

- BASIC TELEVISION SYSTEM
The equipment that converts optical images and actual sounds into electric energy, and the people who operate it
- EXPANDED STUDIO AND ELECTRONIC FIELD PRODUCTION SYSTEMS
The system elements of studio and field productions, and the studio system in action
- PRODUCTION ELEMENTS
Camera, lighting, audio, switching, videotape recording, tapeless systems, postproduction editing, and special effects

BASIC TELEVISION SYSTEM

A system is a collection of elements that work together to achieve a specific purpose. Each of the elements is dependent on the proper workings of all the others, and none of the individual elements can do the job alone. The television system consists of equipment and people who operate that equipment for the production of specific programs. Whether the productions are simple or elaborate, or originate in the studio or in the field—that is, on location—the system works on the same basic principle: the television camera converts whatever it "sees" (optical images) into electrical signals that can be temporarily stored or directly reconverted by the television set into visible screen images. The microphone converts whatever it "hears" (actual sounds) into electrical signals that can be temporarily stored or directly reconverted into sounds by the loudspeaker. In general, the basic television system transduces (converts) one state of energy (optical image, actual sound) into another (electrical energy). The picture signals are called video signals, and the sound signals are called audio signals. Any small consumer camcorder represents such a system.

EXPANDED STUDIO AND ELECTRONIC FIELD PRODUCTION SYSTEMS

The basic television system is considerably expanded when doing a television production in the studio or in the field, such as a telecast of a sporting event. The expanded system needs equipment and procedures that allow for the selection of various pictures and sound sources; for the control and monitoring of picture and sound quality; for the recording, playback, and transmission of pictures and sound; and for the integration of additional video and audio sources.

SYSTEM ELEMENTS OF STUDIO PRODUCTION

The expanded studio television system in its most elementary stage includes: (1) one or more cameras, (2) a camera control unit (CCU) or units, (3) preview monitors, (4) a switcher, (5) a line monitor, (6) one or more videotape recorders, and (7) a line-out that transports the video signal to the videotape recorder and/or the transmission device. Usually integrated into the expanded system are videotape machines for playback, character or graphic generators that produce various forms of lettering or graphic art, and an editing system.

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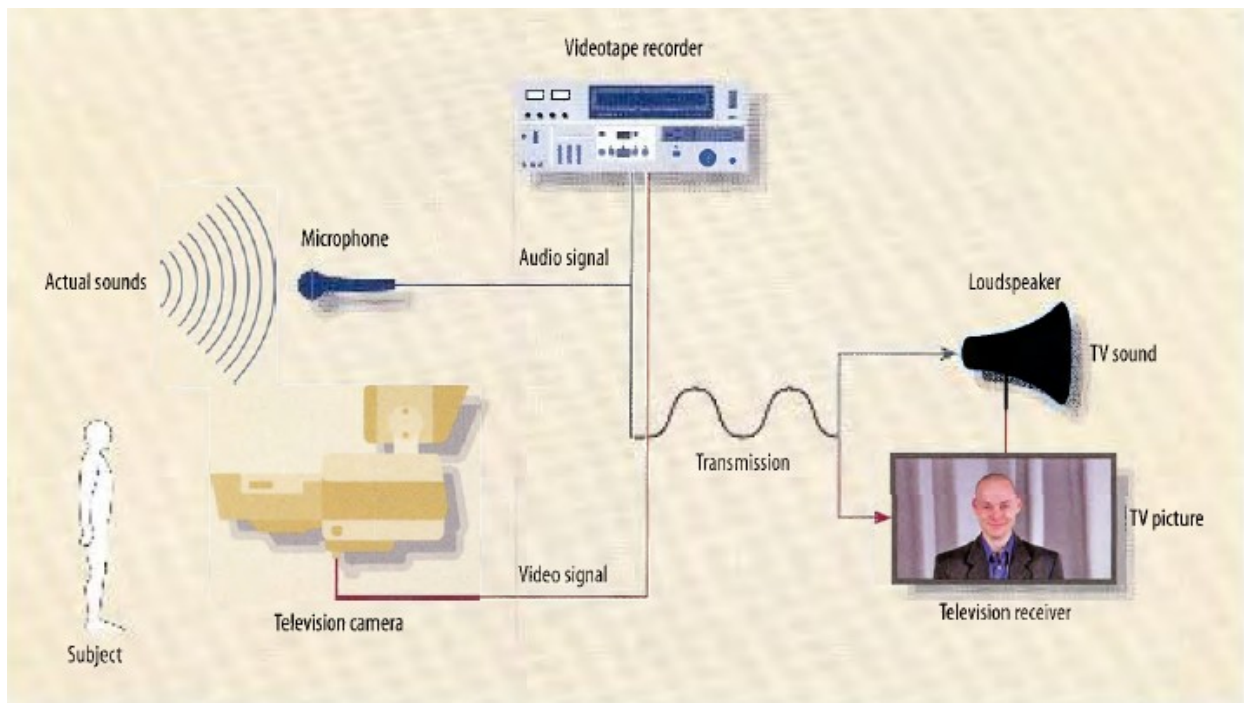


Fig.: BASIC TELEVISION SYSTEM

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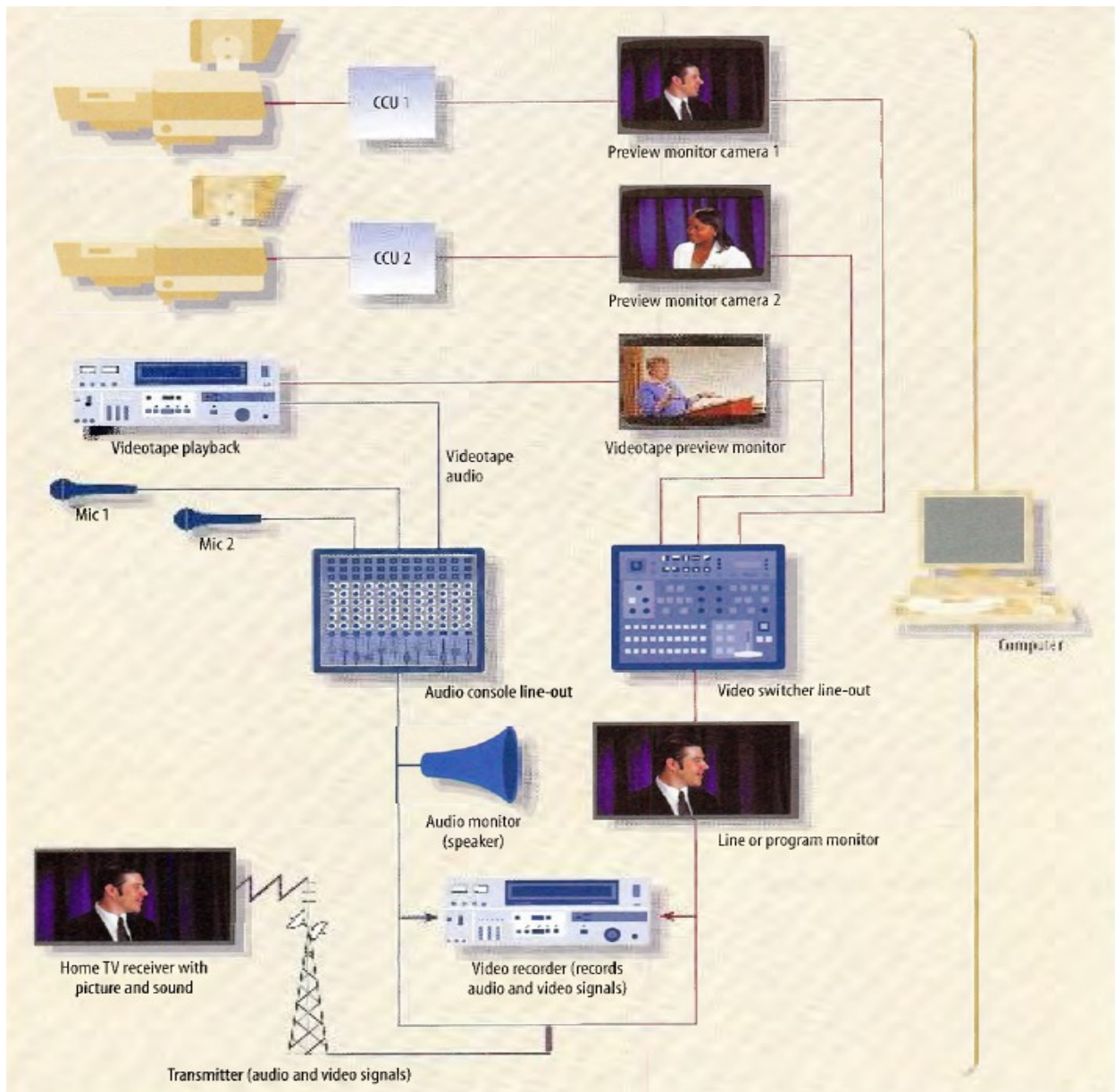


Fig.: EXPANDED TELEVISION SYSTEM

SYSTEM ELEMENTS OF FIELD PRODUCTION

A school principal obviously could not bring her new computer lab into the studio, so someone had to go on location to videotape the event. Such location shooting normally falls into the ENG (electronic news gathering) category and is accomplished with a relatively simple field production system. All you really need is someone who operates the camcorder and a field reporter who describes the action and tries to get some brief comments from the principal and perhaps a teacher or student. Once the footage reaches the newsroom, it is drastically cut and edited to fit the brief time segment (10 seconds or so) allotted to the story. Had the scene with the principal been a live insert, you would have had to expand the system still further, with a portable transmitter to transport the signal from the field to the station. The ENG signal is often transmitted live to the studio.

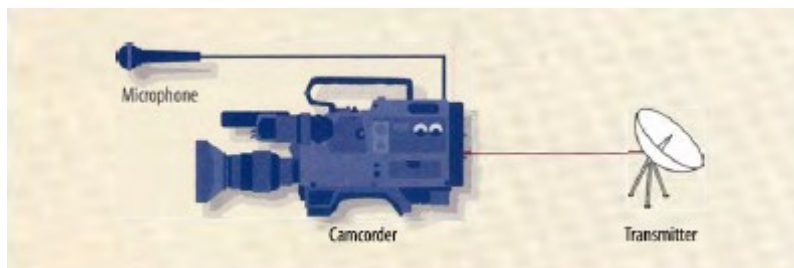


Fig.: ENG System

If the field production is not for news or is more elaborate, you are engaged in EFP (electronic field production). Sometimes field cameras that feed their output to separate VTRs (videotape recorders) are used. Big remotes are field productions whose production system is similar to the studio's, except that cameras are placed on location and the control room is housed in a large truck trailer.

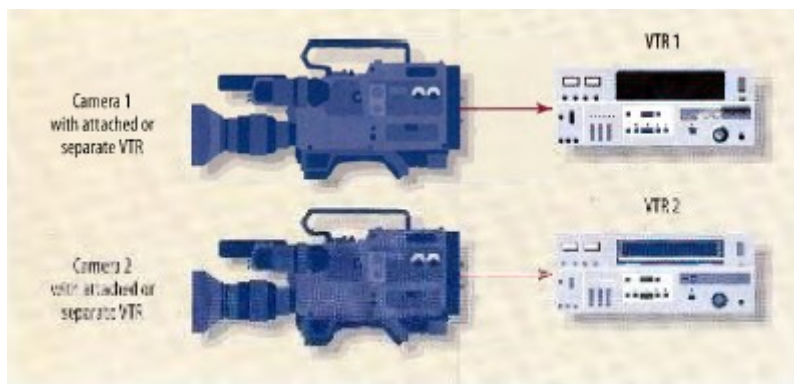


Fig.: EFP System

PRODUCTION ELEMENTS

With the expanded television system in mind, we can identify eight basic production elements: (1) the camera, (2) lighting, (3) audio, (4) switching, (5) videotape recording, (6) tapeless systems (7) postproduction editing, and (8) special effects. When learning about television production, always try to

see each piece of equipment and its operation within the larger context of the television system, that is, in relation to all the other pieces of equipment that are used and the people who use them—the production personnel. It is, after all, the skilled and prudent use of the television equipment by the production team, and not simply the smooth interaction of the machines, that gives the system its value.