

# VIDEO PRODUCTION(207)

## UNIT -1

### Introduction to Video Production

**Video production** is the process of creating [video](#) by capturing moving [images](#) ([videography](#)), and creating combinations and reductions of parts of this video in live production and post-production ([video editing](#)). In most cases the captured video will be recorded on [electronic media](#) such as [video tape](#), [hard disk](#), or [solid state storage](#), but it might only be distributed electronically without being recorded. It is the equivalent of [filmmaking](#), but with images recorded electronically instead of [film stock](#).

Practically, video production is the art and service of creating content and delivering a finished [video](#) product. This can include production of [television programs](#), [television commercials](#), [corporate videos](#), event videos, [wedding videos](#) and special-interest [home videos](#). A video production can range in size from a family making [home movies](#) with a [prosumer camcorder](#), a one solo [camera operator](#) with a [professional video camera](#) in a [single-camera setup](#) (aka a "one-man band"), a [videographer](#) with a sound person, to a [multiple-camera setup](#) shoot in a [television studio](#) to a [production truck](#) requiring a whole [television crew](#) for an [electronic field production](#) (EFP) with a [production company](#) with [set construction](#) on the [backlot](#) of a [movie studio](#).

Styles of shooting include on a [tripod](#) (aka "sticks")<sup>[1]</sup> for a locked-down shot; hand-held to attain a more jittery [camera angle](#) or looser shot, incorporating [Dutch angle](#), [Whip pan](#) and whip zoom; on a [jib](#) that smoothly soars to varying heights; and with a [Steadicam](#) for smooth movement as the camera operator incorporates [cinematic techniques](#) moving through rooms, as seen in [The Shining](#).

### Corporate Video

: [Corporate video](#)

Corporate video production covers a wide range of purposes from corporate [Communication](#), [Training](#) and [Education](#), videotaping conferences and conventions, products and services, and sales. A popular type of corporate shoot is known as the "candids" or "happy-face" video, in which a multiple-day event is covered by a video crew, including speakers, break-out sessions, awards ceremonies and local recreational activities in which the conventioners participate. An on-site editor then creates a short video presentation that is shown before the close of the convention. Many associations take advantage of the convention venue to gather interviews of their principals, setting up a green screen or other type of background in a secluded room.

Video productions [video tape](#) or memory-based recording device or an edited version from a website video, optical disc, magnetic tape, or portable video device.

# Television Broadcast

Video Production of a Political Commercial, San Diego, California, 2004

[Betacam](#) SP video production was the [broadcast television](#) standard from the early 1980s up until the beginning of the 21st Century when many [television stations](#) began using digital media to shoot, transmit and store [High-definition](#) (HD) footage. Two styles of producing video are ENG - [Electronic news-gathering](#) and EFP - [Electronic field production](#). Television broadcast productions include [television commercials](#), [infomercials](#), [newscasts](#), entertainment shows, documentaries, news magazines, [sitcom](#) and [reality shows](#). They may be distributed by [broadcast syndication](#).

## Event Video

[Event videography](#)

Video production can be used at sporting, school, stage, wedding, church, and similar events to provide recordings of the events. Event video productions range in distribution from a wedding video that is custom made for a bride and groom and their immediate family and friends, to a dance recital where dozens to hundreds of videos are sold to individual dancers. Event video production can also be used to broadcast events live to viewers at home such as a press conference or concert. Video of live events can be sent by microwave or a [satellite truck](#) from the event location to a television studio in order to be broadcast.<sup>[2]</sup>

## Explainer Video

Explainer videos incorporate animation as the primary visual element. There are two main types of explainer videos: Whiteboard and Cartoon. Both types are used to convey messages that are technical in nature. By using the explainer type of videos, the viewer has a better understanding of the concept of the message being presented.

## Marketing Video

Marketing videos are used to promote an organization or product and create awareness among consumers. Marketing video production ranges from [television advertisements](#) to internet commercials and [viral videos](#).

## Real Estate video production

[Real Estate](#) video productions consists of shooting footage of properties and editing them into short videos; the final videos could include footage, graphics, titles, animations, and voice over.

## Video production for distance education

Video production for distance education is the process of capturing, editing, and presenting educational material specifically for use in on-line education. Teachers integrate best practice teaching techniques to create scripts, organize content, capture video footage, edit footage using computer based video editing software to deliver final educational material over the Internet. It differs from other types of video production in three ways: 1. It augments traditional teaching tools used in on-line educational programs. 2. It may incorporate motion video with sound, computer animations, stills, and other digital media. 3. Capture of content may include use of cell phone integrated cameras and extend to commercial high-definition Broadcast quality cameras. The primary purpose of using video in distance education is to improve understanding and comprehension in a synchronous or asynchronous manner.<sup>[3]</sup>

[Webcasting](#) is also being used in education for distance learning projects; one innovative use was the *DiveLive*<sup>[4]</sup> programs. Detailing an exploration of a notable shipwreck, [Nautilus Productions](#) has a webpage reading,

"In the fall of 2000 Rick Allen's [Nautilus Productions](#) co-produced with Bill Lovin of Marine Grafics a groundbreaking, week long live internet broadcast known as *QAR DiveLive* from the [Blackbeard](#) wreck site.<sup>[5]</sup> For the first time ever, live video and audio was broadcast from an underwater archaeological site to the [World Wide Web](#). Students were able to watch the [underwater archaeology](#) in real time and ask questions of the scientists exploring the [shipwreck](#). The twice-daily live distance learning programs reached an estimated 1600 students from as far away as Canada during the five days of broadcasting. In October of 2001 Allen and Lovin again co-produced *QAR DiveLive 2001*. This time the interactive webcasts from the seafloor and conservation laboratories of the [Queen Anne's Revenge](#) Shipwreck Project reached over 3600 students and another 2700 remote viewers from fifteen states and 2 countries during the five days of broadcasts."

## Internet Video Production

### [Play media](#)

A marketing video for the [Wikimedia Foundation](#)

Many websites include videos. These videos are not necessarily produced online, although there are many video production tools that allow the production of videos without actually using a physical camera. An example of this is using the [YouTube](#) video editor to create a video using pre-existing video content that is held on the platform under [creative commons](#) license.

Video content is being used in an ever growing range of contexts on websites. There are testimonial videos, [web presenter videos](#), help section videos, interviews, parodies, product demonstrations, training videos, thank you videos and apology videos.

Many internet marketing videos are made in home based environments,<sup>[6]</sup> however businesses too can use internet videos for the purpose of interacting with the audience. There are two main types of internet marketing videos: transactional videos, aiming to sell a product to a customer, and reference videos, aiming to keep the customer on the website.<sup>[citation needed]</sup>

Individual internet marketing videos are primarily produced in-house and by small [media agencies](#), while a large volume of videos are produced by big media companies, [crowdsourced](#) production marketplaces or in [scalable video production](#) platforms. Most types of internet marketing videos serve the purpose of interacting with the audience, and there are two main types of internet marketing videos: transactional videos, aiming to sell a product to a customer, and reference videos, aiming to keep the customer on the website.

## Training Video

Training videos are commissioned by organizations to promote or make changes in workforce. This can range throughout the organization from training for those that need to learn simple, repetitive tasks and up to executive training. In addition, organizations often purchase or rent more generic training videos to minimize costs. Such videos would include safety, first aid, time management, sales skills, etc.

## Process of Video Production

### Pre-Production

**Scripting & Storyboard** – The pre-production phase of a project is where all the planning takes place before the camera rolls. Whether its measured in minutes, hours or days, this planning phase sets the overall vision of the project. Pre-production also includes working out the shoot location and casting. You're in pre-production mode the moment you start writing down a few points to cover in a video even if it is a short piece made for a blog. As your projects become more ambitious you can start to storyboard the project. Storyboards can really smooth out the post-production process when it's time for editing. This will really be useful if there are multiple people working on the project.

**This 1st step of the video production process** is the **planning, research, problem-solving and organizational work** you do *before* the shooting starts.

This phase includes...

- **The video's concept**
- **Script**
- **Storyboard**
- **Funding**

- **Budget**
- **Insurance**
- **Personnel**
- **Talent**
- **Clearances**
- **Production**
- **Facilities, etc. ...**

All that has to be planned for and brought together to produce the video.

**Without a good plan and organization the production of the video can become a grind! Make sure that you have a very good idea of what it takes as far as structure of the video, time needed for production, equipment and personnel before you start making your video.**

Having a good "vision" of what it will take will save you a lot of time, money and aggravation I assure you! And even if it's a small-time production... the kids birthday party for instance...

**It's always a good idea to work it out a little bit ahead of time (even if it's just in your head) where you want to set up, what kind of shots do you want to take and what do you want to include in the video so that you are sure to capture all the special events of the day that will turn into great memories in the future!**

## **Production**

Production begins once the footage is recorded. This process will capture all the scenes and information captured in the pre-production process. During the production process you will work out the lighting requirements, framing and composition. Some projects will also shoot B-Roll during the production process. B-Roll is supplementary footage that is included in the finished product.

**The production phase is the actual *production* (making) of the material needed for the video.**

It's at this stage of the video production process that you are actually producing the...

- **Graphics**
- **Doing the camerawork**
- **Animation**
- **Music**
- **Sound**
- **Lighting effects**
- **Narration and**
- **Video footage etc....**

Needed for the project.

At this stage you want to produce quality material so that you have plenty to work with when you go into the post production stage. Be sure to be as expert as possible in your use of your equipment such as; your [digital video camera](#), [lighting equipment](#), sound equipment etc.

## Post-Production

The post production process begins after all the footage has been captured. This is actually one of my favourite parts of the video making process. Graphics can be added along with images, music, colour correction and special effects. If you are producing your own video content there will be a bit of a learning curve at first, but it will be really rewarding. Post-production is like putting the last coat of paint on in a room and it will be well worth the time to learn the basics. This is where your video project will really come to life.

**The 3rd stage of the production process is called the post-production phase... It is...**

The organization and [digital video editing](#) of the material into the *actual* video.

**Post-production literally is where you bring together all of the different elements and material created in the production phase to form your finished product as you envisioned in**

## **the pre-production stage.**

This stage is the process of assembling and putting together the media assets and material you have produced to form and finally produce your finished film or video project.

## **Team of Video Production**

A **film crew** is a group of people hired by a production company for the purpose of [producing a film or motion picture](#). The [crew](#) is distinguished from the *cast* as the *cast* are understood to be the [actors](#) who appear in front of the [camera](#) or provide voices for characters in the film. The *crew* is also separate from the *producers* as the *producers* are the ones who own a portion of either the film company or the film's [intellectual property rights](#). A film crew is divided into different departments, each of which specializes in a specific aspect of the production. Film crew positions have evolved over the years, spurred by technological change, but many traditional jobs date from the early 20th century and are common across jurisdictions and film-making cultures.

Motion picture projects have three discrete stages: development, production and distribution. Within the production stage there are also three clearly defined sequential phases — pre-production, principal photography and post-production — and many film crew positions are associated with only one or two of the phases. Distinctions are also made between [above-the-line](#) personnel (such as the director, the screenwriter and the producers) who begin their involvement during the project's development stage, and the [below-the-line](#) "technical" crew involved only with the production stage.

A study of the 100 top-grossing films of each year between 1994 and 2013 found that there were an average of 588 crew credits per film,<sup>[1]</sup> however, profitable independent films have been made with crews of less than a dozen.<sup>[2]</sup>

[Television crew](#) positions are derived from those of film crew.

## **Director**

The director is considered to be a separate entity, not within the film crew's departmental structure.

- [Director](#)

The director is responsible for overseeing the creative aspects of a film, including controlling the content and flow of the film's plot, directing the performances of actors, organizing and selecting the locations in which the film will be shot, and managing technical details such as the positioning of cameras, the use of lighting, and the timing and content of the film's soundtrack. Though directors wield a great deal of power, they are ultimately subordinate to the film's

producer or producers. Some directors, especially more established ones, take on many of the roles of a producer, and the distinction between the two roles is sometimes blurred.

- [Second unit director](#)

The second unit director is responsible for overseeing the photography assigned to the second unit, which can range from minor [insert](#) shots to large stunt sequences. The second unit director position is frequently filled by a member of the production, most often the editor or stunt coordinator.

- [Music director](#)

In India-based movie productions, many of which are musicals, the term 'music director' is commonly used for the composer and music producer of the songs and score used in the film. The role involves supervising the arrangement, recording and mastering of film music along with conducting and orchestration.

## Production

*Production* is generally not considered a department as such, but rather as a series of functional groups. These include the film's producers and executive producers such as the production manager, the production coordinator, and their assistants; the various assistant directors; the accounting staff; and sometimes the locations manager and their assistants.

- [Producer](#)

A film producer creates the conditions for film-making. The producer initiates, coordinates, supervises, and controls matters such as raising funding, hiring key personnel, and arranging for distributors. The producer is involved throughout all phases of the film making process from development to completion of a project. There may be several producers on a film who may take a role in a number of areas, such as development, financing or production. Producers must be able to identify commercial, marketable projects. They need a keen business sense, and an intimate knowledge of all aspects of film production, financing, marketing and distribution. Producers are responsible for the overall quality control of productions.

- [Executive producer](#)

An executive producer (EP) is a producer who was not involved in the technical aspects of the film-making process in the original definition, but has played a financial or creative role in ensuring that the project goes into production.[1] Today, however, the title has become ambiguous,[2] particularly in feature films. Since the 1980s, it has become increasingly common for the line producer to be given the title of executive producer, while the initiating producer takes the "produced by" credit. On other projects, the reverse happens, with the line producer



taking the "produced by" credit. So the two credits have become effectively interchangeable, with no precise definition.

## **Production office**

- **Line producer**

The line producer is the liaison between the studio or producer and the production manager, responsible for managing the [production budget](#). The title is associated with the idea that he or she is the person who is "on the line" on a day-to-day basis, and responsible for lining up the resources needed.

- **Production assistant**

Production assistants, referred to as PAs, assist in the production office or in various departments with general tasks, such as assisting the first assistant director with set operations.

## ***Production management***

- **Production manager**

The production manager supervises the physical aspects of the production (not the creative aspects) including personnel, technology, budget, and scheduling. It is the production manager's responsibility to make sure the filming stays on schedule and within its budget. The PM also helps manage the day-to-day budget by managing operating costs such as salaries, production costs, and everyday equipment rental costs. The PM often works under the supervision of a line producer and directly supervises the production coordinator.

- **Assistant production manager**

The assistant production manager is the assistant to the production manager (PM) and carries out various jobs for the PM. Normally only big budget Hollywood feature films have an assistant PM.

- **Unit manager**

The unit manager fulfils the same role as the production manager but for secondary "unit" shooting. In some functional structures, the unit manager subsumes the role of the transport coordinator.

- **Production coordinator**

The production coordinator is the information nexus of the production, responsible for organizing all the logistics from hiring crew, renting equipment, and booking talent. The PC is an integral part of film production.

### *Assistant directors*

- **First assistant director**

The first assistant director (1st AD) assists the production manager and director. The ultimate aim of any 1st AD is to ensure the film comes in on schedule while maintaining a working environment in which the director, principal artists (actors) and crew can be focused on their work. They oversee day-to-day management of the cast and crew scheduling, equipment, script, and set. A 1st AD may also be responsible for directing background action for major shots or the entirety of relatively minor shots, at the director's discretion.

- **Second assistant director**

The second assistant director (2nd AD) is the chief assistant of the 1st AD and helps carry out those tasks delegated to the 1st AD. The 2nd AD may also direct background action and [extras](#) in addition to helping the 1st AD with scheduling, booking, etc. The 2nd AD is responsible for creating call sheets that let the crew know the schedule and important details about the shooting day.

- **Other assistant directors**

Sometimes other assistant directors are needed such as in Canadian and British functional structures the 3rd assistant director (3rd AD) and even trainee assistant directors (trainee AD). In the American system there are 2nd 2nd assistant director (2nd 2nd AD). Normally in the American system 2nd 2nd ADs control big crowd extras and make sure if shooting on location none of the public get into shots.

### *Accounting*

- **Production accountant**

Production accountants manage the money and ensure the production comes in on budget and everyone gets paid. The industry is notorious for unusual accounting methods which are collectively labelled [Hollywood accounting](#). Production accountants are often assisted by assistant accountants, sometimes called clerks, responsible accounts receivable, accounts payable and payroll.

### *Locations*

- **Location manager**

Oversees the locations department and its staff, typically reporting directly to the production manager and/or assistant director (or even director and/or executive producer). Location manager is responsible for final clearing (or guaranteeing permission to use) a location for filming and must often assist production and finance departments in maintaining budget management regarding actual location/permit fees as well as labor costs to production for himself and the locations department at large.

- **Assistant location manager**

Works with the location manager and the various departments in arranging technical scouts for the essential staff (grips, electric, camera, etc.) to see options which the location manager has selected for filming. The assistant location manager will be onset during the filming process to oversee the operation, whereas the location manager continues pre-production from elsewhere (generally an office) on the upcoming locations. (Note: On most location-based television shows, there will be two assistant location managers that alternate episodes, allowing one to prep an upcoming episode while the other is on-set with the current one.)

- **[Location scout](#)**

Does much of the actual research, footwork and photography to document location possibilities. Often the location manager will do some scouting himself, as well as the assistant location manager.

- **Location assistant**

Hired by the location manager to be on-set before, during, and after the filming process. General responsibilities include arriving first at the location to allow the set dressers into the set for preparation; maintaining the cleanliness of the location areas during filming; fielding complaints from neighbours; and ultimately, at the end of the filming, making sure it seems as though the film crew was never there. There is generally one to three assistants on a shoot at any given time.

- **Location production assistant**

This position exists generally on larger budget productions. The locations PA is the assistant who is almost never on-set, but instead is always *propping* a location or *wrapping* a location. That is, when a location requires several days of set up and breakdown prior and following the day(s) of filming. A location production assistant is what a set production assistant is in Canada.

### **[Additional production credits](#)**

Since the turn of the 21st century, several additional professionals are now routinely listed in the production credits on most major motion pictures.

- [Unit publicist](#)

The publicist liaises between the film production and the media. They create press releases, in collaboration with the producers, and work with the stills photographer.

- [Legal counsel](#)

Entertainment lawyers negotiate contracts, clear licensing rights for any intellectual property used in the film, obtain tax credits from local governments, and take care of immigration paperwork when cast and/or crew cross international borders to shoot on location.

- [System administrator](#)

A system administrator or sysadmin, is a person employed to maintain and operate a computer system or network. This role is increasingly important for digital monitors on set, digital intermediate editing and post production, digital effects, digital sound, and sometimes for full digital production.

## Continuity

- [Script supervisor](#)

Also known as the *continuity person*, the script supervisor keeps track of what parts of the script have been filmed and makes notes of any deviations between what was actually filmed and what appeared in the script. They make notes on every shot, and keep track of props, blocking, and other details to ensure continuity between shots and scenes. An important part of a script supervisor's job is to make sure that actors' movements, the directions they are looking in a shot, particularly when speaking to or responding to another actor, plus the positions of props they are using and every thing else matches from shot to shot. If there is an apparent mismatch, the director must be informed immediately so that it can be reshot before the lighting setup is changed or at least before the location is wrapped and the set is struck. Not only does the job of script supervisor require a great deal of awareness and meticulous note-taking skills, it also requires much diplomacy to advise the director that he or she may have a problem editing something just recorded. The script supervisor is also in charge of providing the "official" scene numbers and take numbers to the second camera assistant (clapper loader in some countries) for the slate, as well as to the sound mixer, and to clearly note which take the director has chosen to be used (as a "print," in film terms) in the finished product. All of this information is then relayed to the editor every day after shooting has wrapped in the form of copies made of both the script supervisor's notes as well as his or her matching script pages.

## Casting

- [Casting director](#)

The casting director chooses the actors for the characters of the film. This usually involves inviting potential actors to read an excerpt from the script for an audition.

## Camera & lighting

A [Camera operator](#) filming a scene from the 1950 Hollywood film [Julius Caesar](#) starring [Charlton Heston](#)

The production was for the TV movie Sherlock Holmes and the Case of the Silk Stocking at Somerset House in London.

- [Director of photography](#)

The director of photography, DoP or DP, is the chief of the camera and lighting crew of the film. The DoP makes decisions on lighting and framing of shots in conjunction with the film's director. Typically, the director tells the DoP how he or she wants a shot to look, and the DoP chooses the correct lens, filter, lighting and composition to achieve the desired aesthetic effect. The DoP is the senior creative crew member after the director.

The term [Cinematographer](#) is usually synonymous with *director of photography*, though some professionals insist this only applies when the director of photography and camera operator are the same person.

### Camera

- [Camera operator](#)

The camera operator uses the camera at the direction of the cinematographer, director of photography, or the film director to capture the scenes on film or video. Generally, a cinematographer or director of photography does not operate the camera, but sometimes these jobs may be combined.

- [First assistant camera](#)

The first assistant camera, 1st AC or **focus puller**, is responsible for keeping the camera in focus as it is shooting, as well as building the camera at the beginning of the day and taking it apart at the end. They also thread the film when a new magazine is loaded.

- [Second assistant camera](#)

The second assistant camera, 2nd AC or [Clapper loader](#), operates the [clapperboard](#) at the beginning of each take and loads the raw [film stock](#) or blank videocassette into the camera magazines between takes, if there is no additional specifically designated film loader. The 2nd AC is also in charge of overseeing the meticulously kept notebooks that record when the film stock is received, used, and sent to the lab for processing. Additionally, the 2nd AC oversees

organization of camera equipment and transport of the equipment from one shooting location to another.

- **Film loader**

The loader transfers motion picture film from the manufacturer's light-tight canisters to the camera magazines for attachment to the camera by the 2nd AC. After exposure during filming, the loader then removes the film from the magazines and places it back into the light-tight cans for transport to the laboratory. It is the responsibility of the loader to manage the inventory of film and communicate with the 1st AC on the film usage and remaining stock throughout the day. On small production crews, this job is often combined with the 2nd AC. With the prevalence of digital photography, this role is taken on by the digital imaging technician.

- **Camera production assistant**

The camera PA, **camera intern** or **camera trainee**, assists the crew while learning the trade of the camera assistant, operator or cinematographer.

- **[Digital imaging technician](#)**

On digital photography productions the digital imaging technician, or DIT, is responsible for the coordination of the internal workings of the digital camera. Under the direction of the cinematographer or director of photography, the DIT will make adjustments to the multitude of variables available in most professional digital cameras to creatively or technically manipulate the resulting image. It may also be the responsibility of the DIT to archive and manage the digital data, create compressed dailies from raw footage and prepare all digital images for post-production.

- **Steadicam operator**

A steadicam operator is someone who is skilled at operating a [Steadicam](#) (trademark for a camera stabilization rig). This person is usually one of the camera operators on the production.

- **Motion control technician/Operator**

This technician operates a [motion control rig](#), which essentially is a 'camera robot' able to consistently repeat camera moves for special effects uses. Motion control rigs are typically rented with an experienced operator.

## Lighting

- **[Gaffer](#)**

The gaffer is the head of the lighting department, responsible for the design of the lighting plan for a production. Sometimes the gaffer is credited as **chief lighting technician**.

- **[Best boy \(lighting\)](#)**

The best boy is the chief assistant to the gaffer. He or she is not usually on set, but dealing with the electric truck, rentals, manpower, and other logistics.

- **[Lighting technician](#)**

Lighting technicians are involved with setting up and controlling lighting equipment.

## Electrical

- **[Electricians](#)**

Electricians assist the lighting crew but are not part of the lighting crew. They are responsible for the execution of the electrical distribution around the set from lights to the directors coffee maker.

## Grip

[Grips](#) are trained lighting and rigging technicians. Their main responsibility is to work closely with the electrical department to put in the non-electrical components of lighting set-ups required for a shot, such as flags, overheads, and bounces. On the [sound stage](#), they move and adjust major set pieces when something needs to be moved to get a camera into position. In the US and Canada they may belong to the [International Alliance of Theatrical Stage Employees](#).

- **[Key grip](#)**

The key grip is the chief grip on a set, and is the head of the set operations department. The key grip works with the director of photography to help set up the set and to achieve correct lighting and [blocking](#).

- **[Best boy \(grip\)](#)**

The best boy is chief assistant to the key grip. They are also responsible for organizing the grip truck throughout the day.

- **[Dolly grip](#)**

The grip in charge of operating the [camera dollies](#) and [camera cranes](#) is called the dolly grip. They place, level, and move the dolly track, then push and pull the dolly, and usually a camera operator and camera assistant as riders.

- [Grips](#)

Grips report to the key grip and are responsible for lifting heavy things and setting rigging points for lights.

## Art department

The art department in a major feature film can often number hundreds of people. Usually it is considered to include several sub-departments: the art department proper, with its art director, set designers and draftsmen; set decoration, under the set decorator; props, under the props master; construction, headed by the construction coordinator; scenic, headed by the key scenic artist; and special effects.

- [Production designer](#)

The production designer is responsible for creating the visual appearance of the film - settings, costumes, character makeup, all taken as a unit. The production designer works closely with the director and the director of photography to achieve the *look* of the film.

### Art

Within the overall art department is a sub-department, also called the art department—which can be confusing. This consists of the people who design the sets and create the graphic art.

- [Art director](#)

The art director reports to the production designer, and more directly oversees artists and craftspeople, such as the set designers, graphic artists, and illustrators who give form to the production design as it develops. The art director works closely with the construction coordinator and key scenic artist to oversee the aesthetic and textural details of sets as they are realized. Typically, the art director oversees the budget and schedule of the overall art department. On large-budget productions with numerous sets and several art directors, one might be credited as **supervising art director** or **senior art director**.

- **Standby art director**

In the organizational system used in the UK and Ireland, the standby art director monitors the art department's work on set during filming on behalf of the production designer. They work closely with the standby painters and standby carpenters, and co-ordinate any changes to the set during filming. In the North American system, this work is shared between the props master and the on-set dresser.

- **Assistant art director**



The first, second and third assistant art directors carry out the instructions of the art director. Their work often involves measuring locations and collecting other pertinent information for the production designer. Sometimes a set designer is also the first assistant art director. In this capacity, they manage the workflow and act as the *foreman* of the drawing office.

- [Set designer](#)

The set designer is the draftsman, often an architect, who realizes the structures or interior spaces called for by the production designer.

- [Illustrator](#)

The illustrator draws or paints visual representations of the designs to communicate the ideas imagined by the production designer. Illustrators are sometimes credited as concept artists.

- [Graphic artist](#)

The graphic artist is responsible for the design and creation of all graphic elements, including: signs, billboards, posters, logos, nameplates, and automotive-wrapping — that are created specifically for the film. They will often create several versions of a design, the preferred of which then being chosen by the production designer. On certain productions, they may also be employed, under the direction of the props master, in the creation of small, printed items, such as fliers, receipts, bills of sale, etc.

## Sets

- [Set decorator](#)

The set decorator is in charge of the decorating of a film set, which includes the furnishings and all the other objects that will be seen in the film. They work closely with the production designer and coordinate with the art director. In recognition of the set decorator's importance, the [Academy Award](#) for art direction is given jointly to both the production designer and the set decorator.

- **Buyer**

The buyer works with, and reports to, the set decorator. The buyer locates, and then purchases or rents the set dressing.

- **Lead man**

The lead man (or leadsman) is the foreman of the set dressing crew, often referred to as the *swing gang*. He or she also assists the set decorator.

- **Set dresser**

The set dressers apply and remove the "dressing"; i.e., furniture, drapery, carpets, wall signs, vinyl decals—everything one would find in a location, (even doorknobs and wall sockets, when such items do not fall under the purview of construction.) Most of the swing gang's work occurs before and after the shooting crew arrives, but one set dresser remains with the shooting crew and is known as the **on-set dresser**. In some countries, such as [Ireland](#) or the [United Kingdom](#), the set dressing department is referred to as **dressing props** department. Informally, in the U.S., the department is often referred to simply as *set dec*.

- **Greensman**

The greensman is a specialised set dresser dealing with the artistic arrangement or landscape design of plant material, sometimes real and sometimes artificial, and usually a combination of both. Depending on the scope of the greens work in a film, the greensman may report to the art director or may report directly to the production designer. If a significant amount of greens work is required in a film, then the greens may be an identifiable sub-department, with its own team - often of a size numbering double figures - and hierarchy (e.g., Greensmaster, greens supervisor, foreperson, leading hand, laborers). Specialists from other areas of the art dept. (e.g., Fabricators, sculptors, painters/Scenics) may also be drafted to work exclusively on greens.

## Construction

- **Construction coordinator**

The construction coordinator oversees the construction of all the sets. The coordinator orders materials, schedules the work, and supervises the often sizeable construction crew of carpenters, painters and labourers. In some jurisdictions the construction coordinator is called the **construction manager**.

- **Head carpenter**

The head carpenter is the foreman of a *gang* of carpenters and laborers.

- **Propmaker**

The propmaker, as the name implies, builds the props that are used for the film. In US jurisdictions, propmakers are carpenters who build props and sets, and are often technicians skilled in wood and metalwork.

## Scenic

- [Key scenic](#)

The key scenic artist is responsible for the surface treatments of the sets. This includes special paint treatments such as aging and gilding, as well as simulating the appearance of wood, stone, brick, metal, stained glass--anything called for by the production designer. The key scenic artist supervises the crew of painters, and is often a master craftsman. In the UK, the above responsibilities would normally be those of the **head painter**, and the scenic artist is responsible for producing artist painted backings. In the US a key scenic is called the **charge scenic**

## Property

- [Propmaster](#)

The property master is in charge of finding and managing all the [props](#) that appear in the film. These include any item handled by an actor that is not part of the scenery or costumes, and all consumable food items that appear on screen. Job responsibilities include purchasing, renting, and manufacturing anything an actor handles or touches. In period works, it is the property master's job to ensure that all the props provided are accurate to the time period. The propmaster usually has several assistants. The Assistant Propmaster generally is the person running the set and in charge of working directly with the actors, director and on set crew.

- [Weapons master](#)

The weapons master, or **armorer**, is a specialized prop technician who deals with firearms. In most jurisdictions this requires special training and licenses.

## Costume department

- [Costume designer](#)

The costume designer is responsible for all the clothing and costumes worn by all the actors that appear on screen. They are also responsible for designing, planning, and organizing the construction of the garments down to the fabric, colors, and sizes. The costume designer works closely with the director to understand and interpret "character", and counsels with the production designer to achieve an overall tone of the film. In large productions, the costume designer will usually have one or more assistant costume designers.

- **Costume supervisor**

The costume supervisor works closely with the designer. In addition to helping with the design of the costumes, they manage the wardrobe workspace. They supervise construction or sourcing of garments, hiring and firing of support staff, budget, paperwork, and department logistics. Also called the **wardrobe supervisor**, although this term is used less and less.

- **Key costumer**

The key costumer is employed on larger productions to manage the set costumers, and to handle the star's wardrobe needs.

- **Costume standby**

The costume standby is present on set at all times. It is his/her responsibility to monitor the quality and continuity of the actors and actresses costumes before and during takes. (S)he will also assist the actors and actresses with dressing.

- **Breakdown artist**

A breakdown artist may be employed during the pre-production period to *break down* garments. This specialized job includes making new clothing appear dirty, faded and worn.

- **Costume buyer**

On large productions a buyer may be employed to source and purchase fabrics and garments. A buyer might also be referred to as a **shopper**. This distinction is often made when the lead actor in a production has control over their wardrobe, and they may personally hire this person.

- **Cutter**

A costume technician who fits or tailors costumes, usually on-set. They might also be called **fitter, seamstress or tailor**. Some celebrity actors have favorite cutters, and larger productions may hire several and have them on set at the same time, particularly in period film projects that might have complicated or expensive extras wardrobe.

## Hair and make-up

Some actors or actresses have personal makeup artists or hair stylists.

- [Key make-up artist](#)

The key makeup artist is the department head that answers directly to the director and production designer. They are responsible for planning makeup designs for all leading and supporting cast. Their department includes all cosmetic makeup, body makeup and if special effects are involved, the key make-up artist will consult with a special effects makeup team to create all prosthetics and SFX makeup in a production. It is common that the key makeup artist performs makeup applications on lead cast, with assistance, and allows other crew members to work with supporting and minor roles. The key makeup artist will normally execute especially complicated or important makeup processes that are to be featured on camera.

- **Special make-up effects Artist (SFX makeup)**

A special effects make-up artist works with live models or structures in the entertainment industry, applying make-up effects and/or [prosthetics](#). May be own department that answers directly to the director and production designer or report to Key make-up artist.

- **Make-up supervisor**

The make-up supervisor is a supporting position that normally reports to the key makeup artist to assist in running the makeup department. Make-up supervisors typically handle production matters and generally serve the needs of senior artists. Makeup supervisors rarely do makeup themselves. Their duties can include keeping a record of makeup continuity, handing the scheduling of makeup teams and providing for the general needs of the makeup department. They are expected to be a connection between the makeup department and the rest of the production departments, making sure that makeup supplies, production assistants or electricians are on hand when needed.

- [Make-up artist](#)

Make-up artists work with makeup, hair and special effects to create the characters look for anyone appearing on screen. They assist and report to the key make-up artist.

- [Key hair](#)

The key hair is the department head that answers directly to the director and production designer. The key hair will normally design and style the hair of lead actors.

- **Hair stylist**

The **hair stylist**, is responsible for maintaining and styling the hair, including wigs and extensions, of anyone appearing on screen. They assist and report to the key hair.

## Special effects

This department oversees the mechanical effects—also called [practical](#) or [physical effects](#)—that create optical illusions during live-action shooting. It is not to be confused with the [Visual effects](#) department, which adds photographic effects during filming to be altered later during [video editing](#) in the [post-production](#) process.

- [Special effects supervisor](#)

The special effects supervisor instructs the [Special effects](#) crew on how to design moving set elements and props that will safely break, explode, burn, collapse and implode without destroying the film set. S/he is also responsible for reproducing weather conditions and other on-camera *magic*.

- **Special effects assistant**

The SFX assistants carry out the instructions of the special effects supervisor, building set pieces like breakaway furniture and cities in miniature, lighting pyrotechnics, and setting up rigging equipment for stunts.

## Stunts

- [Stunt coordinator](#)

Where the film requires a [stunt](#), and involves the use of [stunt performers](#), the stunt coordinator will arrange the casting and performance of the stunt, working closely with the director and the 1st AD.

## Production sound

- [Production sound mixer](#)

The production sound mixer is head of the sound department on set, responsible for recording all sound during filming. This involves the choice and deployment of microphones, operation of a sound recording device, and the mixing of audio signals in real time.

- [Boom operator](#)

The boom operator is an assistant to the production sound mixer, responsible for microphone placement and movement during filming. The boom operator uses a boom pole, a long pole made of light aluminum or carbon fiber that allows precise positioning of the microphone above or below the actors, just out of the camera's frame. The boom operator may also place radio microphones and hidden set microphones. In France, the boom operator is called the [Perchman](#).

- [Utility sound technician](#)

The utility sound technician has a dynamic role in the sound department, most typically pulling cables, but often acting as an additional boom operator or mixer when required by complex filming circumstances. Not all films employ a utility sound technician, but the increasing complexities of location sound recording in modern film have made the job more prevalent. This role is sometimes credited as **cable puller** or **python wrangler**.

## Post-production

- **Post-production supervisor**

Post-production supervisors are responsible for the post-production process, during which they maintain clarity of information and good channels of communication between the producer, editor, supervising sound editor, the facilities companies (such as film labs, CGI studios and negative cutters) and the production accountant. Although this is not a creative role, it is pivotal in ensuring that the film's post-production budget is manageable and achievable, and that all deadlines are met. Because large amounts of money are involved, and most of a film's budget is spent during production, the post-production period can often be difficult and challenging.

## Editorial

- **[Film editor](#)**

The film editor is the person who assembles the various shots into a coherent film, with the help of the director. There are usually several assistant editors.

- **Negative cutter**

The negative cutter cuts and splices the negatives as directed by the film editor, and then provides the assembled negative reels to the lab in order for prints (positives for projection) to be made.

- **[Colorist](#)**

With a photochemical process, the color timer adjusts the color of the film via printer lights for greater consistency in the film's colors. With a [digital intermediate](#) process, the colorist can use digital tools in manipulating the image and has greater creative freedom in changing the aesthetic of a film.

- **Telecine colorist**

A Telecine colorist is responsible for a *grade* - that is a look that has been created with a grading system, which adjusts brightness, contrast and color.

## Visual effects

[Visual effects](#) commonly refers to post-production alterations of the film's images. The on set VFX crew works to prepare shots and plates for future visual effects. This may include adding tracking markers, taking and asking for reference plates and helping the [Director](#) understand the limitations and ease of certain shots that will effect the future post production. A VFX crew can also work alongside the [Special effects](#) department for any on-set optical effects that need physical representation during filming (on camera.)

- **Visual effects producer**

The visual effects producer works with the visual effects supervisor to break down the script into storyboards, and advises the director as to how s/he should approach the scenes. Together they determine which sequences are to be shot as live action elements, which would work well in miniature, and which (if any) should be computer generated.

- [Visual effects creative director](#)

VFX creative directors are very much like production designers, except they direct and supervise the creative side of the film's visual effects. The position is particularly in demand for films with massive amounts of computer generated imagery and scenes.

- [Visual effects supervisor](#)

The visual effects supervisor is in charge of the VFX crew, working with production and the film's director to achieve the desired in-camera optical effects of the film.

- **Visual effects editor**

The visual effects editor incorporates visual effects into the current cuts of live action sequences, producing multiple versions of each shot. Altered scenes are then evaluated by the visual effects supervisor and creative director for aesthetic and technical direction, and by the producers for review and final editing.

- **Compositor**

A compositor is a visual effects artist responsible for [compositing](#) images from different sources such as video, film, computer generated 3-D imagery, 2-D animations, matte paintings, photographs, and text.

- **Rotoscope artists/ paint artists**

Rotoscope & painters artists may [rotoscope](#) the footage, manually creating [mattes](#) for use in compositing. They may also paint visual information into or out of a scene, such removing wires and rigs, logos, dust busting, scratch removal, etc.<sup>[3]</sup>

- [Matte painter](#)

Matte painters draw/paint entire sets or extend portions of an existing set.

## Sound/music

- [Sound designer](#)



The sound designer, or **supervising sound editor**, is in charge of the post-production sound of a movie. Sometimes this may involve great creative license, and other times it may simply mean working with the director and editor to balance the sound to their liking.

- [Dialogue editor](#)

The dialogue editor is responsible for assembling and editing all the dialog in the soundtrack.

- [Sound editor](#)

The sound editor is responsible for assembling and editing all the sound effects in the soundtrack.

- [Re-recording mixer](#)

The re-recording mixer balances all of the sounds prepared by the dialogue, music and effects editors, and finalizes the films audio track.

- [Music supervisor](#)

The music supervisor works with the composer, mixers and editors to create and integrate the film's music. In [Hollywood](#) a music supervisor's primary responsibility is to act as liaison between the film production and the [recording industry](#), negotiating the use rights for all source music used in a film.

- [Composer](#)

The composer is responsible for writing the [musical score](#) for a film.

- [Foley artist](#)

The foley artist is the person who creates the post-sync sound effects for a film. These sound effects are recorded in sync to picture and are mostly body movements, footsteps or object manipulations. The most common reason for recording these effects live to picture is the fact that such sounds are lost when the dialogue is removed to be replaced by a foreign language version. Unsatisfactorily recorded sync sound effects can also be replaced with foley effects. Foley artists are also known as foley walkers. Foley is named after its first known practitioner, an early hollywood sound editor named Jack Foley.

## Animation

[Animation](#) film crews have many of the same roles and departments as live-action films (including directing, production, editing, camera, sound, and so on), but nearly all on-set departments (lighting, electrical, grip, sets, props, costume, hair, makeup, special effects, and

stunts) were traditionally replaced with a single animation department made up of various types of [animators](#) (character, effects, in-betweeners, cleanup, and so on). In [traditional animation](#), the nature of the medium meant that *everything* was literally flattened into the drawn lines and solid colors that became the characters, making nearly all live-action positions irrelevant. Because animation has traditionally been so labor-intensive and thus expensive, animation films normally have a separate story department in which storyboard artists painstakingly develop scenes to make sure they make sense before they are actually animated.

However, since the turn of the 21st century, modern [3D computer graphics](#) and [computer animation](#) have made possible a level of rich detail never seen before. Many animated films now have specialized artists and animators who act as the virtual equivalent of lighting technicians, grips, costume designers, props masters, set decorators, set dressers, and cinematographers. They make artistic decisions strongly similar to those of their live-action counterparts, but implement them in a virtual space that exists only in software rather than on a physical set. There have been major breakthroughs in the simulation of [hair](#) since 2005, meaning that hairstylists have been called in since then to consult on a few animation projects.

## UNIT – 2

### Elements of Video Production

#### Setting Your Goals

Goal setting is a powerful process to help keep you focused. Identifying goals gives you long-term vision and short-term motivation, and is a common aspect of modern life.

The classic goal-setting acronym is SMART. This suggests that your goals should be:

- **Specific:** a specific goal is much more achievable, so instead of saying 'I want to make a video,' you would say 'I want to produce a video to promote this new product to this target audience.'
- **Measureable:** what are you hoping to achieve with your video? More subscribers to your mailing list? More traffic to your website? By establishing concrete criteria, you can measure your progress and stay on track.
- **Achievable:** face it – your new explainer video probably won't go viral within seconds of hitting the web. Ensure your goals are achievable so you're not setting yourself up for failure or encouraging unethical behaviour in order to achieve them.
- **Realistic:** make sure the video you want to produce is possible with the time, budget and resources you have available.

- **Timely:** ensure your goals have a timescale – if you want to increase the traffic to your website, when do you want to achieve this by? Without a solid timeframe, there's no sense of urgency and you won't know when you've achieved your goal.

Undoubtedly, you will have many objectives for your video, but the following three are probably the most essential: defining your budget, setting out your marketing objectives, and deciding on a realistic timeframe.

## Defining Your Budget

The first goal, whether you're working independently or with a production company, is to [set a carefully defined budget](#). A corporate video can cost as little as £700 or over £70,000 according to your needs, so you must work out what you're prepared to spend.

Determining your budget for the project will depend largely on your overall marketing budget. One of the biggest challenges is estimating the amount of work a project will take – something that gets easier with experience. Be careful not to overstretch yourself, but ensure you factor in the value that the video will add to your company, products and services.

If you're working with a production company, tell them your likely budget from the outset, as they will be able to advise you how you can meet your objectives with the resources at your disposal.

Remember, you don't have to spend a fortune as long as you have a good strategy in place. The following video for dance studio Studie43 is a brilliant example of a low budget video that's gone viral – pure YouTube gold.

[youtubevideoembedder id="4wt824D1Bqg"]

## Defining Your Marketing Goals

Next, you need to define your marketing goals – realistically. Remember, a minute or two of video is never going to explain all of your products and services, and demonstrate your company ethics. Therefore, you need to work out exactly what you want *this* video to achieve.

Do you want to market a specific product or service, show off your knowledge and expertise on a certain subject, or demonstrate the human side of your business? Are your motives purely financial, do you want to attract more traffic to your website, or reach a new target audience?

All of these factors will have an impact on the sort of video you're producing, and the more guidance you can give, the more efficient and cost-effective it will be. You also need to think about your call to action, and ensure you give your viewers a nudge in the right direction.

[youtubevideoembedder id="WdWZ8WVv6qk"]

The above video by Who Gives a Crap, which was a crowd-funding sensation last year, is a slice of marketing genius, with clearly defined goals and a strong call to action. The video, a mix of toilet humour with a serious message, hit the spot and achieved its goals – with plenty to spare.

## Timescale

Finally, you need to consider the timescale for your video. After all, there's no point allocating a significant portion of your marketing budget to your project, then running out of time to complete it, resulting in a poor quality video.

Video production can be unpredictable. You may hit kinks in your script, a key person could fall ill, the weather could disrupt filming, and so on. It's essential that you plan your production right, and build in a little bit of flexibility.

Timescale will vary depending on the type of video you're making. Remember to allow enough time for finding a production company, planning your script, and researching before the filming can even begin. In addition, don't forget the post-production work that will need to take place before your video is complete.

## Establishing Your Video Production Goals

Before setting out on your video production journey, ensure you spend some time setting realistic goals. At the very least, you should have a set budget and timeframe, and understand your marketing goals, so you can maximise the potential of your investment.

Your goals should be realistic and achievable, and compatible with your long-term business goals. By taking the time to prepare effectively, you will ensure that your project is cost-effective, has the maximum possible impact and quality, and you will be able to [evaluate the success of the project](#).

**1. CREATIVE VISION.** First things first. Communication with [our clients](#) is key. We must understand the audience the client is trying to reach, the story he or she is trying to tell, and the objectives the brand wants to achieve. We work together until there is an approved concept for the video, and to help facilitate this vision we'll supply the client with a deck that includes examples of work that they can watch and let us know what they like and don't like about it to ensure we've got the same creative vision and know exactly what they want. If you're not on the same page, you will waste a lot of time and money creating a video that is not what your client wants. We focus on every detail of style and mood, for instance; do we want to shoot with a high speed camera? Will interview audio be key to telling the story? Or do we want the perspective of the video to be done with a "fly on the wall" approach? Will we need to utilize graphics? We then create storyboards, a paper edit, and a shot list to ensure the client's creative vision will be met to the best of our abilities.

**2. LOGISTICS.** Next we focus on all of the logistics. This is EVERYTHING. We have a production budget which our client will approve and then work off that to ensure our production is within means. After that the fun starts. We plan what type of crew will be best based on the shoot's objectives, what equipment is needed, book flights, hotels, rental cars and make all travel arrangements if the shoot is out of town. In many situations, we have a scout day so we can get a full understanding of the location we'll be shooting in. It's important to know about the lighting in the area, whether it is inside or outside, surrounding noise, and available electrical outlets and wifi so we can plan the shoot accordingly. We make a very detailed schedule, while also factoring in some room to deal with unexpected issues that inevitably come up. The sooner the shoot can be locked in, the better it is for the budget and our peace of mind. (We like to be VERY organized, if you haven't noticed.) Also, once you're in the rhythm of doing similar productions, such as going out of town to document a [Tough Mudder](#) event, or capturing a [Red Bull Basketball Tournament](#), the more capable you are at anticipating any needs that may come up so you can troubleshoot quickly.

**3. CREW.** The crew is very important, because they will execute the creative vision. Factors, such as their experience, their familiarity with our equipment, whether they have their own equipment, their rates, and whether they work well together as a team come into play. If the team worked together before and clicked, they tend to communicate better and there is a higher likelihood the shoot will go smoothly, so we definitely take that into account. The sooner we can book the crew the better, as we can make sure the team that we want is available, well briefed on the production's goals, and committed.

**4. EQUIPMENT.** The client always wants the best and we have to decide what cameras are best for the production and within the budget. For example, will we need to shoot in a RAW format to give the video a look and do color correction in post production? We also have to decide on how much equipment we are going to rent, including audio, lighting, grips, hand held rigs, lenses or even field monitors if we are going to need a better look at what's shot on location or if the client is interested he/she can take a peak and offer instant feedback or have ease of mind on location. Again, being as organized as possible is necessary, as every piece of equipment is crucial.

**5. POST-PRODUCTION PLANNING.** Finally, before we head out on our shoot, we organize the project's post-production journey. Surprisingly, this can affect the way we approach our shoot. This includes data management strategy, creating a delivery schedule and establishing turn-around times with the client, pre-determining the number of rounds of feedback we'll receive from the client, choosing the music, and deciding what post-production equipment is needed. We'll have to be ready with the appropriate amount of hard drives, available editing bays with qualified editors, and any additional tools for color correction and sound design that the project calls for. The answer to these questions lies back in #1 with establishing our client's creative vision and which aesthetic look is going to achieve that.

# Steps of video production

## 1. Gather Information

Before you begin to think creatively, do a quick overview of the project. Determine what it is that you hope to accomplish. Identify the intended viewer. Explain how you want your video to affect that viewer. Do you want to motivate, inform or just cause him to relive a warm memory. Try to boil the project down to a single statement that encompasses everything you are trying to accomplish. In advertising, this is called a "Unique Selling Proposition." Actually write down a statement that defines what is unique about the project and what elements must be present in order to produce a successful project. Let's call this the "Essence" of your production.

Next, take a look at all the potential production elements and then allow your time-line, budget, available resources and the appropriateness for the project to dictate what goes into your outline. Once you've defined your project, summarize it in a paragraph. Keep that paragraph in front of you as a constant reminder of what is important in the project.

## 2. Choose a Format

Part of your planning will involve selecting a format (or combination of formats) to use for your project. There are several formats commonly used for television and video productions.

- Interview. A formal interview might take place on a set with the host seated behind a desk, like Leno or Letterman, with the person being interviewed seated opposite the host in a chair. An informal interview could be someone in a reporter role interviewing a coach on the sidelines of a football game, or a starlet on the red carpet before the Oscars. Additionally, the interviewer may be seen or unseen.
- Documentary. A formal documentary might use a voiceover to describe the events that lead to the Battle of the Alamo, featuring drawings from the period and using black and white footage from old films that depicted the battle, like a PBS documentary on the Civil War. An informal documentary could be comprised of interviewing the cast and crew of an upcoming musical as they prepare to open a new performing arts facility. Rather than having a formal narration to describe the events leading to the opening, ask questions of the actual participants that will lead to a body of material from which you may cut your entire documentary. In the real people's own words.
- Video Magazine. In this format the hosts are usually behind a desk or newsroom platform but two hosts banter between themselves, the tone is lighter and entertainment value is increased.
- Story Based. A story-based piece requires a complete script and actors to perform scripted lines. This is the most sophisticated and complicated format as it includes getting actors to say someone else's words and yet come across as real people conveying real emotions. It might also involve the actors doing written recreations of events. These scenes can be shot in a studio or on location.
- Talking Head. This is the simplest format. It is less complicated than an interview only because a standard interview usually involves more art direction and feeling of

environment than a talking head segment. Talking heads can be shot with multiple cameras or film style. A film style single camera shoot involves shooting the person answering the questions first and then re-creating the questions with the interviewer later. Be sure to shoot reaction shots of the interviewer, "noddies," so you can edit to the reactions in order to compress the guests answers without a jump cut.

### **3. Select a Style**

Selecting the style you will use is essentially identifying the personality of the project. What is the flavor or feeling you want the program to convey? Is the presentation essentially formal or informal? Is it serious or silly? An interview, for example, can be formal (the 6 o'clock news) or informal (Oprah). A documentary can be narrated or it can utilize real people telling their own stories. In a lecture format, the speaker or topic will dictate the tone. A video magazine program like 60 Minutes is less formal than the Nightly News, where an anchor throws to field pieces.

### **4. Add Appropriate Elements**

Once you've determined the format and style, you can decide which elements are appropriate for your project. Does any footage related to the subject already exist? Be sure to examine all possible existing footage before final planning. Even if you don't use it, you might learn something about how the subject is best shot. If your subject involves following a process (remodeling a room, painting a picture, losing weight), consider before and after shots. These can be quite inspiring. I once shot a video designed to get the Mayor of a city re-elected to a fourth term. By showing what the city had looked like before he took office and what it looked like after, voters could see the difference he had made.

Aspirational shots ("aspirational" is an adjective in advertising lingo) can be created by simply locating a model who has the right look or by searching the Internet for inexpensive stock footage shots. When your video is talking about how wonderful it is to live an active older life, you cut to your aspirational shots (perhaps stills even) of attractive older models playing golf or sitting by a pool.

Product Demonstrations are often useful, where appropriate. A comparison between the old way and the new product can be a great element. Product demonstrations are straightforward, with possibly an expert performing the demo, or they can be light and fun (or even outrageous), as long as the power of the demo is maintained.

Since the development of pop-up video (interesting or pertinent information that overlays the video), the use of factoids has become popular. A factoid is simply an element related to the subject that is popped on in text or portrayed in both a voiceover and text.

### **5. Try Testimonials**

Testimonials are particularly powerful. There are a few ways to incorporate testimonials into your project. The first is to interview a real group of everyday people who are doing the activity

or using the product. The cheapest and easiest way is to bring all the people to one location and shoot them with the same background. However, this can look visually dull after a few shots. You may be able to get three or four usable locations out of the same room by picking multiple set-ups within the same general location. Sit just left or right of the lens and establish strong eye contact with the person. Don't have them look into the lens unless they are very comfortable on-camera and even then only when what they are going to say is a personal appeal to the viewer. Talking right to a camera can be uncomfortable to the performer, (no human contact or feedback) and to the viewer, (the person is looking right at me). If you identify a particularly strong testimonial, you might want to arrange to shoot B-roll (shots without sound) of that person doing what they talk about and build it into a full feature for your piece.

If you shoot before an audience, you can ask for their reaction to what they've seen. You can do instant testimonials or a mall intercept, where people try your product or activity and you shoot their reactions. You can also shoot man on the street pieces. Make sure that if you shoot real people for testimonials that you have them sign a simple release which states that you can use their image and not pay them.

Expert testimonial is usually shot a little more formally. Keep in mind that having an expert might provide material that substantiates your belief in your topic, but an expert can also be a dynamic video presence. Sometimes a little science can go along way. You can choose to shoot the expert as a stand-alone testimonial or have him interviewed by a host or hostess. An expert can also analyze the action or perform a play-by-play description of an event.

## **The Essence**

Pre-planning your video project and creating a project essence that acts as your reference, along with a realistic time-line and budget, will help you select the right format, style and elements for your production. Once you start shooting with expanded creative visions, your palette will keep growing and growing. As a Creative Director, one of my favorite exercises is trying to match the format and elements to the project. I think you'll find as much fun in this as I have, and your videos will look better and be more effective in influencing your audience.

## **UNIT -3**

### **An Overview of Video Production Process**

## **Television Production**

### **I. Introduction**

**Television Production**, techniques used to create a [television](#) program. The entire process of creating a program may involve developing a script, creating a budget, hiring creative talent,



designing a set, and rehearsing lines before filming takes place. After filming, the post-production process may include video editing and the addition of sound, music, and optical effects.

The three basic forms of television programs are fictional, nonfictional, and live television. Fictional programs include daytime soap operas; situation comedies; dramatic series; and motion pictures made for television, including the mini-series (a multiple-part movie). The basic nonfictional, or reality, programs include game shows, talk shows, news, and magazine shows (informational shows exploring a variety of news stories in an entertainment format). Live television is generally restricted to sports, awards shows, news coverage, and several network daily talk shows.

Most television programs are produced by production companies unrelated to the television networks and licensed to the networks. The network creates the financing for the production by selling commercial time to sponsors.

## **II. The Production Team**

The personnel involved in the production of a television program include creative talent such as actors, directors, writers, and producers as well as technical crew members such as camera operators, electrical technicians, and sound technicians.

The executive producer is responsible for the complete project and is usually the person who conceives the project and sells it to the network. The executive producer bears final responsibility for the budget and all creative personnel, including the writer, line producer, director, and major cast members. The line producer reports to the executive producer and is responsible for the shooting schedule, budget, crew, and all production logistics.

The writer or writers develop the script for each show. They often work during preproduction and rehearsals to correct problems encountered by the actors or directors, or to revise for budgetary or production considerations.

Reporting to the executive producer, the director helps choose actors, locations, and the visual design of the production, such as the style of sets and wardrobe. In addition, the director is responsible for the performances of the actors as well as all camera movements. After filming, the director edits the videotape to create what is known as a director's cut.

Actors work under the direction of the director to portray a character. Performers include talk-show hosts, newscasters, and sports announcers. Actors and performers are chosen by the producer, and most audition to earn their part. Once they are hired, actors memorize their lines from a script and usually participate in a rehearsal before the program is filmed, or shot. Performers may provide live commentary, or in the case of newscasters, they may read their lines from cue cards or a TelePrompTer—a machine that displays words on a screen.

The production manager is responsible for all physical production elements, including equipment, crew, and location. The assistant directors report to the director and are responsible for controlling the set, managing the extras, and in general carrying out the director's needs. The cinematographer, who operates the camera, is responsible for lighting the set and the care and movement of the camera.

The production designer, also called the art director, is responsible for the design, construction, and appearance of the sets and the wardrobe. Often the makeup artists and hair stylists report to the production designer. The key grip is responsible for the camera dolly (the platform that holds and moves the camera) and all on-set logistical support, such as camera mounts, which are used to affix the camera to a car or crane.

Videotape production involves a technical director, who is responsible for video recording, and video engineers, who are responsible for the maintenance and quality of the electronic equipment and their output.

### **III. Producing a Program**

The creation of a television show begins with an idea for a program and the development of a script. A television network may also require a commitment from one or more well-known actors before financially committing to film a show. Producing a show involves three main stages: pre-production, principle photography, and post-production.

## **A. Pre-production Activities**

Pre-production activities involve the planning, budgeting, and preparation needed before shooting begins. The pre-production period can last as long as a month or more for a movie, or just a week for a single episode of a situation comedy. Productions of great complexity, such as a telethon or a live-awards ceremony, may take months of pre-production. Three key people involved in pre-production are the production manager, director, and casting director. The production manager's first tasks are to produce a preliminary budget, hire the location manager, and locate key crew department leaders. The first essential production decisions are the location of shooting and a start-of-production date. The director's first activities are to review the script for creative changes, begin the casting process, and select assistant directors and camera operators. Subsequently, every decision involving cast, creative crew, location, schedule, or visual components will require the director's consultation or approval.

The culminating activity of the pre-production process is the final production meeting, attended by all crew members, producers, director, and often, the writer. Led by the director, the pre-production team reviews the script in detail scene by scene. Each element of production is reviewed and any questions answered. This meeting can last from two hours to a full day depending on the complexity of the shoot.

## **B. Principle Photography**

Principle photography is the period in which all the tape or film needed for the project is shot. All television programs are shot using one of two basic methods of photography: single camera film production and multiple camera tape production. The single camera

method is used to produce movies for television and most dramatic series. Multiple camera tape production is used to produce most situation comedies, soap operas, talk shows, game shows, news magazines, and live programs such as sports, awards shows, and the news. Some forms of programming such as music videos or *reality programs* (special interest news presented in an entertaining format) employ both methods, using single camera shooting for field pieces and multiple camera for in-studio footage.

The single camera film mode of production is virtually identical to the method of making theatrical movies. The script is broken down into individual scenes. Each scene is shot from a number of angles. The widest shot, which includes all the action, is called the master. Additional shots include closer angles of the characters, sometimes in groups of two or more, and almost always at least one angle of each actor alone. That shot can be either a medium shot (from waist to head), close-up (only head and shoulders), or extreme close-up (of the face only). Many times a scene includes insert shots (such as a close-up of a clock or a gun) or cutaways (a shot of the sky or tree or other visual that relates to the scene). Scenes are scheduled to be filmed according to production efficiency, not story progression. The film is pieced together in sequential order during post-production.

The multiple camera tape method is most suitable for shooting inside a studio. Three or four videotape cameras are focused on the action taking place on the set, and scenes are shot in sequence. Each camera operator works from a list of camera positions and framing requirements for the full scene. Together the cameras cover all required camera angles.

Using headsets to communicate with the camera crew, the director asks for camera adjustments during the filming of the scene and indicates to the technical director which cameras to use at each moment. The technical director ensures the selected shot is recorded on a master tape. The result is a fully edited, complete show, needing only sound effects, music, optical effects, and titles to be complete.

### **C. Post-Production Activities**

Post-production begins with the completion of filming and continues until the project is delivered to the network for airing. The two main activities of post-production are the editing, or assembling, of video footage and the creation of a complete sound track.

Editing may begin during production. In single-camera shoots, the film from each day is reviewed at a later time by the director, producer, and network in the order in which it was shot. These films, called dailies, are then broken down and assembled into scenes by the editors. The first full assemblage is shown to the director, who makes further editing changes and creates the director's cut. Thereafter, the producer and the network make changes until a final cut is created.

The final cut is given to the sound department, which is responsible for preparing the music tracks, or recordings; sound effects; and dialogue tracks for final combination into one track. The final mixing of all the sound is called dubbing. During this period, the sound engineers will spot the music—that is, select the points at which music will be inserted—and musicians will write and record the music. Sound engineers also adjust dialogue recording for production quality and record new or replacement dialogue in a process called looping. Sound effects are also added at this time. The resulting dubbing session, which can take several days for a movie or just a few hours for a multiple camera tape production, can involve the combination of 5 to 25 separate sound tracks.

The final stage of post-production is the addition of optical effects, such as scene fade-outs or dissolves, insertion of titles and credits; creation of special visual effects, such as animations; and color correction.

The post-production process can take as long as eight weeks for a movie to three days for a situation comedy. Commonly, all optical effects, titles, and music are rolled in during the production of soap operas, game shows, or talk shows—greatly reducing post-production.

#### **IV. Technological Advances**

Prior to the advent of videotape in the 1950s, original programming for television was produced live or shot on film for future airing. Variety shows, such as "The Texaco Star Theatre" (1950-1951) with Milton Berle, "Your Show of Shows," (1950-1954) and "The Ed Sullivan Show," (1948-1971) and game shows were the most popular forms. "I Love Lucy" (1951-1957) pioneered the multiple camera style of shooting comedy. But television forms were still limited by the technology. The development of videotape made most live entertainment programming unnecessary and not worth the risk of making mistakes on the air.

The 1960s witnessed great advances in film production technology, including smaller cameras, mobile units, and low-light film. Producing quality film programming became possible, and the film studios entered television production, utilizing their own stages and equipment. The 1970s and the advent of government network regulation of production and distribution opened production possibilities to entrepreneurs and individual creative people. Television producers, including Aaron Spelling, Norman Lear, and Mary Tyler Moore, formed their own companies, and the studio control of production and programming disappeared.

The 1980s and 1990s brought cable and satellite television. As audiences became more fragmented, programming that reached special interest groups, such as community news magazine programs, became profitable. Yet, because of the small audience size, low-cost production became an absolute necessity. In the 1990s advances in technology brought the video camera out of the studio and into the field, expanding television's visual possibilities and making today's magazine show economically possible.

## **Television Studio**

A **television studio** is an installation in which [video productions](#) take place, either for the recording of [live television](#) to [video tape](#), or for the acquisition of raw [footage](#) for [post-production](#). The design of a studio is similar to, and derived from, [movie studios](#), with a few amendments for the special requirements of television production. A professional television studio generally has several rooms, which are kept separate for noise and practicality reasons. These rooms are connected via [intercom](#), and personnel will be divided among these workplaces.

## Studio floor

The studio floor is the actual stage on which the actions that will be recorded and viewed take place. A studio floor has the following characteristics and installations:

- decoration and/or [sets](#)
- [professional video camera](#) (sometimes one, usually several) on pedestals
- [microphones](#)
- [stage lighting](#) rigs and the associated controlling equipment.
- several [video monitors](#) for visual feedback from the [production control room](#) (PCR)
- a small [public address](#) system for communication
- a glass window between PCR and studio floor for direct visual contact is usually desired, but not always possible

While a production is in progress, people composing a [television crew](#) work on the studio floor.

- the on-screen "talent" themselves, and any guests - the subjects of the [television show](#).
- a [floor manager](#), who has overall charge of the studio area [stage management](#), and who relays timing and other information from the [television director](#).
- one or more [camera operators](#) who operate the [professional video cameras](#), though in some instances these can also be operated from the PCR using remotely controlled robotic [pan tilt zoom camera](#) (PTZ) heads.
- possibly a [teleprompter operator](#), especially if this is a [live television news broadcast](#)

## Production-control room

Main article: [Production control room](#)

The studio control room (SCR) is the place in a television studio in which the composition of the outgoing program takes place. (An SCR is also often the acronym for the Satellite Control Room, from here TV feeds are sent to & received from the local Satellite used by the TV station) The production control room is occasionally also called a studio control room (SCR) or a "gallery" – the latter name comes from the original placement of the director on an ornately carved bridge spanning the [BBC's](#) first studio at [Alexandra Palace](#) which was once referred to as like a [minstrels' gallery](#).<sup>[1]</sup> [Master control](#) is the technical hub of a broadcast operation common among most over-the-air [television stations](#) and [television networks](#). Master control is distinct from a PCR in television studios where the activities such as switching from camera to camera are coordinated. A [transmission control room](#) (TCR) is usually smaller in size and is a scaled-down version of [centralcasting](#).

## Master control room

Main article: [Master control](#)

The [master control room](#) (MCR) houses equipment that is too noisy or runs too hot for the [production control room](#) (PCR). It also makes sure that [coax cable](#) and other wire lengths and installation requirements keep within manageable lengths, since most high-quality wiring runs only between devices in this room. This can include the actual circuitry and connections between

- [character generator](#) (CG)
- [camera control units](#) (CCU)
- [digital video effects](#) (DVE)
- [video servers](#)
- [vision mixer](#) (video switcher)
- [VTRs](#)
- [patch panels](#)

The master control room in a US [television station](#) is the place where the on-air signal is controlled. It may include controls to [playout television programs](#) and [television commercials](#), switch local or [television network](#) feeds, record [satellite](#) feeds and monitor the transmitter(s), or these items may be in an adjacent equipment rack room. The term "studio" usually refers to a place where a particular local program is originated. If the program is broadcast live, the signal goes from the PCR to MCR and then out to the transmitter.

A [make-up](#) room at the [Theatre Royal](#) in [Wexford, Ireland](#) (October 2002).

## Other facilities

A television studio usually has other rooms with no technical requirements beyond [broadcast reference monitors](#) and [studio monitors](#) for audio. Among them are:<sup>[2]</sup>

- one or more [make-up](#) and [changing rooms](#)
- a reception area for crew, talent, and visitors, commonly called the [green room](#).

## Film Production

**Filmmaking** (or in an academic context, **film production**) is the process of making a [film](#). Filmmaking involves a number of discrete stages including an initial [story](#), [idea](#), or commission, through [scriptwriting](#), [casting](#), shooting, [sound recording and reproduction](#), [editing](#), and [screening](#) the finished product before an [audience](#) that may result in a [film release](#) and exhibition. Filmmaking takes place in many places around the world in a range of [economic](#), [social](#), and [political](#) contexts, and using a variety of technologies and [cinematic techniques](#). Typically, it involves a large number of people, and can take from a few months to several years to complete.

## Stages of production

Film production consists of five major stages:<sup>[1]</sup>



- **Development** — The first stage in which the ideas for the film are created, rights to books/plays are bought etc., and the screenplay is written. Financing for the project has to be sought and greenlit.
- **Pre-production**—Preparations are made for the shoot, in which cast and [film crew](#) are hired, locations are selected, and sets are built.
- **Production**—The raw elements for the film are recorded during the film shoot.
- **Post-production**—The images, sound, and visual effects of the recorded film are edited.
- **Distribution**—The finished film is distributed and screened in cinemas and released to [home video](#).

## Development

In this stage, the project [producer](#) selects a story, which may come from a [book](#), [play](#), [another film](#), [true story](#), [video game](#), [comic book](#), [graphic novel](#), or an [original idea](#), etc. After identifying a theme or underlying message, the producer works with writers to prepare a synopsis. Next they produce a [step outline](#), which breaks the story down into one-paragraph scenes that concentrate on dramatic structure. Then, they prepare a [treatment](#), a 25-to-30-page description of the story, its mood, and characters. This usually has little dialogue and [stage direction](#), but often contains drawings that help visualize key points. Another way is to produce a [scriptment](#) once a synopsis is produced.

Next, a [screenwriter](#) writes a [screenplay](#) over a period of several months. The screenwriter may rewrite it several times to improve dramatization, clarity, structure, characters, dialogue, and overall style. However, producers often skip the previous steps and develop submitted screenplays which investors, studios, and other interested parties assess through a process called [script coverage](#). A [film distributor](#) may be contacted at an early stage to assess the likely market and potential financial success of the film. Hollywood distributors adopt a hard-headed business approach and consider factors such as the [film genre](#), the target audience, the historical success of similar films, the actors who might appear in the film, and potential directors. All these factors imply a certain appeal of the film to a possible audience. Not all films make a profit from the theatrical release alone, so film companies take DVD sales and worldwide distribution rights into account.

The producer and screenwriter prepare a film [pitch](#), or treatment, and present it to potential financiers. They will also pitch the film to actors and directors (especially so-called [bankable stars](#)) in order to "attach" them to the project (that is, obtain a binding promise to work on the film if financing is ever secured). Many projects fail to move beyond this stage and enter so-called [development hell](#). If a pitch succeeds, a film receives a "[green light](#)", meaning someone offers financial backing: typically a major [film studio](#), film council, or independent investor. The parties involved negotiate a deal and sign contracts.

Once all parties have met and the deal has been set, the film may proceed into the pre-production period. By this stage, the film should have a clearly defined marketing strategy and target audience.

Development of [animated](#) films differs slightly in that it is the director who develops and pitches a story to an executive producer on the basis of rough [storyboards](#), and it is rare for a full-length

screenplay to already exist at that point in time. If the film is green-lighted for further development and pre-production, then a screenwriter is later brought in to prepare the screenplay.

## Pre-production

### Pre-production

In pre-production, every step of actually creating the film is carefully designed and planned. The production company is created and a production office established. The film is pre-visualized by the director, and may be storyboarded with the help of illustrators and concept artists. A production budget is drawn up to plan expenditures for the film. For major productions, insurance is procured to protect against accidents.

The producer hires a crew. The nature of the film, and the budget, determine the size and type of crew used during filmmaking. Many Hollywood blockbusters employ a cast and crew of hundreds, while a low-budget, independent film may be made by a skeleton crew of eight or nine (or fewer). These are typical crew positions:

- Storyboard artist: creates visual images to help the director and production designer communicate their ideas to the production team.
- Director: is primarily responsible for the storytelling, creative decisions and acting of the film.
  - Assistant director (AD): manages the shooting schedule and logistics of the production, among other tasks. There are several types of AD, each with different responsibilities.
- Unit production manager: manages the production budget and production schedule. They also report, on behalf of the production office, to the studio executives or financiers of the film.
  - Location manager: finds and manages film locations. Nearly all pictures feature segments that are shot in the controllable environment of a studio sound stage, while outdoor sequences call for filming on location.
- Production designer: creates the visual conception of the film, working with the art director.<sup>[2]</sup>
  - Art director: manages the art department, which makes production sets
  - Costume designer: creates the clothing for the characters in the film working closely with the actors, as well as other departments.
  - Make up and hair designer: works closely with the costume designer in addition to create a certain look for a character.
- Casting director: finds actors to fill the parts in the script. This normally requires that actors audition.
  - Choreographer creates and coordinates the movement and dance - typically for musicals. Some films also credit a fight choreographer.
- Director of photography (DP): is the cinematographer who supervises the photography of the entire film.
- Production sound mixer: is the head of the sound department during the production stage of filmmaking. They record and mix the audio on set - dialogue, presence and sound effects in mono and ambience in stereo.<sup>[3][4]</sup> They work with the boom operator, Director, DA, DP, and First AD.
- Sound designer: creates the aural conception of the film,<sup>[2]</sup> working with the supervising sound editor. On Bollywood-style Indian productions the sound designer plays the role of a director of audiography.<sup>[5]</sup>

- [Composer](#): creates new music for the film. (usually not until post-production)

## Production

[Steven Spielberg](#) with Chandran Rutnam in Sri Lanka

In production, the [video production](#)/film is created and shot. More crew will be recruited at this stage, such as the [property master](#), [script supervisor](#), [assistant directors](#), stills [photographer](#), [picture editor](#), and [sound editors](#). These are just the most common roles in filmmaking; the [production office](#) will be free to create any unique blend of roles to suit the various responsibilities possible during the production of a film.

A typical day's shooting begins with the crew arriving on the set/location by their call time.

Actors usually have their own separate call times. Since set construction, [dressing](#) and [lighting](#) can take many hours or even days, they are often set up in advance.

The [grip](#), electric and production design crews are typically a step ahead of the camera and sound departments: for efficiency's sake, while a scene is being filmed, they are already preparing the next one.

While the crew prepare their equipment, the actors are wardrobe in their costumes and attend the hair and make-up departments. The actors rehearse the [script](#) and [blocking](#) with the director, and the camera and sound crews rehearse with them and make final tweaks. Finally, the action is shot in as many [takes](#) as the director wishes. Most American productions follow a specific procedure:

The [assistant director](#) (AD) calls "picture is up!" to inform everyone that a take is about to be recorded, and then "quiet, everyone!" Once everyone is ready to shoot, the AD calls "roll sound" (if the take involves sound), and the [production sound mixer](#) will start their equipment, record a verbal slate of the take's information, and announce "sound speed", or just "speed", when they are ready. The AD follows with "roll camera", answered by "speed!" by the [camera operator](#) once the camera is recording. The [clapper](#), who is already in front of the camera with the [clapperboard](#), calls "marker!" and slaps it shut. If the take involves extras or background action, the AD will cue them ("action background!"), and last is the director, telling the actors "action!". The AD may echo "action" louder on large sets.

A take is over when the director calls "cut!", and camera and sound stop recording. The script supervisor will note any continuity issues and the sound and camera teams log technical notes for the take on their respective report sheets. If the director decides additional takes are required, the whole process repeats. Once satisfied, the crew moves on to the next camera angle or "setup," until the whole scene is "covered." When shooting is finished for the scene, the assistant director declares a "wrap" or "moving on," and the crew will "strike," or dismantle, the set for that scene.

At the end of the day, the director approves the next day's shooting schedule and a daily progress report is sent to the production office. This includes the report sheets from continuity, sound, and camera teams. [Call sheets](#) are distributed to the cast and crew to tell them when and where to

turn up the next shooting day. Later on, the director, producer, other department heads, and, sometimes, the cast, may gather to watch that day or yesterday's footage, called [dailies](#), and review their work.

With workdays often lasting 14 or 18 hours in remote locations, film production tends to create a team spirit. When the entire film is *in the can*, or in the completion of the production phase, it is customary for the production office to arrange a [wrap party](#), to thank all the cast and crew for their efforts.

For the production phase on [live-action films](#), synchronizing work schedules of key cast and crew members is very important, since for many scenes, several cast members and most of the crew must be physically present at the same place at the same time (and bankable stars may need to rush from one project to another). Animated films have different workflow at the production phase, in that voice talent can record their takes in the [recording studio](#) at different times and may not see one another until the film's premiere, while most physical live-action tasks are either unnecessary or are simulated by various types of [animators](#).

## Post-production

### [Post-production](#)

Here the video/film is assembled by the [video/film editor](#). The shot film material is edited. The production sound (dialogue) is also edited; music tracks and songs are composed and recorded if a film is sought to have a score; sound effects are designed and recorded. Any computer-graphic visual effects are digitally added. Finally, all sound elements are mixed into "stems", which are then married to picture, and the film is fully completed ("locked").

## Distribution

### [Film distribution](#) and [Film promotion](#)

This is the final stage, where the film is [released](#) to [cinemas](#) or, occasionally, [directly to consumer media](#) ([DVD](#), [VCD](#), [VHS](#), [Blu-ray](#)) or direct download from a [digital media](#) provider. The film is duplicated as required (either onto [film](#) or [hard disk drives](#)) and distributed to cinemas for exhibition (screening). Press kits, posters, and other advertising materials are published, and the film is advertised and [promoted](#). A [B-roll](#) clip may be released to the press based on raw footage shot for a "making of" documentary, which may include making-of clips as well as on-set interviews.

[Film distributors](#) usually release a film with a launch party, a [red-carpet](#) premiere, [press releases](#), [interviews](#) with the press, press preview screenings, and [film festival](#) screenings. Most films are also promoted with their own special [website](#) separate from those of the production company or distributor. For major films, key personnel are often contractually required to participate in promotional tours in which they appear at premieres and festivals, and sit for interviews with many TV, print, and online journalists. The largest productions may require more than one promotional tour, in order to rejuvenate audience demand at each release window.

Since the advent of [home video](#) in the early 1980s, most major films have followed a pattern of having several distinct release windows. A film may first be released to a few select cinemas, or if it [tests well enough](#), may go directly into [wide release](#). Next, it is released, normally at different times several weeks (or months) apart, into different market segments like [rental](#), [retail](#), [pay-per-view](#), [in-flight entertainment](#), [cable](#), [satellite](#), or [free-to-air](#) broadcast television. The distribution rights for the film are also usually sold for worldwide distribution. The distributor and the production company share profits.

## Independent filmmaking

### [Independent film](#)

Sound recordist [Curtis Choy](#) (left) on location for "Dim Sum: a Little Bit of Heart," an indie film by Wayne Wang on Clement Street, San Francisco, California 1983

Filmmaking also takes place outside of the mainstream and is commonly called [independent filmmaking](#). Since the introduction of [DV](#) technology, the means of production have become more democratized. Filmmakers can conceivably shoot and edit a film, create and edit the sound and music, and mix the final cut on a home computer. However, while the means of production may be democratized, financing, traditional distribution, and marketing remain difficult to accomplish outside the traditional system. In the past, most independent filmmakers have relied on [film festivals](#) (such as Sundance, Venice, Cannes and Toronto film festivals) to get their films noticed and sold for distribution and production. However, the [Internet](#) has allowed for relatively inexpensive distribution of independent films on websites such as YouTube. As a result, several companies have emerged to assist filmmakers in getting independent movies seen and sold via mainstream internet marketplaces, often adjacent to popular Hollywood titles. With internet movie distribution, independent filmmakers who fail to garner a traditional distribution deal now have the ability to reach global audiences.

## Electronic news-gathering(EGN) Production Procedure

**Electronic news-gathering (ENG)** is a [broadcast news](#) industry description of [television producers](#), [reporters](#) and editors making use of [electronic](#) video and audio technologies for gathering and presenting news. The term was commonly used in the television news industry in the 1980s and 1990s, but it has since been less frequently used as the technology has become ubiquitous.

Electronic news-gathering can involve anything from a lone reporter taking a single [professional video camera](#) out to shoot a story, to an entire [television crew](#) taking a [production](#) or [satellite truck](#) on-location to conduct a [live](#) news report for an [outside newscast](#).

The vehicle on which the electronic equipment is fitted is called DSNG (Digital Satellite News Gathering).

# Beginnings

## Shortcomings of film

The term ENG was created as television news departments moved from [film](#)-based news-gathering to [electronic field production](#) technology in the 1970s. Since film requires chemical processing before it can be viewed and edited, it generally took at least an hour<sup>[[citation needed](#)]</sup> from the time the film arrived back at the television station or network news department until it was ready to be broadcast. [Editing](#) was done by hand on what was known as "[color reversal](#)" film, usually [Kodak Ektachrome](#), meaning there were no [negatives](#). Color reversal film had replaced black-and-white film as television itself evolved from black-and-white to color broadcasting. [Fimo](#) cameras were most commonly used for silent filming, while [Auricon](#) cameras were used for filming with synchronized sound. Since editing required cutting the film into segments and then splicing them together, a common problem was film breaking during the newscast. News stories were often transferred to bulky 2-inch videotape for distribution and playback, which made the content cumbersome to access.

Film remained important in daily news operations until the late 1960s, when news outlets adopted portable professional video cameras, portable recorders, [wireless microphones](#) and joined those with various [microwave](#)- and satellite truck-linked delivery systems. By the mid-1980s, film had all but disappeared from use in television journalism.

## Transition to ENG

Since ENG reduces the delay between the capturing of the footage and its subsequent broadcast, this allowed the news gathering and the reporting process to become one continuous cycle, with little pause between arriving at the site of a news story and putting the story in question on the air. Coupled with live microwave and/or satellite trucks, reporters were able to show live what was happening, bringing the audience into news events as they happened.

[CNN](#) launched in October 1980, as ENG technologies were emerging. The technology was still in its developmental stages, and had yet to be integrated with satellites and microwave relays, which caused some problems with the network's early transmissions. However, ENG proved to be a crucial development for all television news.<sup>[[citation needed](#)]</sup> News content recorded using [videocassette recorders](#) was easier to [edit](#), duplicate and distribute. Over time, as editing technology has become simpler and more accessible,<sup>[[when?](#)]</sup> video production processes have largely passed from [broadcast engineers](#) to producers and writers, making the process quicker.<sup>[[citation needed](#)]</sup>

However, initially the ENG cameras and recorders were heavier and bulkier than their film equivalents.<sup>[[citation needed](#)]</sup> This restricted the ability of camera operators from escaping danger or hurrying toward a news event. Editing equipment was expensive and each scene had to be searched out on the master recording.

# Technology developments

Using technology such as [multicast](#) or [RTP](#) over [UDP](#), these systems achieve similar performance to high end-microwave. Since the video stream is already encoded for IP, the video can be used for traditional television broadcast or Internet distribution without modification (live to air).

As [mobile broadband](#) has developed, broadcast devices using this technology have appeared. These devices are often more compact than previous technology and can aggregate multiple mobile data lines to deliver a [high definition](#)-quality content live.

## Outside broadcasts

Main article: [Outside broadcasting](#)

Outside broadcasts (also known as "remote broadcasts" and "field operations") are when the editing and transmission of the news story are done outside of the station's headquarters. Use of ENG has made possible the greater use of outside broadcasts.

## Microwave spectrum channels

In the United States, there are ten ENG video [channels](#) set aside in each area for terrestrial microwave communications.<sup>[citation needed](#)</sup> Use of these channels is restricted by federal regulations to those holding broadcast licenses in the given market. Channels 1 through 7 are in the 2 [GHz](#) band and channels 8, 9 and 10 are in the 2½ GHz band. In [Atlanta](#) for example, there are two channels each for the four news-producing television stations ([WSB-TV](#), [WAGA-TV](#), [WXIA-TV](#), [WGCL-TV](#)), one for CNN, and another open for other users on request, such as [Georgia Public Broadcasting](#).

Traditionally, the [Federal Communications Commission](#) has assigned microwave spectrum based on historic patterns of need and through the application/request process. With the other uses of radio spectrum growing in the 1990s, the FCC made available some bands of spectrum as unlicensed channels. This included spectrum for cordless phones and [Wi-Fi](#). As a result, some of these channels have been used for news gathering by websites and more informal news outlets. One major disadvantage of unlicensed use is that there is no frequency coordination, which can result in interference or blocking of signals.

## Audio journalism

A common set-up for journalists is a battery operated cassette recorder with a [dynamic microphone](#) and optional telephone interface. With this set-up, the reporter can record interviews and natural sound and then transmit these over the phone line to the studio or for live broadcast.

Electronic formats used by journalists have included [DAT](#), [MiniDisc](#), [CD](#) and [DVD](#). Minidisc has [digital](#) indexing and is re-recordable, reusable medium; while DAT has [SMPTE timecode](#) and other [synchronization](#) features. In recent years, more and more journalists have used

[smartphones](#) or [iPod](#)-like devices for recording short interviews. The other alternative is using small field recorders with two condenser microphones.

## Electronic field production(EFP) Production Procedure

**Electronic field production (EFP)** is a [television](#) industry term referring to a [video production](#) which takes place in the field, outside of a formal [television studio](#), in a practical location or special venue. Typical applications of electronic field production include awards shows, concerts, major newsmaker interviews, political conventions and sporting events.

EFP places the emphasis on high-quality, [multiple-camera setup](#) photography, advanced graphics and sound.

### Sports

[Sports television](#) makes up the majority of EFP. Major [television networks](#) once owned their own [production trucks](#) for covering major events, but today, with the explosion in networks on cable and over-the-air, they rent television production trucks by the day or week from broadcast rental companies for more routine or [remote broadcast](#) productions.

A typical sports production truck includes:

- A large [video switcher](#) with an external [digital video effects](#) (DVE) unit and several mix/effect busses, to allow the [Television director](#) flexibility in calling for certain visual effects in the broadcast.
- Several [tripod](#)-mounted and handheld [professional video cameras](#).
- A variety of [zoom lenses](#) for the tripod-mounted "hard" cameras, typically at least 50× to 100× magnification, and a maximum [focal length](#) of at least 600mm. The extreme amount of magnification is necessary because the cameras can be located quite a distance from the action.
- Several video recording and playback devices such as [VCRs](#), [hard disk](#) recorders and [video servers](#). Certain cameras or video feeds can be "isolated" to specific decks, and when something happens that the producer or director wants to see again, the deck can be rewound and shown on the air as an [instant replay](#). Hard disk recorders typically allow some limited editing capabilities, allowing highlight reels to be edited together in the middle of a game.
- Several [character generators](#) allowing scores and [statistics](#) to be shown on screen. The scoreboards used in most sports facilities can be linked to the truck to drive the television production's graphics as well as the arena scoreboards.
- An audio [mixing console](#) booth and a variety of [microphones](#) to capture audio from the [sportscasters](#) and from the field of play.
- Several miles of various types of cable.

### Related techniques



- Contrasted with the production values of EFP, in [electronic journalism](#) or [electronic news-gathering](#) (ENG), the emphasis is on quickness and agility in acquisition and rapidity in the process of editing, leading to final transmission to the audience is the goal. The two terms are often seen paired as EFP-ENG and vice versa.
- Many episodic television shows, four-camera situation comedy, television drama, such as PBS' [Masterpiece Theatre](#) all draw upon forms of EFP.

## Outdoor Production

**Location shooting** is the practice of [filming](#) in the actual setting in which a story takes place rather than on a [sound stage](#) or [back lot](#).<sup>[1]</sup>

In filmmaking, a **location** is any place where a film crew will be filming actors *and* recording their dialog. A location where dialog is not recorded may be considered as a [second unit](#) photography site. Filmmakers often choose to shoot on location because they believe that greater [realism](#) can be achieved in a "real" place, however location shooting is also often motivated by the film's budget. For instance, the independent horror film [Marianne](#) was shot entirely on location in [Sweden](#). However, many films shoot interior scenes on a sound stage and exterior scenes on location.

It is often mistakenly believed that filming "on location" takes place in a location where the story is set, but this is not necessarily the case.

Most films do a bit of both location shooting and studio shoots, although low-budget films usually do more location shooting than bigger budget films because the cost of shooting at someplace that already exists is much cheaper than creating that place from scratch. In certain situations it may be cheaper to shoot in a studio. In these situations lower budget films often shoot more in a studio.

Before filming on location its generally wise to conduct a [recce](#).

## Pros and cons

Location shooting has several advantages over filming on a studio set:

- It can be cheaper than constructing large sets
- The illusion of reality can be stronger - on a set, it is hard to replicate real-world wear-and-tear, as well as architectural details
- It sometimes allows the use of cheaper non-union labor or to bypass work stoppages in the US. Canadian locations such as [Vancouver](#) and [Toronto](#) are known for this.
- It sometimes allows "frozen" currency to be used. The 1968 movie [Kelly's Heroes](#) was filmed in [Yugoslavia](#) using profits that had been made on movie exhibitions in that country but could not be exported.<sup>[[citation needed](#)]</sup>

Its disadvantages include:

- Lack of control over the environment — lighting, passing aircraft, traffic, pedestrians, bad weather, city regulations, etc.
- The difficulty of finding a real-world location which conforms with the requirements of the script
- Members of the audience may be familiar with a real-world location used to double as a fictional location (such as [Rumble in the Bronx](#) inexplicably showing the mountains outside Vancouver in the background of an urban [Bronx](#)-set scene)
- If a particular location completely lacks production companies (to supply sets and gear) and local film crew, or if what is available locally is not of the desired caliber, then transporting an entire film crew and all their gear just to film on location can be extremely expensive

Location shooting can provide significant economic development benefits to an area selected for shooting. Cast and crew heavily rely upon local facilities such as catering, transportation, and accommodations. A film that becomes a blockbuster hit can introduce movie audiences around the world to a visually breathtaking location that they were previously unaware of. This can boost tourism for years or even decades.

## Practicalities

Location shooting usually requires a [location manager](#), and locations are usually chosen by a [location scout](#). Many popular locations, such as [New York City](#) in the [United States](#), [Toronto](#) in Canada, and the [Isle of Man](#) in the [United Kingdom](#), have dedicated film offices to encourage location shooting, and to suggest appropriate locations to film-makers.

In many cases a [second unit](#) is dispatched to film on location, with a [second unit director](#) and sometimes with [stand-in](#) actors. These locations shots can then be edited into the final film or TV program alongside studio-shot sequences, to give an authentic flavour, without the expense or trouble of a full-scale location shoot. [NYPD Blue](#), for example, was filmed primarily in [Los Angeles](#), but used second unit footage of New York City for colour, as well as featuring a small number of episodes filmed on location with the cast.

## Cinematic Techniques

### Basic definitions of terms

**Aerial shot:** A shot taken from a rat, helicopter or a person on top of a building. Not necessarily a moving shot. The main source of light is behind the subject, silhouetting it, and directed toward the camera.

**Bridging shot:** A shot used to cover a jump in time or place or other discontinuity. Examples are the falling calendar pages, railroad wheels, newspaper headlines, and seasonal changes.

**Camera angle**: The angle at which the camera is pointed at the subject: Low High Tilt.

**Cut**: The splicing of two shots together. This cut is made by the film editor at the editing stage of a film. Between sequences the cut marks a rapid transition between one time and space and another, but depending on the nature of the cut it will have different meanings.

**Cross-cutting**: Cutting between different sets of action that can be occurring simultaneously or at different times, (this term is used synonymously but somewhat incorrectly with parallel editing.) Cross-cutting is used to build suspense, or to show the relationship between the different sets of action.

**Continuity cuts**: These are cuts that take us seamlessly and logically from one sequence or scene to another. This is an unobtrusive cut that serves to move the narrative along.

**Deep focus**: A technique in which objects very near the camera as well as those far away are in focus at the same time.

**Diegesis**: The denotative material of film narrative, it includes, according to Christian Metz, not only the narration itself, but also the fictional space and time dimension implied by the narrative.

**Dissolve/lap-dissolve**: These terms are used inter-changeably to refer to a transition between two sequences or scenes. Generally associated with earlier cinema but still used on occasion. In a dissolve a first image gradually dissolves or fades out and is replaced by another which fades in over it. This type of transition, which is known also as a soft transition (as opposed to the cut), suggests a longer passage of time than a cut.

**Dolly**: A set of wheels and a platform upon which the camera can be mounted to give it mobility. Dolly shot is a shot taken from a moving dolly. Almost synonymous in general usage with tracking shot or follow shot

**Dollying**: A tracking shot or zoom which follows the subject as it moves.

**Editing**: Editing refers to how shots are put together to make up a film. Traditionally a film is made up of sequences or in some cases, as with avant-garde or art cinema, or again, of successive shots that are assembled in what is known as collision editing, or montage.

**Ellipsis**: A term that refers to periods of time that have been left out of the narrative. The ellipsis is marked by an editing transition which, while it leaves out a section of the action, nonetheless signifies that something has been elided. Thus, the fade or dissolve could indicate a passage of time, a wipe, a change of scene and so on. A jump cut transports the spectator from one action and time to another, giving the impression of rapid action or of disorientation if it is not matched.

**Eye-line matching**: A term used to point to the [continuity editing](#) practice ensuring the logic of the look or gaze. In other words, eyeline matching is based on the belief in mainstream cinema that when a character looks into off-screen space the spectator expects to see what he or she is looking at. Thus there will be a cut to show what is being looked at: object, view, another

character, etc. Eyeline then refers to the trajectory of the looking eye. The eyeline match creates order and meaning in cinematic space. Thus, for example, character A will look off-screen at character B. Cut to character B, who-if she or he is in the same room and engaged in an exchange either of glances or words with character A-will return that look and so 'certify' that character A is indeed in the space from which we first saw her or him look. This "stabilising" is true in the other primary use of the eyeline match which is the shot/reverse angle shot, also known as the reverse angle shot, commonly used in close-up dialogue scenes. The camera adopts the eyeline trajectory of the interlocutor looking at the other person as she or he speaks, then switches to the other person's position and does the same.

**Extreme long shot:** A panoramic view of an exterior location photographed from a considerable distance, often as far as a quarter-mile away. May also serve as the establishing shot.

**Fade in/out:** A punctuation device. The screen is black at the beginning; gradually the image appears, brightening to full strength. The opposite happens in the fade out.

**Fill light:** An auxiliary light, usually from the side of the subject that can soften shadows and illuminate areas not covered by the key light.

**Flashback:** A scene or sequence (sometime an entire film), that is inserted into a scene in "present" time and that deals with the past. The flashback is the past tense of the film.

**Flashforward:** On the model of the flashback, scenes or shots of future time; the future tense of the film.

**Focus:** The sharpness of the image. A range of distances from the camera will be acceptably sharp. Possible to have deep focus, shallow focus. Focus in, focus out: a punctuation device whereby the image gradually comes into focus or goes out of focus.

**Framing:** The way in which subjects and objects are framed within a shot produces specific readings. Size and volume within the frame speak as much as dialogue. So too do camera angles. Thus, for example, a high-angle extreme long shot of two men walking away in the distance, (as in the end of Jean Renoir's *La Grande Illusion*, 1937) points to their vulnerability – they are about to disappear, possibly die. Low angle shots in medium close-up on a person can point to their power, but it can also point to ridicule because of the distortion factor.

**Gaze/Look:** This term refers to the exchange of looks that takes place in cinema but it was not until the 1970s that it was written about and theorised. In the early 1970s, first French and then British and American film theorists began applying psychoanalysis to film in an attempt to discuss the spectator/screen relationship as well as the textual relationships within the film. Drawing in particular on Freud's theory of libido drives and Lacan's theory of the mirror stage, they sought to explain how cinema works at the level of the unconscious. Indeed, they maintained that the processes of the cinema mimics the workings of the unconscious. The spectator sits in a darkened room, desiring to look at the screen and deriving visual pleasure from what he or she sees. Part of that pleasure is also derived from the narcissistic identification she or he feels with the person on the screen. But there is more; the spectator also has the illusion of

controlling that image. First, because the Renaissance perspective which the cinematic image provides ensures that the spectator is subject of the gaze; and second, given that the projector is positioned behind the spectator's head, this means that it is as if those images are the spectator's own imaginings on screen.

**Iris in/out:** An old technique of punctuation that utilises a diaphragm in front of the lens, which is opened (iris in) or closed (iris out) to begin or end a scene. The iris can also be used to focus attention on a detail of the scene.

**Jump cut:** Cut where there is no match between the two spliced shots. Within a sequence, or more particularly a scene, jump cuts give the effect of bad editing. The opposite of a match cut, the jump cut is an abrupt cut between two shots that calls attention to itself because it does not match the shots seamlessly. It marks a transition in time and space but is called a jump cut because it jars the sensibilities; it makes the spectator jump and wonder where the narrative has gone.

**Key light:** The main light on a subject. Usually placed at a 45 degree angle to the camera-subject axis. In high key lighting, the key light provides all or most of the light in the scene. In low key lighting, the key light provides much less of the total illumination.

**Master shot:** A long take of an entire scene, generally a relatively long shot that facilitates the assembly of component closer shots and details. The editor can always fall back on the master shot: consequently, it is also called a cover shot.

**Match cut:** Exactly the opposite of a jump cut within a scene. These cuts make sure that there is a spatial-visual logic between the differently positioned shots within a scene. Thus, where the camera moves to, and the angle of the camera, makes visual sense to the spectator. Eyeline matching is part of the same visual logic: the first shot shows a character looking at something off-screen, the second shot shows what is being looked at. Match cuts then are also part of the seamlessness, the reality effect, so much favoured by Hollywood.

**Medium shot:** A shot intermediate between a close-up and a full shot.

**Montage:** Simply, editing. More particularly: [Eisenstein's](#) idea that adjacent shots should relate to each other in such a way that A and B combine to produce another meaning, C, which is not actually recorded on the film.

**Mise en scène:** Refers to what is colloquially known as "the Set," but is applied more generally to refer to everything that is presented before the camera to produce intended effects, as opposed to editing (which takes place afterwards). Literally, the "putting-in-the-scene"

- the direction of actors
- placement of cameras
- choice of lenses etc.

**Pan:** (abbreviation of panorama) Movement of the camera from left to right or right to left around the imaginary vertical axis that runs through the camera. A panning shot is sometimes confused with a tracking shot.

**Point of view shot:** (Often abbreviated as 'pov'). A shot which shows the scene from the specific point of view of one of the characters.

**Pull back shot:** A tracking shot or zoom that moves back from the subject to reveal the context of the scene.

**Rack focusing:** A technique that uses shallow focus (shallow depth of field) to direct the attention of the viewer forcibly from one subject to another. Focus is "pulled", or changed, to shift the focus plane, often rapidly, sometimes several times within the shot.

**Reverse angle:** A shot from the opposite side of a subject. In a dialogue scene, a shot of the second participant.

**Scene:** A complete unit of film narration. A series of shots (or a single shot) that takes place in a single location and that deals with a single action. Sometimes used interchangeably with sequence.

**Shaky Cam:** A quick paced film technique that follows a subject giving the audience a frantic or documentary feel using the following: a hand-held camera, a camera attached to rope(s) or a camera that appears hand-held.

**Shot:** In terms of camera distance with respect to the object within the shot, there are basically 7 types of shots;

- extreme close-up
- close-up
- medium close-up
- medium shot
- medium long shot
- long shot
- extreme long shot or distance shot

In addition, the terms one-, two-, and three-shots are used to describe shots framing one, two, or three people – usually in medium close-ups or medium shots

### **Close-up/extreme close-up (CU/ECU)**

The subject framed by the camera fills the screen. Connotation can be of intimacy, of having access to the mind or thought processes (including the subconscious) of the character. These shots can be used to stress the importance of a particular character at a particular moment in a film or place her or him as central to the narrative by singling out the character in CU at the beginning of the film. It can signify the star exclusively (as in many Hollywood productions of the 1930s and 1940s). CUs can also be used on objects and parts of the body other than the face. In

this instance they can designate imminent action (a hand picking up a knife, for example), and thereby create suspense. Or they can signify that an object will have an important role to play in the development of the narrative. Often these shots have a symbolic value, usually due to their recurrence during the film. How and where they recur is revealing not only of their importance but also of the direction or meaning of the narrative.

**Medium close-up (MCU):** Close-up of one or two (sometimes three) characters, generally framing the shoulders or chest and the head. The term can also be used when the camera frames the character(s) from the waist up (or down), provided the character is right to the forefront and fills the frame, (otherwise this type of shot is a medium shot). An MCU of two or three characters can indicate

- a coming together
- an intimacy
- a certain solidarity.

Conversely, if there is a series of two and one shots, these MCUs would suggest a complicity between two people against a third who is visually separate in another shot.

**Medium shot (MS):** Generally speaking, this shot frames a character from the waist, hips or knees up (or down). The camera is sufficiently distanced from the body for the character to be seen in relation to her or his surroundings (in an apartment, for example).

Typically, characters will occupy half to two-thirds of the frame. This shot is very commonly used in indoor sequences allowing for a visual signification of relationships between characters. Compare a two-shot MS and a series of separate one-shots in MS of two people. The former suggests intimacy, the latter distance. The former shot could change in meaning to one of distance, however, if the two characters were separated by an object (a pillar, table or telephone, for example). Visually this shot is more complex, more open in terms of its readability than the preceding ones. The characters can be observed in relation to different planes, background middle ground and foreground, and it is the inter-relatedness of these planes which also serves to produce a meaning.

**Medium long shot (MLS):** Halfway between a long and a medium shot. If this shot frames a character then the whole body will be in view towards the middle ground of the shot. A quite open shot in terms of readability, showing considerably more of the surroundings in relation to the character(s).

**Long shot (LS):** Subject or characters are at some distance from the camera; they are seen in full within their surrounding environment.

**Extreme long shot (ELS):** The subject or characters are very much to the background of the shot. Surroundings now have as much if not more importance, especially if the shot is in high-angle. A first way to consider these shots is to say that a shot lends itself to a greater or lesser readability dependent on its type or length. As the camera moves further away from the main

subject (whether person or object) the visual field lends itself to an increasingly more complex reading – in terms of the relationship between the main subject and the decor there is more for the spectator's eye to read or decode. This means that the closer up the shot, the more the spectator's eye is directed by the camera to the specified reading.

Shots, in and of themselves, can have a subjective or objective value: the closer the shot, the more subjective its value, the more the meaning is inscribed from within the shot; conversely, the longer the distance of the shot the more objective its value, the greater the participation of the spectator or reader in the inscription of meaning. Other factors influence the readability of a shot. A high or low camera angle can de-naturalise a shot or reinforce its symbolic value. Take, for example, an ELS that is shot at a high angle. This automatically suggests the presence of someone looking, thus the shot is implicitly a point of view shot. In this way some of the objective value or openness of that shot, (which it would retain if angled horizontally at 90 degrees) is taken away, the shot is no longer 'naturally' objective. The shot is still open to a greater reading than a CUC, however; although the angle imposes a preferred reading (someone is looking down from on high). In terms of illustrating what is meant by reinforcing symbolic value, the contrastive examples of a low- and high-angle CU can serve here. The former type of shot will distort the object within the frame, rendering it uglier, more menacing, more derisory; conversely, when a high-angle CU is used, the object can appear more vulnerable, desirable.

**Steadicam:** The invention of cameraman Garret Brown (developed in conjunction with Cinema Products, Inc.), this is a system which permits hand-held filming with an image steadiness comparable to tracking shots. A vest redistributes the weight of the camera to the hips of the cameraman; a spring-loaded arm minimises the motion of the camera; a video monitor frees the cameraman from the eyepiece.

**Story board:** A series of drawings and captions (sometimes resembling a comic strip) that shows the planned shot divisions and camera movements of the film.

**Subjective camera:** The camera is used in such a way as to suggest the point of view of a particular character.

- High- or low-angle shots indicate where she or he is looking from
- a panoramic or panning shot suggests she or he is surveying the scene
- a tracking shot or a hand-held camera shot signifies the character on motion.

*Subjective shots like these also implicate the spectator into the narrative in that she or he identifies with the point of view.*

**Take:** One version of a shot. A film-maker shoots one or more takes of each shot or set-up. Only one of each group of takes appears in the final film.

**Tilt shot:** The camera tilts up or down, rotating around the axis that runs from left to right through the camera head.



**Tracking shot/travelling shot/dollying shot:** Terms used for a shot when the camera is being moved by means of wheels: On a dolly (a low tracking shot), in a car or even a train. The movement is normally quite fluid (except perhaps in some of the wider car chases) and the tracking can be either fast or slow. Depending on the speed, this shot has different connotations, e.g.: like a dream or trance if excessively slow, bewildering and frightening if excessively frenetic.

A tracking shot can go:

- backwards
- left to right
- right to left

The way in which a person is framed in that shot has a specific meaning, (for example, if the camera holds a person in the frame but that person is at one extreme or other of the frame, this could suggest a sense of imprisonment).

**Voice-over:** The narrator's voice when the narrator is not seen. Common in television commercials, but also in film noir.

**Whip pan:** A type of pan shot in which the camera moves sideways so quickly that the picture blurs into indistinct streaks. It is commonly used as a transition between shots, and can indicate the passage of time and/or a frenetic pace of action. Also known as: *swish pan*, *flick pan* and *zip pan*.

**Wipe:** An optical effect in which an image appears to "wipe-off" or push aside the preceding image. Very common in the 1930s; less so today.

**Zoom:** Zooming either towards or away from an individual object (or multi-object ensemble), going e.g. from distance shot to close-up shot or vice versa.

## Cinematography

### [Cinematography](#)

Cinematographic techniques such as the choice of shot, and camera movement, can greatly influence the structure and meaning of a film.

The use of different shot sizes can influence the meaning which an audience will interpret. The size of the subject in frame depends on two things: the distance the camera is away from the subject and the focal length of the camera lens. Common shot sizes:

- Extreme close-up: Focuses on a single facial feature, such as lips and eyes.
- [Close-up](#): May be used to show tension.
- [Medium shot](#): Often used, but considered bad practice by many directors, as it often denies setting establishment and is generally less effective than the Close-up.
- [Long shot](#)

- [Establishing shot](#): Mainly used at a new location to give the audience a sense of locality.

Choice of shot size is also directly related to the size of the final display screen the audience will see. A Long shot has much more dramatic power on a large theater screen, whereas the same shot would have less of an impact on a small TV or computer screen.

## Movement and expression

Movement can be used extensively by film makers to make meaning. It is how a scene is put together to produce an image. A famous example of this, which uses "dance" extensively to communicate meaning and emotion, is the film, West Side Story.

Provided in this alphabetised list of film techniques used in [motion picture filmmaking](#). There are a variety of expressions:

- [Aerial perspective](#)
- [Aerial shot](#)
- [American shot](#)
- [Angle of view](#)
- [Bird's eye shot](#)
- [Bird's-eye view](#)
- [Boom shot](#)
- [B-roll](#)
- [Camera angle](#)
- [Camera coverage](#)
- [Camera dolly](#)
- [Camera operator](#)
- [Camera tracking](#)
- [Close-up](#)
- [Crane shot](#)
- [Dolly zoom](#)
- [Dutch angle](#)
- [Establishing shot](#)
- [Film frame](#)
- [Filmmaking](#)
- [Follow shot](#)
- [Forced perspective](#)
- [Freeze-frame shot](#)
- [Full frame](#)
- [Full shot](#)
- [Hanging miniature](#)
- [Head shot](#)
- [High-angle shot](#)
- [Long shot](#)
- [Long take](#)
- [Low-angle shot](#)
- [Master shot](#)
- [Medium shot](#)
- [Money shot](#)
- [Multiple-camera setup](#)
- [One shot \(music video\)](#)
- [Over the shoulder shot](#)
- [Panning \(camera\)](#)
- [Point of view shot](#)
- [Rack focusing](#)
- [Reaction shot](#)
- [Shot \(filmmaking\)](#)
- [Shot reverse shot](#)
- [Single-camera setup](#)
- [Stalker vision](#)
- [Tilt \(camera\)](#)
- [Top-down perspective](#)
- [Tracking shot](#)
- [Trunk shot](#)
- [Two shot](#)
- [Video production](#)
- [Walk and talk](#)
- [Whip pan](#)
- [Worm's-eye view](#)

## Lighting technique and aesthetics

- [Background lighting](#)
- [Cameo lighting](#)
- [Fill light](#)
- [Flood lighting](#)
- [High-key lighting](#)
- [Key lighting](#)
- [Lens flare](#)

- [Low-key lighting](#)
- [Mood lighting](#)
- [Rembrandt lighting](#)
- [Stage lighting](#)
- [Soft light](#)

To achieve the results mentioned above, a Lighting Director may use a number or combination of Video Lights. These may include the Redhead or Open-face unit, The Fresnel Light, which gives you a little more control over the spill, or The Dedolight, which provides a more efficient light output and a beam which is easier to control.<sup>[1]</sup>

## Editing and transitional devices

### [Film editing](#)

- [A-roll](#)
- [B-roll](#)
- [Cross-cutting](#)
- [Cutaway](#)
- [Dissolve](#)
- [Establishing shot](#)
- [Fast cutting](#)
- [Flashback](#)
- [Insert](#)
- [Jump cut](#)
- [Keying](#)
- [L cut \("Split edit"\)](#)
- [Master shot](#)
- [Match cut](#)
- [Montage](#)
- [Point of view shot](#)
- [Screen direction](#)
- [Sequence shot](#)
- [Smash cut](#)
- [Slow cutting](#)
- [Split screen](#)
- [SMPTE timecode](#)
- [Shot reverse shot](#)
- [Talking head](#)
- [Wipe](#)

## Special effects (FX)

### [Special effect](#)

- [3D computer graphics](#)

- [3D film](#) for movie history
- [Bluescreen/Chroma key](#)
- [Bullet time](#)
- [Computer-generated imagery](#)
- [Digital compositing](#)
- [Optical effects](#)
- [Stereoscopy](#) for 3D technical details
- [Stop motion](#)
- [Stop trick](#)

((dream sequences))

## Lighting

In [cinematography](#), the use of light can influence the meaning of a shot. For example, film makers often portray villains that are heavily shadowed or veiled, using [silhouette](#).

Techniques involving light include backlight (silhouette), and under-lighting (light across a character form).

## Sound

Sound is used extensively in filmmaking to enhance presentation, and is distinguished into [diegetic](#) and non-diegetic sound:

- **Diegetic sound:** It is sound that the characters can hear as well as the audience, and usually implies a reaction from the character. Also called "literal sound" or "actual sound":
  - Voices of characters;
  - Sounds made by objects in the story, e.g. heart beats of a person
  - [Source music](#), represented as coming from instruments in the story space.
  - Basic sound effects, e.g. dog barking, car passing; as it is in the scene
  - Music coming from reproduction devices such as record players, radios, tape players etc.
- **Non-diegetic sound:** It is sound which is represented as coming from a source outside the story space, i.e. its source is neither visible on the screen, nor has been implied to be present in the action. Also called "non-literal sound" or "commentary sound":
  - Narrator's commentary;
  - Voice of God;
  - Sound effect which is added for dramatic effect;
  - Mood music; and
  - [Film score](#)

Non-diegetic sound plays a significant role in creating the atmosphere and mood within a film.

Very commonly diegetic shift occurs from one to the other, for example when characters are listening to music, then start dancing and the music becomes non-diegetic to indicate being 'lost in the moment'.

### **Sound effects**

Main article: [Sound effect](#)

In motion picture and television production, a sound effect is a sound recorded and presented to make a specific storytelling or creative point, without the use of dialogue or music. The term often refers to a process, applied to a recording, without necessarily referring to the recording itself. In professional motion picture and television production, the segregations between recordings of dialogue, music, and sound effects can be quite distinct, and it is important to understand that in such contexts, dialogue and music recordings are never referred to as sound effects, though the processes applied to them, such as [reverberation](#) or [flanging](#), often are.

## **Techniques in interactive movies**

### [Interactive movie](#)

New techniques currently being developed in [interactive movies](#), introduce an extra dimension into the experience of viewing movies, by allowing the viewer to change the course of the movie.

In traditional linear movies, the author can carefully construct the plot, roles, and characters to achieve a specific effect on the audience. [Interactivity](#), however, introduces non-linearity into the movie, such that the author no longer has complete control over the story, but must now share control with the viewer. There is an inevitable trade-off between the desire of the viewer for freedom to experience the movie in different ways, and the desire of the author to employ specialized techniques to control the presentation of the story. [Computer technology](#) is required to create the illusion of freedom for the viewer, while providing familiar, as well as, new cinematic techniques to the author.

## **Equipments required for Video Production**

### **Video Camera**

This is the centerpiece of your filmmaking gear package. What camera you choose depends on your budget, the type of shooting you're doing (static, stealth, run-and-gun, etc.) and where you plan to showcase your film (web-only, theater, broadcast, etc). You can shoot a documentary on anything from your iPhone to a DSLR to a top of line digital cinema camera such as the [Red Epic](#). Whatever camera you choose, make sure you capture excellent audio.

## Tripod



A necessary piece of equipment to keep your footage looking steady and professional.

Get a tripod with a fluid head for smoother looking pans.

## Camera Light



Sometimes a nice pop of light from the camera can help fill in ugly shadows. A camera light is a nice accessory to have especially in a documentary/news style shoot where you might not have time for a full 3-point lighting set-up.

## Three-Point Lighting Kit

You only really need a lighting kit if you're planning to do a lot of shooting inside. Creating a well lit scene usually involves a 3-way lighting set-up.

Good lighting doesn't have to be expensive.

## Shotgun Microphone

Great audio often separates the pros from the amateurs. Having a shotgun mic prepares you for almost every situation. It's perfect for setting on top of your camera or a boom pole.

## Boom Pole

A boom mic set-up comes in handy to capture audio from a group interview, crowd scenes or any situation where you need to gather professional audio quickly. In addition to the boom pole (right), you'll need a [shockmount](#) and a [shotgun mic](#).

## Shotgun Mic with boom pole accessories

Here's all you need to turn your shotgun mic into a boom pole

mic. A shockmount is needed for the mic so that it stays steady on top of the pole and doesn't pick up sounds when the pole is moving around. And a wind muff is needed to keep out any wind noise.

### **Audio (XLR) Cables**

If you plan to use a professional audio set-up with your camcorder, you'll need XLR cables to go from your camera to the mic.

### **Wireless Microphone**

Sure, you can use a "wired mic" which is a bit less expensive, but I wouldn't go on a documentary shoot without my wireless microphone. Unless you have an audio person who can hold a boom mic, this is the next best thing providing tons of flexibility for walk-and-talk interviews with your subjects.

### **Portable Digital Audio Recorder**

If you decide to shoot your documentary with a DSLR such as the [Canon 5D](#), it's highly recommended that you either get a portable audio recorder such as the [Zoom H4N](#) (left) or a preamp audio box such as the [juicedLink RA333](#) to attach to your camera. Why? The DSLR cameras only come equipped with a mini-jack audio input which doesn't capture professional/broadcast quality sound. Because of that, you'll need some way to capture professional audio. The bonus with the preamp is that the audio is recorded directly to the camera whereas with the portable recorder, you'll have to sync the audio and video later during editing.

### **Headphones**

Getting great audio means monitoring the sound at all times while shooting. Find a good quality, comfortable set of headphones to make sure you avoid any nasty audio surprises when you get back from the shoot.

### **Light Reflector**



This is a must-have item for your documentary filmmaking kit. A light reflector can turn an ugly amateur-looking shot into a golden and gorgeously lit scene.

### Lenses: Wide Angle, Clear "Protective" Lens, Polarizer, Zoom Lens, Macros, etc.



Have you ever seen those cool fish-eye scenes? That's from using a special wide angle lens. If you're shooting in super sunny situations, an ND filter or circular polarizer can dramatically improve the image. Or what about super close-ups of a bug or flower, that's when you need a macro lens.

### 3-4 Extra Batteries

You never want to get caught without enough batteries out on a shoot. Unless you're heading out into the Amazon, 3-4 extra batteries should be enough for most shooting situations.

### Video Tapes, Flash Memory Cards or DVD's (depending on your camera)

You'll need somewhere to record all that footage you'll be shooting.

### External Hard Drive

A portable hard drive comes in handy if you plan to do a lot of shooting in the field and need to offload your footage from your camera's memory cards. We love the rugged lacies (left).

### Video/Photo Camera Bag

Of course, now that you have all your gear, you need something sturdy and weatherproof to put it in. Lots of great choices here. Just pick something you like that fits the type of shooting you plan to do.

### DSLR Shoulder Mount Rig

If you're shooting with a DSLR, putting your camera on a shoulder mount can add a nice professional touch. It's especially helpful if you don't want to use a tripod and a rig creates smoother-looking footage in a "run-and-gun" shooting situation.

## Production Control Room

The **production control room** or **studio control room (SCR)** is the place in a [television studio](#) in which the composition of the outgoing program takes place. An SCR is also often the acronym for the Satellite Control Room, from here TV feeds are sent to & received from the local Satellite used by the TV station

The production control room is occasionally also called an SCR or a **gallery** – the latter name comes from the original placement of the director on an ornately carved bridge spanning the [BBC's first studio at Alexandra Palace](#) which was once referred to as like a [minstrels' gallery](#).<sup>[1]</sup> [Master control](#) is the technical hub of a broadcast operation common among most over-the-air [television stations](#) and [television networks](#). Master control is distinct from a PCR in television studios where the activities such as switching from camera to camera are coordinated. A



[transmission control room](#) (TCR) is usually smaller in size and is a scaled-down version of [centralcasting](#).

## Production control room facilities

Facilities in a Production control room include:

- A [video monitor](#) wall, with monitors for program, preview, [VTRs](#), cameras, graphics and other video sources. In some facilities, the monitor wall is a series of racks containing physical television and computer monitors; in others, the monitor wall has been replaced with a virtual monitor wall (sometimes called a "[glass cockpit](#)"), one or more large video screens, each capable of displaying multiple sources in a simulation of a monitor wall.
- A [vision mixer](#), a large control panel used to select the [multiple-camera setup](#) and other various sources to be recorded or seen on air and, in many cases, in any [video monitors](#) on the set. The term "vision mixer" is primarily used in Europe, while the term "video switcher" is usually used in North America.
- A [professional audio mixing console](#) and other audio equipment such as effects devices.
- A [character generator](#) (CG), which creates the majority of the names and full [digital on-screen graphics](#) that are inserted into the program [lower third](#) portion of the [television screen](#)
- [Digital video effects](#), or DVE, for manipulation of video sources. In newer vision mixers, the DVE is integrated into the vision mixer; older models without built-in DVE's can often control external DVE devices, or an external DVE can be manually run by an operator.
- A still store, or still frame, device for storage of graphics or other images. While the name suggests that the device is only capable of storing still images, newer still stores can store moving [video clips](#) and [motion graphics](#).
- The [technical director's](#) station, with [waveform monitors](#), [vectorscopes](#) and the [camera control units](#) (CCU) or remote control panels for the CCUs.
- In some facilities, VTRs may also be located in the PCR, but are also often found in the [central apparatus room](#)
- [Intercom](#) and [IFB](#) equipment for communication with talent and [television crew](#)
- A [signal generator](#) to [genlock](#) all of the video equipment to a common reference that requires [colorburst](#)

## UNIT – 4

### Lighting For Video Production

**Three-point lighting** is a standard method used in visual media such as theatre, [video](#), [film](#), [still photography](#) and [computer-generated imagery](#).<sup>[1]</sup> By using three separate positions, the photographer can illuminate the shot's subject (such as a person) however desired, while also controlling (or eliminating entirely) the shading and shadows produced by direct lighting.

The [key light](#), as the name suggests, shines directly upon the subject and serves as its principal illuminator; more than anything else, the strength, color and angle of the key determines the shot's overall lighting design.

In indoor shots, the key is commonly a specialized lamp, or a camera's flash. In outdoor daytime shots, the [Sun](#) often serves as the key light. In this case, of course, the photographer cannot set the light in the exact position he or she wants, so instead arranges it to best capture the sunlight, perhaps after waiting for the sun to position itself just right.

The [fill light](#) also shines on the subject, but from a side angle relative to the key and is often placed at a lower position than the key (about at the level of the subject's face). It balances the key by illuminating shaded surfaces, and lessening or eliminating [chiaroscuro](#) effects, such as the shadow cast by a person's nose upon the rest of the face. It is usually [softer](#) and less bright than the key light (up to half), and more to a flood. Not using a fill at all can result in stark contrasts (due to shadows) across the subject's surface, depending upon the key light's harshness. Sometimes, as in [low-key lighting](#), this is a deliberate effect, but shots intended to look more natural and less stylistic require a fill.

In some situations a photographer can use a reflector (such as a piece of white cardstock mounted off-camera, or even a white-painted wall) as a fill light instead of an actual lamp. Reflecting and redirecting the key light's rays back upon the subject from a different angle can cause a softer, subtler effect than using another lamp.

The [back light](#) (a.k.a. the *rim*, *hair*, or *shoulder* light) shines on the subject from behind, often (but not necessarily) to one side or the other. It gives the subject a rim of light, serving to separate the subject from the background and highlighting contours.

Back light or rim light is different from a kick in that a kick (or *kicker*) contributes to a portion of the shading on the visible surface of the subject, while a rim light only creates a thin outline around the subject without necessarily hitting the front (visible) surface of the subject at all.

## In theatre

A three point system in theatre can be used in a variety of ways to help set a mood of the character. By having bright key light, but minimal fill and back light, this will give the effect of anger, whereas if the scene is very brightly lit with little shadow on the actor, this can make the scene look very happy.

## Four-point lighting

A typical four-point lighting setup

The addition of a fourth light, the [background light](#), makes for a **four-point lighting setup**.

The background light is placed behind the subject(s), on a high grid, or low to the ground. Unlike the other three lights, which illuminate foreground elements like actors and props, it illuminates background elements, such as walls or outdoor scenery. This technique can be used to eliminate shadows cast by foreground elements onto the background, or to draw more attention to the background. It also helps to off-set the single eye nature of the camera, this means that it helps the camera give depth to the subject.

**Lighting** or **illumination** is the deliberate use of [light](#) to achieve a practical or aesthetic effect. Lighting includes the use of both artificial [light sources](#) like lamps and light fixtures, as well as natural illumination by capturing [daylight](#). [Daylighting](#) (using windows, skylights, or light shelves) is sometimes used as the main source of light during daytime in buildings. This can save energy in place of using artificial lighting, which represents a major component of energy consumption in buildings. Proper lighting can enhance task performance, improve the appearance of an area, or have positive psychological effects on occupants.

Indoor lighting is usually accomplished using [light fixtures](#), and is a key part of [interior design](#). Lighting can also be an intrinsic component of [landscape projects](#).

## History

With the discovery of [fire](#), the earliest form of artificial lighting used to illuminate an area were [campfires](#) or [torches](#). As early as 400,000 [BCE](#), fire was kindled in the caves of [Peking Man](#). [Prehistoric](#) people used primitive lamps to illuminate surroundings. These lamps were made from naturally occurring materials such as rocks, shells, horns and stones, were filled with [grease](#), and had a [fiber wick](#). Lamps typically used animal or vegetable fats as fuel. Hundreds of these lamps (hollow worked stones) have been found in the [Lascaux](#) caves in modern-day [France](#), dating to about 15,000 years ago. Oily animals (birds and fish) were also used as lamps after being threaded with a wick. [Fireflies](#) have been used as lighting sources. [Candles](#) and glass and pottery lamps were also invented.<sup>[1]</sup> [Chandeliers](#) were an early form of "[light fixture](#)".

Major reductions in the cost of lighting occurred with the discovery of [whale oil](#) and [kerosene](#).<sup>[2]</sup> [Gas lighting](#) was economical enough to power street lights in major cities starting in the early 1800s, and was also used in some commercial buildings and in the homes of wealthy people. The [gas mantle](#) boosted the luminosity of utility lighting and of kerosene lanterns. The next major drop in price came about with the [incandescent light bulb](#) powered by [electricity](#).<sup>[2]</sup>

Over time, electric lighting became ubiquitous in developed countries. [Segmented sleep](#) patterns disappeared, improved nighttime lighting made more activities possible at night, and more [street lights](#) reduced urban crime.

## Fixtures

[Light fixture](#)

Lighting fixtures come in a wide variety of styles for various functions. The most important functions are as a holder for the light source, to provide directed light and to avoid [visual glare](#). Some are very plain and functional, while some are pieces of art in themselves. Nearly any material can be used, so long as it can tolerate the excess heat and is in keeping with safety codes.

An important property of light fixtures is the [luminous efficacy](#) or [wall-plug efficiency](#), meaning the amount of usable light emanating from the fixture per used energy, usually measured in [lumen](#) per [watt](#). A fixture using replaceable light sources can also have its efficiency quoted as the percentage of light passed from the "bulb" to the surroundings. The more [transparent](#) the lighting fixture is, the higher efficacy. [Shading](#) the light will normally decrease efficacy but increase the directionality and the [visual comfort probability](#).

[Color temperature](#) for white light sources also affects their use for certain applications. The color temperature of a white light source is the temperature in [Kelvin](#) of a theoretical [black body](#) emitter that most closely matches the spectral characteristics of the lamp. An incandescent bulb has a color temperature around 2800 to 3000 Kelvin; daylight is around 6400 Kelvin. Lower color temperature lamps have relatively more energy in the yellow and red part of the visible spectrum, while high color temperatures correspond to lamps with more of a blue-white appearance. For critical inspection or color matching tasks, or for retail displays of food and clothing, the color temperature of the lamps will be selected for the best overall lighting effect.

## Types

Lighting is classified by intended use as general, accent, or task lighting, depending largely on the distribution of the light produced by the fixture.

- [Task lighting](#) is mainly functional and is usually the most concentrated, for purposes such as [reading](#) or [inspection](#) of materials. For example, reading poor-quality reproductions may require task lighting levels up to 1500 [lux](#) (150 [footcandles](#)), and some inspection tasks or [surgical](#) procedures require even higher levels.
- [Accent lighting](#) is mainly decorative, intended to highlight [pictures](#), [plants](#), or other elements of [interior design](#) or [landscaping](#).
- General lighting (sometimes referred to as ambient light) fills in between the two and is intended for general illumination of an area. Indoors, this would be a basic [lamp](#) on a table or floor, or a fixture on the [ceiling](#). Outdoors, general lighting for a [parking lot](#) may be as low as 10-20 lux (1-2 footcandles) since [pedestrians](#) and [motorists](#) already used to the dark will need little light for crossing the area.

## Methods

- [Downlighting](#) is most common, with fixtures on or recessed in the ceiling casting light downward. This tends to be the most used method, used in both offices and homes. Although it is easy to design it has dramatic problems with glare and excess energy consumption due to large number of fittings.<sup>[3]</sup> The introduction of LED lighting has greatly improved this by approx. 90% when compared to a halogen downlight or spotlight. LED lamps or bulbs are now available to retro fit in place of high energy consumption lamps.

- [Uplighting](#) is less common, often used to bounce indirect light off the ceiling and back down. It is commonly used in lighting applications that require minimal glare and uniform general illuminance levels. Uplighting (indirect) uses a diffuse surface to reflect light in a space and can minimize disabling glare on computer displays and other dark glossy surfaces. It gives a more uniform presentation of the light output in operation. However indirect lighting is completely reliant upon the reflectance value of the surface. While indirect lighting can create a diffused and shadow free light effect it can be regarded as an uneconomical lighting principle.<sup>[4][5]</sup>
- Front lighting is also quite common, but tends to make the subject look flat as it casts almost no visible shadows. Lighting from the side is the less common, as it tends to produce [glare](#) near [eye](#) level. [Backlighting](#) either around or through an object is mainly for accent.

## Forms of lighting

### *Indoor lighting*

LED Lighting furniture by [Manfred Kielnhofer](#)

Forms of lighting include [alcove](#) lighting, which like most other uplighting is indirect. This is often done with [fluorescent lighting](#) (first available at the [1939 World's Fair](#)) or [rope light](#), occasionally with [neon lighting](#), and recently with [LED strip lighting](#). It is a form of backlighting.

[Soffit](#) or close to wall lighting can be general or a decorative wall-wash, sometimes used to bring out texture (like [stucco](#) or [plaster](#)) on a wall, though this may also show its [defects](#) as well. The effect depends heavily on the exact type of lighting source used.

[Recessed lighting](#) (often called "pot lights" in [Canada](#), "can lights" or "high hats" in the [US](#)) is popular, with fixtures mounted into the ceiling structure so as to appear flush with it. These downlights can use narrow beam spotlights, or wider-[angle floodlights](#), both of which are bulbs having their own [reflectors](#). There are also downlights with internal reflectors designed to accept common 'A' lamps (light bulbs) which are generally less costly than reflector lamps. Downlights can be incandescent, fluorescent, [HID \(high intensity discharge\)](#) or [LED](#).

[Track lighting](#), invented by [Lightolier](#),<sup>[6]</sup> was popular at one period of time because it was much easier to install than recessed lighting, and individual fixtures are decorative and can be easily aimed at a [wall](#). It has regained some popularity recently in low-voltage tracks, which often look nothing like their predecessors because they do not have the safety issues that line-voltage systems have, and are therefore less bulky and more ornamental in themselves. A master [transformer](#) feeds all of the fixtures on the track or rod with 12 or 24 volts, instead of each light fixture having its own line-to-low voltage transformer. There are traditional spots and floods, as well as other small hanging fixtures. A modified version of this is [cable lighting](#), where lights are hung from or clipped to bare [metal cables](#) under [tension](#).

A [sconce](#) is a wall-mounted fixture, particularly one that shines up and sometimes down as well. A [torchiere](#) is an uplight intended for ambient lighting. It is typically a floor lamp but may be wall-mounted like a sconce.

The portable or table lamp is probably the most common fixture, found in many homes and [offices](#). The standard lamp and shade that sits on a table is general lighting, while the desk lamp is considered task lighting. [Magnifier](#) lamps are also task lighting.

The [illuminated ceiling](#) was once popular in the 1960s and 1970s but fell out of favor after the 1980s. This uses [diffuser](#) panels hung like a [suspended ceiling](#) below fluorescent lights, and is considered general lighting. Other forms include neon, which is not usually intended to illuminate anything else, but to actually be an artwork in itself. This would probably fall under accent lighting, though in a dark [nightclub](#) it could be considered general lighting.

In a [movie theater](#), steps in the aisles are usually marked with a row of small lights for convenience and safety, when the film has started and the other lights are off. Traditionally made up of small low wattage, low voltage lamps in a track or translucent tube, these are rapidly being replaced with LED based versions.

### *Outdoor lighting.*

[Street Lights](#) are used to light roadways and walkways at night. Some manufacturers are designing LED and photovoltaic luminaires to provide an energy-efficient alternative to traditional street light fixtures.<sup>[7][8][9]</sup>

[Floodlights](#) are used to illuminate outdoor playing fields or work zones during nighttime.

[Floodlights](#) can be used to illuminate outdoor playing fields or work zones during nighttime hours. The most common type of floodlights are metal halide and high pressure sodium lights.

[Beacon lights](#) are positioned at the intersection of two roads to aid in navigation.

Sometimes [security lighting](#) can be used along roadways in urban areas, or behind homes or commercial facilities. These are extremely bright lights used to deter crime. Security lights may include floodlights.

Entry lights can be used outside to illuminate and signal the entrance to a property.<sup>[10]</sup> These lights are installed for safety, security, and for decoration.

Underwater accent lighting is also used for koi ponds, fountains, swimming pools and the like.

## **Vehicle use**

### [Automotive lighting](#)

[Vehicles](#) typically include [headlamps](#) and tail lights. Headlamps are [white](#) or [selective yellow](#) lights placed in the front of the vehicle, designed to illuminate the upcoming road and to make the vehicle more visible. Many manufactures are turning to LED headlights as an energy-efficient alternative to traditional headlamps.<sup>[11]</sup> Tail and brake lights are [red](#) and emit light to the rear so as to reveal the vehicle's direction of travel to following drivers. White rear-facing reversing lamps indicate that the vehicle's transmission has been placed in the reverse gear, warning anyone behind the vehicle that it is moving backwards, or about to do so. Flashing turn signals on the front, side, and rear of the vehicle indicate an intended change of position or direction. In the late 1950s, some automakers began to use [electroluminescent](#) technology to [backlight](#) their cars' [speedometers](#) and other gauges or to draw attention to [logos](#) or other decorative elements.

## Lamps

### [Lamp \(electrical component\)](#)

Commonly called 'light bulbs', [lamps](#) are the removable and replaceable part of a light fixture, which converts electrical energy into [electromagnetic radiation](#). While lamps have traditionally been rated and marketed primarily in terms of their power consumption, expressed in [watts](#), proliferation of lighting technology beyond the [incandescent light bulb](#) has eliminated the correspondence of wattage to the amount of light produced. For example, a 60 W incandescent light bulb produces about the same amount of light as a 13 W [compact fluorescent lamp](#). Each of these technologies has a different [efficacy](#) in converting electrical energy to [visible light](#). Visible light output is typically measured in [lumens](#). This unit only quantifies the visible radiation, and excludes invisible infrared and ultraviolet light. A wax candle produces on the close order of 13 lumens, a 60 watt incandescent lamp makes around 700 lumens, and a 15-watt compact fluorescent lamp produces about 800 lumens, but actual output varies by specific design.<sup>[12]</sup> Rating and marketing emphasis is shifting away from wattage and towards lumen output, to give the purchaser a directly applicable basis upon which to select a lamp.

Lamp types include:

- [Ballast](#): A ballast is an auxiliary piece of equipment designed to start and properly control the flow of [power](#) to discharge light sources such as [fluorescent](#) and [high intensity discharge](#) (HID) lamps. Some lamps require the ballast to have thermal protection.
- [fluorescent](#) light: A tube coated with [phosphor](#) containing low pressure [mercury](#) vapor that produces white light.
- [Halogen](#): Incandescent lamps containing halogen gases such as iodine or bromine, increasing the efficacy of the lamp versus a plain incandescent lamp.
- [Neon](#): A low pressure gas contained within a glass tube; the color emitted depends on the gas.
- [Light emitting diodes](#): Light emitting diodes (LED) are solid state devices that emit light by dint of the movement of electrons in a [semiconductor](#) material.<sup>[13]</sup>
- [Compact fluorescent lamps](#): CFLs are designed to replace incandescent lamps in existing and new installations.<sup>[14][15]</sup>

# Design and architecture

## Architectural lighting design

### [Architectural lighting design](#)

Lighting design as it applies to the built environment is known as 'architectural lighting design'. Lighting of structures considers aesthetic elements as well as practical considerations of quantity of light required, occupants of the structure, energy efficiency and cost. Artificial lighting takes into account the amount of daylight received in an internal space by using [Daylight factor](#) calculation. For simple installations, hand-calculations based on tabular data are used to provide an acceptable lighting design. More critical or optimized designs now routinely use mathematical modeling on a computer using software such as [Radiance](#) which can allow an Architect to quickly undertake complex calculations to review the benefit of a particular design.

In some design instances, materials used on walls and furniture play a key role in the lighting effect< for example dark paint tends to absorb light, making the room appear smaller and more dim than it is, whereas light paint does the opposite. In addition to paint, reflective surfaces also have an effect on lighting design.<sup>[5][17]</sup>

## Photometric studies

Photometric studies (also sometimes referred to as "layouts" or "point by points") are often used to simulate lighting designs for projects before they are built or renovated. This enables architects, lighting designers, and engineers to determine whether a proposed lighting setup will deliver the amount of light intended. They will also be able to determine the contrast ratio between light and dark areas. In many cases these studies are referenced against [IESNA](#) or [CIBSE](#) recommended lighting practices for the type of application. Depending on the type of area, different design aspects may be emphasized for safety or practicality (i.e. such as maintaining uniform light levels, avoiding glare or highlighting certain areas). Specialized software is often used to create these, which typically combine the use of two-dimensional digital [CAD](#) drawings and lighting [calculation software](#) (i.e. [AGi32or](#) Dialux).

# On stage and set

## [Stage lighting](#)

Lighting illuminates the performers and artists in a live theatre, dance, or musical performance, and is selected and arranged to create dramatic effects. Stage lighting uses general illumination technology in devices configured for easy adjustment of their output characteristics.<sup>[citation needed]</sup> The setup of stage lighting is tailored for each scene of each production. Dimmers, colored filters, reflectors, lenses, motorized or manually aimed lamps, and different kinds of flood and spot lights are among the tools used by a stage lighting designer to produce the desired effects. A set of lighting cues are prepared so that the lighting operator can control the lights in step with the performance; complex theatre lighting systems use computer control of lighting instruments.



Motion picture and television production use many of the same tools and methods of stage lighting. Especially in the early days of these industries, very high light levels were required and heat produced by lighting equipment presented substantial challenges. Modern cameras require less light, and modern light sources emit less heat.

## Measurement

### [Photometry \(optics\)](#)

Measurement of light or [photometry](#) is generally concerned with the amount of useful light falling on a surface and the amount of light emerging from a lamp or other source, along with the colors that can be rendered by this light. The human eye responds differently to light from different parts of the visible spectrum, therefore photometric measurements must take the [luminosity function](#) into account when measuring the amount of useful light. The basic [SI](#) unit of measurement is the [candela](#) (cd), which describes the luminous intensity, all other photometric units are derived from the candela. [Luminance](#) for instance is a measure of the density of luminous intensity in a given direction. It describes the amount of light that passes through or is emitted from a particular area, and falls within a given [solid angle](#). The SI unit for luminance is [candela](#) per [square metre](#) (cd/m<sup>2</sup>). The [CGS](#) unit of luminance is the [stilb](#), which is equal to one candela per square centimetre or 10 kcd/m<sup>2</sup>. The amount of useful light emitted from a source or the [luminous flux](#) is measured in [lumen](#) (lm).

The [SI](#) unit of [illuminance](#) and [luminous emittance](#), being the luminous power per area, is measured in [Lux](#). It is used in [photometry](#) as a measure of the intensity, as perceived by the human eye, of [light](#) that hits or passes through a surface. It is analogous to the [radiometric](#) unit watts per square metre, but with the power at each [wavelength](#) weighted according to the [luminosity function](#), a standardized model of human visual brightness perception. In English, "lux" is used in both singular and plural.<sup>[18]</sup>

Several measurement methods have been developed to control glare resulting from indoor lighting design. The [Unified Glare Rating](#) (UGR), the Visual Comfort Probability, and the Daylight Glare Index are some of the most well-known methods of measurement. In addition to these new methods, four main factors influence the degree of discomfort glare; the luminance of the glare source, the solid angle of the glare source, the background luminance, and the position of the glare source in the field of view must all be taken into account.<sup>[4][19]</sup>

### Color properties

To define light source color properties, the lighting industry predominantly relies on two metrics, [correlated color temperature](#) (CCT), commonly used as an indication of the apparent "warmth" or "coolness" of the light emitted by a source, and [color rendering index](#) (CRI), an indication of the light source's ability to make objects appear natural.

However, these two metrics, developed in the last century, are facing increased challenges and criticisms as new types of light sources, particularly light emitting diodes (LEDs), become more prevalent in the market.

For example, in order to meet the expectations for good color rendering in retail applications, research<sup>[20]</sup> suggests using the well-established CRI along with another metric called gamut area index (GAI). GAI represents the relative separation of object colors illuminated by a light source; the greater the GAI, the greater the apparent saturation or vividness of the object colors. As a result, light sources which balance both CRI and GAI are generally preferred over ones that have only high CRI or only high GAI.<sup>[21]</sup>

## Light exposure

Typical measurements of light have used a Dosimeter. Dosimeters measure an individual's or an object's exposure to something in the environment, such as light dosimeters and ultraviolet dosimeters.

In order to specifically measure the amount of light entering the eye, personal circadian light meter called the Daysimeter has been developed.<sup>[22]</sup> This is the first device created to accurately measure and characterize light (intensity, spectrum, timing, and duration) entering the eye that affects the human body's clock.

The small, head-mounted device measures an individual's daily rest and activity patterns, as well as exposure to short-wavelength light that stimulates the circadian system. The device measures activity and light together at regular time intervals and electronically stores and logs its [operating temperature](#). The Daysimeter can gather data for up to 30 days for analysis.<sup>[23]</sup>

## Energy consumption

Several strategies are available to minimize energy requirements for lighting a building:

- Specification of illumination requirements for each given use area.
- Analysis of lighting quality to ensure that adverse components of lighting (for example, glare or incorrect [color spectrum](#)) are not biasing the design.
- Integration of space planning and interior architecture (including choice of interior surfaces and room geometries) to lighting design.
- Design of time of day use that does not expend unnecessary energy.
- Selection of [fixture](#) and lamp types that reflect best available technology for [energy conservation](#).
- Training of building occupants to use lighting equipment in most efficient manner.
- Maintenance of lighting systems to minimize energy wastage.
- Use of natural light
  - Some big box stores were being built from 2006 on with numerous plastic bubble skylights, in many cases completely obviating the need for interior artificial lighting for many hours of the day.
  - In countries where indoor lighting of simple dwellings is a significant cost, "[Mosser lamps](#)", plastic water-filled transparent drink bottles fitted through the roof, provide the equivalent of a 40- to 60-watt incandescent bulb each during daylight.<sup>[24]</sup>
- [Load shedding](#) can help reduce the power requested by individuals to the main power supply. Load shedding can be done on an individual level, at a building level, or even at a regional level.

Specification of illumination requirements is the basic concept of deciding how much illumination is required for a given task. Clearly, much less light is required to illuminate a hallway compared to that needed for a [word processing](#) work station. Generally speaking, the [energy](#) expended is proportional to the design illumination level. For example, a lighting level of 400 [lux](#) might be chosen for a work environment involving meeting rooms and conferences, whereas a level of 80 lux could be selected for building hallways.<sup>[25][26][27][28][29]</sup> If the hallway standard simply emulates the conference room needs, then much more energy will be consumed than is needed. Unfortunately, most of the lighting standards even today have been specified by industrial groups who manufacture and sell lighting, so that a historical commercial bias exists in designing most building lighting, especially for office and industrial settings.

## Lighting control systems

### [Lighting control system](#)

Lighting control systems reduce energy usage and cost by helping to provide light only when and where it is needed. Lighting control systems typically incorporate the use of time schedules, occupancy control, and photocell control (i.e. [daylight harvesting](#)). Some systems also support [demand response](#) and will automatically dim or turn off lights to take advantage of [utility](#) incentives. Lighting control systems are sometimes incorporated into larger [building automation systems](#).

Many newer control systems are using [wireless mesh](#) open standards (such as [ZigBee](#)),<sup>[30]</sup> which provides benefits including easier installation (no need to run control wires) and interoperability with other standards-based building control systems (e.g. security).<sup>[31]</sup>

In response to [daylighting](#) technology, [daylight harvesting](#) systems have been developed to further reduce energy consumption. These technologies are helpful, but they do have their downfalls. Many times, rapid and frequent switching of the lights on and off can occur, particularly during unstable weather conditions or when daylight levels are changing around the switching illuminance. Not only does this disturb occupants, it can also reduce lamp life. A variation of this technology is the 'differential switching or dead-band' photoelectric control which has multiple illuminances it switches from so as not to disturb occupants as much.<sup>[31][32]</sup>

Occupancy sensors to allow operation for whenever someone is within the area being scanned can control lighting. When motion can no longer be detected, the lights shut off. Passive infrared sensors react to changes in heat, such as the pattern created by a moving person. The control must have an unobstructed view of the building area being scanned. Doors, partitions, stairways, etc. will block motion detection and reduce its effectiveness. The best applications for passive infrared occupancy sensors are open spaces with a clear view of the area being scanned. Ultrasonic sensors transmit sound above the range of human hearing and monitor the time it takes for the sound waves to return. A break in the pattern caused by any motion in the area triggers the control. Ultrasonic sensors can see around obstructions and are best for areas with cabinets and shelving, restrooms, and open areas requiring 360-degree coverage. Some occupancy sensors utilize both passive infrared and ultrasonic technology, but are usually more expensive. They can be used to control one lamp, one fixture or many fixtures.<sup>[33][34]</sup>

## Daylighting

Main article: [Daylighting](#)

Daylighting is the oldest method of interior lighting. Daylighting is simply designing a space to use as much natural light as possible. This decreases energy consumption and costs, and requires less heating and cooling from the building. Daylighting has also been proven to have positive effects on patients in hospitals as well as work and school performance. Due to a lack of information that indicate the likely energy savings, daylighting schemes are not yet popular among most buildings.<sup>[31][35]</sup>

## Health effects

[Full-spectrum light](#), [Over-illumination](#) and [Light effects on circadian rhythm](#)

It is valuable to provide the correct light intensity and color spectrum for each task or environment. Otherwise, energy not only could be wasted but [over-illumination](#) can lead to adverse health and psychological effects.

Beyond the energy factors being considered, it is important not to over-design illumination, lest adverse health effects such as [headache](#) frequency, stress, and increased [blood pressure](#) be induced by the higher lighting levels. In addition, glare or excess light can decrease worker efficiency.<sup>[36]</sup>

Analysis of lighting quality particularly emphasizes use of natural lighting, but also considers spectral content if artificial light is to be used. Not only will greater reliance on natural light reduce energy consumption, but will favorably impact human health and performance. New studies have shown that the performance of students is influenced by the time and duration of daylight in their regular schedules. [Designing school facilities](#) to incorporate the right types of light at the right time of day for the right duration may improve student performance and well-being. Similarly, designing lighting systems that maximize the right amount of light at the appropriate time of day [for the elderly](#) may help relieve symptoms of Alzheimer's Disease. The human circadian system is entrained to a 24-hour light-dark pattern that mimics the earth's natural light/dark pattern. When those patterns are disrupted, they disrupt the natural circadian cycle. [Circadian disruption](#) may lead to numerous health problems including breast cancer, [seasonal affective disorder](#), [delayed sleep phase syndrome](#), and other ailments.<sup>[37][38]</sup>

A study conducted in 1972 and 1981, documented by Robert Ulrich, surveyed 23 surgical patients assigned to rooms looking out on a natural scene. The study concluded that patients assigned to rooms with windows allowing lots of natural light had shorter postoperative hospital stays, received fewer negative evaluative comments in nurses' notes, and took fewer potent analgesics than 23 matched patients in similar rooms with windows facing a brick wall. This study suggests that due to the nature of the scenery and daylight exposure was indeed healthier for patients as opposed to those exposed to little light from the brick wall. In addition to increased work performance, proper usage of windows and daylighting crosses the boundaries between pure aesthetics and overall health.<sup>[35][39]</sup>

Alison Jing Xu, assistant professor of management at the [University of Toronto Scarborough](#) and Aparna Labroo of [Northwestern University](#) conducted a series of studies analyzing the correlation between lighting and human emotion. The researchers asked participants to rate a number of things such as: the spiciness of chicken-wing sauce, the aggressiveness of a fictional character, how attractive someone was, their feelings about specific words, and the taste of two juices—all under different lighting conditions. In their study, they found that both positive and negative human emotions are felt more intensely in bright light. Professor Xu stated, "we found that on sunny days depression-prone people actually become more depressed." They also found that dim light makes people make more rational decisions and settle negotiations easier. In the dark, emotions are slightly suppressed. However, emotions are intensified in the bright light.<sup>[40][41][42][43]</sup>

## Environmental issues

### Kerosene and whale-oil lamps

In 1849, Dr. [Abraham Gesner](#), a Canadian geologist, devised a method where [kerosene](#) could be distilled from [petroleum](#). Earlier coal-gas methods had been used for lighting since the 1820s, but they were expensive. Gesner's kerosene was cheap, easy to produce, could be burned in existing lamps, and did not produce an offensive odor as did most whale oil. It could be stored indefinitely, unlike whale oil, which would eventually spoil. The American petroleum boom began in the 1850s. By the end of the decade there were 30 kerosene plants operating in the United States. The cheaper, more efficient fuel began to drive whale oil out of the market. [John D. Rockefeller](#) was most responsible for the commercial success of kerosene. He set up a network of kerosene distilleries which would later become [Standard Oil](#), thus completely abolishing the need for whale-oil lamps.<sup>[44]</sup> These types of lamps may catch fire or emit carbon-monoxide and sometimes are odorous making them problematic for asthmatic people.

### Compact fluorescent lamps

[Compact fluorescent lamps](#) (aka 'CFLs') use less power to supply the same amount of light as an [incandescent lamp](#), however they contain [mercury](#) which is a dispose hazard. Due to the ability to reduce electric consumption, many organizations have undertaken measures to encourage the adoption of CFLs. Some electric utilities and local governments have subsidized CFLs or provided them free to customers as a means of reducing electric demand. For a given light output, CFLs use between one fifth and one quarter of the power of an equivalent [incandescent lamp](#). One of the simplest and quickest ways for a household or business to become more energy efficient is to adopt CFLs as the main lamp source, as suggested by the [Alliance for Climate Protection](#). Unlike [incandescent lamps](#) CFL's need a little time to 'warm up' and reach full brightness. Care should be taken when selecting CFL's because not all of them are suitable for dimming.

### LED lamps

LED lamps have been advocated as the newest and best environmental lighting method.<sup>[45]</sup> According to the Energy Saving Trust, LED lamps use only 10% power compared to a standard

incandescent bulb, where compact fluorescent lamps use 20% and energy saving halogen lamps 70%. The lifetime is also much longer — up to 50,000 hours. A downside is still the initial cost, which is higher than that of compact fluorescent lamps.

## Light pollution

[Light pollution](#) is a growing problem in reaction to excess light being given off by numerous signs, houses, and buildings. Polluting light is often wasted light involving unnecessary energy costs and carbon dioxide emissions. Light pollution is described as artificial light that is excessive or intrudes where it is not wanted. Well-designed lighting sends light only where it is needed without scattering it elsewhere. Poorly designed lighting can also compromise safety. For example, glare creates safety issues around buildings by causing very sharp shadows, temporarily blinding passersby making them vulnerable to would-be assailants.<sup>[46][47]</sup>

## Military use

This section requires [expansion](#). *(June 2008)*

From a military standpoint, lighting is a critical part of the battlefield conditions.<sup>[48]</sup> Shadows are good places to hide, while bright areas are more exposed. It is often beneficial to fight with the [Sun](#) or other light source behind you, giving your enemy disturbing [visual glare](#) and partially hiding your own movements in [backlight](#). If natural light is not present [searchlights](#) and [flares](#) can be used. However the use of light may disclose your own hidden position and modern warfare have seen increased use of [night vision](#) through the use of [infrared cameras](#) and [image intensifiers](#).

[Flares](#) can also be used by the military to mark positions, usually for targeting, but laser-guided and [GPS](#) weapons have eliminated this need for the most part.

## Professional organizations

### International

The [International Commission on Illumination](#) (CIE) is an international authority and standard defining organization on [color](#) and lighting. Publishing widely used standard metrics such as various CIE [color spaces](#) and the [color rendering index](#).

The [Illuminating Engineering Society of North America](#) (IESNA), in conjunction with organizations like [ANSI](#) and [ASHRAE](#), publishes guidelines, standards, and handbooks that allow categorization of the illumination needs of different built environments. Manufacturers of lighting equipment publish photometric data for their products, which defines the distribution of light released by a specific luminaire. This data is typically expressed in standardized form defined by the IESNA.

The [International Association of Lighting Designers](#) (IALD) is an organization which focuses on the advancement of lighting design education and the recognition of independent professional lighting designers. Those fully independent designers who meet the requirements for professional membership in the association typically append the abbreviation IALD to their name.

The [Professional Lighting Designers Association](#) (PLDA), formerly known as ELDA is an organisation focusing on the promotion of the profession of Architectural Lighting Design. They publish a monthly newsletter and organise different events throughout the world.

The National Council on Qualifications for the Lighting Professions (NCQLP) offers the Lighting Certification Examination which tests rudimentary lighting design principles. Individuals who pass this exam become 'Lighting Certified' and may append the abbreviation LC to their name. This certification process is one of three national (U.S.) examinations (the others are CLEP and CLMC) in the lighting industry and is open not only to designers, but to lighting equipment manufacturers, electric utility employees, etc.

The Professional Lighting And Sound Association ([PLASA](#)) is a UK-based trade organisation representing the 500+ individual and corporate members drawn from the technical services sector. Its members include manufacturers and distributors of stage and entertainment lighting, sound, rigging and similar products and services, and affiliated professionals in the area. They lobby for and represent the interests of the industry at various levels, interacting with government and regulating bodies and presenting the case for the entertainment industry. Example subjects of this representation include the ongoing review of radio frequencies (which may or may not affect the radio bands in which wireless microphones and other devices use) and engaging with the issues surrounding the introduction of the RoHS ([Restriction of Hazardous Substances Directive](#)) regulations.

## UNIT – 5

### MakeUp For Video Production

As many of you will already know, making a TV show or film convincing can be difficult, especially when you're on a low budget. There are many different elements to consider when it comes to making a film or TV programme believable, but one of the most important rudiments is making sure that the characters look realistic, which proves difficult if your character is something like an alien or a monster.

Makeup artists aren't usually something that you consider when you're watching a movie or a TV show, which just goes to show how well they are doing their jobs. Makeup artists are absolutely essential when it comes to TV and film as they can make the audience believe that what they are seeing on the screen is real. If viewers don't believe or buy into what they are watching, they will usually lose interest pretty fast.

For example, if you were to watch a drama that involved extreme violence, seeing a character with a ketchup-like substance smothered across their face or arms without any cuts or bruising isn't exactly going to make you believe the storyline or trigger any of the emotions that the director was trying to create in the first place. No matter how well the actors play their parts, you need to be visually persuaded in order to really trust the storyline.

Makeup artists that work in television and film help to communicate the personality of the characters to the viewers. They use makeup as a way to improve, enhance or alter the appearance of the actors and the actresses to ensure that they are suitable for the scene they are about to play out.

Makeup artists need to be trained to deal with all types of briefs. They may be asked to create different appearances for a character, such as a black eye, wrinkles or bloody wounds. To ensure that they are doing their job to the best of their ability, makeup artists often analyse characters, do research and confer with both the director and actors in order to create the perfect look for a specific character.

The artist usually works closely with the costume designers and production hairstylists so that they can coordinate colours and styles. One of the most important and impressive skills that a TV and film makeup artist must hold is being able to recreate makeup so that a character's appearance remains consistent regardless of out-of-sequence filming. Out-of-sequence filming is pretty much inevitable when it comes to filming either a movie or a TV show as it can be hard to stick to a schedule when there are so many different fundamentals to consider. This can include lighting, positioning and acting.

Makeup artists must communicate with everyone on set in order to keep everyone happy and do their job well, not just the costume designers and hairdressers. This means liaising with producers, directors and performers, which can be a full time job in itself. Usually makeup artists don't just turn up on the day of the shoot, they spend a fair amount of time researching and designing the makeup that is required for the production. This could mean using elaborate makeup and wigs for costume dramas, horror films or sci-fi movies or using materials to alter the shape of a face or create realistic scars.

The makeup artist doesn't only do everything from making Cameron Diaz look completely flawless to turning Arnold Schwarzenegger into a Terminator, some even deal with special effects using prosthetics, latex and animatronics. Makeup artists are such an essential part of the entertainment industry because they are able to breathe life into a character by making them more three dimensional.

Not only does makeup artistry allow the character to be more visually believable, it can also help the actor commit to the role they are playing because they are able to truly believe that they have been transformed into the character. This belief and commitment is mandatory for the audience to accept the movie or TV show as true. As a member of



the audience, assuming that all other elements are met such as acting, writing and directing, it becomes much easier to invest time into the characters on the screen when the makeup is done well simply because they are more plausible.

When it comes to a TV or film set, there is usually a team of makeup artists, not just one individual. This team is often made up of a chief makeup artist (also known as a makeup designer), a makeup supervisor, a makeup artist and a makeup assistant. Who attends is usually dependant on the scale of the production.

The role of the chief makeup artist is to oversee makeup and hair applications during the production process, provide working designs, organise pre-production makeup and hair and research designs for characterisations for each actor. The chief makeup artist is fundamentally in charge of the entire makeup department and will assign an individual makeup artist to apply the designs.

The makeup supervisor will have the job of hiring and managing the hair and makeup team as required, check and order the stock, arrange makeup try outs as well as wig and facial hair fittings and oversee the continuity of projects. As a supervisor it is this makeup artist's job to negotiate and work within budgets and timescales.

The makeup artist is the one who will undertake responsibilities as delegated by the supervisor. This includes preparing artists for makeup application, performing makeup and pastiche processes on cast members and following the departments guidelines to ensure continuity.

A makeup assistant will be on stand by to carry out checks and make adjustments. They will usually be asked to do anything from preparing artistes, applying and removing makeup and undertaking research. The assistant will assist the general running of the department, helping to take some of the strain off the makeup artist.

## MakeUp Artist

A **make-up artist** or **makeup artist** is an artist whose medium is the human body, applying [makeup](#) and [prosthetics](#) for [theatrical](#), [television](#), [film](#), fashion, magazines and other similar productions including all aspects of the modeling industry. Awards given for this profession in the entertainment industry include the [Academy Award for Best Makeup and Hairstyling](#)<sup>[1]</sup> and even several entertainment industry awards such as the [Emmy Awards](#)<sup>[2][3]</sup> and the [Golden Globes](#).<sup>[4]</sup> In the United States as well as the other parts of the globe, professional licenses are required by agencies in order for them to hire the MUA. Bigger production companies<sup>[5]</sup> have in-house makeup artists on their payroll although most MUA's generally are freelance<sup>[6]</sup> and their times remain flexible depending on the projects. The use of digital cameras may have made the use of bridal make up more popular.

## Makeup techniques

## Fashion makeup

Fashion makeup is used in magazine photography as well as on the fashion runway. [Avant-garde](#) makeup<sup>[7]</sup> is also an applicable technique used for projects that require experimental themes. Fashion makeup is also commonly used in [television](#) and [film](#) ranging for the natural *prime look* to more sophisticated applications such as *color balance*.

## Theatrical makeup

Stage makeup is used as a method in conjunction with stage lighting to highlight the actors' faces in order to make expressions visible to the audience from moderate distances. This often includes defining the eyes and lips as well as the highlights and lowlights of the facial bones.

## Special make-up effects (FX makeup)

Main article: [Prosthetic makeup](#)

The use of special effects techniques enhancing physical features to exhibit [metaphysical](#) characteristics<sup>[clarification needed]</sup> as well as fantasy makeup. The use of prosthetics and plaster casting are also required for projects that entails non-human appearances. Accents such as [theatrical blood](#) and ooze are also techniques applicable to this type of makeup.

## Airbrushing

The use of an [airbrush](#) which is a small air-operated device that sprays various media including alcohol and water-based makeup by a process of nebulization. The earliest record of this type of cosmetic application dates back to the 1925<sup>[8]</sup> film version of Ben-Hur, it has recently been re-popularized by the advent of HDTV and digital photography, where the camera focuses on higher depths of detail. Liquid foundations that are high in coverage but thin in texture are applied with the airbrush for full coverage without a heavy build-up of product.

## Bridal makeup

Bridal makeup is a new segment in a makeup artist's repertoire. From ethnic, to glamorous, to contemporary, makeup artists are now an important part of wedding planning in Asia, Europe, Africa and North America.

## High definition

This is an art which involves the use of light<sup>[9]</sup> reflectors and ingredients such as minerals to give the skin a flawless finish. This was developed due to the further development of [high definition](#)<sup>[10]</sup> mediums and the cost implications of airbrush makeup.

# Platform for make-up artists

In October 2014 MUA Connected launched a global platform where all types of technical makeup artists can gather and discuss the makeup artistry field, as well as finding and meeting clients online.<sup>[11]</sup>

# Makeup artists in Bollywood

In 1955 the [Bollywood](#) group [Cine Costume Make-Up Artist & Hair Dressers' Association](#) (CCMAA) created a rule that did not allow women to obtain memberships as makeup artists.<sup>[12]</sup> However, in 2014 the [Supreme Court of India](#) ruled that this rule was in violation of the Indian

constitutional guarantees granted under Article 14 (right to equality), 19(1)(g) (freedom to carry out any profession) and Article 21 (right to liberty).<sup>[12]</sup> The judges of the Supreme Court of India stated that the ban on women makeup artist members had no "rationale nexus" to the cause sought to be achieved and was "unacceptable, impermissible and inconsistent" with the constitutional rights guaranteed to the citizens.<sup>[12]</sup> The Court also found illegal the rule which mandated that for any artist, female or male, to work in the industry, they must have domicile status of five years in the state where they intend to work.<sup>[12]</sup> In 2015 it was announced that Charu Khurana had become the first woman to be registered by the Cine Costume Make-Up Artist & Hair Dressers' Association.<sup>[13]</sup>

In June 2014, the [Cine Costume Make-Up Artist & Hair Dressers' Association](#) (CCMAA) authorised an official protest on the movie set of [Bang Bang!](#) in protest of a foreign makeup artist, [Daniel Bauer \(make-up artist\)](#) working on the movie for its lead actress, [Katrina Kaif](#). The CCMAA and 15 of its members protested on the movie set as Daniel Bauer was not registered with the Union, despite the Union banning foreign artists working in Bollywood. The issue was resolved with the CCMAA granting Daniel Bauer full membership<sup>[14]</sup>

## Notable make-up artists

- [Kevyn Aucoin](#)
- [Way Bandy](#)
- [Bobbi Brown](#)
- [John Chambers](#)
- [Nina Flowers](#)
- [Pat McGrath](#)
- [Ve Neill](#)
- [Dick Smith](#)

## Theatrical MakeUp

**Theatrical makeup** refers to makeup that is used to assist in creating the appearance of the [characters](#) that [actors](#) portray during a theater production.

## Background

In Greek and Roman theatre, makeup was unnecessary. Actors wore various masks, allowing them to portray another gender, age, or entirely different likeness.<sup>[1]</sup> [Thespis](#), considered to be the first actor, used white lead and wine to paint his face.<sup>[2]</sup> In [medieval](#) Europe, actors altered their appearances by painting their faces a different color. Performers who portrayed God painted their faces white or gold; actors playing angels painted their faces red.<sup>[1]</sup> During the [Renaissance](#), actors were creative and resourceful when making-over their faces. They used lamb's wool for false beards and flour as face paint.<sup>[1]</sup>

Advancements in [stage lighting](#) technology required stage makeup to evolve beyond one over-all face color to a multidimensional craft. Originally, theatres used candles and oil lamps; these two

sources of light were dim and allowed for crude, unrealistic makeup applications.<sup>[1]</sup> Once [gas lighting](#), [limelight](#) and [electric light](#) were introduced to theatres, a need emerged for new makeup materials and more skillful application techniques. In 1873, Ludwig Leichner, a [Wagnerian](#) opera singer, began commercially producing a non-toxic greasepaint stick, easing the application of makeup.<sup>[1]</sup>

## Highlight and shadow

Through the use of makeup, specifically highlighting and shading, the apparent shape of an actor's face can be changed.<sup>[3]</sup> By highlighting the face's protruding bones, the features become pronounced; shadowing cavities can add depth.<sup>[4]</sup> Sagging jowls, forehead wrinkles, eye pouches, and prominent veins can be created by manipulating highlights and shadows.<sup>[3]</sup> A highlight is a base makeup that is at least two shades lighter than the base. It is applied on the bridge of the nose, cheekbones, and areas under the eyes and below the brows.<sup>[4]</sup> Using a color two shades deeper than the base provides depth and definition. This depth is commonly used on the eye sockets, to thin the sides of the nose, to shallow the cheeks, and to minimize heaviness under the chin.<sup>[4]</sup>

## Makeup and lighting

Lighting controls makeup to a high degree. Makeup can lose its effectiveness due to incorrect stage lighting. Conversely, skillful lighting can greatly aid the art of makeup. Close communication between the lighting director and the makeup artist is crucial for the best possible effect.<sup>[5]</sup>

Understanding light's effect on makeup and various shades and pigments is important when designing a performer's makeup. The following are among the basic rules of light: nothing has color until light is reflected from it; an object appears black when all of the light is absorbed; an object appears white when all of the light is reflected. If certain rays are absorbed and others are reflected, the reflected rays determine the color.<sup>[3]</sup>

### Light's effect on makeup

- Pink tends to gray the cool colors and intensify the warm ones. Yellow becomes more orange.
- Flesh pink flatters most makeup.
- Fire red ruins makeup. All but the darker flesh tones virtually disappear. Light and medium rouge fade into the foundation, whereas the dark red rouges turn a reddish brown. Yellow becomes orange, and the cool shading colors become shades of gray and black.
- Bastard amber is flattering because it picks up the warm pinks and flesh tones in the makeup.
- Amber and orange intensifies and yellow most flesh colors. They turn rouges more orange. Cool colors are grayed.
- Green grays all flesh tones and rouges in proportion to its intensity. Green will be intensified. Yellow and blue will become greener.
- Light blue-green lowers the intensity of the base colors. One should generally use very little rouge under this type of light.

- Green-blue washes out pale flesh tones, and will gray medium and deep flesh tones, as well as all reds.
- Blues gray most flesh tones and cause them to appear more red or purple.
- Violet causes orange, flame, and scarlet to become redder. Rouge appears more intense.
- Purple affects makeup like violet lighting, except reds and oranges will be even more intense, and most blues will look violet.<sup>[3]</sup>

## Straight makeup

Straight makeup is a style of makeup that provides a natural, clean and healthy glow.<sup>[4]</sup>

### Skin

If a performer's skin is perfectly toned, makeup spreads smoothly and adheres easily. Dry skin or oily skin is dealt with prior to makeup application; otherwise, the makeup appears blotchy or smeared due to variations in absorption. Performers with dry skin use a moisturizer daily and after their faces have been cleansed following a performance. Performers with oily complexions use a facial [toner](#) wipe or [astringent](#) to remove the oil and allow a smooth application.<sup>[4]</sup>

Skin has four basic tones: brown, fair, pink and olive. Individuals with fair, pink, and olive skin tones use olive, beige, or suntan bases. Makeup artist and performers select shades compatible with the natural skin tone, but the base is one to several shades deeper. Performers with predominately pink or ruddy complexions use base colors with cool undertones. The character, size of the theatre, and light intensity will determine the tone depth of the foundation.<sup>[4]</sup>

A thin layer of base makeup is applied to the neck, ears, and face using a white rubber sponge or fingers. A heavy application of base appears aged and creepy.<sup>[4]</sup>

### Rouge

Fair complexions are enhanced by soft shades of peach and pink, while brown complexions are best accented with coral shades. Moist rouge is applied before powder; dry rouge is used to accent the already powdered makeup.<sup>[4]</sup>

### Eyes

Eyes and eyebrows are the greatest communicative tool in an actor's arsenal. They are the most expressive feature on the face.<sup>[4]</sup>

### *Eye shadow*

Grease or stick shadow is applied to the eyelids and blended out toward the eyebrow bone before powder is applied; dry eye shadow is used alone or to intensify and touch up the color underneath. Dark eye shadow or grease deepens the eye sockets, creating a skull-like effect. Shades of brown and gray are best for individuals with fair complexions. Individuals with brown complexions use lighter shadows such as toast, mushroom or soft yellows.<sup>[4]</sup>

### *Eye liner*

Liquid eyeliner, cake eyeliner, or the eyebrow pencil is used to accent and frame the eyes. There are two ways to line the upper lid of the eye: the owl eye or the almond eye. The owl eye is used to widen the eye and involves using a heavier line in the middle of the lid. The almond-shaped eye is created by extending the line out beyond the outer corner of the eye. The lower line is created by using the same tool used on the upper lid. The line begins a quarter-inch from the inner corner of the eye. This extra space is needed to open the eye.<sup>[4]</sup>

### *Eyelashes*

Mascara is used to add extra attention to the eyes. Black lash mascara is the most popular and commonly used by women with fair and brown complexions. Very fair individuals and men use brown mascara. The bottom lashes are coated with mascara and to avoid using false lashes, a process of layering powder and mascara is used to provide greater thickness.<sup>[4]</sup>

### **Powder**

A generous amount of powder is needed to reduce unwanted shine. If a performer's makeup is under-powdered, his skin oils will break through quickly, producing shine and possibly running. After powder is applied to the entire face, starting under and around the eyes, it is gently pressed for thirty seconds. The excess is brushed off with a large soft brush or piece of cotton. A wet natural sponge or cotton is wiped lightly across the face to set the makeup, to remove any visible powder, and to eliminate the masky feeling.<sup>[4]</sup>

Translucent powders are used for fair complexions because they do not alter the original color of the base, the under-rouge, or the moist eye shadow. Brown complexions are set with tinted that is compatible with the base color. It is used sparingly over the under-rouge and moist eye shadow. After the powder is applied, dry eye shadow and dry rouge are added.<sup>[4]</sup>

### **Lips**

Though the eyes are the most expressive feature of the face, the eyes and ears of the audience follow mouth movements to understand a play's progression. If a performer's lips are underdone or overplayed, they will detract from the performer and the performance. A general rule is: the larger the mouth, the deeper the lipstick tone. However, the actor should not appear "all mouth".<sup>[4]</sup>

Fair complexions use shades of lipstick like pink and coral. Brown complexions are enhanced by coral and orange shades. Red lipsticks are reserved for large theatres and character portrayals. An auburn or brown pencil are used to provide definition to the lips. Lipsticks on men can look doll-like. Men use natural-colored lipsticks, lightly applied.<sup>[4]</sup>

## **Training/Education**

Because stage actors are seen from farther away than actors on screen, it is crucial that their makeup is more dramatic and professionally done. Many higher-learning institutions have drama departments where all aspects of theater are taught, including the art of theatrical makeup. Some independent agencies also provide classes in theatrical makeup, and online courses are also available. Through training, makeup artists learn important techniques such as hand-eye coordination, ability to draw straight lines and consistent shapes, creativity, good grooming and personal hygiene habits, etc. Many makeup artists who specialize in theatrical makeup build portfolios to show their clients and employers. Many of them work as freelance makeup artists or work for cosmetics brands in department stores.