



# Effective TV Production

Second Edition

Gerald Millerson





MEDIA MANUALS

**Effective TV Production**  
**Second Edition**

## MEDIA MANUALS

### VIDEO CAMERA TECHNIQUES

Gerald Millerson

### USING VIDEOTAPE

J. J. Robinson & P. H. Beards

### BASIC TV STAGING

Gerald Millerson

### THE USE OF MICROPHONES

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### TV LIGHTING METHODS

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### EFFECTIVE TV PRODUCTION

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of Communications and Theatre, Temple University, Philadelphia, Pa.*

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# Introduction

Once we have overcome the initial awkwardness of unfamiliarity, we tend to take TV technicalities for granted. TV directing appears deceptively simple. Even junior schools compile their own video-recorded projects nowadays! The rawest beginner can hang a mike round someone's neck, point a camera at him, and zoom in and out!

But an amateurish treatment soon loses its cuteness, and becomes a bore. Our audience grows frustrated, confused, even reduced to laughter—but in the wrong places. They become over-aware of mechanics, and inevitably compare the results with regular TV presentations seen at home.

It is seldom sufficient merely to see and hear the subject. How we present it is all important. And here lies the difference between the amateur and the professional. To use facilities imaginatively, conveying ideas clearly and persuasively, is a matter of know-how. And know-how can be learned. The trouble for the newcomer is that there seems such a lot to be learned.

This book has been written to help you acquire knowledge of important fundamentals quickly and to provide a firm foundation for experience. It outlines techniques and hazards of TV production and tells you how to organise your show in the most effective ways.

Contrary to widespread belief, the camera and microphone do not readily substitute for an on-the-spot observer. It is up to us to choose how and what these tools select, to suit our particular purposes. If we do this successfully, the results will be so obviously 'right', that our audience accepts them unquestioningly. Inappropriately used, the medium can get in the way of our message. Our audience can become distracted, misled – or go on to think about other things!

TV directing is always concerned with four basic issues:

The message. The programme material. What we are trying to say to our audience. The emotions we hope to engender in them.

The mechanics. The equipment we have available. What it can and can't do.

The methods. The techniques we choose to enable us to build up an arresting, interesting presentation.

The organisation. The behind-the-scenes activities that interrelate and coordinate the work of the production team.

This is our field of study.

## Acknowledgement

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## Controlling a TV Production

Exactly what a TV director does varies between organisations and with the kind of programme material he is handling. He may be totally responsible for all the business and presentational aspects of the show, in a combined role of producer and director. Alternatively, he may concentrate on the creative side of the production, and leave administration to a producer. But whatever the job emphasis, we find the director the key figure in the studio production team, guiding, co-relating and unifying their efforts.

### Typical directing roles

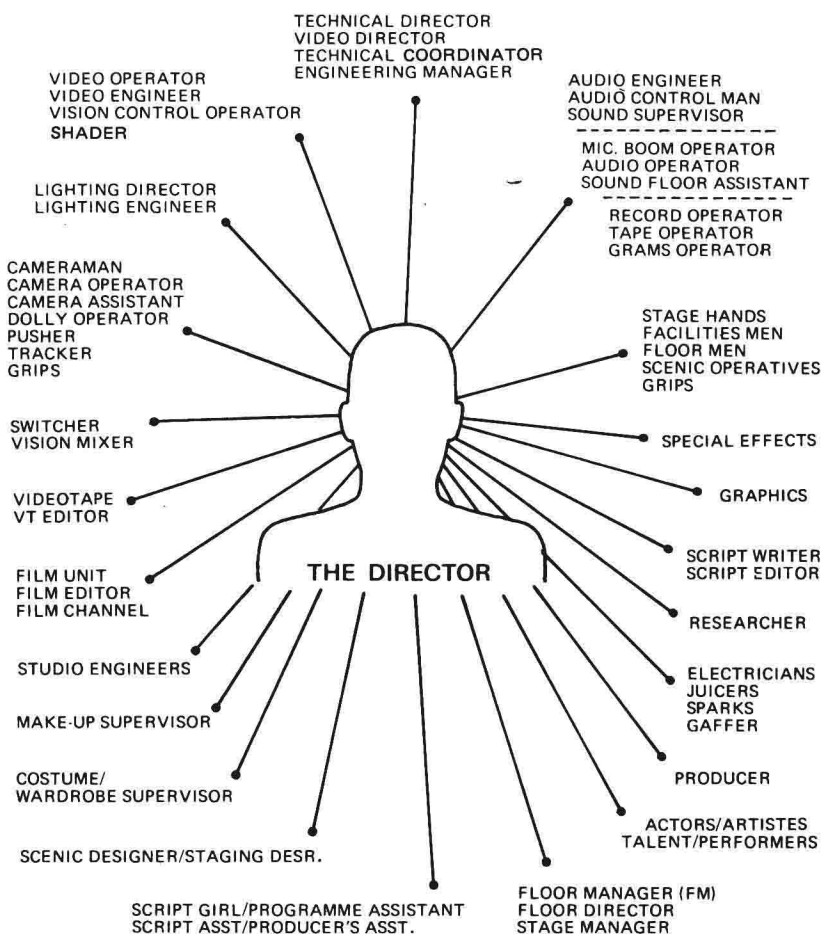
In a *presentational role*, the director presents for the screen a series of separate items or 'stories' devised by an editorial group. This is a common practice in current affairs, news, magazine programmes.

In a *selective role*, the director heads a team of specialists. After preliminary briefing or planning, they contribute their respective interpretations of his project (staging, lighting, costume, make-up, graphics, etc.). He appraises their treatments, and indicates any changes he feels necessary. The director himself concentrates on the dynamics of talent performance, camera operation and switching (editing).

In the role of an *originator*, the director may have devised the entire production concept. He will have written the script, and often initiated the staging treatment. His team of specialists translates the director's decisions into material terms. They organise the mechanics or construction required, costing and labour.

### The organisational centre

Most people think of the TV director as the person in the production control room, heading his production team – the hub of the production operations. But this is only part of his job, albeit the major part. Underlying the work here, we have the important preliminaries of choosing and interpreting the programme subject, the organisation and planning. There is the selection of talent, discussion of treatment methods and equipment with specialists, research, pre-studio rehearsals, devising models perhaps, and the anticipation of the thousand and one facets that go to make up the total show. Contributory aspects do not just *appear*! The director sees that there is a need for a film clip here, a graphic there, an action prop or a certain mood to be created in a scene. His team of specialists and assistants help him achieve these, as near as possible to his ideal. But the director has initiated and evaluated their contributions. From the preliminary idea to the edited product, the director is the architect of his production – for which he ultimately accepts the responsibility.



## PRODUCTION TEAM

### Studio Production Group

Studio production requires the services and skills of a large number of people. Their exact job functions and titles vary between organisations.

## A Studio Tour

TV systems today take many forms. They range from impressively equipped installations housing all the latest electronic wizardry, to modest self-contained one-man mobile units. Yet the production principles discussed here apply to them all.

### TV studio

At first sight, the empty TV studio is a deceptively uncluttered, open area. But considerable care has gone into its design. Acoustically treated for optimum sound quality, its smooth, carefully levelled floor permits widespread camera movement. Apart from a *safety lane (fire lane)* around its edge, most of the studio floor is taken up by the *setting area (staging area)*. Here the prefabricated *scenery (staging)* is erected to form *settings* within which the action takes place (action areas). Quiet but powerful ventilation systems maintain a comfortable working temperature, despite the heat generated by equipment and lighting.

Studio lighting is provided by a series of special purpose lights hung individually, from *battens (barrels, bars)*, or clamped to a ceiling framework (*lighting grid*), or on floor stands, or in ground units. Each provides illumination of carefully adjusted brightness and direction, to suit both the technical and artistic requirements of the production.

Around the walls we find the various technical appurtenances of studio equipment: power supplies, camera-cable sockets, controls for lighting equipment (hoists, switching), scenic hoists, etc.

### TV cameras

Within the studio, the TV cameras (two to four are typical) are on mobile mountings (usually *rolling tripods* or *pedestals*, page 18). A long attached cable connects each to a wall socket, and so to its associated video apparatus elsewhere. Although this 'umbilical cord' can cause snarl-ups or entanglements as cameras move around, supplies must be fed to the camera, and the TV *video* (picture) signal taken from it. After suitable amplification and correction by a *video engineer (vision operator, shader)*, each camera's picture is fed to a *production switcher (vision mixer)* in the nearby *production control room* (page 14). Here the director and his team sit, selecting from the cameras' shots and other picture sources (film, videotape, slides, remotes, etc.).

### Ancillary rooms

Near the studio is the *scenery bay* or *storage area* which holds scenery and 'props' ready for productional use, and the *technical storage area* where technical equipment is kept, such as cameras, sound booms, picture monitors and loudspeakers, leaving the studio floor clear of surplus gear. A *preparation room* is sometimes available too, to set up experiments for science demonstrations, and making working models.



## Production Control Room

In one wall of the studio, beyond a large possibly tinted window overlooking the staging area, is the *production control room*. This is the operations centre of the TV show, where the director, his production staff, and contributory specialists work. Two layout approaches are commonly used in production control area design.

### Communal layout

The first is a communal open plan arrangement. This may be in single level or split form. Along the central desk sit the director and his assistant, accompanied by the *switcher (vision mixer)*, *technical director*, *audio engineer* and *lighting director*. Job names and functions vary considerably (page 11). The *shader/video engineer* may be located in a separate equipment room.

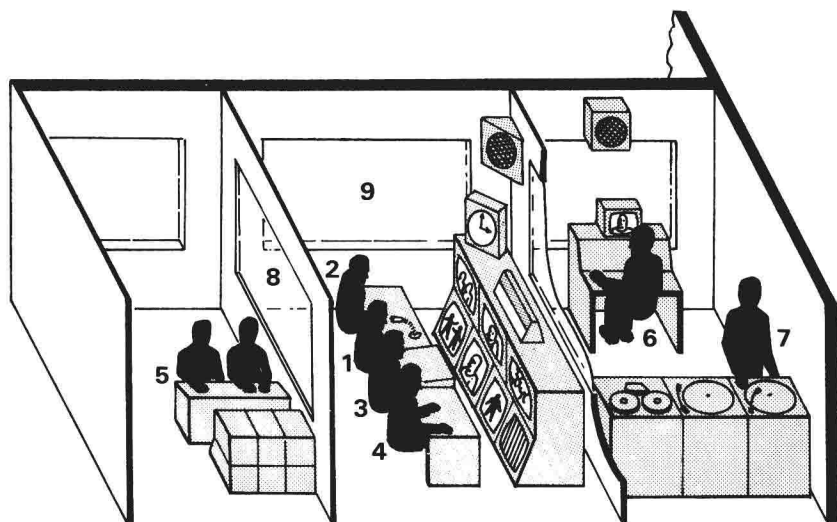
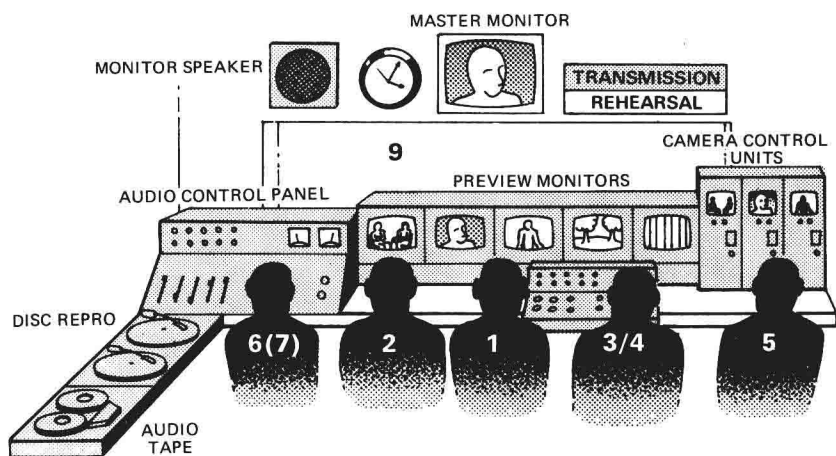
On the row of *preview (channel) monitors* facing the desk are the various picture sources. Each camera's output, any film and videotape, slide scanners, remote sources, is displayed for continual monitoring. At the appropriate moment, the director (or a specialist *switcher*, *vision mixer* or the *technical director* himself) operates the *video switching unit*, and switches the selected picture to the studio output. This picture, which is displayed on the *master (main channel; line transmission) monitor*, can be fed to video recording equipment and/or transmitted 'live' as required.

The programme's audio contribution is controlled by a specialist, who switches, fades and blends the various sound sources from his console. Here he adjusts sound dynamics and quality to suit artistic and technical requirements. These audio sources include studio microphones, discs, audio tapes (reel, cassettes, cartridges), film, videotape, remotes, etc. Sometimes a small *announce booth* is included nearby, for announcements or commentaries.

In this communal layout, all personnel wear headsets in order to communicate with the crew, the programme itself being heard over a nearby loudspeaker. This can result in a fair amount of extraneous talk as all participants overhear everyone's instructions, cues, exchanges.

### Sectionalised layout

Here the control area is divided into three rooms: *production control* in which the director, switcher (vision mixer) and technical director are located, a *sound control room*, and a *vision control room* (lighting and video control). The talkback system includes a communal (general) circuit continually relaying the director's information to the floor crew and adjacent control rooms. But individual specialists might have private-wire intercom circuits, to prevent their disrupting general talkback.



## PRODUCTION NERVE CENTRE

### Production Control Room Area

(A) In a *communal* control room layout, all the jobs are located around the director on a central desk.

(B) In the *sectionalised* control area, the production control, audio control, and video control functions are located in separate rooms, to prevent interaction.

1. Director. 2. Director's assistant. 3. Switcher/vision mixer. 4. Technical director (TM). 5. Video/engineer (shader), vision operator. 6. Audio/sound control. 7. Disc/audio-tape operator. 8. Lighting control. 9. Window to studio beyond.



## Camera Controls

What engineers call the 'camera head', most people refer to simply as the *camera*. Behind its lens (or lenses), is the camera tube(s) that generates the TV picture (video), together with associated circuitry, and a small viewfinder for the cameraman to arrange his shot.

### Camera lens

The simplest TV camera has a single fixed lens. Some monochrome cameras have several such lenses, fitted into a rotating *lens turret*. This provides a variety of lens angles (page 20). A handle (or push-buttons) at the rear of the camera head, rotates this turret to select the one needed. Nowadays, a single *zoom lens* is more often fitted. Its angle is continuously variable (page 26), altered by a control on a panning handle used to support the camera. The angular range of the zoom lens varies with design. A change of 5°–50° is typical. Some zoom lenses include *converters* or *extenders* which increase the available range.

Any camera must usually be re-focused as distance changes, to keep the subject sharp. On simpler cameras focus is adjusted by a ring on the lens barrel. More advanced cameras use a focus knob at the side of the camera head, while some zoom lenses have a rotating sleeve attached to a pan bar. Whatever the design, smooth unobtrusive focus-following is essential for effective camerawork.

### Camera head

The *camera head* is attached to its mounting (usually a *tripod* or *pedestal*) by a *panning head*. This enables the camera to be *tilted* up and down, or *panned* (pivoted round) over a wide arc. A *pan bar* (or handle) is used to steady and guide the head movement.

The camera viewfinder shows a monochrome picture (even on colour cameras) of the shot taken in by the camera lens. A hood shields it from stray light, and a built-in magnifier, with electronic 'crispening' to assist focusing. When a camera has been selected by the switcher (page 44), a small indicator, beside the viewfinder, and a numbered red *tally light* (*cue-light*) on top of the camera are illuminated.

The cameraman can often superimpose another camera's shot on his own viewfinder image (*mixed feeds*), so that the two pictures can be matched: e.g. to fit his shot of titling on to another camera's shot of a map.

Depending on the control room layout used (page 14), the cameraman's headset either intercommunicates with a communal (omnibus) intercom system, or he hears the director's talkback alone, together with the studio's audio output (*programme sound*). He can, when called, speak via private-wire circuits to the video engineer, lighting, or director.