SEMESTER III

PAPER III

TELEVISION AND RADIO PRODUCTION

UNIT-I

Elements of TV Production - picture transmission and reception - sound transmission and reception - TV Camera - organizational structure of a TV studio.

UNIT-II

Pre and post - production planning - functions, duties and responsibilities of the crew members. Art direction - location - floor management - out-doors and indoors - lighting - management of live shows / live telecast - sports coverage etc.

UNIT-III

Production techniques - video formats - types of TV programs - talk shows - interviews - demonstrations and discussion - teleconferencing - single - multi camera production.

UNIT-IV

Basics of Audio production techniques - mono - stereo - multi-channel - characteristics - types - directional features - different recording media - recording equipment accessories - mixing consoles - talk-back units - monitoring sound - live mixing - AM - FM - satellite radio-Dubbing - re-recording.

UNIT V

Production techniques - audio formats - outdoor - indoor recording techniques - ambience - types of program - News reading - live interviews - news reels - story telling - education and development program - radio - drama - radio commercials.

UNIT-I

Elements of TV Production - picture transmission and reception - sound transmission and reception - TV Camera - organizational structure of a TV studio.

ELEMENTS OF TV PRODUCTION

What is TV Media Production?

Television (TV) advertising is known traditionally as the medium with the longest reach – therefore it has the largest impact. TV reaches a mass audience and is one of the most popular ways of conveying a mass message. TV media production allows for the flexibility to use various approaches and different combinations of audio, video and text to make their content memorable and emotional. TV's use of audio and visual effects create a lasting impact on the audience and producers interact color, sound, sight, drama and motion to ensure that their message is strong and persuasive.

Elements of TV Production

- **Pre-Production**
- **Production**
- **Post-Production**

Pre-Production

Pre-Production is the planning and preparation stage of filmmaking. During this time, principal actors are cast, the crew is hired, schedules are made, and locations are secured.

The Unit Production Manager (UPM) is in charge of how money is spent and the overall management of the production. The UPM will work with the Assistant Director to figure out the budget and coordination of the Background Actors.

During pre-production, the costume designer and wardrobe department will create outfits and find clothing for the actors. Depending on the project's budget, this may include wardrobe for Background Actors. Background may be dressed by production for some period pieces, if the movie or TV show is trying to achieve a very specific look, or if the Background Actor needs to match an established style. In most cases though, Background Actors are responsible for bringing their own wardrobe to set.

Central Casting's Casting Directors do their own prep work to prepare for production. This varies from project to project, but can involve casting Stand-Ins and doubles and checking Background Actors' availability for when filming begins.

Production

Of the three stages of film production, the production phase is where Background Actors, Stand-Ins, and doubles are the most involved. Production is where the principal photography (filming) for the movie or TV show takes place.

During rehearsals and camera blocking, Stand-Ins work with the Director, Assistant Director, camera crew, and other crew members to block out actor movements and lighting set-ups for a scene. Stand-Ins have a chance to work more closely with actors and crew members and may work more regularly on a project.

When a scene is ready to be shot, Background Actors will be called to set. The Assistant Directors will instruct them where and when to move in a scene, which may involve crossing the camera. Background Actors often have to pantomime in scenes so they don't interfere with the sound being recorded by the principal actors. When Background Actors are not needed on set, they're taken to Holding.

There are a variety of doubles that are used depending on the needs of the project. Photo doubles must match the principal actor as closely as possible in height, build, hair color, and complexion. Body doubles can be used when an actor plays two or more characters on screen, to replace a principal actor for nude scenes, to perform special skills, or for second unit or insert shots to free up the actor to film other scenes. Our article What's the Difference Between a Stand-In and Photo Double? has more information on the different types of photo doubles and what they do.

Post-Production

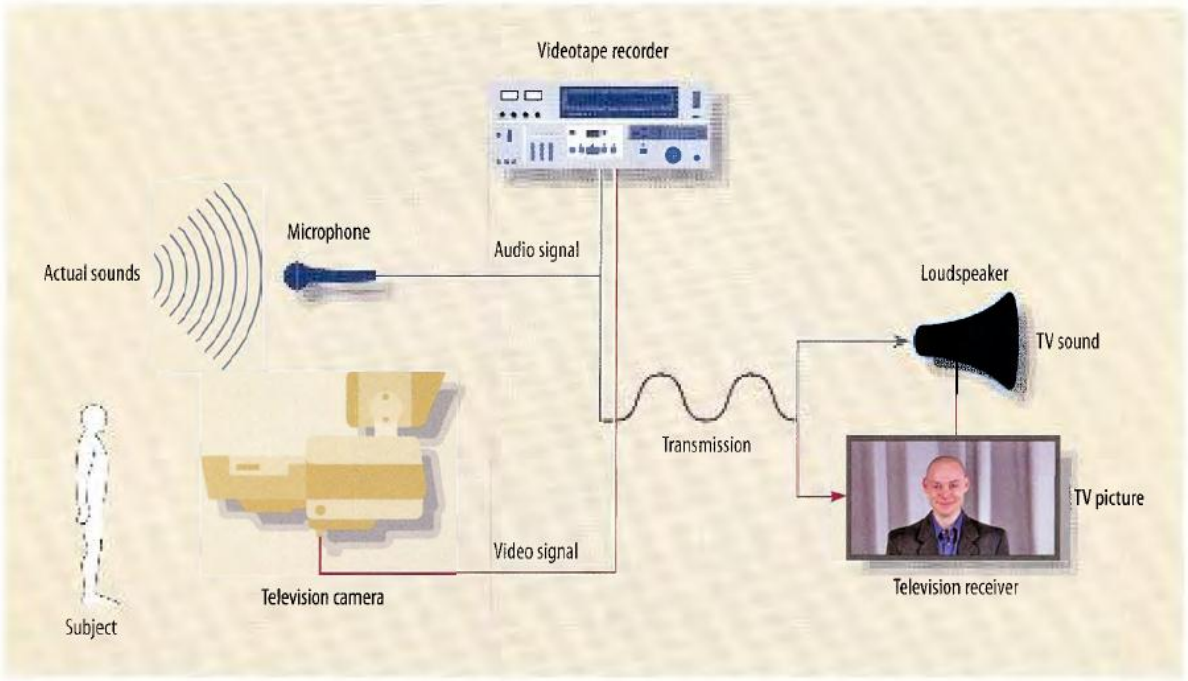
When principal photography has finished, the project will move into post-production. This phase includes editing, sound mixing, and any special effects the project may need. While the film or TV episode is being edited, the director may decide to reshoot or film additional scenes. Background Actors, Stand-Ins, and doubles may be cast for these reshoots and pick-ups.

If a director wants to create crowd noise for a scene, they may bring in Background Actors during post-production to record improvised conversations. These are called walla groups, named for the early radio practice of having people repeat "walla, walla, walla" over and over to mimic the indistinct chatter of a crowd. Central Casting casts walla groups for a variety of projects, even for animated shows like The Simpsons.

The different post-production crews will put their finishing touches on the project and when the director decides the film is finished, it will move out of the post-production phase to distribution.

TELEVISION TRANSMISSION AND RECEPTION & SOUND TRANSMISSION AND RECEPTION

Transmission and reception involve the components of a television system that generate, transmit, and utilize the television signal wave form (as shown in the block diagram). The scene to be televised is focused by a lens on an image sensor located within the camera. This produces the picture signal, and the synchronization and blanking pulses are then added, establishing the complete composite video wave form. The composite video signal and the sound signal are then imposed on a carrier wave of a specific allocated frequency and transmitted over the air or over a cable network. After passing through a receiving antenna or cable input at the television receiver, they are shifted back to their original frequencies and applied to the receiver's display and loudspeaker. That is the process in brief; the specific functions of colour television transmitters and receivers are described in more detail in this section.



1.1 BASIC TELEVISION SYSTEM
The basic television system converts light and sounds into electrical video and audio signals that are transmitted (wireless or by cable) and reconverted by the television receiver into television pictures and sound.

Transmission

Generating the colour picture signal

As is pointed out in the section Compatible colour television, the colour television signal actually consists of two components, luminance (or brilliance) and chrominance; and chrominance itself has two aspects, hue (colour) and saturation (intensity of colour). The television camera does not produce these values directly; rather, it produces three picture signals that represent the amounts of the three primary colours (blue, green, and red) present at each point in the image pattern. From these three primary-colour signals the luminance and chrominance components are derived by manipulation in electronic circuits.

Digital Transmission :

All "free-to-air" TV stations are now transmitting "free-to-air" television in digital form also traditional analog transmission. The coverage and diversity of digital transmission will increase progressively over the next few years. The Australian Government has set a deadline for analog "free-to-air" transmission to be terminated by December in the year 2013. After analog transmission is ceased in the year 2013 Television transmission will be in digital form only.

PICTURE TRANSMISSION:

Picture information is optical in the character and might be thought of as grouping of large

number of tiny areas representing picture details. These basic areas into which the picture details

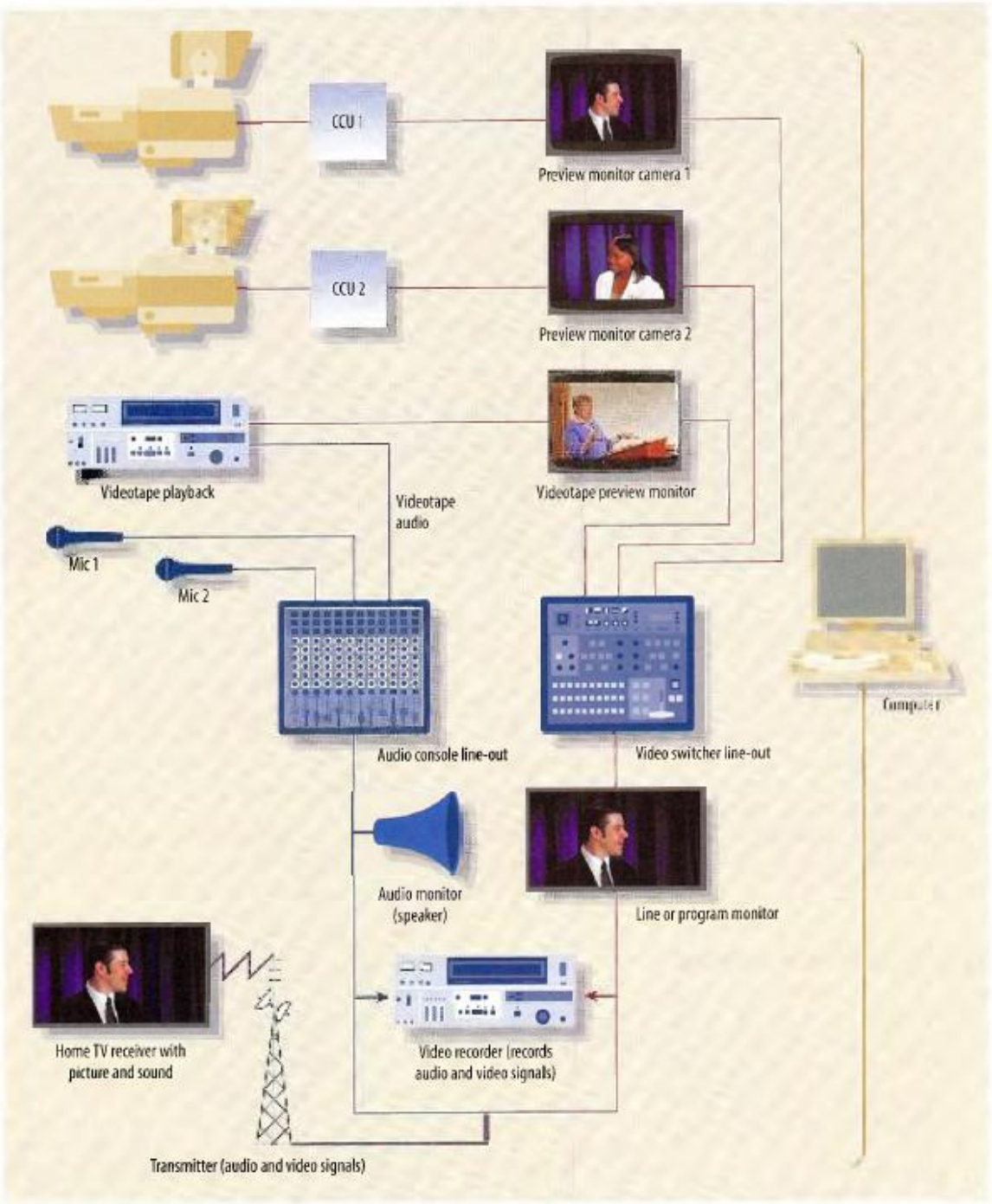
might be broken up are known as the 'picture elements' or 'pixels', which when viewed together represent visual information of scene so that at any instant there are almost an infinite number of pieces of Hierarchical transmission.

Hierarchical transmission:

Channel coding is conducted in units of the OFDM segments. So that division of a single television channel can be used for fixed reception service and rest for mobile reception service. This signal transmission is defined as hierarchical transmission. Each of the hierarchical layer consists of one or more the OFDM segments and parameters such as a carrier modulation scheme the inner-code coding rate and the time interleaving length can be specified for each hierarchical layer. Up to three hierarchical layers may be provided and that segment used for the partial reception is also counted as one hierarchical layer.

Basic configuration of channel coding:

Multiple TSs output by the MPEG-2 multiplexer are fed to TS re-multiplexer such that the TSPs can be properly arranged for signal processing one data segment at a time. In the re-multiplexer, each TS is first changed into 188-byte burst-signal form by means of a clock having a rate four times higher than that of the IFFT sample clock. An outer code is then applied, and these TSs are converted into a single TS. That need to be picked up simultaneously for transmitting picture details.



1.2 EXPANDED STUDIO TELEVISION SYSTEM
The expanded studio television system contains quality controls (CCU and audio console), selection controls (switcher and audio console), and monitors for previewing pictures and sound.

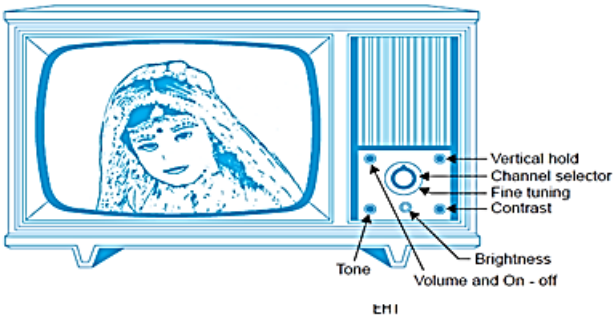
Sound reception

The path of the sound signal is common with the picture signal from antenna to the video detector section of the receiver. Here the two signals are separated and fed to their respective channels. The frequency modulated audio signal is demodulated after at least one stage of amplification. The audio output from the FM detector is given due amplification before feeding it to the loudspeaker.

Synchronization

It is essential that the same coordinates be scanned at any instant both at the camera tube target plate and at the raster of the picture tube, otherwise, the picture details would split and get distorted. To ensure perfect synchronization between the scene being televised and the picture produced on the raster, synchronizing pulses are transmitted during the retrace, *i.e.*, fly-back intervals of horizontal and vertical motions of the camera scanning beam. Thus, in addition to carrying picture detail, the radiated signal at the transmitter also contains synchronizing pulses. These pulses which are distinct for horizontal and vertical motion control, are processed at the receiver and fed to the picture tube sweep circuitry thus ensuring that the receiver picture tube beam is in step with the transmitter camera tube beam.

Receiver controls



EH1

TV CAMERA

TYPES OF TELEVISION CAMERA.

- Studio cameras
- ENG cameras
- EFP cameras

❖ There're wide ranges of television / video cameras are available today in the market, from family use camera costing a few thousand ringgits to sophisticated precision cameras that incorporate current state of the art technology. As you would expect, camera design and performance vary with cost. The

Lower End of the range can provide very satisfactory picture quality under optimum condition whilst the

Higher End are more expensive and more advance dproduces consistently excellent picture for long periods; even under poor condition. There are 6 broad categories of TV cameras:-

❖ A professional video camera (often called a television camera even though its use has spread beyond television) is a high-end device for creating electronic moving images (as opposed to a movie camera, that earlier recorded the images on film). Originally developed for use in television studios or with outside broadcast trucks, they are now also used for music videos, direct-to-video movies, corporate and educational videos,

wedding videos, among other uses. Since the 2000s, most professional video cameras are digital (instead of analog) professional video cameras.

1. Studio Broadcast Cameras

Studio Cameras with Teleprompter

Studio Camera

The regular studio camera characteristics:-

1. Use for **MCP (multiple camera production).**
2. Statically use only in the studio.
3. The studio camera are heavy &
4. Fitted with large zoom lens assembly.
5. Have large or full size viewfinder. (camera of this category are widely used on location where superior picture quality is essential).
6. Mounted on either wheeled dolly or pedestal; enable to be moved around quickly & silent.
7. These cameras are cabled, via a studio wall outlet & control by main **Camera Control Unit** (picture quality is frequently checked by an operator / engineer) located in the **PCR** (production control unit – part of the studio) or **OB** (outside broadcast).
8. Although digital techniques are used to pre set all circuits adjustment in studios, it is still rely on careful manual alignment for precise colour fidelity & high definition.

2. Portable Broadcast cameras

Camera Control Units

Portable Broadcast

The regular portable camera characteristics:-

1. Use for **MCP (multiple camera production)** & **SCP (single camera production).**
2. A Hybrid type camera – detachable body for two purposes of usage.
3. more compact camera, more mobility &
4. high quality system suitable for both studio & field (MCP)
5. Also can be fitted with large zoom lens & viewfinder or fitted with smaller ones.
6. It has its own circuitry and various automated controls available when required.
7. Its video output can be direct or separate to a portable VTR, or to a CCU or a **Remote Control Unit (RCU),** connected to a microwave link which transmits its video to a base station.

3. Lightweight Cameras

Digital Beta

The lightweight camera characteristics:-

1. A self contained unit.
2. use in SCP
3. design for field work
4. Reduced in size & weight.
5. They can be hand-held or attached to a tripod.
6. batteries powered camera with its own **VTR (Video Tape Recorder)**

4. Small Hand held Low Cost Cameras

The camera characteristics:-

1. Compact hand held cameras.
2. used for CCTV & industrial application
3. Connected directly to a lightweight portable VTR.

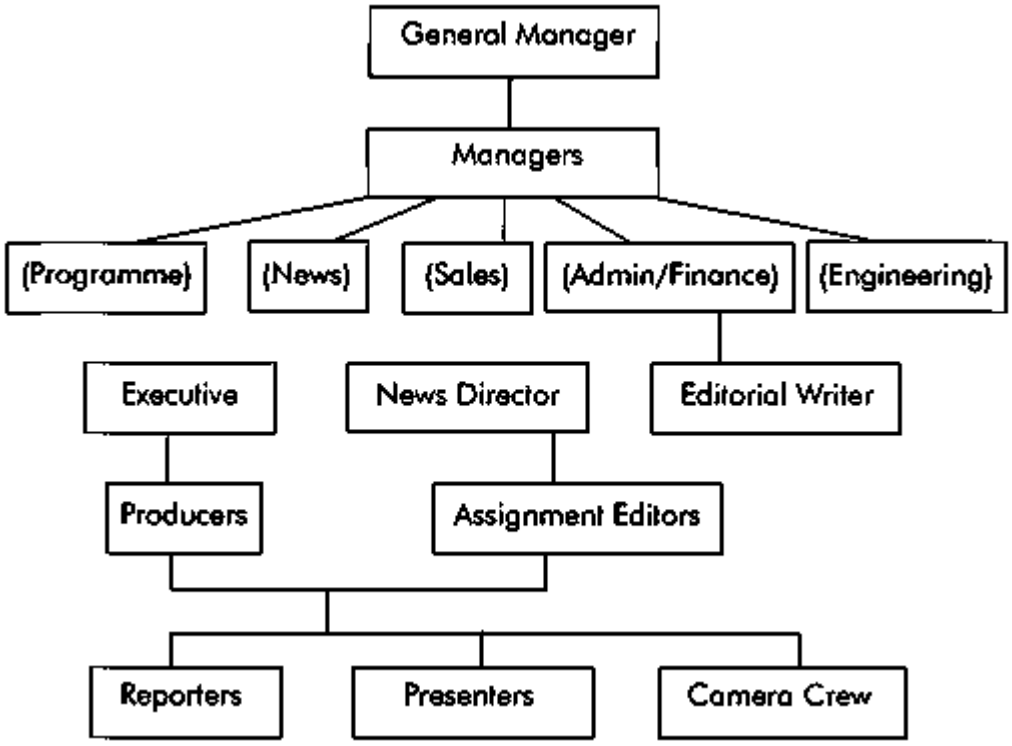
5. Combination Cameras

6. Electronic Cinematography

The camera characteristics:-

1. It is still a video camera but incorporate features of a motion picture camera (film camera).
2. with detachable lenses &
3. able to incorporate Prime Lenses (Film lenses)
4. 16:9 setting available.
5. Shoot materials in video but for film purposes.

ORGANIZATIONAL STRUCTURE OF A TV STUDIO



General Manager

A general manager, or GM, is the chief executive officer of a television station. This person manages the budget for the station, sets the human resources policies, hires and fires senior staff, and oversees all programming and sales initiatives. These individuals create a strategic plan for the organization and set benchmarks for achieving goals. General managers often have a high profile in the community and form strategic partnerships with local organizations to raise the visibility of the station within the market.

Sales And Traffic

The sales and traffic departments are focused on selling on-air advertising and assuring those commercials air as scheduled, respectively. A sales department consists of a sales manager who oversees a staff of salespersons, who meet with clients in person and on the phone to sell air time, and sales assistants, who handle the administrative work of the sales department, which can include writing ad copy and interacting with the traffic department. The manager of the traffic department assures that ads air as scheduled, that the correct number of spots air, and that there are no conflicts in the ad schedule. For example, there shouldn't be two ads for two different local car dealers airing back to back.

News

The news department does reporting and local content for the daily newscast. This department is run by the news director, who enforces editorial policy and hires and manages staff. The rest of the news department consists of both on-air and off-air positions. Newscasts require an anchor, a sports person, a meteorologist, and correspondents or reporters. Behind the scenes news staff can include a desk assistant, who monitors news and can refer stories to reporters; researchers, who provide background for stories; producers, who write scripts and perform technical duties for the news show; and online staff, who adapt television material for online or create original content.

Engineering

The director of operations, or chief engineer, assures that the station stays on the air and that all of the physical and technical aspects of the station are in working order and in compliance with standards set by the Federal Communications Commission. This includes management and maintenance of all equipment, including the transmitter as well as all cameras, monitors and digital editing equipment. This individual may manage the camera operators, the directors, who oversee the content and technical aspects of the television program, and the engineers, who operate and maintain internal and external electronic television equipment.