage in a digital format can be loaded into a computer using a FireWire or HDMI cable from the camcorder into the computer. The new video file is then placed into a Batch Window. At this point, settings are chosen that will select the desired file format for the converted video information.

There are a variety of video file formats to choose from when creating video streams. The most common formats are:
- Windows Media
- RealMedia
- Quicktime
- MPEG (in particular MPEG-4)
- Flash

Obviously, the viewers of streaming video can only view the project if they have a player program capable of reading files in the selected streaming format. Video producers who want to increase their business in production for the Web should be able to use all formats and encoding software. Since most professional video is shot in HD, the amount of information per frame has increased significantly from video shot in standard definition (SD).

The next consideration is the screen or frame size. While a standard size like 640 pixels × 480 pixels is comfortable for viewers, it is sometimes too big for easy streaming. This screen size requires an enormous amount of information that can be too large for streaming to be practical. A smaller screen size will require a smaller amount of information, but will yield a smoother picture. This is an important factor because another variable in video quality is frame rate. Normally, standard video is shown at a rate of 30 frames per second (fps). Some video projects on the Web must slow the frame rate down enough to allow the size of the file to be manageable. The rule of thumb for frame rates is simple: the wider the bandwidth, the more frames per second allowable. Rates less than 30 frames per second will yield video that is viewable, but a bit choppy. Generally speaking, the higher the data rate possible for streaming, the higher the frame rate. As broadband connections get faster, higher frame rates will become common.

Movement  Because of the small screen size and slower frame rate, some adjustments must be made in the shooting of the project. To keep file size manageable, the videographer should avoid shots that have much camera movement. To the computer encoding the video information, movement requires more information for storage than still images. More information to be encoded results in larger file sizes. Avoid unnecessary camera movement, because on-screen movement will be in the action you are recording. Don’t add to the movement unless it is unavoidable.

Backgrounds  Simple backgrounds should be used instead of cluttered, complicated ones. Too much meaningless detail in the background wastes bandwidth. Save bandwidth for the use of telling the story. Since your screen size is small, the viewer isn’t always able to see it anyway. Make sure that you light everything that you want viewers to see. The encoding process often enhances the “grain” found in darkly lit parts of your picture. The smaller screen size demands that close-up shots be used frequently. Viewers need to be able to identify the subject and place it in the proper context. Therefore, wide shots should be used sparingly. Shots that have a canted or unusual angle should be used with great restraint.
Special Effects Although special effects like dramatic wipes or strobe effects are easy to accomplish with most editing programs, using special effects may be detrimental to your streaming project. Because special effects require more information and thus more bandwidth, they can slow down the stream. Another consideration is the reality that special effects are much less discernable on a small screen than on a large screen. It is best not to take up valuable bandwidth with effects that are all but lost on the viewers. An appropriate axiom here would be “Keep it simple!”

A final consideration for preparing video for the Web is to make a decision about the audio that will be used for the project. Each file format used for video streaming treats the audio in slightly different ways. It is prudent to read the manual for the software program and make sure that the audio will be prepared in the appropriate way.

Once all of these variables are considered and choices are made, the video file is then ready to be sent to the processor to be converted from the video format to a streaming format. Some programs allow simultaneous viewing of the file while it is being converted. A split screen is shown with the original video on one side and the converted video on the other side.

Once the file is fully converted, it can be sent to the Web host, the computer that will store the video project information. The Web host is then capable of making the video stream available on request to other computers (or clients) regardless of their location.

In addition to the conversion process itself, some software will provide some publishing aids: shortcuts to uploading the converted file to the desired host web site and detailed instructions that are easy for novices to follow.

The host site will sometimes have information on the site to facilitate the transfer process. Often sites will give specific instruction on how to send a file using FTP (File Transfer Protocol) and how to make the video file available to the audience. Also, the software should have precise instructions that will enable the videographer to prepare the file to be served from a host or server or embedded in a web page away from the host.

The previous suggestions will continue to be appropriate until Internet connections get much faster. Older 3G and slow Wi-Fi speeds prevent high-quality video viewing. When download speeds get faster, viewing full-motion, full-frame HD video will become easier. This translates into shooting video for the Web in a style that is similar to shooting video for typical exhibition on a broadcast station or any large monitor. In other words, as the technology improves, the restrictions on the videographer who shoots for the Web will diminish.

Interest in Internet use among corporations increased dramatically after the World Wide Web was introduced. Because web sites are capable of high-quality graphics and sound, corporations began to see these sites as promotional opportunities. Products are routinely promoted on the Web in a variety of ways. Corporations are now creating home pages for institutional-type promotions. This presents an exciting opportunity for video producers in the future. Because Web home pages are not expensive to create or maintain, most corporations are interested in having them. Soon, full-motion video will be readily available at the home page for any viewer or Web surfer to visit. Where the home page once had a picture of the corporate headquarters or the main product of the company, now videos of a chief spokesperson might welcome you to the site and encourage you to check out the company’s latest products or services by clicking on a button or linking to another page or site. These sites might contain information like a video brochure, or any of the standard, videotape-delivered corporate video products that have been in use for 30 years.
Vlogging

Vlogging or video blogging is found on a web log that uses video as the primary content; the video is linked to a video blog post and usually accompanied by text data to provide context. Some vlogs are just video diaries where people choose to chronicle their lives on video and then post the video to the Web for others to see and comment upon. Other vlogs are similar to newscasts. Many are created by one person, not an entire news staff. Vloggers are web loggers (bloggers) who like to express their opinions in a place that can be seen by others ... the Web. Vloggers often use the Web to express their opinions about political issues and to react to the way that traditional news media cover these issues.

Vloggers use RSS (really simple syndication) or some similar format to provide Web syndication. Readers and viewers of blogs and vlogs use aggregator software to feed them the vlog and alert them when new material has been added to vlog sites.

Shooting for vlogs is similar to shooting anything for the Web. It is important to conserve bandwidth by keeping unnecessary background to a minimum and concentrating mainly on the subject or object that is central to the vlog. In many cases, the vlog shows a talking head, similar to a news anchor.

Podcasts

Podcasts are audio or video files, such as radio programs or music videos, that are available over the Internet using either RSS or Atom syndication for listening either on mobile devices or personal computers. Atom is an XML (extensible markup language)-based protocol that facilitates data sharing on the Internet.

The term podcast can mean both the content and the method of delivery. Podcasters’ web sites may offer direct download of their files, but the subscription feed of automatically delivered new content is what distinguishes a podcast from a simple download or streaming. Usually, the podcast features one type of “show” with new episodes, either sporadically or at planned intervals, such as daily or weekly. In addition to this, there are podcast networks that feature multiple shows on the same feed.

Podcasting’s essence is about creating content (audio or video) for an audience who wants to listen when they want, where they want, and how they want. For aspiring videographers and video producers, it is another way of distributing programming that is low cost and relatively simple to achieve.

MOBILE TV

Mobile TV is video that is distributed to audiences via cell phones. This type of distribution is a new but fast-growing way to get video to large audiences. Content can be anything from a typical news show or segment to an entire episode of a TV series. The obvious concerns about mobile TV for videographers are the size and shape of the screen. Since cell phone video screens are about 3.5 inches (diagonally measured), small detail in the picture may not be seen by the viewer. As the construction and design of cell phones change, the screen dimensions may change also. One thing is certain, however; mobile TV will become more important and almost ubiquitous in the future. Content providers are constantly working...
with cell phone service providers to work out plans for more and more video for distribution to cell phones. Just ask your friends if they have a smart phone, one that has a connection to the Internet and a data package. Chances are that at least half of them have a smart phone, currently either an iPhone or an Android phone that they carry with them most of the day, every day. This is an audience with a huge potential. Stay tuned for more exciting developments about producing video for mobile TV!

Cell phones are not only video “receivers” but can also be video recorders and senders. Local television stations encourage cell phone users to shoot video clips or take still pictures at the scene of events that are newsworthy. Although cell phones don’t have the capabilities to record high-quality video yet, they are capable of getting a shot of the scene long before the news videographer can get there.

Mobile TV, video sent to cell phones, is becoming an important distribution outlet for program providers like ESPN. More programming outlets can lead to more opportunities for videographers.

**SUMMARY**

This chapter discusses the various types of video shot in the field for nonnews uses. These uses include corporate and professional video, entertainment, commercials and public service announcements, performance videos, music videos, nature and documentary videos, video art, multimedia, and Internet and related videos.

Corporate video (also known as professional or industrial video) is “nonbroadcast” video created for specific reasons that further the goals of the company or organization requesting the video. This type of production includes corporate in-house news shows, training videos, promotion, and sales videos.

Entertainment video includes video shot for the purpose of putting together programs that could be aired for broadcast, cable or satellite distribution, or on the Internet for a general audience.

Commercial and public service announcements are short projects, often 30 or 60 seconds in length, created for businesses and organizations and also meant to be distributed for exhibition on the Internet, or broadcast, cable, and satellite outlets.

Performance videos include video shot both for historical archive and for showing as entertainment. Often, the historical archive provides a record of a performance used by the creator (e.g., director or choreographer) for reference, resumes, etc. Sports video production includes both competition coverage, shot for exhibition to a general audience, and feature coverage for sports shows and highlights for news shows.

Nature and documentary videos are a growing style of video that has become more popular because of channels like the Documentary Channel, Discovery Channels, and Animal Planet.

Video art is a video style that cannot be categorized easily, because it encompasses many styles of work. In fact, video art may or may not conform to any established style. Video art is made as an expression of the video artists and may be entertainment or experimental.

Field production is also used when producing multimedia. Video is shot to be included in a presentation that may include text, graphic materials, film, and audio.

The Internet is playing a more important role in the production and distribution of video. Video is shot for streaming on the Web for many purposes, including corporate video and video for entertainment. In addition, many video bloggers are using the Web to distribute their own video news programs, often low-budget simple productions that express the
vloggers’ political viewpoints. Video producers are also using the Web to store podcasts, video projects, and programs that are downloadable to portable devices for viewing by interested audiences. Mobile TV is video distributed via cell phones, and it is an increasingly important method of distributing video for news and entertainment.

The ease of uploading video and viewing video at web sites like YouTube has revolutionized how we produce, distribute, and receive video programs. Amateur videographers now have an easy way to make their video projects available for viewing by a potentially huge audience. Like the file sharing sites for music that have strongly affected the music industry, sites like YouTube will affect the video and broadcast/cable/satellite industries.