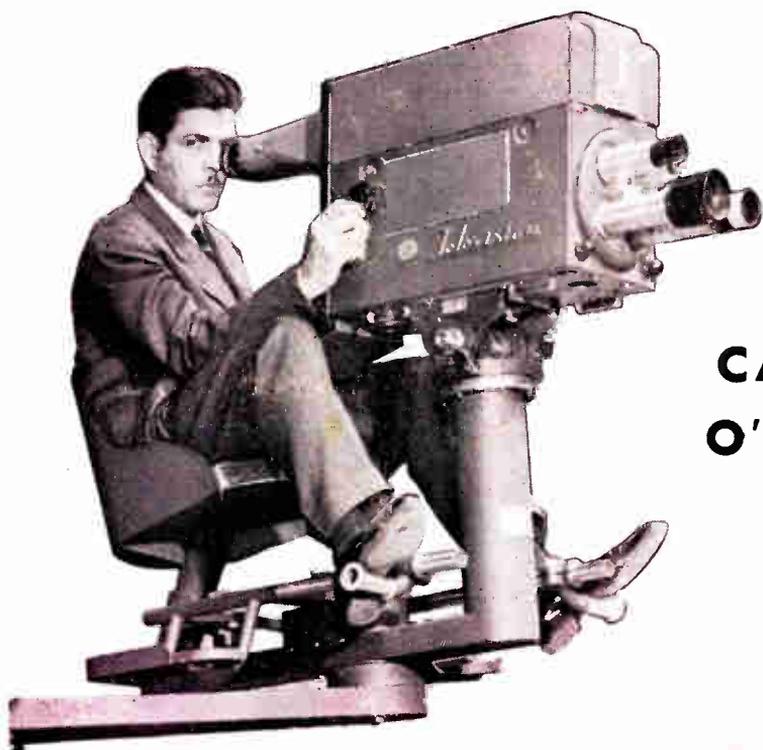


# TELEVISION

PROGRAM

# PRODUCTION



**CARROLL  
O'MEARA**

**THE RONALD PRESS COMPANY • New York**

# TELEVISION PROGRAM

## PRODUCTION

O'MEARA

This book gives full, authoritative coverage of the many elements that go into the efficient production of effective television programs. Major emphasis is placed on the fundamentals and refinements of good camera work, the techniques of staging programs, and the special problems of various program formats.

**TELEVISION PROGRAM PRODUCTION** is a comprehensive manual for those planning a career in the program side of the industry as well as for those already active in the field as advertising agency personnel, directors, writers, actors, announcers, or production specialists. After a brief review of technical fundamentals, the functions of station personnel, and the necessary equipment and setup for studio operations, the book takes up in detail:

- camera operation and control, the calling of shots, picture composition, special devices and effects in exploiting camera possibilities to best advantage
- the use of graphic materials, slides, motion picture films, and music
- program settings and dressing, lighting, colors and textures, special props, make-up
- the production of extempore programs, dramas, comedy and variety shows, sports, special events, educational and demonstration programs
- script requirements, story and play adaptation, the writing and production of commercials
- duties and responsibilities of the director, stage manager, announcer, master of ceremonies, etc.
- television recording on kinescope and tape, and the advent of color television

In stating clearly and emphatically what is good and what is bad practice, what to attempt, and how specifically to go about it, the author has taken actual studio procedures as his criterion, and not mere theory. He draws not only upon his own wide experience as a television director, but also upon the professional advice of a long roster of technical experts in every phase of the industry.

## CARROLL O'MEARA

*Television Consultant and Agency Representative; Former Producer-Director for NBC-TV in Hollywood and New York*

Upon graduation from Stanford University in 1929, Carroll O'Meara worked for a number of years as a newspaper reporter and publicity man. He began his career in broadcasting in 1934 as a writer, then director and continuity editor for station KHJ in Los Angeles. Three years later he joined Young and Rubicam, Inc., where he was successively writer-director, account executive, and manager of the agency's Hollywood office. Some of the programs he directed in radio include "The Aldrich Family," Burns and Allen, "Date with Judy," "The Packard Hour," and the West Coast originations of "March of Time" and "We the People." He left Young and Rubicam in 1946 to do free-lance radio writing.

In 1948 Mr. O'Meara was trained in television production at the NBC flagship station in New York, in preparation for the opening of the network's Hollywood station, KNBH. He directed the first NBC television program on the West Coast (January, 1949). Since then he has directed more than 2,000 network and local programs of all types, including "Halls of Science" (a frequent honor winner), "Get the Facts," "Editor's Round Table," "Tex Williams' Western Caravan," "Inside Our Schools" (for *Life*), as well as numerous telecasts of public events, news stories, and sports.

Mr. O'Meara left NBC in 1954 to establish his own business as a television consultant and representative for out-of-town advertising agencies sponsoring programs originating in Hollywood.

## Advance Reviewers Say...

"This is the most thorough, easy-to-understand book I have ever read on broadcasting. Fortunately, it's written by a man who has enough experience to write with authority on the subject and who knows what he's talking about."

**JOHN GUEDEL** *Producer of the Groucho Marx "You Bet Your Life" program, "People Are Funny," and "Art Linkletter's House Party."*

"My heartiest congratulations on your authentic and comprehensive work on television. Its scope is so broad and its material so carefully prepared and well presented that anyone engaged in the television industry will find it extremely valuable as a source of information and reference. This book fills a real need in our industry."

**C. BURT OLIVER** *Vice President, Foote, Cone & Belding, Advertising*

"Emphasizing actual studio practice, on-the-spot know-how, this book is a practical guide to all phases of television production."

**EARL RETTIG** *Vice President, Production and Business Affairs, National Broadcasting Company, Inc.*

"Impressive . . . inclusive . . . necessary. Thoroughly understandable and completely practical. Vital material for the newcomer to the field of television, a solid refresher course for the veteran."

**ROBERT L. REDD** *Vice President, Radio & Television Division, Erwin, Wasey & Company, Ltd.*

"This book is a must for anyone planning a career in television. Too bad it wasn't published sooner—but of course, if it had been it couldn't reflect the same wealth of experience and know-how."

**PAUL PRICE** *Television Advisor, Allied Artists Productions, Hollywood.*

"At last a really complete book on this complex subject is available! O'Meara's book covers everything from technical fundamentals to tricks of the trade. Its wealth of information makes it an accurate reference book for the busy executive, an easy-to-understand textbook for the student, and a dependable guide for anyone whose work has to do with TV."

**TED KROUGH** *Vice President, Honig-Cooper Company, Advertising.*

**THE RONALD PRESS COMPANY • New York 10**

# TELEVISION PROGRAM PRODUCTION

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By

CARROLL O'MEARA

TELEVISION CONSULTANT AND AGENCY REPRESENTATIVE  
FORMER PRODUCER-DIRECTOR FOR NBC-TV  
IN HOLLYWOOD AND NEW YORK

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THE RONALD PRESS COMPANY, NEW YORK

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THIS BOOK IS AFFECTIONATELY DEDICATED  
TO THREE WONDERFUL WOMEN—KITTEE,  
KATHLEEN, AND JEAN—IN APPRECIATION  
OF THEIR CONSTANT INSPIRATION  
AND ENCOURAGEMENT.

## PREFACE

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THIS book is a comprehensive manual on program production in television. It is designed as a guide for those planning a career in the program side of the industry and as a reference work for those already active in the field as advertisers or agency personnel, producers, directors, writers, actors, announcers, and talent representatives.

The volume had its origin in a notebook I kept for personal use while being trained in television production by NBC in New York in 1948 in preparation for the opening of the network's Hollywood station. The notebook grew as television grew, being constantly revised and added to as new techniques and devices were introduced. My associates in Hollywood used the notebook to advantage and suggested that it be made available to all who are interested in the subject. The finished work reflects not only the experience gained personally through the direction of more than 2,000 telecasts, but also the sound and valuable advice of experts in all phases of the industry.

The aim of this book is to give full and authoritative treatment to the many elements which contribute to efficient production of good television programs. A glance at the chapter titles and headings in the text will show the wide range of topics discussed. I have endeavored to explain clearly and concisely everything from the fundamentals of good camera operation to the mechanics of staging various types of programs. Full treatment is given also to such pertinent topics as the latest developments in special electronic and optical effects, tape recording, and television in compatible color.

In dealing with the special problems of various program formats or with the use of various techniques, I have not hesi-

tated to state what I consider good or bad procedure. My criterion throughout the book has been actual studio practice, as borne out by extensive personal experience or consultation with technical experts, rather than mere theory.

We learn by doing and observing, by taking note of our experiments and those of our competitors. It is my good fortune to have worked closely for twenty years with several outstanding executives and creative men whose names have acquired legendary stature in radio, television, and advertising. Various policies and opinions of each of them are most certainly reflected in chapters of this volume.

Now it is my privilege and obligation to thank those in the television industry who have helped me in many ways in the preparation of this book: Hal Bock and Sid Strotz, who selected me from the roster of radio writers and directors on the West Coast for training in television production in New York in 1948; Fred Coe, my assigned coach, and John Gaunt, who worked with me in the training period; Edward Sobol, who has given me valued criticism and friendly guidance over the years; Jack Burrell, always a dependable source of technical knowledge; Carl Cabasin, Al Protzman, and Bill States, outstanding television engineers who have answered thousands of technical questions for me; and Lou Onofrio, Bill Palmerston, Bill Wallace, Joe Strauss, Armond Poitreus, and Jim Wojiechowski, who freely aided me in camera experiments.

For specific and most valuable assistance on the subjects listed I am deeply grateful also to the following artists and technicians: Howard Johnson and Harold Helvenston (scenic design); Kay De Hart (film operation and editing); Marvin Adams, Bill Comegys, Ross Miller, Russ de Baun, and Ted Pennebaker (video data); Oscar Wick (lenses, projectors, and optics); Milt Altman and Allen Chechik (graphic art); Frank J. Somers and Dan Brewer (color television); Ralph Clements (remote telecasts); Fred Williams (make-up); Earl Curtis (special effects); Al Scarlett, Jim Kilgore, Boris Isaacson, and Parker Oliver (lighting); Vince Avery (lighting equipment); and Manny Cordeiro (props).

I especially wish to thank Ralph Lovell for the pages on Kinescope recording which are excerpted from various memoranda that he prepared; and Bill Garden for the section he wrote

on televising baseball. My secretary Bobbie Ricksen gave up many evenings and weekends to type and retype the manuscript.

And finally I wish to thank the following persons, networks, stations, and companies for permission to use material: American Broadcasting Company; Background Engineers; Columbia Broadcasting System, Inc.; Harry Clork, Ted Young, and Hal Roach Studios, Inc.; Jack Van Nostrand; Edward De Roo; Klaus Landsberg; National Broadcasting Company, Inc.; Stations KNBH, KNXT, KTLA, KTTV; TelePrompTer Equipment of California, Inc.

CARROLL O'MEARA

Hollywood, Calif.  
January, 1955



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TELEVISION PROGRAM  
PRODUCTION



## TECHNICAL FUNDAMENTALS

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THE “miracle” of television, so far as we can perceive now or foresee into the future, is the ultimate development in man’s effort to communicate over great distances. Its importance in the dissemination of knowledge and information promises to rival Gutenberg’s contribution to printing four centuries ago.

Although television is a relatively new invention, it owes its existence to hundreds of important discoveries achieved through three or more centuries of research in various fields of science. There could be no television without the capture of electrical force, the understanding of optics, the invention of the vacuum tube, and innumerable other developments in physics and chemistry.

### What Is Television?

Television can be described as an electronic system which captures a living scene pictorially with related sound, transmits both by wire or through the air over great distances, and then reproduces both at a remote point of reception.

The startling result is accomplished by the transmission over wire or through the air, or both, of electrical impulses of varying frequencies and intensities in separate but kindred channels or wavelengths. In a regular telecast one wavelength (carrying sound) transmits electrical impulses activated by natural sound vibrations ranging from 40 to 15,000 per second. Another wavelength (transmitting the picture) carries an incredible barrage of electrical impulses set up by the camera tube’s response to

varying degrees of light intensity in the image viewed by the camera. These impulses range from 10 to 4,000,000 per second.

In a broad sense the principle on which the telephone operates serves to illustrate how sound and picture can be converted into a stream of electrical impulses. When you use a telephone, the vibrations in your voice strike a diaphragm in the receiver. This thin metal disc or plate, not much larger than a dollar, lies against a capsule of carbon granules. Vibrating against the diaphragm, the voice changes pressure on the carbon granules, which action in turn alters electrical currents to various frequencies and intensities for transmission. The currents are received identically at the other end of the line and are reproduced into sound—with the aid of another diaphragm which vibrates as it is attracted or repelled magnetically according to the currents received. In a comparable manner, an illuminated scene is converted, according to light intensities, into a stream of electrical impulses for transmission and reconversion into a picture at the point of reception.

The two phases of a telecast are known as *audio* and *video*. *Audio* embraces all sound involved in the telecast: speech, music, and sound effects. *Video* refers to the visual aspect of the transmission—the “picture,” whether it portrays live action or inanimate objects. Of course it includes motion-picture film as well as living subjects, still photographs, drawings, printed matter, etc.

Audio transmission in television is equivalent to that of FM radio. Video transmission through the air is based on the same principle, but it begins, not with a microphone, but with a highly sensitive cathode-ray tube in the cameras which converts light intensities in the picture to a stream of electronic impulses.

### Operation of the Pickup Tube

Very basically, the principle of the cathode-ray tube's operation can be compared to the means by which photographs are printed. Applying a magnifying glass to a black-and-white picture in a magazine or newspaper, you will observe that it is composed of millions of dots. The picture seems to possess varying degrees of whites, grays and blacks. But remember, all of the tones are printed with black ink of the same density. Variety of

tone is achieved by proximity and frequency of dots in relation to each other.

A television picture is not made up of dots but of streams of light which zip through the screen in five hundred and twenty-five horizontal lines at lightning speed. Each line is scanned electronically and is somewhat like a ribbon of infinitesimal thickness that varies in light intensity in minute sections from one end to the other.

The entire frame of a picture, regardless of the size of the screen is (by American standards of transmission) scanned electronically in one thirtieth of a second. In other words, each of the five hundred and twenty-five lines is replaced by a succeeding line thirty times per second. As a matter of interest, a motion-picture projector delivers only twenty-four frames (pictures) per second.

### Course of Transmission and Reception

Here is the sequence a television picture undergoes en route to the viewer's screen:

1. The lens of the TV camera (just like the lens of a photographic camera) optically captures an image of the physical object.
2. The image (instead of being focused on film) is focused against the receiving end (photo cathode) of the pickup tube.
3. Here the light intensities of the image are converted into electronic impulses of corresponding degrees of intensity running in 525 horizontal lines, representing tones from near white, through gray, to near black. (There is no pure black or pure white in television.)
4. From the camera the electronic translation of the visual image is carried by coaxial cable to the control room of the studio. Here the picture is electronically refined and sent on its way to the station's master control room, which governs all circuits. (In small stations it is sent directly to the transmitter.)
5. From the master control room the picture is conveyed by coaxial cable or is microwaved (beamed through the air) to the station's transmitter, usually situated on top of a mountain or tall building.

6. The transmitter radiates the electronic impulses into the ether. On a kindred wavelength it simultaneously broadcasts the electric impulses activated by sound vibrations.
7. Both series of impulses (audio and video) are received by the viewer's antenna and conveyed by wire to the receiver.
8. Here, in effect, the processes of microphone and cathode-ray tube are reversed. The loudspeaker reconverts the audio waves into an accurate reproduction of the original sound. And the receiver tube (Kinescope) reconverts the incoming video impulses into an electronically manufactured facsimile of the original image.

### Aspect Ratio of Picture

The area of the picture, both as captured and converted, is always in the ratio of four units horizontally to three units vertically, regardless of the size or shape of the tube. This is referred to as the *aspect ratio*—a very important matter to keep in mind when composing a picture at the point of origin, when staging a scene, or when creating titles or advertising material.

Most home receivers mask off corners and borders of the over-all picture which is transmitted. In general, however, they present a rectangular picture in 4 to 3 ratio. This loss of picture area at the corners and at the borders should always be borne in mind by the director in the studio. He must remember that at all times there will be some shrinkage, and he should compensate accordingly in the framing of his pictures, allowing for adequate "head room" at the top and margin at the borders. The general and safe rule is to allow for 10 per cent shrinkage on all borders.

### Sources of Picture

A telecast may include any or all of the following sources.

- ✓ LIVE SUBJECTS—Any persons in the studio or elsewhere appearing before cameras in the program circuit.
- STILL OBJECTS—Anything visual—from an automobile to a boiled ham or diamond ring.
- TITLES—The general term applied to all printed matter appearing on the screen, usually identifying programs visually, listing

cast and production credits, or translating segments of an advertiser's message into print or graphic design for the sake of impact. The term is also applied loosely to still photos, cartoons, product labels, and other graphic material.

**DEVICES**—Mechanical or other solid objects, still or animated, such as merry-go-rounds displaying an assortment of packages or products; a cash register recording a significant total; extreme close-ups of small objects for transitions or special effects, such as the telltale sputtering of a dying candle, an hourglass spilling out its last grains of sand, a few measly coins in an open purse, a school report card lying in a gutter, a marriage license torn in half, a Bible opened to expose a pertinent chapter, or a pair of worn shoes lying under a bed.

**MINIATURES**—Small-scale reproductions of real-life scenes which (with proper camera treatment) will suffice for the represented subjects in real life. Typical subjects, appearing on the scene in "realistic" size, would be castles or cathedrals, metropolitan skylines, mountain ranges and peaks, or an aviator's view of a city. When properly treated and presented, all can appear to be completely realistic.

The opposite of *Miniature* is *Magnascale*. In this treatment normal life-sized persons or objects are magnified many times for fantastic effects. For example, a cute little nymph dances on the keys of a piano; the keys, of course, are made bigger than tombstones, and the effect, by contrast, makes the dancer appear as small as Tom Thumb's little sister. A reverse effect is achieved by making furniture, houses, or trees infinitely smaller than normal, thus giving a gargantuan appearance to human beings in relation to them.

**MOTION-PICTURE FILM**—This can be readily blended into any live program at any time by switching or dissolving circuits from the production studio to the station's film studio where motion-picture film is projected into special cameras available there.

**SLIDES**—Still pictures, titles, or signs on 35mm film transparencies (the standard 2 in. x 2 in. frames) may be projected into cameras in the station's film studio.

The strategic use of both slides and film can greatly facilitate and enhance any studio production, adding realism, widening scope and achieving authentic atmosphere. This is particularly

true when film is used to establish locale with outdoor atmosphere or to incorporate scenes with broad scale action which cannot be attained within the limitations of even the biggest TV studios.

Film and slides are also most useful to relieve studio cameras—for movement to subsequent scenes, or even for momentary rest periods, a benefit to both cameras and cameramen.

So much for the fundamentals of technical operation in the studio. Now just a final word about what television means to viewers and the industry.

### Television Wavelengths

Commercial television utilizes shorter-wavelengths and higher frequencies than commercial radio. This segment of the wavelength spectrum is referred to as VHF (Very High Frequency). The channels in this group are designated by numbers 2 to 13. The lower-numbered channels are preferred by telecasters because of their natural ability to cover greater distances and to reach into vales and pockets in the terrain of the broadcast area.

The next band above VHF is UHF (Ultra High Frequency). Some commercial telecasters have been assigned channels within this band, but generally this segment of the broadcast spectrum has been reserved for telecasting by educational and civic institutions and projects. The scope of this band is from 470 to 890 megacycles, containing channels 14 to 83. Reception of these stations on standard home receivers calls for installation of special tuning adaptors.

## STATION PERSONNEL

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ALTHOUGH the reader may intend to engage in only one phase of television operation, he will be much better equipped for a career in the industry if he possesses a basic knowledge of other departments in the over-all operation. This applies especially to those who would be producers, directors, or program management executives. Naturally, no one can be a specialist in all fields, but a good specialist in any one or two fields should have at least a basic knowledge of the operation and problems of all.

In line with the objective of understanding the operation of all departments and functions, it is necessary to know how a station or network sets up its departments, the personnel involved, and the duties they perform. In this way one knows whom to approach for what service, whom to deal with for the solution of various problems, and how most directly and speedily to accomplish various objectives.

In order to encompass all the departments and personnel which might be engaged in telecasting, the staff of a major TV station or network originating studio will be described. It stands to reason that many stations, indeed most stations, will not have available to them the staff, facilities, or equipment referred to in this and succeeding chapters. Small and medium caliber stations will have to adapt their methods and program standards to local economic conditions. If they are linked to a network, much of their programming will be supplied to them by cable, film, or Kinescope recording. Fewer programs will originate locally, and those produced will of necessity be of a much less ambitious nature than programs the networks originate. Likewise, their personnel will be much more limited. They may per-

form nearly all of the operations of a major network station, but there will be less specialization and much "doubling in brass." The truth of the matter is they may often achieve comparable quality in some types of programs by ingenuity, versatility, hard work, and skillful planning.

### Station Management

The operation of a major TV station is directed by the following management executives and departments.

**GENERAL MANAGER**—He is the fiscal administrator of the station, and determines operating policies, selects key personnel, and has jurisdiction over all department heads. He is usually an experienced business man, qualified to administer an investment of several million dollars. He keeps a close eye on financial control sheets, sales, profits, and station popularity ratings. Of all persons on the staff he is most directly responsible for retaining the station's license to broadcast by operating according to standards prescribed by the Federal Communications Commission (FCC) which governs all radio and television.

**SALES MANAGER**—He is in charge of the sale of commercial time to sponsors, and handles relations with advertisers and advertising agencies. He heads a staff of time salesmen and oversees a promotion department to exploit station's attributes and facilities. He often attempts to influence programming to facilitate or promote sales, which the program department traditionally resents and regards as unwarranted "meddling." (The proverbial feud between sales and program departments dates back to the earliest days of broadcasting.)

**PROGRAM MANAGER**—His primary duty is to guide station's program structure, with the objective of gaining maximum audience for the sake of highest local popularity and maximum time sales. He builds and schedules programs with an eye toward local competition from other stations at various hours of the day and in accordance with his understanding of local viewing preferences and habits. He reviews and selects new talent and programs, negotiates terms of talent contracts, and usually is in complete charge of all program operations, including selection and supervision of directors.

**PRODUCTION MANAGER**—Acting under the Program Manager, he supervises the entire production staff. With one or more assistants, he handles all details of production scheduling, assigns directors, stage managers, and other production personnel to their respective programs; assigns studios for rehearsal and broadcast, and schedules production facilities. Under some operations he is charged with responsibility of watching over production expenditures and program budgets.

**CONTROLLER**—He acts in the capacity of a company treasurer, making up financial control reports and overseeing all general operating budgets. He is responsible for agency credit, time sales contracts, and collection of accounts. He is in charge of the accounting and payroll departments. Frequently he may be assigned to handle matters pertaining to contracts with various guilds and unions, although that duty is usually assigned to the legal department or company attorney.

**CONTINUITY DEPARTMENT**—This department usually consists of a staff of three or more persons supervised by a continuity editor or chief. They review all scripts and commercial copy, editing them in accordance with station policy or broadcasting standards. It is their responsibility to delete objectionable material, keep commercial announcements within prescribed time limits, and even to attend rehearsals and telecasts to make certain that there will be no violations by gesture or implication which may be anticipated although not referred to in the written script material. When necessary they also handle matters pertaining to copyrights or performing rights and royalties. Quite often they are compelled to work closely with the station's legal counsel. This applies most frequently in relation to prize contests in which viewers are invited to participate by telephone or mail, or to commercials which contain misleading claims or other statements not suitable for telecasting.

If the station maintains staff writers (as opposed to writers contracted for specific programs) they would normally report to the continuity chief.

**MUSIC RIGHTS DEPARTMENT**—This department handles necessary clearance of music to be used on programs, obtaining permission through copyright owners, music publishers, or their representative societies. (See Chapter 9.)

**ENGINEERING SUPERVISOR**—He has the very responsible job of overseeing all engineering operations, technical personnel, and equipment. He is charged with establishing and maintaining the quality and strength of the station's telecast signal. He is also responsible for hiring, assigning, and (when necessary) training of all technicians. He must pass on the design of any new studio or transmitter facilities, and must approve the purchase of any new technical equipment. He and his assistants keep an accurate and detailed log of all operations, and a very close record on the whereabouts or performance of all the expensive equipment. They also make all engineering assignments daily or weekly by program and studio.

**PUBLICITY MANAGER**—His function is to publicize station programs and personalities in newspapers and magazines. Depending on the size of the organization, he may have a staff of writers working under him. They prepare news releases, handle contacts with television editors, and issue periodic logs of station programs.

**OTHER DEPARTMENTS**—As in any other business organization, depending on size and scope of operation, a station might have other departments operating under the management heads mentioned—legal, personnel, cashier, maintenance, etc. Certainly all major stations, and for that matter most stations of any reasonable size, will maintain their own mimeograph department for stenciling and duplicating the voluminous scripts and routine sheets required in program production.

### **Program Production Personnel**

In this category are all those persons directly concerned (under the program and production managers) with building, casting, rehearsing, staging, and directing programs.

Before proceeding further, it should be stated that the functions of producer and director now vary throughout the nation. In the late 1940's, when television had its rebirth after the war and started the enormous and rapid expansion which led to the powerful transcontinental systems we know today, the duties of these two persons were clearly defined. One produced the show; the other directed it. More recently talent representatives ad-

vertising agencies and program "packagers" have entered the scene to a very substantial degree. With or without reason (often warranted but sometimes not), they insist on managing and directing a production through rehearsal and right up to actual air time. In such cases the man formerly known as the director is not a director at all; he is then known as camera director, being in charge only of "calling the shots" which the staging director has decided upon in rehearsal and prescribed for the telecast.

In original practice, and certainly in the best dramatic programs now on the air, the man directing the shots delivered on the air is the same man who stages the production and rehearses the cast from the beginning. In all but the biggest and most expensive productions, there will not be this duplication of effort and extravagant use of creative talent. A man who is not capable of casting talent, rehearsing the cast, directing interpretation of lines, controlling pace and mood, planning stage movement, camera angles, and appropriate camera shots, is not qualified to be a director—not even a camera director. Let's face this fact: the latter is not much more than an automaton—a sometimes helpful but not always necessary adjunct to the technical director's faculties of memory and sight perception.

In the original and most widely accepted practice, the following are the members of program personnel responsible for creating a program for telecast, and their respective duties.

**PRODUCER**—He is responsible for building the program, engaging talent, handling talent contracts, and other fiscal matters. He buys scripts or stories (selected by himself or the director), manages budgets, and oversees all production expenditures. He sometimes acts in the capacity of program supervisor.

**DIRECTOR**—He consults with producer in selection of script, generally supervises TV adaptation, manages auditions and casting; confers with art director on design of sets, floor plan, properties, and wardrobe; blocks out camera angles and shots; works out a plan of camera traffic; rehearses the program and confers with the technical director on the program's movement, explaining what shots are desired and when; and finally, "calls the shots" of the program on the air. In the latter capacity he acts as an editor and coordinator.

**ASSISTANT DIRECTOR**—He works side by side with the director—preferably from the start of production, but certainly from the start of camera rehearsal to and through the telecast. The extent of his duties depends upon his own abilities and talents and upon the director with whom he works. For general purposes, he keeps track of all timing, notes scenery changes, curtain pulls, entrances of actors, setup of props and titles, etc. On the air he sits at the control panel beside the director and relieves the latter of as many such details as possible, enabling him to concentrate on program movement and the calling of shots. By telephone system (described in the next chapter) he is in communication with various program assistants on the floor and should see to it that the program moves along as timed at dress rehearsal, and that all physical movements on the stage take place as scheduled. Actually, he anticipates for the director, working slightly ahead of him in some respects to make certain that shots, scenes, lighting effects, props, and titles are ready and set when the director calls for them.

**STAGE MANAGER (also known as FLOOR MANAGER)**—He is the director's indispensable assistant on the studio floor or stage. On the air it is his duty to carry out responsibilities and assignments designated in rehearsal. From the time camera rehearsal starts the director and assistant director (if one is assigned to the program) work in the control room often far removed from the actual scene of action and usually not in direct view. Thus, in rehearsal the stage manager acts not only as the director's assistant on the floor but often as his "eyes" and personal emissary. In rehearsal or on the air he relays all directorial cues to performers and propmen. In programs where no assistant director is assigned he is responsible for timing the program and seeing to it that the action runs as scheduled, keeping principals of the cast apprised regularly of time situation during the telecast. He will signal them to speed up or slow down, according to the situation. On the director's order he will effect certain emergency or planned cuts when necessary to get the program off on time. In effect, he is the director's "executive officer" on the scene of action—not merely important, but indispensable.

**FACILITIES MEN**—Sometimes generally referred to as "prop men," these are the hustlers who handle all scenery, stage effects,

props, and mechanisms. At appropriate times they manipulate title devices, provide steaming hot coffee for a commercial, move scenery, close a significant door in a play's setting while the cameras arc elsewhere, place a smoking cigar butt in an ash tray at the exact time the plot calls for it, blow out a candle, load a pistol with blanks, and in a multitude of ways participate in the over-all production.

Don't underestimate the importance of facilities men. They usually are veterans from the theater or film studios, and most of them are ingenious artists in their own field, eager to demonstrate their individual talents to make the director's job easier or the production better. They love nothing more than being assigned to create a special effect on their own or to solve some tricky problem of scenery movement with inventiveness or skill based on long experience in show business.

**SOUND EFFECTS OPERATORS**—These men are responsible for the creation of all sounds not made automatically by the cast in the course of normal action. In radio *all* sound effects are created by these technicians. In TV they create only those sounds which do not result from normal action of members of the cast appearing at the time on cameras. Typical of the normal sounds referred to would be footsteps, the sound of doors opening or closing, the pouring of a drink, the squeaking of a rocking chair. By agreement with the unions concerned, all sound effects not obviously or naturally created by persons seen on camera are made by the sound effects operators. By way of clarification, a member of the cast might press the button of an electric doorbell; the sound of the bell would be created by a sound effects operator. On the other hand, when an actor rings a handbell in a scene on camera, the effect is created automatically. By the same token, a pistol fired on stage creates its own sound. But a pistol shot heard off-stage (outside the scene of camera view) would not be made by a member of the cast but by a sound effects man.

The sound unit might be operated by one, two, or three men, depending upon the amount of sound required and the rapidity with which the effects are called for. Ordinarily all sound would be handled by one man. The sound effects technician utilizes both manual effects and specially made sound recordings. In recent years radio has developed an enormous library of recorded

sounds which are available for TV. These recordings, for example, include such a variety of sounds as airplane motors, bird calls, elevators in operation, storms, crowds in various proportions and tempers, running water, ocean waves, fire, gun and cannon shots, baby cries, etc. There are even records of Big Ben, the roar of Niagara Falls, the beat of authentic savage tom-toms, and the blast of the Queen Mary's whistle. If recordings do not have the sound called for, with a little time an imaginative sound effects man can usually create the effect desired.

### Studio Engineering Personnel

It should be pointed out to newcomers to television that there is a traditional state of feud existing between program men and engineers. In some stations it amounts to no more than a friendly jousting between separate clans or fraternities. In other stations, however, it is a constant source of irritation and sometimes even approaches bitterness. When this unfortunate and silly situation does arise it is usually due to the ineptitude of a few personalities only—in either the program or engineering department, or both.

It has already been stated rather emphatically that it behooves a director or producer to know something about the fundamentals of TV operation from the technical side. Perhaps now the necessity is even more apparent. One can't blame a technician for being impatient with a director who makes exorbitant demands on technical facilities, or who gives ridiculous directions and expects them to be obeyed simply because he is in charge—regardless of practicality or plausibility. Hence, once again, the necessity for production and program men to understand at least the fundamentals of all phases of TV operation is emphasized.

Good program production, moreover, depends on teamwork. To achieve maximum performance in any telecast, engineers must understand the objectives and the problems of program production, while program men must learn to work cooperatively with engineers by inviting their suggestions and showing appreciation for their help.

**THE "TD" SYSTEM**—Before considering the technical personnel engaged in the production of studio programs, this point

should be made very clear. The system of operation described in this text is one used by NBC and many major stations. It is known as the "TD" (for technical director) system. Under this arrangement the director's orders are relayed to the engineering crew through the technical director. The program director talks only to members of program personnel on the communication lines at rehearsal and on the air. The engineering personnel maintain an entirely separate system of communication.

CBS and many stations use what is called the "Supervisor" system. The supervisor heads the technical crew and does the switching—just as in the TD system. But under this arrangement the director talks directly to cameramen on the communication lines, calling for shots desired or modifying them by direct command.

In the Du Mont network and in many small stations the director not only talks directly to cameramen but actually does the switching also—which makes him an exceedingly busy man, considering that he has only one brain, two eyes, and ten fingers to preside over a script, monitor screens, the clock, and a console of dials and buttons.

Under the TD system, the following are the personnel involved in the engineering side of a studio's operation.

**TECHNICAL DIRECTOR**—He is in charge of all engineering operations in the studio, the captain of the entire technical crew. Usually he is a man with a thorough knowledge of both audio and video requirements and circuits, who understands camera operation (optical as well as electronic peculiarities), and not only has some proven sense of show values, but has also demonstrated an ability to command men under him quietly with discipline and efficiency.

As head of the technical crew he instructs cameramen, oversees lighting, governs the method and control of all sound pickup (audio), and in general works in every way with the director to achieve the results desired. He sees to it that the required pictures are delivered on schedule by operating the control console and effecting the desired switches, dissolves, supers, and fades as requested. The director fortunate enough to have an imaginative and experienced technical director assigned to his production should arrange to have his services made available in advance—to consult him in staging and planning before sets are

designed and built, and most certainly before the floor plan of a show has been laid out. Among other things, he can foresee problems of conflict in lighting various sets, in movement of cameras from one set to another, and in placement of microphones for best audio pickup.

In rehearsal he makes note of camera shots and angles, fades, dissolves, and special effects. He records these in his script. On the air he calls upon his cameramen for shots as the director orders—but let's not forget that a good TD remembers the specific shots and effects as rehearsed and often can be an invaluable help to a director who "loses his place in the book" under the strain which confronts him.

A good technical director with the right mental attitude and "know-how" can be a director's greatest asset in any production. He should know the answer to technical problems which come up in planning or rehearsal; and if he doesn't know, he should say so honestly and then seek the answer or solution by actual test or consultation with other engineers. There are some who will say adamantly: "It can't be done." Others will say in effect: "I've never seen it done. But what you ask for sounds interesting. It seems worth the effort, so let's try it and see."

**VIDEO ENGINEER**—He is responsible for picture quality at all times and for all cameras in operation. On his panel in the control room he manipulates dials that govern and perfect pictures from all video aspects. He keeps a watchful eye on variations in lighting and the effect on over-all illumination of picture during a telecast, and generally oversees anything that affects picture quality. In rehearsal he points out objects detrimental to a good picture, in the event that such objects have not been observed by director or technical director. On the air his duty is to manipulate his controls, with a full understanding of each camera's peculiarities, so that the best possible picture will be transmitted. No two camera tubes are alike. They are all temperamental in various degrees and respond differently to different stimuli, and an experienced video man will know the particular eccentricities of the tubes he is working with.

**AUDIO ENGINEER**—He governs all sound pickup and balance. He is one of the few engineers in the crew who is not necessarily an electronics man. He is usually a former "mixer" from radio who has had some training in practical TV operation.

The audio man has control of all sound circuits, covering voice, music, or sound effects, and is responsible for bringing in desired sound on cue with proper balance in relation to all other sound. He is in direct telephonic communication with men operating the microphone booms. Following the script and director's instructions from the booth, he thus keeps the boom men warned in advance of any action that might affect boom placement or movement. For example, on intimate close-ups with cast members who are speaking or singing, the boom is dipped low over their heads. Just before such a shot is widened, or before a seated actor rises, the boom operator is warned to lift the microphone so it will not appear in the picture.

Frequently the audio man is called upon to "spin" music recordings on a turntable beside him in the booth. (He does not handle sound effects records.) In an elaborate setup a separate man would be assigned to handle music records. In dramatic programs involving the use of many records for themes, bridges, or background effects it is imperative to have a man on this job alone, placing the proper discs on the turntable at the right times and winding them in so they will start at the proper spot at the exact second at which they are called for.

**CAMERAMEN**—They operate all cameras in the studio, controlling them electronically as well as optically. They are trained not only in photography but are also qualified electronics engineers.

At the start of the working day the cameraman equips his camera with the lenses that will be required. Then he "warms up" the delicate electronic mechanism and, with the direction and aid of the video man in the booth, aligns it for picture. This is equivalent to a tuning process. Occasionally during the day minor adjustments might be necessary. If the electronic operation of the camera isn't working satisfactorily, the optical aspect of the machine is of no use whatever.

The cameraman must be a good photographer, understanding lenses, focus, and composition. He must work faster than a cameraman in any other medium, and he must be disciplined to work to meet the unique demands of TV studio teamwork, instantly executing orders given or exercising initiative when circumstances warrant. All this in addition to being a competent electronics engineer!

**BOOM OPERATORS**—They place fixed microphones on the stage under the direction of the audio man. During rehearsal and on the air they operate the microphone booms.

**LIGHTING MEN**—These engineers usually work under the supervision of the technical director. In some union arrangements the crew is composed of electricians who are not necessarily electronics engineers. In such cases they are supervised by a lighting director, who in turn takes directions from the technical director. They fix or hang all stationary lights, move all floor scoops as required, and operate the dimmer board and spotlights. It is their job also to handle electrical wiring when practical lights are called for in a play setting.

### **Other Engineering Personnel and Departments**

So far we have considered only those engineers who operate in the studio of a program's origination. A major station could not function without many other engineers and a few other technical departments, as follows.

**MASTER CONTROL CENTER**—This is the “nerve center” of the entire setup of technical equipment. It is of particular importance in a network station. Usually manned by one or two men on duty at all times the station is on the air, this section of the operation contains the “sync” (synchronizing) generators, switching relays, master switching controls over circuits between various studios and the transmitter, and what is called the “spew” (actually SPU—special power unit).

Men on duty here keep a vigil over the outgoing picture to the transmitter and compare it constantly with the quality of the picture being received by air from the transmitter. They also handle all switching and communication between studios and transmitter as required when program-origin points shift. They maintain a detailed log of operations, noting times programs start and end, times of commercial announcements, station identifications, and any irregularities which may occur, such as breakup of picture, momentary loss of audio or video transmission, etc.

**TRANSMITTER ENGINEERS**—At all hours in which the station is on the air there must be one or more men on duty at the trans-

mitter. Very small stations might have their transmitter within the station building. But major stations, surrounded by tall buildings and other obstructions, usually find it necessary to have their transmitter situated out in the country or atop a tall mountain far removed from the studio. Communication between the studio and transmitter is by telephone line and coaxial cable or microwave.

**FILM STUDIO ENGINEERS**—They operate the film and slide projectors and necessary cameras for pickup, plus related audio equipment.

**KINESCOPE ENGINEERS**—They handle the Kinescope equipment which records live programs on film for reference purposes or subsequent rebroadcast. They process, edit, and cut the special film and audio tape used for this purpose.

**MAINTENANCE MEN**—These engineers are “trouble shooters” who repair and keep in condition all studio technical equipment. They have detailed charts of all electrical circuits and keep on hand a supply of all tubes and devices required for replacement in cameras, control panels, etc. Even while a program is on the air they are often summoned hurriedly to a studio to seek out a cause of trouble and to make emergency repairs or replacements. Specializing in a knowledge of technical equipment, they are also called upon occasionally to test new equipment or to devise special electronic effects required in certain telecasts.

## **Facilities Department**

Generally speaking, this department is in charge of all physical properties and gear not included under technical equipment. The men and women in this broad category perform a great variety of functions. They are in charge of all sets, set dressings, furniture, props, wardrobe, make-up, and operation of title devices and special effects which do not come under electronics. The department might consist of the following personnel.

**ART DIRECTOR**—He is usually in charge of the entire operation, hiring all employees, making all assignments, and supervising operations. He is most apt to be an artist or architect with a good business sense, or a good business man with a knowledge of theater and scenic design. He purchases all the extensive sup-

plies needed for the construction of sets, and oversees budgets which show the exact cost of all facilities built, rented, or used for each program on the station. In his spare (!) time he might occasionally design a set for some favored program.

**SCENIC DESIGNERS**—Men in this section design sets according to requirements of each program and draw out a detailed architectural plan for construction and possibly a floor plan for placement in the studio.

**SCENIC ARTISTS**—It is their job to paint the sets, whether the job be painting a plaster column to resemble marble, or a canvas backdrop to represent a woodland setting or the skyline of Paris.

**CARPENTERS**—They build all flats, walls, stairways, doors, windows, counters, and many special devices. This work is done in a carpenter shop usually equipped with a good supply of power tools. Many carpenters on staff are used also to install sets in the studio, move them, and eventually to knock them down for destruction or storage.

**GRAPHIC ARTISTS**—These men and women execute all graphic art. They make titles, illustrations, advertising pieces, and charts, and occasionally are called upon to decorate props or scenery with lettering or specialized designs.

**PROP MEN**—This term is applied loosely to all men in the facilities department who are assigned at the time to handle facilities within a broadcast; for example, the men manipulating flip cards for titles, or opening a door on cue. More specifically, and especially in the original sense used in the theater and in motion pictures, a prop man is one in charge of procuring and handling “properties”—such as guns, cigars, canes, etc.—which might be required in a play.

**SET DRESSER**—A specialist in props who dresses sets according to requirements. He might be required to obtain an old-fashioned coffee grinder, a blunderbuss, or a delicate crystal candelabra. These he borrows or rents from various sources if they are not included in prop room stock. He may be required to select appropriate paintings for a living room scene, to decorate the mantel piece, or arrange a floral bouquet.

**MAKE-UP MEN**—Their job is to apply proper make-up on all persons requiring it (see Chapter 14) and, when necessary, to

affix toupees, moustaches, and beards, build false noses, create scars, paint black eyes, etc.

**WARDROBE MISTRESS**—The task of handling wardrobe is usually given to a woman. Her job is to procure necessary wardrobe from costume suppliers or clothiers who will lend it (usually for a credit), and then to assign the garments to the proper individuals at the required time. As a rule, a wardrobe specialist is one having good taste in modern clothing and an accurate knowledge of costume by periods.

## STUDIO EQUIPMENT AND SETUP

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UNDER normal conditions a network originating studio or major TV station provides three cameras in regular operation. In New York, Chicago, and Hollywood some of the higher budget programs utilize four or five cameras. Major football games, political conventions and other outstanding public events have begun to use as many as seven cameras. More than three cameras is a luxury, of course. But there are times when important action is spread over a wide area containing several points of interest, and the use of extra cameras and pickup points is justified. When used strategically, extra cameras add much to showmanship and effectiveness in an important telecast.

Cameras are expensive—costly to purchase and costly to maintain and operate. The Image Orthicon (pickup) tube alone costs well over \$1,000. Its life of satisfactory service is only a few hundred hours, generally, although some tubes have been known to give satisfactory service up to 1,200 hours or more. Depreciation of the tube is only one item of expense, however. There is also power to be considered—both electrical and manpower—and the latter includes not only engineering man-hours in operating extra cameras but hours of time in stringing cables and setting up all the necessary facilities to operate each camera chain.

On many sustaining programs and on most “commercials” with low budgets it is now common practice to operate with only two cameras. In some rare cases—with short, simple programs—only one camera is used. Any major program, however, particularly one telecast in a period in which enormous time costs are involved, would certainly call for three or more cameras to attain

full realization of program potentials. To economize unduly on camcras, costly as they are, would be "penny wise and pound foolish."

We should start first of all with an understanding that the studio stage or floor, the scene of actual staging or presentation, is isolated physically and acoustically from the control booth. (See Figure 1.) The latter unit almost always adjoins the stage and through sound-proofed windows provides a view of the action on the stage. Sometimes, however, when a stage setting is placed at a far end of the studio (out of sight of the control room window) or when scenery set in front of the window obstructs the view, the staging scene can be viewed only through the "eyes" of the camera. In the normal studio setup of a major TV station or network originating point, the following outline of equipment and facilities would be representative.

### The Control Room

Here all elements of a telecast, both audio and video, are channeled, edited, and assembled. This unit turns out to master control the "on-the-air" picture, with accompanying sound, that goes out over the transmitter.

The operating equipment in the control room (or control booth) is highly departmentalized for functional purposes. Whether arranged in one long panel, in two separate decks, or with the audio element isolated acoustically from the remainder of the operation, the control room contains the following equipment elements.

**Audio Control.** An audio panel with dials ("pots" or rheostatic faders) governs all audio pickup points. This panel opens up certain microphones when needed, controls the volume of each, and blends the over-all assembly of sound. The unit usually contains two turntables that are used exclusively for recordings of theme music and background and transitional music. The turntables revolve at  $33\frac{1}{3}$  RPM, the standard speed of the 16-inch recordings used in radio, as well as at the standard phonograph speed of 78 RPM. There is also a patching board with cords and plugs for quick assembly of necessary electrical circuits. Naturally, the audio engineer has beside him a loudspeaker which projects all audio being telecast for the benefit of those in the

control booth. Undoubtedly, he will also have before him a monitor (Kinescope screen) showing the "on-the-air" picture in order to anticipate movements of cast, audio fade-outs, fade-ins, and the like, and to control sound perspective in relation to picture.

**Video Control.** Next is the video control panel. Of necessity, this unit contains as many viewing screens as there are cameras in operation. The video engineer has at his disposal various dials pertaining to each camera chain. With these, and with the cooperation of cameramen, he controls brightness, expansion, shading, and other electronic aspects of picture quality.

**TD's Panel.** The next section of the panel system is that operated by the technical director, inevitably seated immediately next to the program director. The TD has a specially designed console of button switches and dials which control picture cuts, dissolves, superimpositions, and fades. He and the director will watch the same series of monitors, one showing the picture being put out on the air, all the others previewing pictures being composed for an imminent "take."

Except for lights on some sections of the panel's desks, the control room will be very dark in order to enable better judgment of picture quality. The few lights one sees in this key location of the production operation are necessary for reading of scripts, notes, and the ever-important clocks with their essential red second hands.

### **On-Stage Facilities**

Now let's consider the facilities and equipment which will normally be found on the stage, studio floor, or actual point of program origin.

In the normal studio arrangement of a major TV station, the following would comprise the technical equipment available for production.

**Cameras.** A dolly camera and two pedestal cameras. (Refer to subsequent paragraphs for descriptions of camera mounts.)

**Microphones.** One or two boom "mikes" for cast, and fixed (standing or suspended) mikes for music, sound effects, or announcer. An audience program will require microphones sus-

pended from the ceiling for audience laughs, applause, and other reaction. When the master of ceremonies moves about the stage or into the audience, a hand-microphone and cable are called for.

Regarding microphones, it should be mentioned that by common practice and good reason there are times when a visible microphone is perfectly in order in television. For example, when we see a reporter interviewing people in a studio audience or on a street corner, we find it acceptable to see him with a portable microphone. But on the other hand, a microphone has no place in a dramatic production. Its visibility for merely an instant reminds the viewer that he is witnessing an attempt to deceive him, thereby destroying an illusion and impairing his enjoyment of the honest fraud. Hence, the ever-present but seldom-seen boom microphone.

The boom "mike," intentionally always immediately above a scene of action and out of the picture frame, swings overhead like a potato dangling from a trout pole. It is mounted at the end of a complex and delicately geared arm which enables the operator to swing it in an arc in following action, to thrust it several feet forward instantly or withdraw it telescopically as required. At the same time the sensitive face of the microphone can be tilted in the direction of a speaker or singer.

At the end of the boom or pole, the microphone is mounted in a framework of rubber bands which reduces or eliminates the shock of its active twisting or turning. The pole extends from a mechanical standard equivalent to a tripod. Usually the position of this base is fixed during a telecast, being preset in a strategic spot. However, some of the more pretentious variety and dramatic programs now use mobile bases (dolly booms) which can be pushed into or pulled away from scenes of action.

**Lighting.** Lighting may be either incandescent or fluorescent, or both. Some lighting is preset, permanently fixed in the program setting, or adjustable according to action during a telecast. (For a full treatment of lighting, see Chapter 12.)

**Sound Effects Unit.** Sound effects equipment, consisting of truck with turntables and controlled amplifiers, plus all mechanical or manually operated gear, should be set up on the stage as close to the action as possible. It should not be in a location where it would impede or hamper movement of cameras, light

scoops, or cables. If the sound effects operator cannot see the actors in action, he should of course be provided with a monitor (viewing screen showing picture on the air) in order to synchronize sound with action. A program headset is also helpful, enabling him either to hear dialogue or to receive cues directly from the director when necessary.

**Monitors.** Viewing screens placed strategically about the studio floor, showing the picture that is on the air, are known as "monitors." These are most helpful at times to stage managers, actors, announcers, and facilities men. They show exactly when a scene is completed video-wise, when a dissolve has been terminated, what camera is "in business" and delivering what shot (close-up, wide-angle, etc.), indicating when a performer in a frozen pose is free to move to the next scene, when a title has served its purpose, and so on. Such monitors are indispensable when a person on stage uses his voice for narration over a silent film, or attempts to synchronize voice with visual action in a remote section of the studio.

**Loudspeakers.** These are fixed in the walls or ceiling and serve as the voice of a studio address system, referred to as the "SA". Over this system the director and technical director in the control booth can address the entire stage when necessary, calling crew members to their stations after a break in rehearsal, giving over-all directions to the cast or specific instructions to members of the production team who may not be listening in on the various telephone circuits. Incidentally, this address system, carrying an authoritative voice as it does, is a handy device to help in clearing a stage or studio of visitors, miscellaneous friends, and "hangers-on" immediately before a telecast.

When a studio goes on the air, prearranged circuits automatically nullify the operation of the SA system—to prevent the voice of the director or others in the control room from being heard inadvertently on the air in a telecast. When the situation calls for it, however, it is still possible to bypass this protective circuit arrangement. With the aid of the technical director, a bypass switch is thrown and the director may speak through his microphone or mouthpiece at will in the booth. His voice will be amplified and projected over the loudspeakers in the studio and picked up by any live microphones there.

### Related Facilities—Off-Stage

By simple and proper arrangement in advance, the studio equipment just described can be augmented with the facilities of the station's film studio. It is detached from the originating studio physically, but by connecting or switching necessary circuits these facilities can be called upon for integrating additional elements in the studio program:

1. Stand-by announcer's microphone, isolated from the studio floor.
2. Usually, there will also be a camera available to put the announcer's picture on the air.
3. Recording turntables to play recordings of music themes.
4. Film projectors to incorporate motion-picture film in the studio production. Such film can include animated signatures for the sign-on and sign-off; film inserts in the body of the telecast; filmed scenes for transitions in a dramatic program for the sake of movement, change of mood, or locale; or animated background upon which, for example, faces or titles in the studio may be superimposed. The film cameras also pick up standard film transparency slides. (See Chapter 8.)

### Communication Systems

From the isolated control room all departments of the production operation are at all times in telephonic communication with members of their respective departments on the studio floor. Likewise, the technical director or video man in the control room can contact at any time the film studio or master control—simply by throwing a switch and speaking into panel microphones or headset mouthpieces.

Each of these separate communication lines is referred to as a "PL" (private line). The PL system can be patched into various combinations for various requirements. It may seem complicated and confusing, but once seen in action its practical aspects become immediately apparent. If all members of the production crew were on the same circuit, there would be so much talk and unrelated instructions into each telephone receiver that the result would be gibberish.

First of all, consider again briefly the control room and the men who operate it. This point is the source and center of telephonic communication, which is usually one-way—except for the unique methods which TV men on the studio floor have devised to answer or respond to directions from the booth.

**The TD's Line of Communication.** The technical director, as previously explained, is the captain of the entire technical staff of a telecast. While on the air, however, his principal assignment is to deliver the shots called for. Therefore, his PL circuit will be connected only with cameramen. Incidentally, each cameraman wears a phone headset plugged into his camera, and instructions from the TD are conveyed to him by telephonic circuits contained in the camera's cable—along with coaxial cable for video transmission, and electrical circuits for power.

The technical director often (while on the air) advises or directs the audio engineer, the video engineer, or the lighting director regarding their respective phases of the operation. This, of course, is done directly in the booth and without the use of the PL system.

The technical director, by manipulation of available switches, can also use his phone circuit for communication with film studio, master control, or TV (Kinescope) recording laboratory.

**Program Director's Line of Communication.** Next we consider the phone circuit used by the program's director. Under ordinary studio arrangements, he has no direct communication whatever with the engineering crew, even cameramen, although this practice has varied and will continue to be modified under certain operating structures. Under the operational system we are considering, the director usually addresses over his PL only non-engineering personnel. Foremost on his circuit would be the stage manager. The latter can relay cues by signal to the announcer, or the announcer might have his own telephone headset and receive his cues directly from the booth. The same applies to a sound effects man or to facilities men.

Quite often an orchestra leader or pianist may have a double headset of earphones. One side of the headset receives instructions from the director (regarding cuts, changes in routine, etc.) from the booth. The other side delivers a "program feed" enabling the musical director to synchronize music with remote dramatic action, voice cues, etc. Surprisingly, this seems to work

effectively in some of the biggest television productions on the air. But with all the sound and fury, the music, noise, and excitement of a big show, a man who has to endure two "programs" simultaneously and respond to split-second cues while watching both musical score and dialogue script should be entitled to some kind of special consideration in the courts or mental institutions if and when the need arises.

The stage manager and some others on the receiving end of the director's PL on the studio floor have lightweight cables attached to their telephone headsets. These can be plugged into the proper circuit at various points around the base of the studio walls. Needless to say, in any locale where there is so much movement and equipment, the cords are an inconvenience and often a nuisance. The phone lines often get in the way of camera traffic, become tangled in light stands, title racks, and furniture, or otherwise impede the stage manager's movement about the floor. Often it is imperative that someone scurry in haste to a section of the stage beyond the limits of his phone cable. In such cases he has to remove or disconnect his headset, deposit it somewhere out of the way, accomplish his mission, and then return. Meanwhile, the director in the booth often has no way of knowing whether or not he has received instructions given during the interim, or why he has not responded to directions called for in that time.

A solution to these problems and inconveniences is the special wireless systems which are in use in many major studios, giving the indispensable stage manager complete freedom of movement over the entire staging area. The director's PL system is connected to a miniature radio transmitter installed in the ceiling or wall of the studio. The stage managers and others using the system carry petite receiving sets, about the size and shape of a small school book and weighing approximately four pounds. Even the hearing device is an improvement over those in regular PL systems. A special earplug is used instead of a headset; sound is conveyed acoustically from the receiver to the ear through a plastic tube resembling spaghetti. This arrangement is not only more comfortable but enables the wearer to hear on-stage conversation as well. With a regular headset it is necessary to remove one earpiece to converse with actors. The habit of wearing one earphone removed from the ear for this purpose often results

in embarrassing "leakage" on the air—from the PL phone into a live microphone nearby.

**Audio PL.** The audio engineer, who controls sound, will have a PL to the mike boom operators only. If the program has been adequately rehearsed, the man operating the boom will know what action takes place and will swing, dip, or raise his boom accordingly. On his PL system the audio engineer warns his boom operator when the mike is too low or when mike-boom shadows are appearing on backgrounds or over the faces of cast members.

**Video PL and Lighting.** Next, let's consider the video engineer. His PL, if he uses one, pertains only to picture quality in so far as it is affected by variable lighting during a telecast. Therefore, his phone circuit might be directed to the lighting director on the stage floor. In telecasts using elaborate lighting equipment and effects the lighting director is more than likely to work in the booth, probably beside the video engineer. Between the two of them, they will advise men on the floor when changes in the lighting pattern are necessary, and the lighting director will give definite instructions to his technicians regarding the movement of portable lights and the operation of dimmer board and other devices controlling the amount and placement of light.

**Recap of Communication Circuits.** Now reviewing in outline form the system of telephone circuits described, the following are the lines of communication in a major studio operation under the "TD" system referred to in this text:

DIRECTOR .....	talks with.....	STAGE MANAGER
		(Sometimes 2-way circuit)
	.....	FACILITIES MEN
	.....	ANNOUNCER
	.....	MUSICAL DIRECTOR
		(Often receives feed of outgoing program also)
TECHNICAL DIRECTOR .....	.....	CAMERAMEN
		(Sometimes 2-way circuit)
	.....	FILM STUDIO
		(Always 2-way circuit)

.....	MASTER CONTROL (Always 2-way circuit)
AUDIO ENGINEER .....	MIKE BOOM OPERATORS
VIDEO ENGINEER .....	LIGHTING MEN (Unless lighting director works in control booth, in which case he would talk to light men.  Video man can also talk to film studio, kinescope laboratory, or master control, by throwing proper switch.)

### Camera Mounts

Originally all TV cameras were mounted on film camera tripods or similar supports. Next, the tripods were fixed on triangular platforms with wheels, which made them mobile though unsteady. Then fine supporting mechanisms were developed especially for television use.

**Pedestals.** In the better equipped studios all cameras except the principal dolly camera are mounted on sturdy metal pedestals. (See Figure 2.) They contain gears which readily lift or lower the camera. The base of the pedestal can be reliably fixed in any desired spot on the studio floor, but if quick reposition is called for (in between on-the-air pictures), directional wheels can be quickly activated and the camera moved with relative ease to the next designated position.

The camera elevation is controlled in some pedestals by fine gear systems which rapidly and silently raise or lower the camera. Another modern type of TV camera pedestal operates with a counterbalance system in the vertical shaft, making it possible to lift or lower the camera instantly with a mere touch of the hand.

All pedestals have head mountings (equivalent in action to a universal joint or friction head) which enable the camera to pan horizontally or vertically, or to be locked at any angle in a fixed position.

**Camera Dollies.** The dolly camera is mounted on a low-slung, sturdy and very steady truck which can be pushed silently toward or away from a subject with ease and without vibration. The most popular dolly of this type is called a "Fearless." (See Figure 3.) The camera is fixed at the forward end of a cranellike boom. The operator sits in a saddle behind his camera and rides with the truck, adjusting his framing and focus as the camera proceeds toward or retreats from a scene. The boom on which the camera is mounted can rise or descend in an arc. It can also swing around a full 360 degrees. Elevation or revolving of the boom is managed with the simple manipulation of wheels which control gearing systems. This operation can be done either by the cameraman or by the dolly man who maneuvers the truck. Regardless of the position or angle of the boom, the camera can be panned vertically or horizontally.

In addition to its facility for steady movement while delivering an on-the-air picture, this dolly enables the camera to shoot from both lower and higher elevations than pedestals, ranging from approximately 2 to 8½ feet above the floor. The angle of vertical pan, however, due to the construction of the friction-head mounting at the end of the boom, is somewhat limited. It can pan 55 degrees above horizontal, but only 20 degrees below.

The major handicap of this type of dolly mechanism, in addition to the fact that it takes an extra man to operate it, is its size and comparative unwieldiness. The truck occupies considerable floor space. It is 45 inches wide and 67 inches long—the length mentioned not including operating space required at the rear of the truck for the pushing and guiding arm. Furthermore, because it is long and heavy, more time is required to maneuver it about the floor from one "dolly track" or line of approach to another.

**Pedestal vs. Dolly.** The cameras on pedestals are much more flexible and utilitarian. Their supporting structure is lighter, smaller, and less cumbersome. They not only occupy less valuable floor space but, except for preset head-on approaches to a subject, they can move around faster and easier.

Until recently, pedestals were not used for dollying or trucking—that is, delivering an on-the-air shot while moving toward or from a subject, or crossing parallel past it. However, with the advent of smooth and solid studio floors, and with the increasing

skill of cameramen who have learned to maintain perfect framing and focus while moving their pedestals, the dolly action is now frequently accomplished with pedestals, sometimes over considerable distances. At all times cameramen operating pedestal-mounted cameras may be called upon to "ease in" or "ease out," moving imperceptibly to widen a frame or close it in. This is done, obviously, in anticipation of the entrance of an extra person in a scene or to improve composition.

**The Crane Dolly.** A few of the more elaborately equipped studios, notably in New York and Hollywood, now have a few mobile camera cranes of a type developed for motion pictures. One good example is the Sanner Dolly, which transports an extensive crane hinged on a mobile truck. (See Figure 4.) The crane extends almost 12 feet and lifts the camera lens 9 feet from the floor. Seated in a saddle behind the camera, the operator rides with the camera and pans vertically or horizontally at liberty, but elevation or lowering of the crane is done by an assistant who walks beside the truck and manipulates a counter-balanced lever system. He also operates gears which swing the crane horizontally when required. The machine requires one or two additional men to maneuver the truck.

The camera crane has the advantage of giving height, such as the view of a ballroom from a balcony, or of providing elevation for a bird's-eye view of ballet patterns, etc. (Actually, it gives the impression of being much higher than it really is.) It can also be used for various novel effects, but all in all its size, expense, and limitations make it a luxury item—for use only in enormous studios, and on programs with very "fat" budgets.

## OPERATION AND CONTROL OF TV CAMERAS

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### Camera Characteristics

THE television camera is a highly complex but compact instrument containing coils, condensers, registers, switches, dials, a maze of electrical wiring, and more than 25 vacuum tubes, including the expensive and sensitive pickup tube.

Nowadays practically all cameras (except in the TV film studio) are equipped with Image Orthicon tubes, a tremendous improvement over the old Iconoscope pickup tubes. They are able to function with very little light, being capable of picking up a scene illuminated only by candles. They can even show the lighting of a match in a completely dark room. Generally they operate in sets illuminated with only 100 to 200 foot-candles of light. With the old "Ike" tube 1,500 or more foot-candles of light were required, which almost blinded performers and caused intolerable heat. Today an air-conditioned studio is completely comfortable when Image Orthicon tubes are employed.

The principal TV cameras used in the United States are manufactured by Radio Corporation of America, Du Mont, General Products, Ltd. (an English concern), and General Electric Company.

The RCA camera is most widely used. Without turret, lenses, or electronic view finder, it weighs 73 pounds. The view finder, a 43-pound detachable unit mounted at the top of the camera, contains a 5-inch (or larger) Kinescope tube which provides a video picture for the cameraman's framing and focusing. It

shows exactly the scope of the image he is capturing, and the quality of the picture. No optical (direct sight by lens) view finder is present or necessary.

It requires about forty-five minutes to warm up and align the tubes for operation each day. Once adjusted, they are allowed to remain "hot" throughout the day or working shift. At lunch periods or during any long breaks in rehearsal the lenses are capped and the side doors of the cameras opened to ventilate the instrument and protect the tubes from needless overheating. A small electric fan inside the camera blows air on the tubes to cool them at all times when the camera is functioning.

**Focusing the Camera.** The focusing of an ordinary photographic camera is usually done by turning a knob which varies the distance of the lens from the film or focal plane. In a TV camera focus is accomplished by bringing the face of the pickup tube toward or away from the lens. In the RCA camera this is done by revolving a vertical wheel on the right side of the camera casing. In a Du Mont camera the adjustment is made by turning a cylindrical handle at the end of the right guide arm, similar to the accelerator on some motorcycle handlebars. In both cases the action causes the tube to move forward or backward on a geared track. This movement is comparable to moving the lens framework forward or backward on a bellows-type or folding camera; it accomplishes the same purpose, too—achieving accurate focus by varying the distance from the lens to the focal plane.

**Memory Retention.** If the camera is left focused for any length of time on any static object, particularly a subject with great contrasts of light and dark, as in some printed titles, the Image Orthicon tube will retain the picture momentarily. This characteristic of memory retention is known as "burning." The burn is washed off the tube by pointing the camera directly into a bright light, defocusing and maneuvering it with a circular motion. On the monitor this action gives the appearance of wiping the stain off a table with the circular motion of a luminous cloth.

It is because of this "memory" characteristic of the I.O. tube that a technical director will sometimes give an order like: "Wave it, Two"—indicating to the Number 2 Cameraman that

the picture or title he is shooting will not be put on the air for a while and that, in the meantime, he should not risk a burn. Meanwhile, the cameraman remains in approximate position but prevents burn by slowly panning his camera back and forth.

Incidentally, the tendency of an Orthicon tube to burn is a good reason to use slides in the film studio whenever possible—especially in cases where a title or still picture is to be left on the screen for any considerable length of time. (The Iconoscope tubes there do not burn perceptibly.) By so using slides we save immobilizing one of the cameras until its burn can be washed off; the alternative would be to proceed in spite of the burn—in which case we might soon have a close-up of a pretty girl with a dog-food label seemingly “supcred” over her face.

A burn can be acquired in 20 or 30 seconds. It will last that long or even longer, traces of it being visible sometimes for even several minutes. It gradually vanishes of its own accord, but it’s an infernal nuisance and isn’t compatible with best TV standards. The more service a tube has seen the more it is apt to burn easily and retain the burn.

**Picture Breakup.** Once in a great while a camera will “go soft” (blurry) or even “go out” while on the air. The tendency to softness can often be overcome in just a few seconds with minor adjustments in the camera or related electronic chain. If the camera goes out entirely the director might as well just cuss it lustily and revise his shooting plan for the remainder of the telecast, making the best of it with the other cameras in operation. Such breakdowns are usually caused by burnt-out vacuum tubes, shorts, or severance of wiring at solder points.

Such incidents cause havoc while on the air, especially in programs employing only two cameras. Fortunately they are rare. In more than 2,000 telecasts which the author has directed, cameras have gone out possibly a dozen times. There have been scores of times, however, when it has been necessary to refrain from calling on one camera for several minutes at a time while electronic adjustments were made on another camera.

When a camera gets into trouble the other cameramen and the stage manager should be immediately apprised of the situation. Thus they will be prepared for any excessive demands during the emergency and will understand any deviation from the rehearsed shooting plan.

## Camera Lenses

TV cameras are equipped with turrets which accommodate three or four lenses. These can be instantly flipped from one to another by twisting a knob at the rear of the camera.

The lenses have irises with the common photographic stops, ranging from  $f/22$  to  $f/4.5$  or  $f/3.5$ , or sometimes greater. With normal studio lighting the stops are usually set at  $f/5.6$  or  $f/8$ .

There are many lenses which can be used. The most popular are the 35mm, 50mm, 75mm, 90mm, 135mm, 8½ in., 10 in., 13 in., 25 in., and 40 in. There is also the spectacular Zoomar.

A good complement of lenses for studio use would be 50mm, 75mm, 90mm, and 135mm. The combination is flexible and meets the most common requirements in an average size studio. If extreme close-ups are called for (to shoot a postage stamp, for example, or to obtain normal close-ups at a considerable distance) an 8 in., 10 in., or 13 in. lens can be temporarily substituted.

In the author's experience, the most versatile lens for studio usage is the 75mm. Its angle of view and other optical characteristics make it ideal for dollying. It gives an adequate scope of view at a medium distance and does not cause optical distortion when pushed in close to a subject.

It is not good practice to keep long lenses mounted on the turret throughout a studio telecast unless they are used frequently. Their weight makes it difficult to flip quietly and easily from one lens to another. More important, with some lens complements, the camera views its own longer lenses on a wide-angle shot; the very short wide-angle lens will include the end of the long lenses in its scope of view. Also, when two cameras are working close together, a long lens is quite apt to poke its snoot accidentally into the frame of the adjoining camera's picture.

Lenses can be fixed to or removed from the camera's turret in a matter of a few seconds. Therefore, it is not necessary to equip a camera turret with long lenses for a very few shots in one sequence in a telecast. It is better to start with the normal complement of lenses, then release one camera from action temporarily while the more popular lenses are replaced by the longer close-up lenses for the particular intimate shots required.

**Long Distance Lenses.** The 25 in., 40 in., and longer (rare) lenses are employed only in field programs for telescopic shots.

They are interesting but not always practical. Because of their great length and weight, extremely long lenses are supported at the far end by special cradles on tripods placed in front of the camera. In this fixed position they cannot be panned without specially constructed apparatus.

Unless the scene is entirely at great distance it is unwise to pan with even a 25 in. lens. The subject matter is relatively so enormous and critically focused that even the slightest vibration makes the picture jiggle drastically. For this same reason few cameramen will ever attempt to dolly with a lens longer than 90mm. Even the smoothest floor would seem to acquire unknown valleys and bumps.

**The Spectacular Zoomar.** The Zoomar is a complicated but simply operated lens device which gives the effect of a "zoom" toward or from some remote object with great speed and smoothness. It is most popularly used in outdoor sporting events. In viewing a football game, for example, we see first the two opposing teams lined up at the scrimmage line; the ball is snapped back and in a matter of seconds it becomes clear that an end run is to be attempted; instantly the Zoomar closes in the shot to show closer action in a limited area around the ball carrier. We thus get an intimate view of the critical action, although losing sight of a large number of other players. In a baseball game, when a fly ball is hit, a Zoomar can in effect hurl the viewer to the outfield in a matter of seconds for a close-up of the catch, and then seemingly bring him back with the ball in the throw to the infield.

The optical miracle of the Zoomar suggests the use of a multitude of graduating lenses in rapid succession and continuity, with no apparent transition or interruption between them. In a very general way, that describes how the Zoomar performs optically.

**The Field Zoomar.** There are two types of Zoomars—one for studio use and one for outdoor operation. Let's consider first the field Zoomar. It is a device that resembles an oboe or small bazooka and extends out almost 3 feet from the camera. It has a metal Y-shaped frame to support it against the camera casing, and a focusing rod which operates like a horizontal plunger, being pushed in to widen a shot or pulled back to close in on a subject (the exact opposite of the direction of zoom). Generally,

this device is a temporary auxiliary, requiring about thirty minutes to install and adjust. It can be removed, and the usual complement of turret lenses substituted, in approximately five minutes. While a Zoomar is fixed to the camera the use of other lenses is nullified.

**The Studio Zoomar.** Inside studios an Electro-Zoomar is usually used. It is a stubbier attachment which is intended to be operated electrically, the zoom in or out being effected by buttons which control electric motors. The zoom movement is pleasingly constant, being more than an adequate substitute for a dolly in some circumstances. However, the rate of movement is not flexible. The zoom requires from eight to ten seconds to run its course from one extreme to the other. When faster zooms are required on the studio Zoomar, the electrical control must be detached and a manual control substituted.

The Zoomar can be used with excellent results for dramatic effects, substitution of dollies, presentation of commercials, etc., but it is at its best advantage in covering outdoor sporting events—in which it has become almost indispensable.

The Zoomar's value in achieving spectacular effects is somewhat offset by its limitations, especially in studio usage. Although it is capable of delivering a good close-up, it is often weak and fuzzy around the edges on a long shot. It requires very strong light, which may be a detriment to pictures delivered by other cameras in the operation.

After a Zoomar is installed and tested on a camera it should be carefully adjusted for the particular operation it is expected to perform. In order that it will be always in focus the extreme limits of its zoom should be very critically set—from its most remote possible closeup to the very widest angle that might be expected. Without further adjustment it will not operate beyond this range.

### Lens Coverage

Table 1, applying to TV camera lenses, shows the width of picture which can be expected from the most popular lenses at varying distances. It indicates how far a camera can get back from a scene without overshooting a set, how much footage in stage floor is required for various scopes desired (especially im-

portant in ballet), and best of all for the director's purpose, it illustrates how one lens can capture the shot of another lens by varying distance from the subject.

TABLE 1. COVERAGE OF TV LENSES \*

LENS Focal Length	ANGLE OF VIEW Degrees	HORIZONTAL COVERAGE (FEET) AT DISTANCES OF							
		5 ft.	10 ft.	15 ft.	25 ft.	50 ft.	75 ft.	100 ft.	150 ft.
35mm	54	5	10	15	25	50	75	100	150
50mm	38.5	3.5	7	10.5	17.5	35	52.5	70	105
75mm	25	2.2	4.4	6.6	11.2	22.5	33.7	45	67.5
90mm	22	2	4	6	10	20	30	40	60
135mm	14.75	1.3	2.6	3.9	6.5	13	19.5	26	39
8½ in.	9.5	.8	1.6	2.5	4	8	12	16	24
10 in.	8	.7	1.5	2.1	3.5	7	10.5	14	21

\* Allow variance of 10 per cent due to scanning or expansion.

As previously mentioned, Table 1 applies to television cameras only. Because the actual picture varies slightly on every camera, due to characteristics of the tube, scanning, and expansion, it is not possible to give an absolute and universally applicable scope of view—as in pure optics, for instance. In figuring scope of view it is advisable to allow for a marginal shrinkage of from 10 per cent to 25 per cent.

What the table does demonstrate emphatically is flexibility of the TV camera when its turret is equipped with the proper complement of lenses for a specific assignment and variety of shots in a given studio program.

Note that the shortest lenses are those giving widest angle of view. This can be stated as a simple rule: the shorter the lens, the wider the shot; the longer the lens, the bigger (or tighter) the close-up.

Study the table again and note the enormous scope of the 35mm lens as compared with the others. It is interesting to observe further that with this lens the distance from the subject always equals the width of picture. In other words, as one

cameraman always remembers the character of this lens, "5 gets you 5, 10 gets you 10," and so on.

Another easy "key" to remember is that which applies to the 50mm lens: "10 gets you 7"—that is, 10 feet from the subject will give a width of 7 feet, and so on correspondingly in multiples of 10 and 7.

In the table maximum distance from camera to subject is shown as 150 feet, that being more than adequate for most studio usage. If it should be desired to ascertain the scope of view at greater distances the figure can be determined by simple multiplication. For example, the 135mm lens at 50 feet shows a scope of 13 feet. To determine the lens's scope at 250 feet, simply multiply 13 by 5.

Do not lose sight of the fact that the scope of view is *width*. Due to aspect ratio or picture proportion, height will be three-fourths of width. In this regard the table can be helpful in determining how far cameras can pull back from a setting without overshooting the top. For example, if a camera is shooting straight-on at a wall setting (that is, including no floor space in the picture), and if the setting is only 12 feet high, then the camera can show a maximum width of only 16 feet. If the camera goes back further it will have to pan down to avoid shooting over the top of the set.

Naturally, with any lens the size of a subject within the frame of the picture varies according to distance from the camera. This does not mean under any circumstance that one lens can be used satisfactorily for all purposes by merely varying the camera's distance from subject. An experienced cameraman will vary lenses according to situation and subject as well as distance.

**Improper Use of Lenses.** Grotesque results are obtained by improper use of lenses. A good example is the distortion which results when dollying in close on a singer or dancer on a 35mm or 50mm lens. The figure is often horribly foreshortened. If the cameraman is shooting from normal elevation he will make the subject's face wide, neck thick, and shoulders extremely broad, with the remainder of the anatomy tapering off ridiculously from the hips to the feet. Shooting upward from a low elevation gives the reverse effect when a wide-angle lens is used too close to a subject.

The longer lenses, it should be noted, have a very limited depth or field of focus. Using a long lens too close to a choir of three rows, for example, would allow only one row to be in focus; the faces would be sharply defined in one row of singers, while the other two rows would be blurred.

Incidentally, this characteristic of the longer lenses can be used to advantage for desired optical effects, bringing the foreground plane into sharp focus while softening or hazing out the background. A typical case would be the presentation of a boy and girl in a love scene standing before a painted woodland backdrop. Particularly if the backdrop is sharply defined and highly detailed, it can be softened into a setting of ethereal atmosphere, while maintaining definition of the boy and girl in the foreground. (Limited depth of focus is a factor which also has other advantages, if properly used. They will be described later in this chapter.)

**Call by "Shot"—Not Lens.** It is well for a director to know the functions of the various lenses employed, but until he becomes extremely proficient by experience and has acquired a full knowledge of their respective attributes, it is better that he not "call" his shots by designating particular lenses—as used to be the practice in some studios. Rather he should call for the particular type of shot he wants (i.e., close-up, medium close-up, etc.) and let the cameraman select the appropriate lens. The latter should not only know his lenses as well or better, but, being on the scene, he is usually in a better position to know his relation to the subject—that is, angle and distance.

### **Camera Teamwork and Procedure**

Good camera operation calls for natural photographic instinct—a sense of news or picture value, and a talent for artistically correct picture composition. It also calls for tight discipline and strict adherence to a code of procedure developed by rugged experience in an occupation with unique requirements and demands.

An inviolable signal of command is the ruby tally light, which gives warning that a camera is "in business," delivering a picture on the air. The light or lights, about the size of a half dollar, are at the front of the camera where they are visible to actors and

all others concerned. A much smaller ruby light flashes on at the same time for the cameraman's benefit; it is situated inside the visor hood of the view finder.

The ruby light represents a cardinal rule: "This camera is in business—Behave Accordingly!"

When the cameraman has the red light he knows he can't relax for a second. His complete attention is demanded for the interim, and he enjoys delivering his best at this critical point. He must keep in absolute focus on the subject at all times, pan as necessary, maintaining proper framing. Obviously, this is no time to flip lenses or go "cruising" in quest of other shots.

When the dissolve bus is set up for operation in the control room—in anticipation of a dissolve or superimposition—red tally lights will show on the two cameras involved. After the effect has been completed the light will go out on the camera which has been released. In his haste to get to his next shot the cameraman, expecting release after a dissolve, will sometimes pull out a second or two too soon, causing a wipe of his diminishing picture on the screen. He should hold his position until his light goes out or until the technical director notifies him that he has been released.

**Camera Discipline.** At the end of a rest period or break in rehearsal the crew members are summoned to their respective "battle stations" with the technical director's polite but meaningful command over the SA: "Pictures, please!"

Cameramen should promptly put on earphones and open up their cameras. Rehearsal cannot proceed until they do so. The delay of one man will hold up the entire operation, causing loss of valuable rehearsal time, which is important and costly.

A good cameraman listens attentively to directions, knowing that neither time nor patience is available to repeat them constantly. He quietly and accurately selects the subject designated, frames his picture, and focuses rapidly. Once a shot is tested and approved, he remembers the exact spot—lens and picture—and, on schedule, he delivers exactly the same picture that was chosen through time and experiment in rehearsal. In dramatic programs and others involving a great variety of shots and angles, the cameraman keeps a detailed schedule of his shots, noting them on a tablet fixed for quick reference on the back of his camera.

**Cameramen's Silent Language.** On his PL circuit the technical director can address all his cameramen, but in most studio arrangements they cannot reply telephonically. Hence, when not in view of the control room window, they resort to a strange visual language; they answer Yes or No by nodding or horizontally waving their cameras slightly, simulating a child's Yes or No by movements of the head.

Here is a typical example of such communication. The technical director will ask: "What's the matter, One—can't you get in there for that shot?" Number 1 camera horizontally pans back and forth, indicating, "No." In such a case an alert Number 3 cameraman, if momentarily free, might supply the answer by pointing his camera toward Number 1, showing the "bind" or obstruction—not enough cable, lights in the way, a chair or table obstructing his movement, or whatever it may be.

All such problems should be solved or circumvented in rehearsal. Needless to say, they frequently occur during telecasts of extemporaneous or partially ad-lib programs wherein subjects and movement can't always be predicted. That's when the peculiar camera "language" is invaluable.

**Cameraman's Discretion.** When a desired shot can be achieved by flipping a lens rather than by pushing in or pulling out camera and retaining the current lens, it is better to use the turret. This is desirable for three reasons: it can be done more quickly; the camera retains its known position in relation to other cameras; and the camera involved avoids the risk of poking a lens snoot into another's picture or of accidentally backing into other cameras or lighting equipment.

Cameramen are thoroughly trained to follow directions explicitly. They might disagree with the angle or composition the director chooses for a shot, but by experience they know there are program or technical reasons for certain departures from orthodox methods—reasons of which they cannot always be aware at the time.

On the other hand, contingencies do arise which emphatically call for instant deviation from planned shooting schedule. About all that can be said of such cases is that a cameraman must act fast and with the utmost discretion. When he violates an original direction in an emergency and thereby "saves the director's neck," he is a hero; if he doesn't, he's a bum.

There will be times, particularly in extemporaneous programs where the action is fast, when a cameraman will find it necessary to use a lens which does not have adequate depth of focus for the situation. A long lens applied close to a subject will show a very definite limit in depth, the plane of critical focus varying with even a few inches in a straight line from the camera. This is a disadvantage when it is intended to show a group of persons arranged in slightly varying planes from the camera—a section of a crowd, or a close-up on a box of apples, for example. In such a case, the cameraman either splits the focus or concentrates on a foreground or key area. The latter method is employed in certain circumstances when trying to show celebrities in a crowd; focus is concentrated on the newsworthy figures, allowing others to blur out.

**Utilizing Depth of Focus.** As explained previously, there are times when limited depth of focus is desirable—as in the case of softening out the background of a love scene to isolate the principals or separate them from realistic surroundings. As every photographer knows, limited depth of focus can be further accentuated by opening up the lens stop, but this is not always feasible in TV, as it requires corresponding reduction of light on the set or subject.

Here is a case which not only illustrates how this limited depth of focus can be an asset, but also contains other facts to consider in good camerawork. Suppose the subject is a cage containing three very active birds with interesting plumage and head feathers. We will assume that the cage has the usual vertical wire bars and is about 3 feet wide and 2 feet deep. Obviously, since we are featuring not the cage but the birds, it is important to “get through” the bars and show the birds in close-up. The birds don’t stand still long in any spot, but we observe that they hop alternately from one of three locations in the cage to another—perhaps from the floor to a crossbar to a suspended ring. Question: What do we show and how?

1. Since the birds are small and detail is important, a close-up lens will be required. Push in close and focus inside the cage where the birds are most apt to appear often. After showing the entire cage on one camera, cut to the close-up shot.
2. Wait for the birds to flit into the point of focus, and hope they’ll hold their pose individually for a moment at a time.

It is idiotic to attempt panning with them as they move. This results only in disturbing “wipes” on the screen. It is an inviolable rule that *a camera should never be panned fast on closeups!*

3. Because the depth of focus is so limited and the point of critical focus is relatively so far removed from the plane of the cage’s bars, the bars will be practically invisible, lost out of the range of the lens’s eye.

It is this latter factor in optics which makes it possible to shoot a baseball game or other sports events through a chicken-wire screen. With the proper lens, a camera back of home plate can shoot the infield and outfield through the wire without ever revealing the presence of the protective screen between the camera and the picture subject!

This same factor of focal depth should be kept in mind by the director in staging movement of characters in a play or in planning his shots of their movements. Experience in the control room, watching thousands of shots at various distances and with differing lenses, is the best teacher in this respect.

**The “Wild” Camera.** On the coverage of news events or extemporaneous programs, it is a good practice for the director to keep one camera free—as much and as often as possible. With three cameras it is often practical and usually advantageous to designate one camera at a time as the “wild” camera, allowing it to move about with some degree of liberty, “fishing” for shots, and generally acting as an “eye” for the control room—to show what is going on in the audience, set, or stage. It can help solve problems, anticipate contingencies, and point up subjects or scenes that might otherwise be missed.

The free camera, operated by a man with good picture and news sense, can often contribute immensely to the color, human interest, and excitement of extemporaneous programs. It can point out a cute child with chocolate ice-cream all over his face, fighting time and gravity as an ice-cream cone melts. It can call attention to a fight in the grandstand, show a happy “visiting fireman” who wants to climb on a cabaret stage and join the conga line, or the inevitable mongrel dog at a football game who gnaws at the heels of the referee or gets in the way of ball carriers or tacklers. Camera ingenuity, combined with fortuitous circum-

stances, is what gives TV its two greatest elements for mass appeal:

1. An incomparable and flattering sense of omniscience through intimacy and efficiency of view.
2. An indefinable sense of pleasure in being THERE—NOW—and seeing it—while it is actually HAPPENING.

### **Visual Effects—Electronic and Optical**

In television there is no such thing as the cinema's legendary "face on the cutting room floor." Its equivalent is the picture that was available from a camera in operation but was not selected for transmission over the air. There is no salvaging of unreleased scenes of action. In TV only the immediately present is available for an instant, and then is gone forever—unless it happens to be recorded on film as it is telecast.

In a rehearsed program the director carefully sets all his shots in advance. He may digress slightly from the preset pattern while on the air—for reasons of expediency, sudden inspiration, or happenstance. The final shooting, cutting, editing, and manner of presentation are accomplished while the program is being telecast. In live TV there are no retakes, a fact which drives some timid or cautious film stars to Las Vegas or Palm Springs when they might be starring in a television epic.

As was explained previously, the editing is done electrically. There is no cutting or patching of film, and dissolves are achieved instantly by electronic means instead of the time-consuming chemical process used for motion pictures.

Basically, the visual effects one sees on the TV screen are brought about by one of these three methods:

1. By means of electrical or electronic facilities
2. By movement of cameras
3. By use of optical devices. (Optical devices will be described in Chapter 5.)

**Visual Effects by Electronic Control.** Special electronic effects, most of which call for special equipment not ordinarily installed in most studios, will be described in the next chapter. The following are the most common visual effects brought about through electrical switching or electronic means.

**CUT**—Otherwise referred to as a switch, which it actually is, a cut brings about immediate substitution of one picture for another.

**DISSOLVE**—The electronically blended transition from one picture to another is known as the “dissolve.” It is accomplished with two cameras simultaneously in action, each with a picture framed and focused. One is putting out a picture on the air. The other is delivering a picture only to the preview screen in the control room. At the director’s order, the technical director gradually diminishes the picture on the air; at the same time he gradually brings into full value the succeeding picture. The effect is that of one picture melting into another. With the most up-to-date equipment, the dissolve can be completed at any desired speed—slowly if preferred, or almost as rapidly as a switch.

**SUPER**—This term is drawn from “superimposition.” In this effect the image from one camera is superimposed over the image from another, thus actually providing a blend of the pictures from two cameras. The effect is comparable to that of placing one photographic negative over another and printing the combination. The result is also the same in that neither picture is seen at full value, each sharing density and figurations with the other. In spite of this drawback the super has tremendous possibilities in TV. But, like all such tricky effects, it should be used with discretion. It has a special purpose only and should be used accordingly.

**FADE**—This consists of making a picture vanish into a black screen (*fade out*), or come up from a black screen to a picture with full tonal value (*fade up*).

**CROSS-FADE**—This effect is the fading of a picture to black, and then from black the rather rapid fading up of the succeeding picture. The effect is especially good to change scene or to suggest elapse of time. It should be used sparingly and at obviously significant moments; otherwise some viewers are apt to assume it is a fault in reception or transmission. Naturally, the related audio should be cross-faded in harmony with the picture.

**BAT BLACKS (OR HIT BLACKS)**—This effect, electronically reducing a picture’s brilliance to give strong emphasis to black values, is good for night scenes and occasionally for use in supers and other special effects.

**Mechanical or Optical Visual Effects.** So far the effects described are the common effects achieved electronically from the control booth by manipulation of the various control dials and switches. Many other common effects are brought about through movement or adjustment of cameras, as follows.

**DEFOCUS**—A misty effect may be achieved by taking the picture out of sharp focus. This is done manually by the cameraman. The effect gives an ethereal or dreamy quality and is highly useful in some dramatic scenes, particularly to suggest unconsciousness, a lapse of memory, etc.

**PAN**—To pan is to move progressively from one section of a scene to another by steadily turning or elevating the camera on the swivel head of its pedestal or mounting. The pan (derived from the word “panorama”) can be horizontal (panning right or left), vertical (panning up or down), or diagonal (from an upper corner of a scene to a lower corner, or vice versa). It can even be circular in motion (clockwise or counterclockwise) or follow any pattern (as in the figures 8 or 2, or the letter S).

**DOLLY**—This effect is achieved by moving steadily and smoothly toward a scene (a dolly in), or from a scene (dolly out). Comparable terms frequently given in directions are “push in” or “pull out”; or “widen the shot” or “close in.”

**BOOM**—This is a moving view of a scene best described as what a swan would see by moving its head and extending its neck up or down. The effect is not familiar to the human eyes, as a rule, except in motion pictures. The subject of vision remains the same but the point of view is dramatically lifted or lowered, moved forward or backward simultaneously. Obviously, it can be accomplished only with a camera mounted on a crane—such as those on a Fearless, Sanner, or Houston dolly.

**PEDESTAL (OR RACK)**—Vertical lifting or lowering of the elevation point from which a picture is viewed produces this effect. This isn't possible on cameras mounted on tripods, which can alter elevation only by clumsy and time-consuming adjustments of leg extensions. On the specially constructed camera pedestals this action takes place smoothly and can be done even while a camera is putting out a picture on the air.

**ZOOM**—In some cases this can be done with a quick push-in or pull-out with either a pedestal or dolly camera. Generally, how-

ever, the action is reserved for cameras equipped with a Zoomar lens. A tricky and striking effect, the zoom gives the viewer the impression of being catapulted toward a remote spot, or (in reverse) having an imminent scene jerked speedily into the distance.

## SPECIAL TECHNICAL DEVICES AND EFFECTS

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**I**N this chapter we are concerned with special effects which are achieved by electrical or electronic means—obviously in either audio or video phases of the operation. In Chapter 13 there will be a full treatment of what are normally called “special effects” in the theater and in motion pictures. The effects described herein are those which have been used in radio and television and which are created or controlled by scientific apparatus.

### Audio Effects

Special effects in this category are taken for granted by experienced radio engineers or “mixers.” So far practically nothing new in audio treatment has been developed since the birth of television. It is true that many audio devices and practices (the boom mike, prerecording, etc.) were not known commonly in radio, but they have all been used for many years in motion picture production.

Before considering special audio effects it is important to understand a few simple principles of microphone placement. In normal pickup of audio, whether it be music, sound effects or speech, the primary consideration is proper balance—that is, relation in volume and presence between the various sound sources according to the prevailing situation.

A singer standing near a piano may have her voice and accompaniment picked up on one microphone only—providing (*a*) she has adequate volume, (*b*) is not standing too close to the piano’s

area of sound output, and (c), most important of all, providing that the accompanist cooperates by maintaining a volume level that will support but not override the voice.

If space and staging permit, separate microphones can pick up voice and accompaniment. In the case of orchestral accompaniment this is essential for best sound quality, the audio engineer being able to deliver proper sound balance by constant modulation with rheostats or faders controlling the volume of each microphone.

Separate microphoning of voice and music is imperative when music is used in dramas for mood and transitions.

In the "miking" of symphony and concert orchestras there are two divergent theories. One school holds that all modulation and balance should be completely in the hands of the orchestra director; the music is thereby presented as it would be done in a concert hall—and therefore should be picked up by one microphone sufficiently removed from the orchestra to have the benefit of acoustical blend of all orchestral elements. This single mike, they contend, is equivalent to a pair of human ears and receives the music as it is intended to be heard—without influence of electrical devices or controls.

Those in the opposing school favor positioning of mikes in each choir of the orchestra—reeds, strings, percussion, brass—and occasionally in strategic areas to pick up solo passages by the softer-toned instruments, such as cellos, oboes and clarinets. This arrangement allows for remarkable control of balance and occasionally for intimate pickup of soloists. But as supporters of the single-mike system contend, there is a danger that the "mixer" will take away from the conductor the intended interpretation of a musical selection. When this method is employed with concert or symphony music the audio engineer should have a knowledge of music, or he should have beside him a music arranger following the score and offering guidance toward the delivery of what he knows the conductor would want in the way of balance.

The multimike pickup on jazz bands is, more than anything else, a defensive measure. It helps to penetrate the brass section to let the reeds and violins through, and it is a slight aid in smothering aspiring Gene Krupas with their trap drums who get carried away with themselves on the theory that melody in music is only a minor adjunct to rhythm.

**Separation of Audio Pickup for Perspective.** After balance, separate microphoning has other uses. Sound perspective is one of them—entirely a matter of mike control to maintain volume and presence in relation to distance as shown visually. For example, a person at the distant end of a ballroom speaking in conversational tone should not be heard at the same sound level in which a person in the immediate foreground has just been heard. Nor should the person in the distance have to project his voice merely to be heard if he is supposed to be actually conversing.

The effect of voice projection, when desired, is accomplished by having the speaker actually project—but at a greater than normal distance from the microphone.

The reverse, an impression of intimacy, is achieved by coming very close to the mike and speaking in a very subdued tone. Since the extreme proximity to the microphone might pick up breathiness, it is advisable to stand at the side of the microphone and speak *across* instead of directly into its pickup face.

**Sound Distortion.** Distorted vocal effects—as with voices heard over a telephone or radio—are created by linking a filter into the circuit. This little apparatus is capable of controlling the degree of distortion as desired. The effect, when preset, can be instantly snapped on by the audio engineer.

The impression of long-distance radio reception is achieved with such a filter for the voice. Sputtering, howls, and static are added by sound effects blended into the filter.

**Creating Echoes.** In better equipped studios, echoes are created with the use of an echo chamber. This is usually a room in the studio's basement with cement walls and floor, having a loud-speaker at one end and a microphone at the other to pick up the sound as it bounces off the live surfaces. The room, of course, is linked in circuit with microphones on the stage which pick up the original voice or music and put it through the echo chamber on its way to the control booth. The degree of echo can be regulated in the booth.

A good chamber of this type is effective not only in creation of realistic echoes but for enhancement of some musical numbers. It is especially useful for church choirs, adding the live acoustical quality of a cathedral.

Although less effective, echoes can be achieved by other methods. One of the most common is the placement of a micro-

phone at the opening of a grand piano's sounding board. In this case the actor or singer projects voice through strings into the sounding board at the opposite side.

### Video Effects

As previously explained, various unusual effects can be attained entirely by video control. By "batting blacks" a picture can be made very dark, giving the impression of night. A scene can be abnormally elongated vertically or widened horizontally—as is done by comic mirrors one finds at carnivals. There are many other unusual visual effects accomplished entirely by regular video control, or in some cases, with the addition of special control equipment.

**Switching from Positive to Negative.** One of the simplest of all effects to achieve is a switch of picture from positive to negative, and vice versa. This can be done instantly by changing a camera's polarity. With this effect a white face becomes black, and a black suit becomes white; all dark areas in the picture turn light, and light areas turn dark. Obviously, it is only a trick—to be used only when a comic situation warrants it in a studio production. (This ability to switch polarity is vitally useful in film projection, enabling negative film to be projected as positive.)

**Effective Supers.** Supers can be muddy and ineffective if not done properly, with adequate time and thought to prepare and test them. If they're not done well they had better be avoided. Because a superimposition is a device ideally adapted to television when executed properly, it is important to understand how the effect is best achieved.

As previously mentioned, a super is actually a simultaneous presentation of two pictures, one over the other, like the result of printing a picture in photography through two negatives at the same time.

In a full super only half the tonal value of each picture is presented. To maintain quality and tone value in one picture while superimposing another it is essential to have stronger tone qualities in the supered picture. Therefore, in the latter we favor plain, dark backgrounds and light tones in the supered subject. On the other hand, the original picture (over which the super

is to be placed) may have an over-all neutral tone. Neither should have "busy" backgrounds or too much detail in the foreground.

The most effective supers are accomplished by proper positioning of persons or figures in each—so that figures will not clash and the supered object will have a chance to appear stronger by being positioned over a neutral background.

This will illustrate what is meant. Suppose a young woman is shown seated at her desk, writing in her diary. Suddenly a spirit, perhaps the ghost of her departed mother is to appear in the scene with her. For best technical advantages this spirit might appear as just a face or a cameo-type bust. The effect might be begun by slyly altering the framing of the initial picture to place the young woman at one side of the frame, perhaps at the left. Next, there should be a suitable background on the right side of the picture—preferably dark and very plain, with no candles, picture frames, or other bright objects present to muddy up the superimposition.

Meanwhile, the supered subject has been set and framed. In this instance the "spirit" would stand before a totally black background. If she is to be shown full length she would wear a light gown. If only head and shoulders are to be shown she should be cloaked with a black cloth, exposing only the head and shoulders. Ideally, she would have blonde or white hair. Being on the right side of the supered picture, she should face to "camera left" (stage right). If only head and shoulders are to appear she would be shown to best advantage at the upper right section of the supered picture. In this case she would look to "camera left" and downward. Thus, when the super takes place and she suddenly appears in spirit fashion in her daughter's bedroom she will appear ethereally suspended in the air. With the aid of the important points mentioned, both the daughter and the mother's spirit will have good picture quality, neither losing much tone value by reason of the super.

All supered effects should utilize the factors described, in so far as possible. When supering a name, label or figure, try to put it over a plain, dark background. Avoid the "hash" that results when supering two scenes filled with detail. For instance, when supering a sponsor's trade-mark over a football field, wait until action has subsided. Cut to a wide shot, or if using a Zoomar

lens, zoom back; pan to a relatively clear area of the field, then come in strong with the super. The same reasoning and precautions apply to all supers.

**Supers by Lens Racking.** A stunt not often employed, but which can serve good purpose, especially on extemporaneous programs when certain situations develop rapidly, is creation of an effective super by half-racking one lens. By that is meant only partially opening one lens—by not completing the turret's turn between lenses; it leaves the screen black except for a somewhat circular area in one corner of the frame where the lens is open. This segment of picture—preferably containing a complete close-up—can be so positioned in relation to the complete picture on a second camera that the close-up can be effectively supered without benefit of other masking or special backdrop.

**Distortion Waves.** This effect gives the impression of the image melting into watery waves. It is accomplished electronically with the installation in the camera controls of an instrument known as a Flexitron.

**Wipes.** This type of effect, in sharp contrast to dissolves, is used for transition from one scene to another. It is employed very well by CBS on some of its dramatic programs. With the installation of a special effects generator in the circuits, the wipes can be made vertically, horizontally or diagonally. They can also be made as diminishing or expanding diamond shapes or rectangles.

**Split Screen.** This is one of the most novel and useful of all electronic special effects. It presents two separate pictures on the screen, each of which has its full tonal value (as contrasted to supers).

It is actually a variation of the wipe effect just described. It is achieved with the same device, operated in the same manner; but instead of continuing the wipe to displace one picture with another the transition is checked at a desired point. As with wipes, the screen can be split in half diagonally, vertically, or horizontally. Obviously, each of the two segments is picked up by separate cameras, and they need not be in the same studio or even in the same city.

This electronic trick was a thrilling innovation only a few years ago when it was used to show a commentator in New York

interviewing Senators and other public figures in Washington—both appearing on the screen at the same time. More recently Arthur Godfrey made capital of the technical device by appearing on his program originating in New York while remaining on his farm in Maryland.

In baseball coverage the device has been used to advantage by cutting into the lower right hand corner an insert of a runner on first, while the remainder of the picture shows action involving pitcher, catcher, and batter. In dramatic programs it has often shown two scenes involving each end of a telephone conversation, or two related dramatic actions which occur simultaneously.

The required controls for the effect are not within the gear of standard studio equipment, and due to expense of installation, it is apt to be a long time before most studios are able to provide the facility.

### Optical Effects

Here we consider technical effects which are achieved by cameras alone, sometimes with the use of extra camera devices.

**Defocusing.** The most useful of all special optical effects which can be achieved without employment of special lenses or devices results from the simple operation of manually defocusing—that is, taking a picture out of focus optically. This is effective in dramas to suggest loss of consciousness, sleep, or lapse into a dream. A variation of the effect is to defocus one scene, dissolve to another scene out of focus, then bring the new scene into focus.

The effectiveness of the above transition can be heightened dramatically, especially to suggest a knockout or drugged condition, by dissolving to a vortex in between the two effects described. This is simply a whirling pattern or centrifugal design that seems to draw the viewer into its center like a whirlpool.

A related effect for this and comparable situations can be had by supering other action subjects over the scene—such as black and white revolving cylinders having barber-pole stripes. Preferably, they should present a close-up section of the cylinder. They might revolve horizontally, vertically, or at a diagonal angle.

Similar patterns of contrasting figurations are also worth experimentation for the production of eerie effects.

**Lens Iris.** This is a device which operates separately from the camera. Actually it is a mechanical contrivance about one foot square which operates exactly as a regular photographic camera's iris does, permitting a perfectly round aperture to open at the center and to dilate as much as desired. The iris mechanism can be mounted on a stand or pedestal which permits ready adjustment for height. It is set on the floor immediately in front of the camera, with the iris' face against the camera's lens. The dilation or contraction is controlled by hand.

This device is most effective for blacking out a scene, going from full picture to black by gradual contraction of the circle. Similarly, it can be used for an effective opening of a scene. Another use is for quick masking of a face or subject within a circle for superimposition.

**Trick Lenses.** There are many special lenses which have been used for novelty effects in TV.

One which has become quite common is the revolving prism lens. With this device the prism can be rotated manually, enabling a picture to turn upside down, do a complete revolution, rock like a boat or go into a whirling spin. The device is easily attached to a camera and can be quickly removed. It has one idiosyncrasy, however: it reverses the picture normally viewed by the camera. In other words, a man appearing beside a table will suddenly appear on the other side of the table when the director cuts to the camera having this lens. For comic effects this could be useful—in this manner: position a man and a woman side by side, perhaps singing a duet; shoot them with two cameras angled as close to head-on as possible, one camera having the prism lens; then, by switching back and forth between the two cameras the man and woman suddenly pop to opposite sides of the picture.

Other novelty effects can be obtained with multiple image lenses, otherwise designated as multifacet lenses. These contain prisms which multiply an original image. One, for example, might show the same close-up in the center of the screen and in all four corners. Another might position the close-up in the three corners of a triangle. For added novelty effect these lenses can also be made to revolve.

Needless to say, all such devices are novelty effects only and should be used sparingly and on the proper occasions.

## CAMERA DIRECTION

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**T**HE manner in which each individual director “shoots” a program depends on his judgment and taste, his knowledge of camera technique, the available technical facilities, and his artistry and ingenuity in portraying a story or reporting significant aspects of a particular performance or event. No two directors work exactly alike—any more than they are apt to have identical facial features or license plate numbers. If many of them performed in even similar fashion under identical circumstances, it stands to reason that they wouldn’t be as highly paid as they are. A good director must know all the camera tricks and technical devices. But ahead of that knowledge, his value depends on individual ingenuity and originality, thoroughness, artistic taste, and diplomacy.

Before proceeding further it should be stated that material presented in this chapter embraces either (1) accepted fundamentals of standard studio practice; or (2) the author’s own views as to what is good and bad in camera direction. With reference to the latter, the opinions are based not only on long experience in television, but years of study in art and photography.

### Designation of Shots

To recapitulate briefly, the scope of a picture depends on the angle width of a camera’s lens. Imagine an isosceles triangle with the lens seated in its apex. The far end of the triangle—that is, the plane running parallel to the face of the camera—represents

the scope or field of view. The two lines which come diagonally from that plane and converge at the apex of the triangle determine the width of angle.

A short lens which spreads the scope of a picture is a wide-angle lens. A longer lens which reduces the scope of view is a "tighter" lens with a narrower angle.

Obviously, at equal distances from a subject, the longer the lens the more extreme a close-up will be. This can be illustrated by rolling a sheet of typewriter paper into a cone and peering through it like a telescope. First roll it cross-wise to simulate a long lens. Look through it at some nearby object. Then, to observe the contrasting effect of a wide-angle lens, roll the paper loosely in the other direction with a wide "bell" at the end opposite the "eye piece." The more the bell-end is expanded, the wider the angle of the "lens."

A picture's scope is always referred to by its width. Naturally, however, reducing the width also reduces correspondingly the height of the picture. In consistency with four to three ratio of the frame, the height of the picture is always seventy-five per cent, or three-fourths, of the width.

**Terms and Abbreviations.** In common practice the following are popular designations of shots, with the abbreviations applied to them in the script:

- XLS—Extra-Long Shot (very wide)
- LS—Long Shot (or establishing shot)
- MS—Medium Shot
- CU—Close-up
- XCU—Extreme Close-up

**Distinction Between Shots.** (See Figures 5A-5F.) With variations and refinements of the above classifications, the shots you will use in TV are identified and described as follows.

**EXTRA-LONG SHOT**—(Employs a wide-angle lens at considerable distance from subject.) Out of doors this would apply to the scope of a football field as viewed from high in the grandstand. In the studio it would be applied to the setting of a large ballroom. It allows not only for many persons at full figure but considerable floor and wall space as well. Because it reduces the size of the human figures too much for good viewing, it is seldom

used except to show mass movements or outlines briefly—as with crowds, large chorus lines, or ballet patterns.

**LONG SHOT**—This allows for full figure of three or four standing adults in a group, with much of the setting exposed above and beside them. Good for the so-called “establishing shot” (ES), presented early in a new scene to establish locale or orient the viewer as to various features of a set—doors, windows, stairways, paintings, and similar points of interest or significance which will subsequently be shown individually in closer shots.

**MEDIUM SHOT**—This normally allows for comfortable framing of three persons standing fairly close together and shown from waist up. When so used it is also referred to as a “3-shot”; it gets three people in the picture as close up as possible for maximum benefit of facial expression but still allows adequate margins and room for moderate movement of head and shoulders. For the sake of intimacy or dramatic effect, it is feasible to close in somewhat on this shot if you can depend upon action being confined to the more restricted area. This would be called a “tight 3-shot.”

**2-SHOT**—This shows two persons rather close together, from the waist up and with reasonable margins at side and top of frame. A “tight 2-shot” would reduce margins and show only heads and shoulders. If it is a very tight shot, it calls for special positioning of subjects, possibly with one partially in front of the other and shown with profile or three-quarter view of the face—as in love scenes or intimate and intense dialogues.

**CLOSE-UP** (also known as a “Bust Shot”)—This shows one person, comfortably framed, with only head and shoulders in view. In close-ups of women wearing strapless evening gowns or bathing suits the shot should be wide enough to include at least a small portion of the garment; otherwise nudity will definitely be suggested.

**EXTREME CLOSE-UP**—This shot includes only the head or face. A shot this close is so highly critical of facial defects that it is seldom used—except on children, very pretty young women and dramatic “characters.” In cases of the latter, facial lines, scars, moles, or shaggy eyebrows will loom up tellingly, even ominously on the screen, being so greatly magnified.

**Discretion and Fairness.** There are very few women, even the prettiest of professional young models, who may appear to advantage under a very "tight" close-up. The camera detects and emphasizes what the human eye kindly overlooks—discolored or misshapen teeth, "crow's feet," or baggy eyes, crepelike necks, or fuzz on the cheeks or lips. Sad to relate, not even the best make-up can easily overcome these defects in such a highly critical shot.

The answer, of course, is to take no shot closer than (1) the subject can stand, or (2) the situation warrants. At times you will not be aware of facial defects until you see a person's close-up on the preview screen. If the shot is objectionable or "unkind," have the camera ease back until the defects disappear or are less noticeable.

It is particularly important to exercise this fairness and precaution with young women prematurely showing signs of age, and with women still accepted as pretty who might be passing through their thirties for the second time. Older women take their age for granted and expect to be accepted as "elderly" in varying degrees. But younger women have justifiable reason for complaint when their age is accented or increased by indiscreet camera treatment.

The lighting directors should be notified of spots on the set in which close-ups are to be taken, in order that they can be properly lit. A good close-up calls for planned and tested lighting. In audience participation programs and others in which there is no rehearsal with guests, approximate zones for close-ups should be set and tested with "stand-ins."

### Camera Angles

Remember that the camera acts as the viewer's eyes. Therefore, it isn't sensible to take shots from angles that aren't pleasant, or natural or intelligible to the viewer. Why should a pair of lovers in a standing kiss be seen at an angle looking up from the floor—unless the viewer represents a spy under a bed or an overindulged dinner guest prone on the carpet?

Camera angles should be varied for interest and dramatic accent, but the variance of angles and the frequency of cutting from one to another can be vastly overdone. It makes the viewer

nervous and confused by being seemingly popped all over the place.

Camera angles can improve or distort facial features and figures. It is wise to study and experiment with such angles to see what can be accomplished or avoided.

Practically everyone has a "better side" of the face. Become acquainted with this characteristic as applied to your principals. When best appearance is preferred, as is usually the case, try to stage action so that shots of profiles or three-quarter views will favor your "stars."

**Avoid Defects.** Quite often in television, particularly in audience participation programs or shows using nonprofessional guests, we encounter persons with unfortunate physical defects—gruesome scars, birthmarks, swellings or facial abnormalities, maimed or amputated limbs, or other disfigurements. Since the sight of such defects is unpleasant to viewers, it is good taste as well as kindness to conceal the misfortune if possible. Without making the person aware of his reason, the director can stage or seat such guests accordingly and use shots and angles which will avoid the defect.

**Accent the Best.** Beware of shots too close or improperly angled for singers. Don't explore their tonsils or review the fillings in their molars. This is neither attractive nor sensible. Many singers, especially if they move about or use their hands expressively, can best be presented with a medium shot and head-on angle.

Persons with broad noses or prominent nostrils should not be shot at an upward angle. A long nose is emphasized when you shoot down on it. In both cases it is best to shoot straight-on.

To minimize double chins, jowls or crepelike necks shoot from as high an angle as other facial features will allow—in consistency, of course, with normal viewing level. We don't want to give the viewer the impression of needlessly looking down on a subject.

Dancers and others shown in full figure will be distorted by shooting down on them, particularly when using wide-angle lenses close to a subject. To prevent foreshortening of legs, especially if a dancer is short or stout, have your camera pedestal down and shoot straight at the waist—or even pedestal lower and shoot slightly upward.

## Composing Pictures

Picture composition begins with recognition of the inevitable but artistically agreeable aspect ratio—the 4 by 3 dimensions of the screen. Of necessity all composition must be adapted to that.

As a matter of interest, it might be recalled that almost all portraits by the great masters are vertically shaped. Thus, in showing any of the immortal portrait paintings in television we have to compensate in one way or another for the difference in ratio. To show Gainsborough's famous "Blue Boy," for example, we'd show the entire picture with half the area of the screen wasted in useless border at the sides; or for a closer view of detail, the camera would cut its picture to the horizontal dimension of the painting and then pan up and down to reveal in close-up a section at a time.

**Apply Basic Rules of Art.** Adhering to the TV screen's proportions, good picture composition still complies with all recognized rules of artistic composition for horizontal pictures.

*The horizon line should never be set so that it divides the picture in equal halves.* It should be either substantially above or below the middle of the frame. It is a good rule to set the horizon at from one-third to two-fifths of the distance from either top or bottom of the frame. Whether this horizon line is high or low depends upon the relative content and interest of subject matter.

**Margins Are Important.** Always allow adequate margin from the top of a person's head to the upper border of the picture screen. If you were drawing a portrait you wouldn't have your subject's head pressed against the top edge of your paper; you'd place the head a third of the way down the paper and allow sky-line or background above it and around it.

In camera work the margin between the top of the head and the upper border of a picture's frame is referred to as "head room." Obviously, the extent of head room is increased or diminished simply by panning the camera slightly down (for more head room) or up (for less head room).

For some unexplained reason there is a tendency in television, even on the biggest and costliest shows, to place a performer's

head at the very top of the screen. Often on a medium shot the head is contained in the top 20 per cent of the picture, while the remaining 80 per cent of the screen is devoted to an expressionless and uninteresting suit of clothes. If any explanation can be applied to this strange technique, it must be that the director is unduly conscious of an artist's fee; if a guest commands \$2,500 for a performance, the director must fear he won't be delivering full value if he allows \$75 worth of sky or painted scenery to show above the performer's head while neglecting the expensive artist's abdominal area.

It is important always to bear in mind the inevitable shrinkage of picture margins which occurs in all home receivers, more in some sets than in others. Regardless of artistic values, in framing a picture always allow enough margin so that a singer's head won't be cut off at the hairline—or a dancer's limbs at the ankles—as a result of too tight framing, plus natural shrinkage in TV transmission and reception.

The picture a director sees on the monitor in the control room will shrink at least 10 per cent on the viewer's receiver. Therefore in composing pictures it is imperative to allow for this margin of loss. Otherwise a good composition will be ruined, or worse still, essential features in the picture will be cut off on all four borders.

Adequate head room always improves picture composition. But excessive margin at the bottom of the picture, mere blank floor space, is highly objectionable. Always allow adequate margins on all four borders of the picture, but don't waste precious screen area with excessive margins, particularly at the bottom. Don't leave great areas of floor space in front of ballet dancers merely because they will eventually dance "down stage" toward the camera. Be prepared to take another shot when that occurs, or to have your camera rapidly dolly back to show the full grace and detail of their movement without letting them slip out of your frame.

Here is where a director must compromise with technical limitations of the medium. For maximum clarity and interest it is always his tendency to strive for the largest feasible presentation of face or figure on the screen. Prominence of face is important to convey expression on a screen of limited size. To increase head room, naturally, the size of face and figure must

be reduced. But isn't it better to have a face of relatively less prominence than to have the top of a head chopped off by shrinkage of picture or by excessive masking of the total picture-tube surface, as applies to some sets?

**Artistic Framing.** In composing a picture, both director and cameraman should not lose sight of background elements. By no means must a human figure or facial close-up always appear in the center of the screen. Often good artistic taste will command that the subject be placed slightly right or left of center—to compose a picture that utilizes background elements for purpose of interest, balance, or just good composition. These background elements might consist of a vase of flowers or a painting on wall, a graceful tree on the horizon line, or an off-center grouping of remote human figures or inanimate objects.

Especially when shooting close-up profiles it is advisable to consider framing the head right or left of center—with extra space on the facial side of the profile, of course. If there is something interesting in the background on that side of the screen, the off-center placement of the head will certainly compose a better picture. Even if the background is dull or neutral, this device will at least give the subject a more comfortable appearance, saving him or her from seeming to rub the face against the wall.

### **Staging Positions and Movement**

Intelligent staging of action is important for picture quality, production efficiency, and picture composition.

Unless there is a definite reason for so doing, don't place your characters in a straight line. If they are parallel to the camera lens, it unnecessarily widens the picture. If arranged diagonally from the camera, those in back may be out of focus or lost in the diminishing perspective.

When a close-up of some member of the cast is in order and it is not practical or desirable to cut to a close lens on some other camera, let the individual walk into a close-up—by moving toward the camera to a preset spot. For the sake of proper framing and focus, the action should be carefully rehearsed and the terminus of movement marked on the floor with carmine crayon or chalk. (For reasons explained in Chapter 11, a carmine or tangerine

shade of crayon is best for such a purpose. The marks are easily spotted by the human eye but are virtually invisible to the TV camera's eye, especially on a gray surface.)

**Proper Grouping.** The artist's well-known triangular grouping of subjects has unlimited use in TV. In effect it makes it possible to frame three persons comfortably within the picture area of a normal 2-shot. Let two persons be seated on a divan, the third being seated on a low stool or Ottoman placed close in at one side.

Comparable grouping can be achieved by having two youngsters stand in front of an adult seated in a chair, or by having the adult kneel behind two very small youngsters.

In any standing group try to have the smallest or shortest persons in front. Further reducing the width of a group picture, let those in the rear overlap shoulders slightly, if necessary, bringing women somewhat forward from the men when possible. When gracefully arranged in this manner they won't seem crowded and their strategic positioning will reduce width of picture and thereby enable closer view of all faces.

Members of a choir, school class, or other large group arranged in parallel or terraced rows should be staggered so that every face is in full view of the camera. Boys and girls in the second row, for example, should stand so their heads appear exactly between heads of those in the first row. If there is anything worse than having a face completely blocked by a head in front of it, it's having the same face only half-blocked. At rehearsal explain to the members of the group what you're trying to accomplish and how every face can be seen if all members of the group are properly positioned. Then, since they will undoubtedly break and re-form again before telecast, charge each of them with an individual responsibility to get his face through to clear camera view.

**Positioning by Height.** For obvious reasons, extraordinarily tall persons present technical problems in picture composition. If they can't be seated throughout the duration of their appearance, perhaps it might be possible to let others stand on steps beside or behind them.

Tall men or women should not be required to bend over a low table to illustrate or work with objects on the table, as in

cooking programs. Because of their height the picture has to be wider than usual to include the face as well as the table. Naturally, they will have a tendency to bend over toward the surface of the table, thus showing us the top of their heads instead of their faces. This has another effect which must be considered: audio becomes faulty, since they are projecting voice toward the table instead of directly outward where the mike boom can best pick it up. It's all very simply solved—by building up the height of the table from 8 to 12 inches, even with the use of wood blocks, which practically never show anyway.

In a case where two persons of greatly varying height stand behind a table and the width of picture is determined by the essential table, it is well to provide a slight platform to raise the elevation of the shorter person in relation to the table. When you meet this situation and the taller party wears a tall chef's cap, cut the top of the cap off in framing the picture. Your viewers know what he is wearing and they know what it looks like. It is senseless to widen the picture enough to include the top of the high cap and reduce the size and clarity of facial expressions accordingly.

**Positioning for Interviews.** In a seated interview involving only two persons, don't place them side by side on two chairs in the same line or on a sofa. Obviously, the tendency will be for each to face the other, giving nothing but profiles from both the entire time. A better arrangement results from placing interviewee and interviewer in chairs in tight juxtaposition and at angles advantageous for both. Using engineering jargon in application to angles and position, place the interviewee at 10 o'clock, facing 5 o'clock. The interviewer would be placed at 4 o'clock, facing 10 o'clock. With two cameras, positioned at 8 and 5 o'clock, this will give wonderful close-ups of each and a fine 2-shot giving accent to the interviewee, which is as it should be.

**Staging Action.** Long entrances and exits, when necessary, are best made diagonally across the staging area—to or from upstage right or left. When there is reason for it or when some effect is achieved by it, an entrance can be made from behind a camera at either side. Likewise with exits. Unless the proper lens is in use, however, such movement past cameras could "muddy" the

picture momentarily as the person walks through a plane that is not in focus with the central point of interest.

When it is desirable to get a person in or out of a scene rapidly, a movement directly to or from the side (at right angles to the camera) is best. When exits are made to the side, an unprofessional guest who lingers unnecessarily after being "cued-off" by a firm "thank you," or who is inclined to exit awkwardly, can be eliminated pictorially by panning the camera to the master of ceremonies and pushing in to a close-up on him.

Incidentally, in the matter of making exits, nonprofessionals have a tendency to back out of a scene, possibly through politeness. This not only appears awkward but might result in tripping or bumping into furniture. Coach them to turn gracefully toward their destination and simply walk out. The turn, naturally, should be an "outside turn"—a one-quarter turn to face them in the direction of exit; this is mentioned because it is possible to make a three-quarter turn, revolving in the wrong direction, thereby turning the back on both audience and the Master of Ceremonies.

When nonprofessionals appear in a program involving movement from one position to another—for example, walking through a large area to describe ceramics displayed on several tables—it is highly advisable to plan the movement so the MC or announcer will lead. In this way it is not only easier to control the budget of time per section of display, but the professional party can help to draw others into position where they will appear at proper angles and will not obstruct shots. He can also set the pace of actual movement, so the parties will not become spread too far apart.

Principals seated in a group shot should be instructed not to rise suddenly without cue or warning. It is very likely that the boom microphone will be dipped low over them, which will be exposed if it is necessary to take a sudden wide shot to accommodate a rise. Other complications can result if the director and cameramen cannot anticipate the rise.

### Selection of Shots

A person attending a three-ring circus has an over-all view of a vast panorama of assorted action and sights. But he does not

watch the over-all performance at all times. Instead, he alternately concentrates on one ring at a time, focuses his attention on a nearby clown, looks up at the trapeze performers on their lofty swings, then turns to see the face of the friend seated next to him. With nature's magnificent optical system and perception senses, he is in effect constantly cutting from one shot to another, instantly and automatically framing and focusing at will. He sees what he wants to enjoy, what he accidentally discovers, or what attracts his attention.

The television director functions in the same manner—and he alone is the judge of what the viewer will see. With his various preview screens he can view all the action or isolated bits of it. It is his responsibility to edit—to select what the viewer *wants* to see or what he *should* see for maximum enjoyment and understanding of a performance. It is important to choose shots that are newsworthy, of special picture interest, importance, significance, or dramatic value.

Be on the alert for shots that clarify a presentation, or that advance or enhance a story. Beware of shots that merely show off a director's talent or expose lack of good taste or judgment. Good editorial sense is imperative at all times.

For the sake of interest or dramatic effect, the director should look for or contrive unexpected shots—if they are in keeping with the mood or type of program. He should take a shocking shot only if it heightens suspense or thrill in a program that is accustomed to shocks—providing further, it is not beyond standards of good taste for home reception.

Above all, remember that you don't always have to show the face of a person speaking. A reaction shot in a dramatic scene is often more effective than a close-up of the speaker. The expression of a man being informed that he is to become a father might well be more dramatic and interesting than the face of the woman relating the news.

In selecting shots choose the picture the viewer wants to see. Better still, choose the picture he'd elect to see if he had great ingenuity and originality. That's the director's pleasant duty and privilege—to select what should be seen; or to choose the dramatic, extraordinary shot which unexpectedly adds to the viewer's enjoyment or emotional experience in a program.

## Calling Shots

As the reader has been informed, the method of operation described here is known as the "TD" system. The director calls the shot, and—by manipulation of dials and switches on his control panel—the technical director delivers the picture to the screen.

In calling for a cut or direct switch from the picture of one camera to that of another, the director customarily says: "Take One" or "Take Two"—or whatever number applies to the camera with the picture next desired.

Since there is a natural momentary pause while the TD selects the proper button to punch, it is sometimes good practice to help him anticipate the shot in this manner: "Ready Three—Take it!"

This method of anticipation is especially advantageous when a dissolve is called for after a series of cuts. Bringing about a dissolve calls for an extra manipulation (turning a dial) before the dissolve can be effected. The operation is facilitated if the director uses this procedure: "Ready—a dissolve to One . . . Dissolve!"

The following monologue is typical of what you would hear if you sat behind a director at the start of a program. It represents the director's orders to the technical crew working with him in the control booth, and the directions he gives over his PL to the stage manager and facilities men on the floor of the stage:

Fifteen seconds . . . Ten . . . Ready Three on title (NUMBER 3 CAMERA "FREEZES.") . . . Five . . . Music! Dissolve to Three! . . . Roll title . . . Fade Music . . . Cue announce (ANNOUNCER READS FROM SCRIPT, SYNCHRONIZING WITH COPY OR PICTURE ON TITLE). . . . Music up . . . Fade . . . and dissolve to One. She's on—Cue her! . . . (A PERFORMER BEGINS SPEECH OR ACTION) . . . Ready, Two—a close-up on the man. Three go to the piano . . . Take Two. . . . Three, get a medium shot on the pianist. Ready, Three—Take! . . . Keep number One wide for protection. Two, next wider shot—and ready to dolly in on the girl . . . Ready, Two—Take! Now slowly dolly in. . . .

A program with script and adequate time for rehearsal obviously functions differently on the air from the extemporaneous or partly ad-lib type of program which is so common in TV.

In a rehearsed program all shots will be carefully preset, rehearsed, and noted by director, TD, cameramen, and all others concerned. In such cases it is wholly unnecessary to give warning of forthcoming shots. The TD follows his script notations and gives specific instructions to cameramen only occasionally. And if all is going well, the director merely calls the succession of shots or effects at the moment it seems proper to take them. Frequently he might vary the shooting plan slightly or give additional directions, such as: "close in tighter"—"give more head room"—"pan left and center the tall guy."

The directions continue more or less in this manner for the duration of the program. A person hearing this jargon for the first time usually finds it interesting but confusing and nerve-racking. Actually it is all very simple to men experienced in the operation, but no one will deny that a certain tenseness prevails, on some programs more than others; and the constant alertness, quick action, and precision teamwork required are not conducive to soothing the nerves of newcomers or spectators.

### Giving Directions

A good director should give his directions like a good captain issuing routine commands on the bridge—not like Captain Bligh addressing Mr. Christian, although some few directors try to emulate him in the booth! Directions should be given calmly, concisely and with certainty. Don't mumble into your script. On the other hand, don't shout; it hinders the operation and annoys the entire production crew. Speak clearly and just loud enough to be adequately heard over voice and music coming through the speaker.

For many reasons it is bad policy to bark over the SA at rehearsal. There are two good reasons not to cuss out cameramen for failing to get a shot while on the air. In the first place, the direction was probably not clear, or there wasn't time to position, frame, and focus. Secondly, if a director cusses loud enough his language can easily be heard by the cameramen over the technical director's PL system—which doesn't often have the effect of speeding up or improving subsequent camera performance.

At all times it should be remembered by the director and all members of the technical and production crews that the staging

of a telecast depends on absolute cooperation and teamwork from *all* concerned. It is assumed that all members of the team are competent or they wouldn't be there—and incompetence is soon detected and corrected. A good performance, then, begins with a sense of good will and an eagerness to deliver the very best from every station—with the Musketeers' spirit of "one for all and all for one."

**Switching.** When is a cut in order? The answer is: when a change of picture is welcome for interest or relief, or when action calls for it. Determination of these instances is sometimes automatic (as when a person in a close shot rises from a chair); otherwise it is a matter of the director's discretion.

A picture that isn't varied occasionally in angle or composition can become monotonous, especially if it doesn't contain very interesting subject matter or action. But too much cutting is even more annoying, resulting in a jumpy presentation on the screen.

A dramatic scene between two persons becomes choppy if close-ups are switched back and forth constantly between actors as they speak. This is especially true when speeches are short. It might be better to sustain the scene on a 2-shot, saving close-ups for only the most important speeches or those calling for particular facial expression.

An average popular song, running from 1½ to 3 minutes, is much too long to carry with interest on one camera. A song of 2½ minutes' duration will reasonably call for four varied shots, possibly two mediums and two close-ups from different angles.

Do not switch in the middle of a sentence or dialogue speech. In a song, switch at the end of a phrase—better still, at the end of a verse or chorus.

**Use of the Dissolve.** Some directors use a fast dissolve instead of a cut between pictures. Often the effect is interesting. For example, it is very effective in varying shots of a solo ballet dancer as she pirouettes, providing she is kept in the center of the screen and is not "melted" from one side to the other. But generally, such use of the dissolve is risky, visually annoying, and sometimes weird.

Particularly if a dissolve from one picture to another is the least bit slow, the effect gives the viewer a feeling of impatience—

akin to the sensation of being required to walk fast through deep water. Then, too, there is the risk of comic or objectionable picture momentarily on the screen as the dissolve is at a point midway from start to completion. In a certain national amateur program this defect used to be a common feature. All shots were altered by dissolves, occasionally very slow ones—as if the director was leisurely sipping the rare wine of his magic. On singers he frequently dissolved from a head-on close-up to a close-up in absolute profile. The result of his artistry was that he made open mouths slowly evolve into ears, or ears revoltingly bloom between a contestant's eyes.

The most effective use of the dissolve is to bridge from one scene to another. If the presentation of a drama moves from one scene to the next with only a cut or switch, we are inclined to assume that the new picture is merely a new shot in the same scene.

If there is a radical change of scenes, and if a lapse of time is involved, it is effective to dissolve to a transitional device in between scenes. Examples of such bridging devices would be a clock, newspaper headline, electric sign, railroad train (on film), name plate on an apartment house door, or any similar object which quickly and visually portrays a thought which advances the story.

Another effect to indicate change of scene and lapse of time is to fade out the picture to black and then fade in to the new scene. This effect can be simply accomplished, but it has faults as well as advantages. Unfamiliar viewers are apt to interpret a slow fade-out as interruption of signal or faulty operation of their receiving sets. The fade-out should be used sparingly.

**Use of Supers.** Employed with skill and discretion, the super offers endless possibilities for novel or dramatic effects. It makes possible, for example, the use of "spirits" who can appear or disappear at will, walk through walls or assume any size, becoming an elf who sits on a sugar bowl or a Paul Bunyan who holds a man in the palm of the hand.

The super also offers the opportunity of showing objects which are related but which in reality do not appear together in the same realm or scene. Some examples: the face of a man over the page of a woman's diary as she writes; the vision of an old-fashioned girl in gingham standing beside the present-day elderly

woman she has become; the hangman's gallows appearing over the forehead of a murder suspect as he is being grilled by police; a barren plum tree suddenly assuming the blossoms of spring and then returning to the skeleton tree of December.

Utilize the super for what it is worth and only when it contributes to the viewer's interest and enjoyment. Don't use it too frequently or unnecessarily. Don't prolong it beyond its utility and value.

### **Tips and Precautions for Directors**

Keep a "cover shot"—one which you can cut to fast without disrupting continuity. This is especially important in extemporaneous or ad-lib shows where not all action can be predicted or anticipated. In other words, particularly when you are using only two cameras, don't direct both cameras to close-up or extra-tight shots. When one camera is assigned to close-up, the other should be directed immediately to flip his camera turret to a wider shot. This will give you protection in event of some unforeseen movement or action of subjects.

It is extremely awkward or embarrassing to have all cameras on close-up when a tightly composed group of persons suddenly spreads apart or rises from a sofa. The director finds himself in the position of the sad fellow who was "all dressed up with no place to go." There will be a messy picture momentarily until an off-the-air camera can secure a cover shot it should have maintained in the first place.

When you have three cameras in operation, designate one—even for short lapses of time—as your "eye," to be used to show the booth what is going on at the scene, or to "fish" for interesting shots. The man operating this camera should be notified immediately that he is "free" or "wild." When he gets a shot and the shot is taken, another camera should be appointed as "free" and the operator of that camera notified. All cameramen should of course be advised when original pattern or plan of shooting is resumed.

As much as possible, try to anticipate contingencies in advance of air-time. Think of situations which are apt to develop. Consider the personalities involved. Then work out in advance solutions to any problems which might arise. The strain and pressure

of program direction on the air is not conducive to the clearest thinking. It is much better to have problems solved in advance, with various clearly determined alternatives to choose from when emergencies arise.

Carefully work out in advance your time schedules. Have one schedule of *desired* timings (perhaps marked in blue pencil), and one of *must* timings (preferably marked in red).

Budget your time by elements in the show, so you will know whether to cut or expand an act or segment late in the program. If program structure allows, insert a “bumper” act just before sign-off—one which can be stretched, faded out, or cut off as the situation requires.

Know exactly when you should hit closing music, credits, or sign-off titles. Vary the bumper act or number accordingly to fit. This will enable you to have a tidy sign-off—the last chance a viewer or critic has to appraise the production of the over-all performance. If you run long on a network the program will be abruptly chopped off. A neatly timed sign-off is the final touch of good production.

What do you do when a camera “goes out,” something that happens every few hundred hours? The failure may come suddenly, with little warning or none whatever, and there is seldom any indication when normal operation may be restored. In this circumstance you will be fortunate to have three cameras assigned to your program. If such is the case, immediately notify all members of the production staff and technical crew of the emergency via the PL systems. Then rearrange your shooting plan accordingly, even removing the “dead” camera and rearranging the position of one of the active cameras.

The director is really in trouble if this emergency arises when shooting a show with only two cameras. The remaining “live” camera must carry the show. If the latter isn’t already on a flexible lens, call for a “fade to black,” followed by a quick switch to a dolly lens on the remaining active camera. Then bring the live camera’s picture back on the air and proceed—with fingers crossed.

As your program progresses, check off passing segments of the script with a pencil. While watching three or four screens and a clock it’s easy to lose your place in the script—and often difficult to regain position in a hurry.

Develop a uniform and consistent system of marking your own cues in the script—with warnings ahead of point of action, cues for switching, dissolves, entrance of music or voice, fade-outs, film rolls, time notations, etc.

Don't attempt unreasonably difficult shots or effects when time is not adequate—either for rehearsal or for performance on the air. It is better to create a simple picture well than to attempt a tricky one that might be a gamble resulting in embarrassing “hash” or failure. Your critics won't appreciate the tricky shot you contemplated but didn't deliver, but they'll certainly note well the shot that “didn't come off.”

Finally, don't be allergic to suggestions! Remember that you have working with you a crew of technicians well trained in the various phases of engineering operation and production personnel who must have talent or experience to qualify them for their jobs. Invite their suggestions and give them consideration.

Take advantage of the technical director's knowledge and experience. Consult him regarding technical aspects of your program. Often he may surprise you with ideas for improvement of the program content itself. Encourage your cameramen to exercise their ingenuity. Even in a dramatic program where you have carefully planned and plotted all your shots and camera angles, be receptive to their suggestions. Occasionally they will see or think of a highly dramatic shot you may have overlooked. Even if you don't use their suggestions, the fact that you consider the ideas and try them will increase their interest in the program and thereby improve the final results.

Remember, no director is expected to know everything about program production or technical operation. Even if one actually did, which seems unlikely, the fact that he reflected this knowledge or assumption of perfection in his attitude would be resented by all his coworkers. Soon he'd be working with a crew unconsciously daring him to make his program a success.

But that's a negative appreciation of this viewpoint. Welcome suggestions and ideas, simply because it's good business. Give thanks when they're not used, credit when they are used. And in the final analysis, you'll get credit for having an open mind. More often than not (ironic as it seems), you're apt to receive final credit for conceiving the ideas!

## TITLES AND TITLE DEVICES

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AS EMPLOYED in television, the term “title” is derived from its original usage in the medium—visual identification of a program at its opening and close. The term has now come to be used loosely in reference to all close-up graphic material presented in the course of a program: cast and production credits, printed advertising copy, cartoons, charts, diagrams, still photographs, and other illustrative material picked up by cameras extraneously from a scene of action but integrated in the program.

Titles and title devices, either still or mechanically animated, can be picked up by any camera momentarily set aside for the purpose in the studio. Still titles can also be processed on film slides for direct projection into cameras of the station’s film studio, from which point they can also be blended into a program. Animated titles or commercials on film can also be integrated in a “live” studio program from the remote film studio.

The use of film slides and motion-picture film will be covered in the next chapter. In this chapter we are concerned only with methods of delivering titles to cameras in the studio of program origin.

### Still Titles

Still titles are printed, hand-lettered, painted, drawn, or mounted on cards which can be suspended on racks or supported on easels. Actually, they can be of any size, so long as the area of subject matter is confined to a four to three ratio. However, very small or very large cards are a nuisance in the studio. Both

appear the same size on the screen, but the very small card calls for unnecessary camera work (possibly a special lens, and inevitable extra movement of camera to close in tight enough); and the large card takes up precious space on the studio floor, is cumbersome to handle, and often interferes with lighting, casting unexpected shadows on the scene when set in place immediately before use.

**Standardization.** In New York and Hollywood, both NBC and CBS have approached a system of standardization regarding title-card sizes which has proved most satisfactory. Quite early in TV's development someone decided it would be wise to extract a loose-leaf ring clasp device from a folder and fix it to an easel, punch holes at the top of title cards to fit, and thereby have a mechanically accurate contrivance for dropping one title card over another. When title copy is accurately centered on the cards and the device is operated with manual efficiency, it can give the effect of pages of a calendar falling neatly in succession. Titles mounted in the loose-leaf clasp device are referred to as "flips" or flip titles.

The spring-clasp device in regular loose-leaf folders (the size which holds standard typewriter paper) is 11½ inches wide. The rings appear on the clasp framework at 1½ inches, 5¾ inches, and 10 inches. Actually these measurements are not important when one considers that punching devices are available which punch all three holes accurately and simultaneously. The important thing is to make absolutely certain that the middle hole is centered on the card, or more particularly that it is centered on the card's graphic content.

The most economical and practical size of card for this is 20 inches wide by 15 inches high. Illustration boards, showcards and other art boards are commonly sold in sizes of 40 inches by 30 inches. These boards could be halved or quartered and still be in proper TV proportion. However, we must allow adequate margins on all sides of the frame, and in this instance we are also adapting available paper sizes to practical studio usage and the loose-leaf ring clasp.

Under this system all graphic content on the card (picture and lettering) should be contained within a framing area of 12 inches horizontally by 9 inches vertically, with the quadrangular area absolutely centered on the card. Diagram 1 shows graphically

what has been described as the ideal standard for title card proportions and alignment.

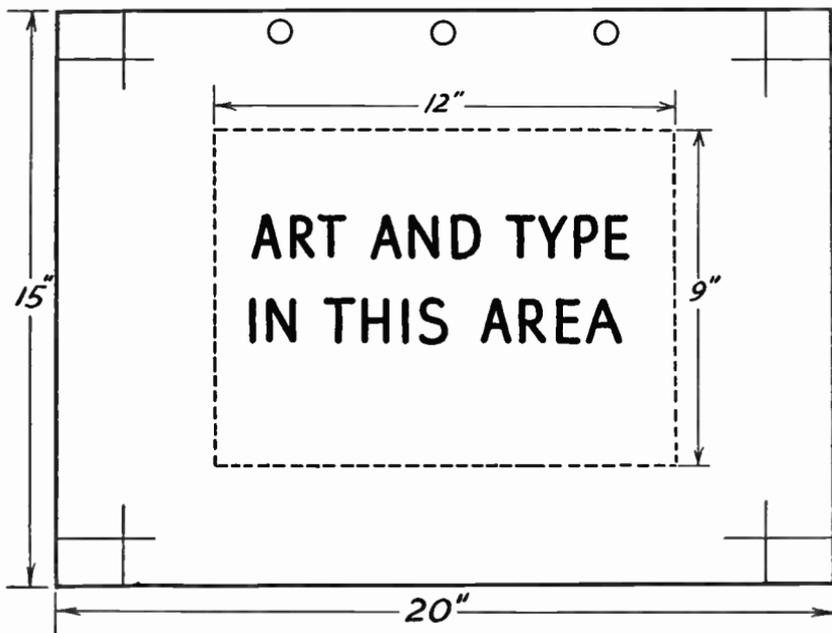


DIAGRAM 1. Layout and dimensions for titles. Camera would frame its "picture" on crosses shown in the corners, thereby providing adequate margin and allowance for shrinkage of over-all frame in transmission and reception.

### Title Art Requirements

Title copy should be carefully worked over, especially the matter of advertising copy—which is wasted if not easily read. Language should be brief, typographically workable, and to the point. Long and cumbersome words should be avoided, and too much copy should not be presented in one frame. Bear in mind that titles must be read with ease by a viewer sitting at a normal distance from the screen. When too much copy is allotted to one frame, the type must necessarily be smaller and more compressed, resulting in eyestrain or complete loss of impression on the viewer. All too often we see titles so filled with small printed matter that they require the viewer to lean forward to read, or

to walk over to the set to apprehend—if he cares to take the trouble. (See Figure 6.)

Cards should not have a glossy surface. When photographs are to be used it is highly desirable to obtain matte (dull) prints rather than glossy prints. The latter easily reflect studio lights into the camera. When it is not possible to obtain matte prints, try to have the glossy prints pressed absolutely flat and tight to the mounting cards.

Color, of course, is of no importance in black-and-white (monochrome) TV except for comparative tone values. If color is used the artist must take into consideration the color responses of the camera's Image Orthicon pickup tube. (See Chapter 11.)

Normal titles (excluding those used for supers) should never contain absolute blacks or absolute whites. A pure white is most apt to "burn" its image on the pickup tube, embarrassingly retaining this image through a succeeding shot or two; and the black helps to accent the contrast. When a white value is desired, employ an oyster-shell tone or light gray. For an effect of black, use a "smoky" black or very deep mix of black and green. Titles used for supers should have lettering in this gray or near-white, executed on dull black or extremely dark green surface.

**Product Labels.** Quite often in commercials a product label is called for, and inevitably the actual label is used—at the start of the advertiser's experience in television. Then, more often than not, it is discovered that the illustration of a tomato appears weak and washed out, or that the tone of a lipstick gives a pretty girl the appearance of a zombie. Then it becomes necessary to modify the colors, adapting them to give the tonal value desired on the TV screen.

**Surfaces for Titles.** In title art many interesting effects can be obtained by the use of unusual surfaces or substances. Wallpapers, for example, especially with the great variety of unusual patterns available today, provide an excellent fund of interesting surfaces for lettered titles. Particularly suitable for certain programs are those patterns which simulate wood grains, woven raffia mats, mild plaids, marble, or watermarked taffeta.

Monk's cloth is an excellent surface. Lettering on it can be done with buttons, sequins, nails, or strips of cloth. If a title

with monk's cloth surface can be set flat on a table or angled only slightly, interesting lettering can be achieved with pebbles, sugar cubes, sea shells, poured salt, small twigs—or even kitchen utensils.

**Consult a Skilled Graphic Artist.** Most graphic artists working in television delight in having their ingenuity challenged. Tell them the title of a new program, the content and spirit of it—then dare them to come up with a title idea. More often than not, especially if a fee or creative credit is involved, they'll contrive something to be proud of.

Many advertising agencies prefer to execute their own title cards instead of calling on the services of the trained title artist of the TV station or network. This is not always to the advertiser's advantage, either in economy or results, unless the agency has a lettering artist who thoroughly understands TV requirements as to tone values, framing, and letter proportions. Since good titles are so important in conveying the advertiser's message with the greatest impact, it is better to pay a nominal fee for the services of a title expert.

In its own right a title is just as important as any video material in the program. If it isn't, it shouldn't be on the screen. The opening title of a program is especially important. Remember, it comes into view when many persons in the potential audience are apt to be twisting the station selector dial, fishing for the most appealing program in the new time period. A captivating opening title with interest and action is a "best foot forward"—enticing the viewer to stay with the program.

### Various Title Devices

Obviously, in addition to the still or flip titles already described, innumerable other devices can be created or invented. In the following pages most of the more common devices will be described, together with a few unusual title effects which have seen only limited use. First, let's consider those most commonly used, in addition to the popular and very useful flip title.

**Zip or Pull Title.** Cards are laid vertically on the shelf of a title rack, in proper order, and perfectly centered. Cards are changed simply with a rapid pull to one side, preferably from left to right.

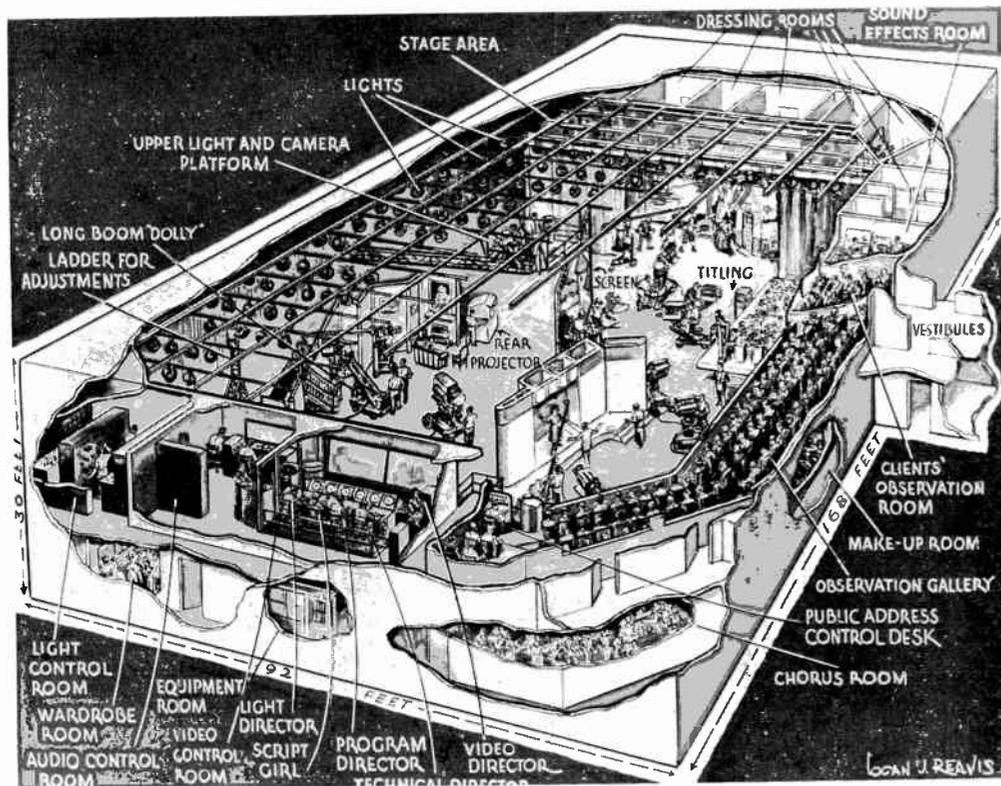


FIGURE 1. STUDIO 8-H, NEW YORK. The layout of NBC's much-discussed Studio 8-H in Radio City, New York, converted at tremendous expense from one of the network's finest radio studios. (NBC diagram by Logan Reavis.)



FIGURE 2. CAMERA MOUNTED ON PEDESTAL DOLLY. Note turret containing complement of four lenses, which are revolved into position as needed. The camera is elevated or lowered by gear wheel barely visible at rear of pedestal. The wheel at the top of the base alters the direction of the casters (protected by aprons to clear camera cables). The rectangular device above turret lens is a Hunt light, used for special illumination of scenes. This is often replaced by Teleprompters (see Figure 15). (KNBH photograph.)



FIGURE 3. FEARLESS MOUNT. Adapted for television from a dolly commonly used in motion-picture studios. (KNBH photograph.)



FIGURE 4. SANNER BOOM DOLLY. Used for dramatic change in elevation and view by dollyng camera and rapidly altering elevation. In the saddle is Syd Sanner, the engineer who invented the device. A similar crane device is the Houston dolly. (NBC photograph.)



A. Long Shot (LS). Otherwise referred to as wide-angle shot or establishing shot (ES), shows surroundings and figures in full before closing in for more intimate scenes.



B. 3-Shot (3-S). If the girls were positioned closer together, the camera would deliver a waist shot of the three subjects on the same plane.



C. 2-Shot (2-S). Actually a loose 2-shot. Framing could be closed in somewhat for a "tight 2-shot."

FIGURE 5. DESIGNATION OF CAMERA SHOTS. What the camera sees, either by moving in or by flipping lens turret. The models appeared on the "Lee Hogan Presents" program over NBC (l. to r.: Christine Reed, Sally Fraser, and Gloria McGough Marshall).



D. Medium Shot (MS or MED). In calling for this picture in the group shown, the director would specify: "Get a medium shot of the girl at the left."



E. Close-up (CU). Frames head and shoulders in agreeable composition. Framing here would be improved by pulling camera back and panning up slightly to increase head room.



F. Extreme Close-up (XCU or ECU). Normally acceptable only for children or young women with exceptionally smooth skin and good features. Otherwise it is used only for dramatic "character" shots.

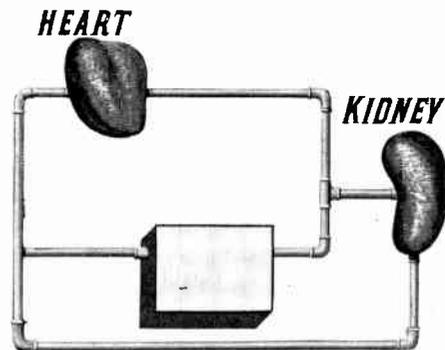
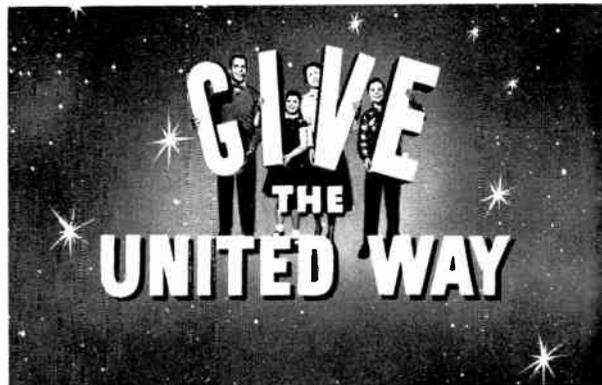


FIGURE 6. TITLE ART. Representative title art, including both regular program titles and graphic illustrations. (These were executed by the Graphic Art Department at NBC, Hollywood, under the supervision of Milt Altman.)

Ordinarily, with this method only the text or subject matter of the title is framed by the camera. It is possible, of course, to utilize the device with a suitable framework—for example, a picture frame, a billboard, a rococo encasement, or a window sill.

Some years ago the author directed a program titled "Showcase," which featured young amateur musicians. An application of this device was used to open the program. The initial shot disclosed a smart store window set in a wall of granite blocks. From a rather wide shot the camera would dolly in close to the window. The titles were reviewed on the back wall of the display area. Three separate titles identifying the program and the guest artist were zipped out in succession. There was no backing behind the final title, and when it was pulled its displacement revealed the interior of a music salon where the guest might be discovered playing the piano. The camera then dollied through the aperture, seemingly taking the viewer into the salon.

**Crawl or Roll Title.** For the opening or closing of plays and other programs with considerable identification copy, production, and cast credits, this form of title is popular and most practical. The title copy is printed or hand-lettered on a long strip of paper in columnar fashion. The paper strip inscribed with the copy is mounted on the cylindrical face of a vertically revolving drum. As the drum is slowly turned, manually or electrically, the copy is exposed a section at a time, giving the impression of gradually crawling up the surface of the receiver's screen, vanishing at the top.

The crawl title is, of course, a time-worn device in motion pictures, but for many reasons its use is even handier in TV.

Milt Altman, one of Hollywood's finest graphic artists, has perfected an electrically powered crawl title mechanism which not only assures a smoothly operated roll but can be readily varied in speed. The latter feature is very important on crawl titles used at the close of a program when time is an extremely critical factor. The mechanism can be adjusted to provide a leisurely roll with which a program should sign off, but if laughs or other delays have stretched the program unexpectedly the machine can be readily adjusted to run the full text of title through in the time remaining.

Titles with copy which is not too lengthy, consisting of from four to six frames, can be presented with an identical crawl effect

by printing them on a sheet or card fixed vertically on a wall or title stand. The crawl effect is achieved by the camera's framing the first section at the top and then slowly panning downward. This device is economical and reduces manpower requirements.

**Theater Proscenium.** Naturally, this device calls for the framework of a theater stage in miniature. Titles can be exposed by opening the traditional traveler curtain at the start, or by lifting one curtain after another in sequence.

**Various Miniatures.** Miniatures, when well made and skillfully lit, offer unusual realism. We refer here to such as toy villages, fairy castles, or an enchanted cottage in a forest with light in a window and a column of smoke rising from the chimney. Program identification copy can be written over a rose trellis, a rural mailbox, a wishing well, or even on the front door of a central structure in the locale, with the camera first showing the over-all scene and then slowly dollying in to bring the signs into close-up, concluding its course at the point of story action.

Some miniatures designed and constructed by talented artists tend to become too elaborate for mere title purposes. Although the trees and buildings are small, the entire panorama may be too widespread for constant use. The platform supporting it becomes heavy and cumbersome, requiring the time of two men to set it into place and remove it for each program; it takes up valuable space on the floor and requires excessive space to store in between telecasts. And to achieve proper lighting often takes more time on each program than is practical to allow.

Fortunately, there is a happy solution to such a problem. Set the panorama up with all its details in perfection, trees bent correctly, all figures and architectural details in their proper position, etc. Then have the miniature setting lit with extreme care in a key to suit the mood and locale, with all shadows uniform in direction to give realism and surprising depth. The next step is to have the scene well photographed. The photo can be blown up to an 11 by 14 size, suspended on a title rack, and thereafter shot in place of the miniature itself. There have been many instances in which such a step not only saved many valuable man-hours each week but was every bit as realistic, even enabling continuation of the dollying effect.

Here are some ideas for small miniatures which are simple but have interest and action and which have been used with great success on many children's programs.

On a board 3 feet wide set up a strip of rural highway with simple sky backing and distant trees in silhouette. In the foreground place a series of billboards, each half the size of a post card, containing titles and credits of the program. For an effect of movement, simply shoot a close-up of a section at one side and pan smoothly to the other side. The effect is like viewing consecutive billboards on a highway.

A comparable device uses a parade of cut-out figures mounted on a board. The procession is accomplished by pushing the mounting board parallel with camera through the close-up area.

For animation, experiment with a large adaption of the ancient Jacob's Ladder toy, with copy painted on both sides of the wooden slats and alternated as the steps reverse.

**Other Devices.** Except for expense and practical requirements of operation, there is no limit to ingenuity in the forms which can be contrived for title effects. Some of the most effective and intriguing titles are those which are simple but especially appropriate to a program, executed in a novel manner with imaginative props. Following are a few examples:

The vertical roll title or crawl can be executed horizontally. In this case the copy is fixed on a horizontal revolving drum. In super form over the base of an advertisement or picture, it is excellent for visual presentation of news headlines or bulletins.

When two cameras are available for title presentation, experiment with vertically revolving discs—having surfaces that revolve in the manner of a clock's hands. Dissolve from one to another, at a time when one disc's copy has been presented and the next segment is to be read.

The theater marquee type of title is seldom used in TV but can be most effective when executed properly. First, holes must be drilled or punched to outline letters. A moderate light is then placed behind the board and flashed intermittently on and off, either by a manual switch or better by electrical "breakers." Variations of this effect can be contrived, but usually they are expensive or time-consuming in construction.

The method of punching holes in a title card to admit dots of light can be used effectively in many ways. In addition to lettering, lines of an illustration can be drawn, or a specimen of graphic art can be animated with dramatic effect by the simple use of masking tape on the reverse side of the card, pulled off to reveal the lines of light dots as needed. This is especially applica-

ble to statistical graphs or charts of similar nature. For most effective presentation, the chart or illustration should be done on paper mounted on a plywood board which has been previously drilled with holes outlining a curve in the graph. The line of holes is covered with masking tape at the rear, and a light is placed there which will penetrate the paper fixed to the front surface. As the curve on the graph is referred to or described, the masking tape is peeled off at the rear, admitting the light to disclose magically a dotted line on the chart.

A very simple titling device when copy can be presented in two frames: paint the words on the closed slats of a Venetian blind or louver screen; show one side, then reverse to expose the other.

Shoot through a narrow glass tank with goldfish swimming in it. Place a zip title frame immediately back of it. Show the titles being zipped out, or cover the action with a burst of air bubbles in between the titles.

For identification of a cooking program, experiment with kitchen utensils or supplies. For example, first show a close-up of the corner of a table. Bring in a baker's rolling pin, with just the hands and forearms of the chef showing. Then dolly in to an extreme close-up of the center of the rolling pin—on which the name of the program, the cooking expert, and the sponsor have been written. Slowly roll the pin on the table, revealing the copy as a crawl title does.

Or for an interesting presentation of one name on a cooking program, show first a dark baking board over which flour has been evenly sifted. Have a hand come in and write out the name with a finger. With practice the writing can be done upside down and backwards (to be read from the viewer's side of the board); or the writing can be done in the normal manner, with the board being reversed at the conclusion.

A comparable stunt can be done by showing first a window, the reverse side of which has been well covered with Bon Ami or frosting solution and allowed to dry to an opaque white. On cue the home economist can write her name or the program title on the window with her fingers (in reverse, of course), then with a rag wipe out the entire center of the window to disclose herself in a kitchen setting. The window can be set in a framework on a table, which can be quickly removed after the initial effect has been accomplished.

A very simple device for use in dramatic programs is a book, with pages turning at intervals to reveal the name of the story, the author and the cast.

### Animated Titles on Film

The producer whose budgets allow the use of professional film cameramen should use them, by all means, for the sake of quality as well as good business practice. However, when a professional film cameraman is not available, very often an amateur with titling experience can make an interesting and effective animated title on 16mm film at low cost. Following are three such examples of amateur cinematography which the author contrived and executed at very little expense.

In the first instance, an area on the floor was covered with an interesting woven floor mat. A camera was set very low on a tripod, then carefully focused and framed on a small area of the mat. A rag doll and other toys were arranged near the outer edges of the framed area. Then wooden letters were lined up in the center, spelling out TOYLAND. After the letter's positions were carefully marked with light pencil the setting was lit to give relatively flat lighting. The letters were then removed. Next came the shooting. First, four seconds of just the mat and toys, and the camera was stopped. The letter T was put in place. After two seconds more of shooting, the camera was stopped and the letter O was put in position. This process was continued until the word was completely spelled out. Then the lighting was rearranged with a strong light from upper left so the letters would cast long diagonal shadows. Thus the viewer saw not only the letters popping successively into position, but an added value in the sudden switch of the lighting.

The second title was done at the beach with similar stop-action technique. In the late afternoon, when tide and sun were right, a camera on a tripod was set up in the upper surf area, focused on the sand. As a receding wave left the sand smooth and wet, a hand with stick entered the frame and wrote out two words, then withdrew. In order not to drag out the timing, the camera was stopped until the next approaching wave was close. Starting again, it recorded the words being washed out, leaving another flat surface on which other words were written and

erased in the same manner. Photography of this type takes time and patience but the effect is usually worth it.

A third film title device utilized slow speed shooting for high speed animation. It involved cartooning and lettering done at normal tempo by an adept artist (who, incidentally, had the outlines of his figures and letters sketched in lightly, invisible to the camera's eye). The final effect showed three successive panels magically sketched at great speed.

When suitable "stock" or specially shot clips of film are available, film and studio title cards can be used in conjunction, either successively or by superimposing title copy over the film.

### **Important Considerations Regarding Title Devices**

A word of caution! It is a temptation to devise unique titles, and an achievement when one can be developed which will attract attention and favorable comment—providing the execution of the effect isn't too extravagant for the program in terms of time, space and money.

Dispense with any effect that takes too much time to set and rehearse for proper execution on the air. Under no circumstances should the rehearsal of a program's contents suffer for the sake of a tricky opening or closing device. Get rid of it or modify it.

Animated program titles can be done most successfully and dependably on motion-picture film. When ingenuity is applied, it needn't be too expensive. And remember, the initial cost is the total cost—whereas, the use of a complicated mechanical device for each program has an accumulating cost in repetitive man-hours for setup and rehearsal.

There is no limit to the number of title effects which can be devised, mechanically or with the use of film, and almost every director starting a new program is challenged to develop a signature device which will be distinctive and intriguing. It's always a challenge to come up with a new idea that is enthusiastically and readily approved. But before the idea is submitted, the director should apply these test questions.

1. Is it appropriate for the program?
2. Is it practical for continued use—in cost and rehearsal time involved?
3. Can it always be executed to perfection?
4. Or should a simpler device be substituted?

## MOTION-PICTURE FILM AND SLIDES

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MOTION pictures are telecast by running the film through specially built machines which project the moving image directly on the face of a pickup tube. Projector-camera equipment constructed for this purpose invariably employs an Iconoscope for its pickup tube. It is much better adapted for this purpose than the more modern Image Orthicon used in studio cameras, being more receptive of the intense light required for film, and having practically no tendency to burn images on its face.

The operation takes place in the film studio, which can be linked electronically with any studio originating live programs or even with a remote unit in the field. Thus a feature film can be switched to a production studio for a live commercial at intervals, or conversely, a live program can be switched to film studio for filmed commercials or special film "clips" to augment the live production.

### **An Auxiliary for Live Programs**

No one will question the program value of good feature films and shorts in TV, but they are sometimes a minor reason for the existence of the film studio. For the best part of the operating day in some stations, particularly in the East, the film studio is called upon only for film inserts in live programs or for slides (to be discussed later in this chapter).

Good film clips can expand the scope and interest of almost any live program, presenting "flashbacks" or factual scenes, serving as a time coverage for a change of set or costume, and en-

abling the inclusion of scenes which are either impractical or impossible to produce in a TV studio.

Dramatic programs, especially, benefit by the use of film inserts—for example, stock scenes of Paris, Broadway, a Western mining town, or a jungle—used for graphic establishment of locale. Or they might employ shots for mood, transitions or advancement of plot—such as railroad trains in motion, steamships, airplanes, storms, explosions, etc.

Producers of some live dramatic programs occasionally make their own film inserts with members of their studio cast, showing the principals in establishing or locale shots which contribute realism to the production normally confined to a few interior scenes. Typical of this would be characters of a play shown crossing Fifth Avenue and walking into Rockefeller Center, sailing in New York harbor past the Statue of Liberty, riding horseback over a meadow, or driving down Hollywood Boulevard.

When such film sequences cannot be specially shot with members of the cast, stock shots can be used with good effect if they can be procured in time. Unfortunately, television so far has surprisingly few available sources of such atmospheric film sequences—even of the most common locales and places. Countless millions of feet of such film have been shot by the motion picture industry, but only a few small companies have released any of it to TV. Much of the limited footage which is available is either of poor quality or not exactly what is wanted. The problem is further complicated by inadequate cataloging of material, requiring countless hours of viewing and editing to produce a strip of just a few seconds' duration.

Atmospheric scenes on film, when they can be specially shot or procured from film libraries, are used advantageously in many types of programs for mood or special effects. Such scenes might show flags flying in the breeze, clouds drifting across the sky, waves breaking on a rocky coastline, a rippling stream or a waterfall, troops on the march, a forest fire, tumble weeds bouncing over a dusty prairie, bees swarming around a hive, etc.

In cases where such atmospheric film is used regularly on a program, and providing the scene's contents are repetitive in nature—as with waterfalls, smoke, windmills, clouds, birds in flight, etc.—the film can be spliced in a loop, allowing it to run continuously through the projection machine. This not only

cuts down costs for original film footage but it makes the scene constantly and instantly available through as long a period of time as is desired.

When such film loops are used, the complete single scene should be of at least six seconds duration, preferably much longer. A shorter loop cannot be conveniently threaded in the projection machine. Moreover, if the scene is run through several times, a short loop is more apt to make the repetition obvious, thus spoiling its effectiveness. Needless to say, great care should be employed in the splicing of the loop—to prevent a jump when the final frames of the scene lead into the repeat action. In cutting and splicing try to match as closely as possible the action or pattern of the scene's contents at the close with the start of the strip.

Remember that such atmospheric shots as have been considered here can be blended into an outgoing program by dissolving completely to film for an interlude, or they can be superimposed over live scenes in the originating studio. Used with artistry, they can be most effective either way in musical programs.

### **Facts on TV Film Projection**

Motion pictures used in television can be either silent or sound films, color or black-and-white (monochrome). In scripts, logs, and technical designations, sound film is indicated as SOF (sound on film). Silent film is designated NS (no sound).

Many stations are equipped only with 16mm projectors, but the larger stations have both 16mm and 35mm projectors, with two or more interchangeable camera chains adjustable for each. Speed of projection cannot be varied in TV projectors. All projection must be at standard (sound) speed of twenty-four frames per second.

Color film is adequate if it has good density and contrast. Such film is superior to a black-and-white print that is either washed out or too dense.

Negative film can be projected by changing polarity, accomplished by simply throwing a switch in the pickup camera. The quality is just as good if not better than in a positive print, but the practice of using negatives is not common, due to the risk

of damaging the original. The ability of the TV camera to project negative film for a positive picture is especially advantageous when time is a factor. News events, for example, can be shown promptly after they are shot, without taking time to print a positive after the negative has been developed.

Negative film is very soft and easily damaged. Obviously, a damaged negative cannot be replaced without the needlessly expensive step of reshooting scenes. Many scenes can never be recaptured. Therefore, in editing, cuts are made in the negative only after all scenes are decided upon. When many prints of the film are to be made, the negative is further protected by running off several "fine grain prints" from which projection prints are made. When properly handled, the latter are quite durable. However, excessive usage, dust, and lint will scratch the surface, causing the disturbing "rain" effect we see in very old films. Even a sturdy projection print if not properly stored will eventually become brittle and apt to break easily in projection.

The best quality in both picture and sound is obtained from 35mm film. Occasionally 16mm film has excellent picture quality, but the fidelity of its sound seldom compares with that on good 35mm film.

The standard film used in motion-picture theaters is 35mm film. When such "movies" are released for television it is common practice to reduce the film to 16mm—to accommodate stations having only the smaller projectors, and for reasons of economy in printing and distribution. With such reduction, both sound and picture quality suffer. Sound often depreciates drastically. The effect of reduction is most noticeable when music is involved, resulting in annoying "wows" and "scoops."

Film technicians are working on this problem and have recently made considerable progress. Now, instead of reducing a composite 35mm film (picture and sound together), they process the original sound track into the reduced picture film.

**Precautions Against Breakdown.** With some major programs on film the networks have instituted a practice of running a 16mm "protection print" simultaneously with the projected 35mm film. Thus if the film should break, a lamp burn out, or the video chain go out of order, the protection print can be instantly switched into service. Sound and action should be identical, so the running time will remain the same and the inter-

ruption need last only a second or two—until the directing technician observes the failure and presses a button to put the substitute film on the air.

Incidentally, such breakdowns or failures are rare in stations where equipment is well maintained and film is properly processed before airing.

**Preview Advisable.** Some sponsors insist on having all films previewed in their entirety before each telecast—to make certain not only of timing and sequence, but to check the film for flaws such as broken sprocket holes, damage to picture, and improper splicing or breaks. If this is not practical from a standpoint of manpower and facilities available, at least the film should be run through a high-speed footage counter. This will not only give an accurate timing of the over-all film or its various sequences, but it will also tend to test the splicing and sprocket holes, which are the two most common sources of film breakage.

**Editorial Review.** In addition to the mechanical reasons mentioned, many stations insist on previewing all feature films for editorial reasons. As viewers know only too well, a great percentage of the movies which have been shown in TV over the past few years have been very old films—made before the existence of any “Hays office” or other bodies controlling standards of decency. Many of them contain an abundance of suggestive dialogue, smutty gestures, indecent attire, or scenes not acceptable for presentation in the home.

The network stations make a practice of running no films whatsoever without review by a member of the continuity or editorial department. For reasons of economy, the review for both technical and editorial reasons should be done simultaneously. At this run-through the film can also be timed.

### **Film Technicalities**

The sound on film does not run parallel to the corresponding picture frame. On 35mm film sound precedes picture by nineteen and a half frames. On 16mm film sound is twenty-six frames ahead of corresponding picture. This is one of the many reasons why only experienced cinema cutters should do any cutting or splicing of SOF film.

When 16mm film is used it is preferable to have film with sprocket holes on one side only. This is an aid in cutting and splicing. When working hastily with film having double sprocket holes it is possible to splice wrong side up. Film with single sprocket holes would prevent this accidental reversal.

Another precaution in that same vein is to use film that is all direct or indirect, that is, with either emulsion side up or celluloid side up throughout. If sections of both types are used it is possible for the cutter to match the emulsion sides in a splice and thereby reverse a segment of film.

With 35mm film used in TV great care should be taken to cut and splice without leaving any partial frames. It is necessary to have complete frames with all four sprocket holes—for the reason that TV projectors, unlike cinema projectors, do not automatically adjust for such errors. The machines have to be stopped and the picture reframed.

**Leaders Are Essential.** A TV projection machine requires 5 seconds to gain normal operating speed. Consequently, the “take” of the film picture must be anticipated accordingly.

To aid in delivering a ready picture at the second it is required, a standard motion-picture “academy leader” is spliced at the head of the film, and preferably this should be preceded by several feet of blank leader for ease in threading the machine. (The latter should be about 12 seconds of film—8 feet for 16mm and 18 feet for 35 mm).

The academy leader has its footage indicated by figures printed on the film, which appear on the screen (in preview, of course) in reverse order. These figures are visible on preview monitors in the projection room and in the control room. The projectionist first threads his blank leader in the machine. Then he rolls the film automatically in the projector to the proper frame. As he does so he sees on the screen: “START . . . 12 . . . 11 . . . 10 . . . 9 . . . 8 . . .” He stops his machine at the sight of the figure 8. On 5 seconds notice the machine is now ready to deliver picture in motion at operating speed.

Much if not most of the motion picture film now used in TV is headed by a special television academy leader in which the numbers are printed in the center of a design resembling a test pattern. This is superior to the older cinema type leader in that

it gives the engineer controlling video an advance test of alignment and brilliance of the projection camera chain, and he is thereby enabled to blend the film better with the preceding film or live studio picture.

**Editing for TV Projection.** In cases where several separate sequences of film are used in a program, a 5-second strip of "run-down" or opaque film is spliced at the end of each sequence, and that in turn is spliced to an academy leader in advance of the following sequence.

It is good practice to use opaque leader at the end of every film or sequence—for protection. If the slightest slip is made in the transition from film to live action this will give the impression of a fade-out. It also gives the projectionist added notice to stop his machine in time for setup of the next roll.

When cutting sequences in SOF film—for example, breaking an hour feature into three segments to permit insertion of live commercials—it is wise to select a point which will permit 2 or 3 seconds of silence on the fade-out. At least do not make a practice of cutting on the last syllable of a crucial sentence, as this will provide no picture for fade-out—unless the director calls for an earlier fade, which would also require fade-out of the audio on the important line.

Likewise, the start of each sequence should have 2 or 3 seconds of picture with no sound, or at least no dialogue, music, or sound, which would have to be jumped into rather than smoothly faded in.

**Timing Film.** In the matter of timing film for absolute accuracy when a split-second schedule must be adhered to, there are only two absolutely dependable methods: run the film on a TV projector, or run it through an accurate footage counter and make careful computations. Quite often portable projectors will vary 10 or 20 seconds per half-hour of film—just enough to have the sponsor's signature or label chopped off at the end of the program.

Most technical manuals used by cinema editors and cutters contain extensive conversion tables relating film footage to running time. For TV production purposes, however, the following table should be adequate, showing sufficient footage and number of frames per second at standard speed.

TABLE 2. FILM FOOTAGE

Time	16mm *	35mm **	Frames
1 sec. ....	$\frac{3}{5}$ ft.	$1\frac{1}{2}$ ft.	24
2 " ....	$1\frac{1}{5}$ "	3 "	48
3 " ....	$1\frac{4}{5}$ "	$4\frac{1}{2}$ "	72
4 " ....	$2\frac{2}{5}$ "	6 "	96
5 " ....	3 "	$7\frac{1}{2}$ "	120
		etc.	
10 " ....	6 "	15 "	
30 " ....	18 "	45 "	
1 min. ....	36 "	90 "	
2 " ....	72 "	180 "	
		etc.	

\*  $\frac{3}{5}$  ft. every second; 3 ft. every five seconds; and 36 ft. per minute.

\*\*  $1\frac{1}{2}$  ft. every second;  $7\frac{1}{2}$  ft. every five seconds; and 90 ft. per minute.

### Production with Film

Film used for inserts in a live program—indeed *all* film—should be selected and delivered well in advance of the telecast.

**Necessary Releases.** If it is a feature or other dramatic film, the film lessor should deliver with it an executed release, warranting ownership or right to lease, and indemnifying the station against suits of plagiarism, piracy, or unauthorized use.

Whenever possible, any newsreel clips showing close-ups or interviews should be accompanied by similar indemnification or signed release forms from persons involved, granting their permission for appearance on television. This is not always possible, of course, and the courts have recently ruled in favor of telecasters, stating in effect that persons willingly seen at public events or other places where their faces might be telecast or photographed are not ordinarily in a position to claim damages for violation of their right of privacy.

If the film contains music, the distributor's indemnity should cover that also. If not, or if there is any question as to financial responsibility in case of judgment for plagiarism of music or performance without rights granted, then the station should ask for a music lead sheet listing all music, composers, and performers (or music directors) involved. In such case the music must be approved through regular music clearance channels.

Incidentally, a station's innocence regarding performance rights of films is no defense. At least one major station has already

lost out in a lawsuit of this kind, and other cases are in litigation—mostly resulting from dealing with irresponsible producers or distributors who did not possess TV performance rights as claimed.

**Procedure for Use of Film Inserts.** After film clips have been obtained, they should be reviewed for technical quality. If possible this should be done with the aid of a film technician who can pass on technical aspects of the film—density, sound quality, etc., if there is any question on such matters. Simultaneously, the film can be timed and edited into segments.

Well in advance of a telecast the director should notify the station or network's production manager that film is intended to be used on a particular program, and the latter will arrange to have the film in order and projected on schedule. Full specifications should be given: approximate time film will be called for in the program, length of film, whether it is color or black-and-white, positive or negative, SOF or NS, 35mm or 16mm. The film will be set up in the projection machines according to routine instructions, ready for its use in relation to other films scheduled for telecast on the same day.

When previewing film, especially clips to be used as inserts in a live dramatic program, make careful note of the exact time of each sequence. An error of one or two seconds can make the difference between smooth transition as opposed to sloppy change-overs from live studio action to film and vice versa. It is well to make a notation also as to action, sound, or dialogue at the end of each sequence. Filmed sequences used in a dramatic show are more than likely to be silent film, with appropriate sound effects or music supplied from the live studio.

Successful blending of film into a program calls for precise timing and extreme alertness on the part of all persons involved.

The film is rolled in the projection machine at the director's order transmitted by telephone from the control booth to the film studio. The director calls out: "Roll film." Then on one of his preview screens he notes the numbers of the academy leader running through the projector—. . . 8 . . . 7 . . . 6 . . . 5 . . . 4 . . . 3 . . . 2 . . . (BLANK) . . .—then a fraction of a second of picture, and he calls for a cut or dissolve to the film.

Coming out of picture and back to live action in the studio, the director should warn his stage manager, who in turn will alert

the cast. In anticipation of the changeover, the director keeps his eye on both his stopwatch and the on-the-air monitor.

In feature films or segments of long duration it is now common practice to punch warning dots in the tail end of the film. These white perforations appear as circles or triangles which flash for an instant in the upper right hand corner of the screen, the first dot appearing eight seconds before the termination of the segment and the second dot appearing one second before the end of the picture. Black dots are inserted in newsreel films to warn of forthcoming SOF.

The dialogue or action immediately preceding a transition to film is exceedingly important to all persons involved in delivering picture at the exact second it is needed. In the script or at rehearsal the director designates specific dialogue or action as the "roll cue," a sentence or bit of visual business lasting exactly five seconds. This cue should be adhered to strictly and enacted on the air at the same tempo as in rehearsal. Otherwise the picture will come up too soon or will be delayed. In the case of the former, it may use up vital picture content which can't be put out on the air while essential dialogue is still being recited. In the latter instance, it results in awkward expressions by members of the cast, known as "egg on the face"—the all too familiar frozen smile, the glazed eye, and the countenance which exposes the thought "Gosh, will that film ever come up!"

Especially in ad-lib type programs or those using guests unfamiliar with TV procedures, it is imperative to assign the film roll cue to an experienced member of the cast, preferably an announcer or MC. It is also helpful to have on-stage a monitor within easy view of the cast—in a position where they can see it without turning their heads or obviously glancing to one side. Furthermore, the monitor should be positioned so that nearby strong lights will not impair its visibility to the cast.

Such floor monitors enable members of the cast to know instantly when the dissolve to film has been completed. It also gives visual warning or notice of any contingency—such as one of those ghastly mishaps which occur every once in a while due to error or mechanical breakdown. At the very instant a roll is started, the projector lamp might burn out. The film might have been misfiled by the projectionist, or threaded in upside down or backwards, or accidentally placed in the wrong machine. Or

the film might snap or tear. Fortunately, such nightmarish incidents don't happen often, but they are all possibilities in even the most efficient operation. If the director recognizes that the wrong film is being projected, he of course should not "take it"—or if the error is not apparent until he has dissolved to film, he should get out of it fast. In such cases or in the event of similar contingencies, he can hope that his principals on stage can be alerted quickly, realize the situation and continue with action or ad-lib dialogue until some kind of cue or direction can be relayed to them as to how the program will proceed under the emergency.

To paraphrase a line from Oscar Wilde, that's when "each second is like an hour, an hour whose seconds are long!"

### Film Slides

A slide is a still picture of any title or subject for projection into the cameras in the film studio. Test patterns on the air, visual station and network identifications in between programs, and still photographs within programs are projected from slides.

**Standard Type.** When we speak of slides in this industry, we invariably refer to 35mm film transparencies mounted in cardboard or glass frames 2 inches square. The "double frame" size picture within this mounting has standard dimensions of  $1\frac{1}{8}$  inches by  $27/32$  inches. All picture matter and type must be contained in this masked area, preferably with comfortable margins on all sides of the frame.

Ordinarily slides are positive transparencies (as opposed to film negatives) of pictures or lettered title cards. Remembering this, a step in processing can be saved in cases of all-print slides by doing title lettering in reverse tone. In other words, if light lettering is desired on a dark surface, do the lettering in dark paint on a light surfaced card. When this is photographed, the negative automatically becomes positive for projection.

By special arrangement with the technicians in the film studio, it is possible to use negative slides for positive transmission. This is done by changing polarity of the pickup camera—as with negative motion-picture film. Due to operating risks involved this step is frowned upon except for emergency cases. The required reversal of polarity could cause a slip-up in the projection of the preceding or following slide.

Color transparencies of standard size may also be used, but they often lack the density of good black-and-white film slides.

**Projecting Standard Slides.** A well-equipped studio will have available two cameras for slide projection. They are not exclusively for this purpose, however, being available more essentially for pickup of motion-picture film.

There are various methods for “feeding” slides into position in the projection machine, and new apparatus is constantly being developed to speed up and facilitate the operation, especially for the benefit of smaller stations with limited operational staffs.

A very efficient machine of this type called the Selectro-Slide takes twenty-four slides on a revolving drum. The slides can be set in the machine in advance of a series of programs, in proper sequence, and electrically rotated in position as needed.

The most common slide projection machine resembles that used in homes for projection of color transparencies. It has a vertical frame with a slot at each end for slides. The frame is shuttled manually back and forth to put the new picture in position. While the second slide is on the air the first slide is removed by hand and the third slide is inserted, ready to be pushed into position as called for.

With this apparatus it is possible to present a sequence of slides on only one camera, but of course the slide replacements cause a zip effect on the screen.

If two cameras are available, it is better practice to cut or dissolve from one camera to another, substituting new slides while the alternate camera is off the air.

There is no limit to the number of slides which can be used in an operation of this kind, but in between dissolves adequate time should be allowed for the removal of one slide, insertion of the next, and zipping into position. A skilled operator can usually replace slides in four seconds, but for obvious reasons it is safer to allow five to eight seconds.

When used with a series of slides, all audio—such as narration, commentary or advertising voice—should naturally be timed according to a prearranged schedule for changes.

If a slide is to be repeated in a continuous sequence, it stands to reason that a duplicate slide should be provided. Otherwise, in effect, a sponsor might get the picture of a shaggy ostrich on

the air while the announcer is urging viewers to buy his tender spring chicken.

**Slides vs. Studio Titles.** There are many reasons why a director should prefer film slides over use of title cards in the studio whenever feasible. Foremost is the fact that the Iconoscope tube used in film cameras is not apt to burn in the image of the title copy. In cases where the same titles, pictures, or other graphic material are used week after week as signature devices it is often wise to spend a few dollars to have them made into slides. Not only will "burn" be avoided, but the titles can be more easily stored and preserved.

Another very important reason to use slides in preference to title cards in the studio: on programs using few cameras, or on which they are constantly in action, they can be spared to shoot graphic material at times only with great inconvenience. The use of slides whenever possible is tantamount to borrowing an extra camera occasionally for a production. It relieves the already hectic studio operation immensely and usually saves time.

As with motion-picture film, it is possible to dissolve or cut from the production studio to slides in the film studio, and back again.

Also, slides may be supered over "live" pictures originating in the production studio.

When proper arrangements are made, the film studio's slide projection equipment can be an invaluable adjunct to the facilities in the studio of program origin.

**Other Types of Slides.** In addition to the standard transparent 35mm slides considered so far, other types are sometimes used when equipment is available to project them.

The second most common type, usually brought in by educators, is the familiar old lantern slide, once popularly used for home entertainment, but now most often employed in illustrated lectures. These slides have a standard size mounting of  $4\frac{1}{2}$  by  $3\frac{1}{2}$  inches. The framed picture's scanned area is  $3\frac{1}{2}$  inches by  $2\frac{3}{8}$  inches.

The picture on lantern slides is either a matte finished photograph, as popularly used by travel lecturers; or it can be a black-and-white or color transparency, commonly used for medical or other scientific illustrations.

Normally two different types of projection must be used, since one type is opaque and the other transparent. The opaque type, or photograph, is projected against the pickup tube of the camera by a Balopticon, or "Balop," delivering its picture by reflected light. The transparency delivers its picture directly, by penetration of light through the film or glass plate on which the picture is printed.

A rather new device known as a "Telop" can project both types of lantern slides, transparencies and opaques.

Lantern slides are not made especially for television, since relatively few studios are equipped to use them. However, much graphic material collected over recent decades is available only on lantern slides, and the situation will undoubtedly continue to a certain degree, regardless of the simplicity and fine picture quality of the 35mm slide system.

Quite often a guest, while discussing a program in advance with the director, will inquire if he may use slides—of the "regular" or "standard" type. It is important to ascertain if they are of the standard type used in TV. Otherwise he may show up for the program with lantern slides and a home projector, or more likely with no projector at all.

Or the director may discover that some valuable illustrative material planned for a program is available only on lantern slides, and the studio does not have the necessary projection equipment for them. What to do then? If it's worth the inconvenience involved, the problem can be solved by renting or borrowing a home or lecture hall type of lantern slide projector and constructing a temporary isolated screen. Select an area in the studio near the program set which is not drenched with light, tack a 40 in. x 30 in. piece of white illustration board on the wall for a screen, set the projector on a table about 6 to 8 feet back, and "throw" the picture on the cardboard. The camera is placed next to the projector and captures the picture on the cardboard screen.

With slides of good density, and providing the projector has a strong lamp, this is all that is necessary. Absolute darkness in the projection area is not imperative, but if leakage of light from other areas in the studio impairs the quality of the picture, set up a projection tunnel. This can be done simply by placing a 6 or 8 foot wall flat at right angles on each side of the screen. Better still, use a small "three-fold" backing to form the same

open-end box. If necessary, for further isolation, throw a blanket or canvas over the top.

Before proceeding too far with the temporary tunnel contrivance, test the camera's pickup of the projected picture, merely in a dimly lit area. In many cases you'll be surprised at the clarity of picture which can be captured by this method alone, without the bother of isolation walls or top covering.

### The Place of Good Music in TV

SO FAR, pure music has not prospered greatly in television, and it probably never will—except for occasional operas or symphonic programs well supported by renowned vocal or instrumental soloists.

Orchestral music alone, one must admit after seeing some ambitious attempts to present it in TV, does not make good television. The medium inherently places more emphasis on what is seen rather than heard—from both technical as well as production standpoints. Furthermore, the enjoyment of music is not enhanced by constantly viewing the mechanics of what makes it—seeing first a string section laboring with precision but effort, a percussionist waiting for the dramatic moment to crash his cymbals, then a tuba player puffing into his enormous horn seemingly with an expression of regret that he didn't study the comfortable clarinet instead.

This is neither good television nor intelligent presentation of music. Since TV is becoming a constantly more important factor in our national life, and since Americans have always enjoyed music of one kind or another, it seems obvious that methods must be devised for TV to utilize and preserve our wholesome interest in music and at the same time benefit program standards and educational objectives.

A few outstanding programs have made notable strides in this direction, some of the best examples being Fred Waring's Pennsylvanians, "The Dinah Shore Show" and "Your Hit Parade"—all of which enhance the enjoyment of music by interpreting, dramatizing, or augmenting music visually.

Those interested in preserving symphony music in this country would do well to study and emulate the techniques applied in these programs. Perhaps symphony concerts might eventually become outstanding, regular features in TV when such imaginative visual elements are applied.

Steps toward increasing the popularity of classical music in TV would be utilization of the beauty of the ballet, with full creative attention given to proper presentation of it in this medium; and augmentation of other music with interpretative action in pantomime, realistically or in silhouette.

Descriptive music of the great composers could be presented with appropriate atmospheric film sequences—to give visual as well as melodic portrayal, for example to colorful selections such as “Fingal’s Cave Overture,” “Valse Triste,” “The Swan,” “The Sleeping Beauty,” “The Flight of the Bumble Bee,” or Grofé’s “Grand Canyon Suite.”

Mood music could be visually enhanced with intriguing animated figurations from nature—unusual cloud formations, whirling pools in a mountain stream, rolling billows of smoke, falling blossoms or leaves scurrying through an orchard as the wind blows, a high waterfall such as “Bridal Veil” in Yosemite, constantly varying its contour like a veil in a light breeze.

Similar figurations which would captivate the viewer’s interest could also be devised by animated film cartoon methods, such as Walt Disney’s artists used so effectively in *Fantasia*. It would be an expensive process, but relatively cheap in terms of what television has come to pay for talent and scenery in some productions. And of course the initial expenditure could be further justified in the fact that frequent repeats are possible. Consider how dramatically a composition like “Rhapsody in Blue” could be portrayed with this method, alternating scenes from musicians to dancers to figurations!

Much of this, obviously, is thinking in terms of the future—after all the simpler, more obvious, and less creative techniques have been used to exhaustion.

### Who Shall “Pipe” the Tunes?

For economic and practical reasons, the music in TV’s infancy has been largely “canned,” or recorded, especially when orchestral

music has been called for. Union rates for individual musicians, even with adequate rehearsal time allowed and paid for, have never been excessive, but the accumulated costs of a full-scale orchestra have been more than most local program budgets permitted. And there have been other factors which encouraged the use of recordings: the telecasters and the music union were slow in arriving at satisfactory understandings regarding rates, rehearsal calls, and especially rights to retelecast programs by Kinescope recording methods. Inadequate space for orchestra setup in small studios, unavailability of time for music rehearsal, and the general feeling that good tonal quality could not be obtained under the hectic studio conditions prevailing are other factors which promoted the use of recordings over live orchestras.

Many fine programs, including several nationally released dramatic shows, have managed exceptionally well with recorded music from their very inception. Good recorded music simplifies production problems, usually gives fuller and better tonal quality, and reduces program costs. But it certainly doesn't have the flexibility of "live" music. It requires an enormous amount of time to compile selections for appropriate use, and in programs with many transitions or musical cues it calls for an extra technician, an expert, to operate the turntable.

In the author's opinion, a dramatic program with many sharply defined cues and with mood music that must be closely adapted to dramatic action—with musical punctuation, staccato effects, crescendos, and "stingers" pointing up dramatic crises or situations should be attempted only with live music, even if it is done with only an organ.

On the other hand, programs using only a signature theme to open and close, and possibly two or three music transitions to segregate elements in the program can be performed as effectively and certainly sound better with carefully selected recordings.

### Clearance and Copyrights

As in radio, all music presented in television is subject to payment of royalty for "performance rights" if the compositions are protected by extant copyrights.

In the United States every copyrighted song or composition is granted primary protection for a period of twenty-eight years.

This is renewable for an additional period of the same term, giving the author and/or composer the right to collect royalty for public performance of the composition for a period of fifty-six years.

Any song or composition protected by American copyright laws automatically goes into "public domain" after the fifty-six-year term of protection. Thereafter it can be performed publicly, in any medium, without payment of royalty.

With few exceptions, all music with copyright in force in the United States is represented in one of three major organizations representing songwriters, composers, and copyright-holders: The American Society of Composers and Publishers (the largest of all, known as ASCAP); Broadcast Music, Inc. (known as BMI); and The Society of European Stage Authors and Composers (known as SESAC).

The catalogs of these three syndicates contain virtually all modern published music any director or producer would require. Some authors or composers, or their estates, retain private control of their copyrighted compositions, and performance rights in each instance must be obtained directly from their representatives. This applies particularly to modern Spanish and French composers, protected by international copyright agreements. Composers involved include such notables as Puccini, Debussy, De Falla, and Ravel.

All networks and most major stations have standing contractual arrangements with ASCAP, BMI, and SESAC whereby the music of their members can be readily performed by merely reporting usage and adhering to certain stipulated restrictions. In such cases the stations or networks pay an annual fee previously agreed upon, and the division of this sum is prorated among the copyright holders according to the number of times their compositions are performed.

Stations not having such contractual arrangements with the composers' organizations must file a periodic report and pay for performance rights on a per-use basis.

In the matter of copyright violation, if a lyric is merely spoken it is the same as if it were sung. By the same token, the playing or singing of a sufficient portion of any song or composition which will definitely identify it constitutes infringement of copyright if performance rights have not been obtained.

The three major combinations of composers mentioned have offices in New York, Chicago, and Hollywood. They have autonomy to grant permission for the performance of compositions or complete works of any of their clients, or in certain cases they are authorized to deal directly with the composer or copyright holder to obtain such necessary permission.

In cases where it is desired to sing or play unpublished music, the composer or songwriter will usually be required to sign a release for protection of the station, authorizing telecast of the music, warranting originality of the music and lyrics, and agreeing to indemnify the telecaster for any judgments of plagiarism. Usually such indemnification is not equivalent to financial security, due to the lack of high financial responsibility of the composer, but the requirement of a signature on the release form serves to deter any intentional plagiarism. Usually before the station or network allows the music to be played on the air a music expert reviews the composition to ascertain if there is any obvious similarity to known published works.

### Performance

Among the many complications in this industry which confuse and harrass a director are those pertaining to the use of some copyrighted music. In the final analysis, most of these limitations or regulations are reasonable when one considers how music can be innocently misused or how a valuable property can be damaged by thoughtless treatment of a comedian or other performer who "leeches" on the creative output of a songwriter for the sake of a laugh.

**Standard Regulations and Taboos.** Here are the most important restrictions and regulations on the performance of music:

Our national anthem, "The Star Spangled Banner," must always be presented in entirety, without variation or undue embellishments. NBC has a strict regulation which permits it to be played only at the very start or close of a program.

All sacred music must be performed respectfully, and of course without jazz treatment.

Songs with lyrics of questionable taste, designed for night-club patronage, are not permitted. It must be remembered that the program goes into the home, where children are present and

where most adults are not as jaded or tolerantly amused as performers might expect to find in the audience of a Broadway musical or burlesque show. In TV even more than in radio all material must be diligently screened for lewdness or vulgarity, because in the visual medium a mere gesture or expression can point up suggestive phrases.

Songs about narcotics are taboo, and any lyrics referring to the use of narcotics must be revised or deleted.

Like every other public medium of expression in recent years, television has had to take extra precautions to avoid offense to persons of various races, creeds or political beliefs.

**Status of Permissions.** Ordinarily when permission for telecast is granted, it is for nondramatic presentation, regardless of whether the song comes from a musical show or not. If dramatic treatment is intended, this fact must be stated in the application for performance rights, and permission may be granted or withheld by copyright owners.

In the cases of some songs and musical compositions, permission is granted for performance only "as published" with no variations or special arrangements.

In radio it is permissible to present in a single program two songs vocally from any one musical show. Not so in television. In this medium we cannot present in any program more than one song from the same musical show. There is no limit, however, on the number of such tunes which may be presented instrumentally per program.

**The Meaning of Grand Rights.** Grand rights apply to the permission required to stage a dramatic or music segment from any musical show in the original manner, costume or setting; e.g., a single song from *Show Boat*. On all shows with copyright in force grand rights may be granted or refused by copyright owners. When such permission is granted, a royalty is normally called for—even for presentation of only a small segment of a musical comedy, opera, or operetta. Most operas are, of course, now in public domain, but a few still have copyright in force. Most of the best modern operettas we know will have copyright in force for some years to come.

**Dramatizing Songs.** Without special permission it is illegal to present a copyrighted song (show tune or otherwise) by means

of introductory dialogue blending into the lyrics of the song, or to dramatize a song. Permission for such performance can be easily obtained, as a rule—without payment of extra royalty, especially for non-show tunes.

**Variation of Lyrics.** Variety and comedy shows frequently call for variations of the lyrics of popular songs—to meet certain situations or to capitalize on the popularity of song phrases by making “gags” of them. As a matter of fact, a popular song whose title or phrases are being overdone on the air is always a vulnerable target for the harpoons of the gagmen, and the audience always seem to enjoy the wisecracks.

But special variations are allowed only with permission. Sometimes the composers’ representatives will be lenient, at other times they will be most uncooperative. Usually it depends upon *who* the performer is and *what* he proposes to say. Some composers and authors permit no fiddling by the “ha-ha boys,” as they call them, for the simple and sensible reason that they may have something to lose and nothing to gain. On the other hand, a performer with a good following who frequently presents their music in a manner which will increase popularity, or who has the stature to improve a song even by gagging it, will receive the cherished O.K.

**Visual Lyrics.** In many programs producers have been tempted to show on the screen the lyrics of songs—in the manner of motion picture theaters in by-gone years which invited audiences to “follow the bouncing ball” as it designated words of lyrics on the screen. So far TV has shied away from this in fear of copyright violation, in the belief that televising lyrics is tantamount to publishing (and thereby pirating) copyrighted song lyrics.

### Selection of Music

Fortunate is the director with an orchestra conductor, or even an organist, who has a knowledge of music, imagination, originality, and interest in his program. In such a case the director may show him a script, challenge him to deliver the best mood and transition music, and rest assured that it will be as good or better than he would have selected, even if he knows the literature of music thoroughly.

In lieu of that, it is well for the director to work with the musical director. Explain the mood desired, and invite him to offer music selections for approval. Perhaps you will be able to offer suggestions for modification—either of strains from the classics or original compositions. This can be done easily with an arranger-pianist.

If you must use recorded music, by all means familiarize yourself in spare time with the music of composers whose works readily express dramatic moods. Avoid compositions which have become trite by excessive use in radio, and seek out other works or other composers whose themes are just as effective but less familiar. If you have the time, knowledge of music and judgment, you may select mood music and transitions from the recorded symphonic works of modern composers or old masters.

More than likely you will eventually call upon original music written and recorded especially for radio usage—introductions, themes, transitions, and special musical effects. Some of the “long-haired” element of the audience would readily classify these minute compositions as “corny.” Actually, many of them are. But if the truth were known, most of them have been composed and recorded by some of our best modern composers and directors under fictitious names. Their efforts have served well in a commercial channel which had a definite need for them, and it must be recognized that many musical sophisticates have lingered by their radio or TV sets, completely captivated by dramas which were punctuated or enhanced by “custom-made” music.

What are the sources of thematic or mood music? Well, there are many libraries of recordings which provide everything from various types of electrifying fanfares to dirges. Leading mood music libraries in this field are produced by NBC Thesaurus, Associated Program Service, Chappel & Company, Tempo Record Co., Boosey & Hawkes, and Capitol Records.

Considerable mood and thematic music is available on film sound tracks, produced by such concerns as Filmusic Company of New York, Sam Fox Publishing Company, and Picture Scores TV Corporation.

In the catalogues of almost all of these concerns one will find appropriate theme music suitable for signatures. Beyond that, most of them will have mood music particularly suitable for backgrounds or transitions, identified by description of moods,

varying in transition from one mood to another, and also varied as to time and treatment. There are regal fanfares and simple fanfares, dirges for a hobo or a king.

Most of them, fortunately, are immediately adaptable to presentation on the air: they pick up a theme sharply, develop it rapidly, and either come to a climax or blend into a new motif. Anyone using recorded music in production should investigate specially prepared record libraries.

In presenting dramas or scenes with historical American backgrounds, don't overlook America's rich heritage of folk music. It is not all Stephen Foster, nor is it all the wonderful music of the American Negro, although these two sources seem to exist in popular imagination as the sole fountain of our folk music. As our nation was built by Swedes and Germans, Irish and Italians, Poles and Chinese—digging in mines, planting in fields, or grading the roadbeds of railroads—our heritage of folk music was born, and it grew better than we knew. Investigate and you will find that there are good folk songs of American grain fields and cattle pasturclands, of river workers and hog farmers, of railroads and mines. We have popular songs to be proud of, and the best of them establish and recall an era in our national life better than words can describe it.

Program music should be selected for mass appeal, or at least for appeal to a substantial segment of the mass audience. Music with strong melodic strains, action, and variety of structure is best for presentation in this medium. Even the most appealing selections should not be too long. Three minutes is about the reasonable limit for a vocal solo. When a production number runs longer than five minutes it is overstaying its welcome.

Orchestral or other accompaniment of vocal numbers should be arranged to provide a minimum of "wait" in introduction and between verses. This is particularly important in cases where relief shots are not available. The viewer does not enjoy the embarrassing discomfort of a soloist who is introduced, appears immediately on camera, and then has to maintain some kind of agreeable expression while waiting for the termination of a long musical introduction.

Needless to say, bridge or transition music in dramatic programs should also be selected or composed with video in mind. What is being shown? What is the visual action portrayed? And

does the music harmonize with the picture? Give time and thought to programming for showmanship and listening-viewing pleasure. Strive for interesting contrast as a master chef does in planning a dinner—varying flavor, color, and texture—from bland to sharp, from sweet to sour, with just an occasional suggestion of bitterness.

Currently popular music should be selected with strategy, which is more important than one is apt to realize at first. In 1937 the author had the pleasure of working in radio with Johnnie Green, composer of “Body and Soul,” “Coquette,” and many other popular songs as well as several sophisticated suites, and now musical director at M-G-M. He had an uncanny aptitude for playing a popular tune at the exact time its performance would give the most pleasure to the followers of our nationally broadcast dance program. His theory, which surveys and audience ratings proved correct, was that there is a time when a popular tune is “ripe”—not too soon, when it may hit the audience as being unfamiliar; and not too late, when it has been heard too often. Occasionally he would introduce a new song destined to be a “hit.” In that case he would compensate for its unfamiliarity by having us point out that it was a “first performance.” If he didn’t have the privilege of introducing the number to the public, he would wait, watch the popularity reports (based on sales of records and sheet music), and then play the number at the “ripe” time—after listeners had heard the tune enough to be able to hum it or sing it, but before they had become tired of it through excessive repetition.

### **Production with Music**

In the matter of background and transition music for dramatic shows, it is important for the producer or director to get the finished script to the music director in time to permit him to devote his best creative effort to the production.

Let him study the script first, then meet with him and review his ideas and suggestions. A talented music director, you may discover with surprise, will often come up with ideas for interesting dramatic or production effects. These may call for minor revisions in dialogue to dovetail with music, or the addition of stage business or action or sound effects. Whatever the ideas are, if you are fortunate enough to have a capable music

director anxious to contribute creatively to the program, hear him out and give his ideas honest consideration. Make this a practice from the start of your relationship. Otherwise he will be discouraged and thereafter you may not have the benefit of any creative contributions in this vein.

**Audio Pickup and Prerecording.** Unless soloists must appear in front of an orchestra, for reasons of limited space or studio setup, it is well to have their audio picked up by a microphone separated from the orchestra. This gives the audio engineer an opportunity to control level or balance between the two. Otherwise, all modulation must be done acoustically rather than electrically, and of course there is always the possibility that either soloist or accompaniment will inadvertently raise or lower volume level beyond expected or rehearsed sound strata.

Lines of chorines or dancers required to sing as they dance should have their songs prerecorded. The boom "mike" cannot always get close enough to them with safety and proper sound pickup, and therefore better sound quality and definition of lyrics can be obtained if they record their song in advance of the telecast. This prerecording is played on the air, with sound projected on the stage through loudspeakers. The performers go through the motion of singing their lyrics—but the microphones are dead. As a result, the TV audience has the benefit of full tone quality and clarity, without the boomy or muddy quality that would otherwise be present.

An interpolation of the technique described above can be applied when having as a guest on a program a phonograph recording artist. The record can be played on the air, giving the listener the benefit of the full orchestra and the exact recorded performance. But the vocalist in the studio is singing to a dead mike. This is known as singing by "lip sink" (synch)—or synchronizing action of mouth and lips, as well as gestures, with recorded music.

This device, incidentally, has great potentialities for talented mimics, or for use in comic situations—for example, with a pretty girl doing a "lip sink" performance of a recorded basso singing "Asleep in the Deep."

**Scheduling Rehearsals.** Considering the expense which orchestra rehearsal entails, to say nothing of the very high cost

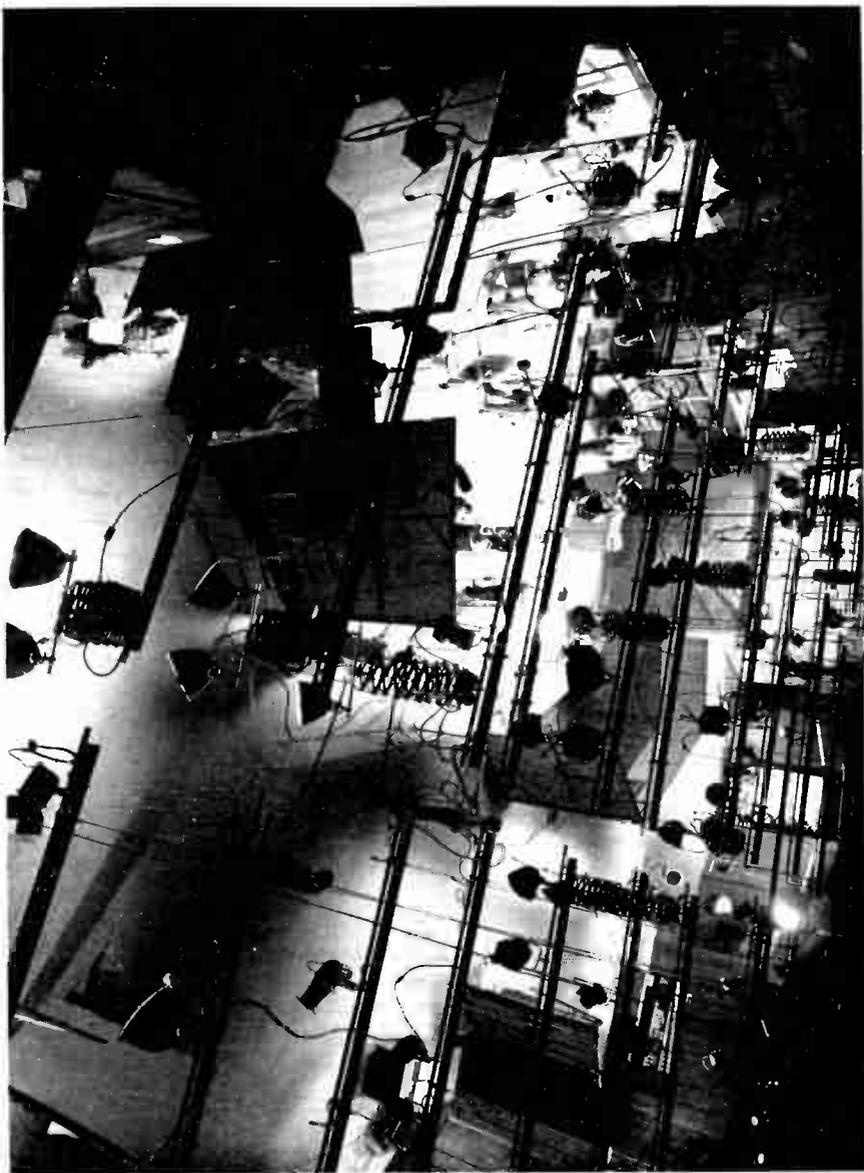


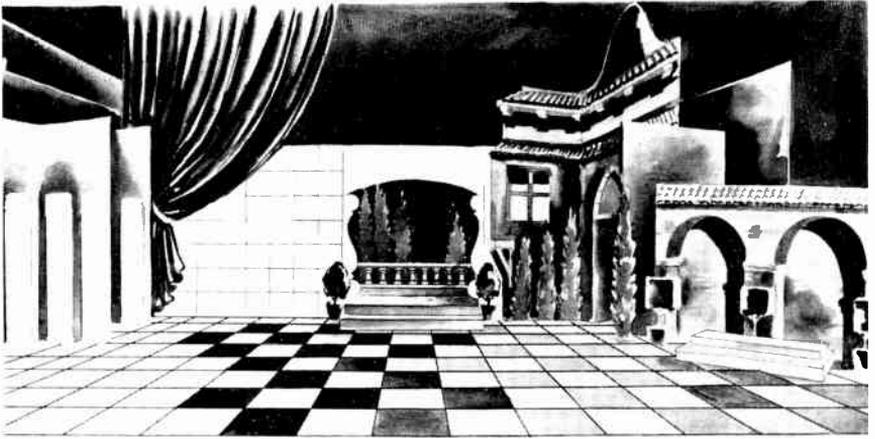
Figure 7. Du Mont Telecenter, New York. Overhead view of a vast stage in the Du Mont Telecenter in New York. Note flats and drapes, also the variety of overhead lights. (Du Mont photograph.)



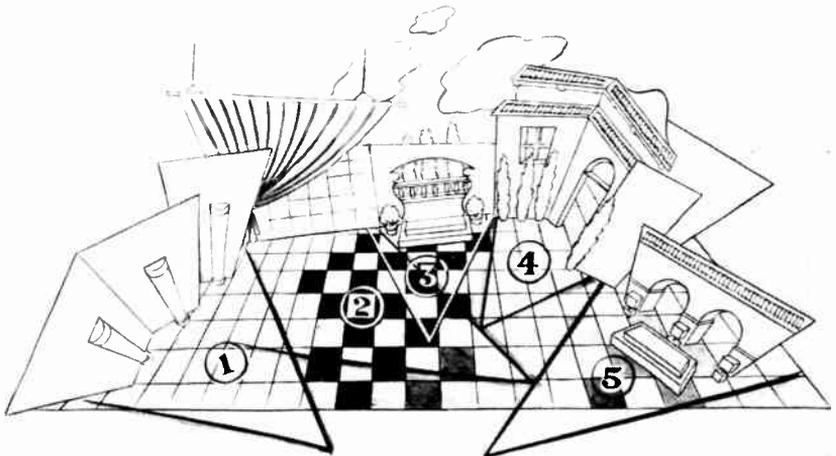
FIGURE 8. ARCHITECTURAL BACKINGS. Enormous space and depth, rare in television, are possible in ABC's vast production plant in Hollywood, a former motion-picture studio. The scene is from the elaborate production of "A Tale of Two Cities" and uses actual depth in contrast to the usual painted perspective in backdrops. Cameras actually dollied deep into the street scene over the painted "cobblestones." (ABC photograph.)



FIGURE 9. PAINTED BACKDROP. Masked with foreground architectural pieces, trees, and other props, painted backdrops create an illusion of depth and reality. The only rivals for well-executed backdrops of this type are suspended photo murals or rear projection scenes. (KNBII photograph.)



A. Well-Executed Setting for a Television Ballet of "Romeo and Juliet." Marble blocks painted on the floor gave not only perspective but contrasting mood atmosphere that was accented by varied lighting. The set was designed by Harold Helvenston, art director for Clampett Productions.



B. Camera Areas: (1) Opening Scene—Dancing. (2) All fencing scenes. (3) Balcony scene. (4) Intrigue and Friar Lawrence scene. (5) Tomb scene for death of Romeo and Juliet.

FIGURE 10. SLI DESIGN. (By permission of Harold Helvenston.)

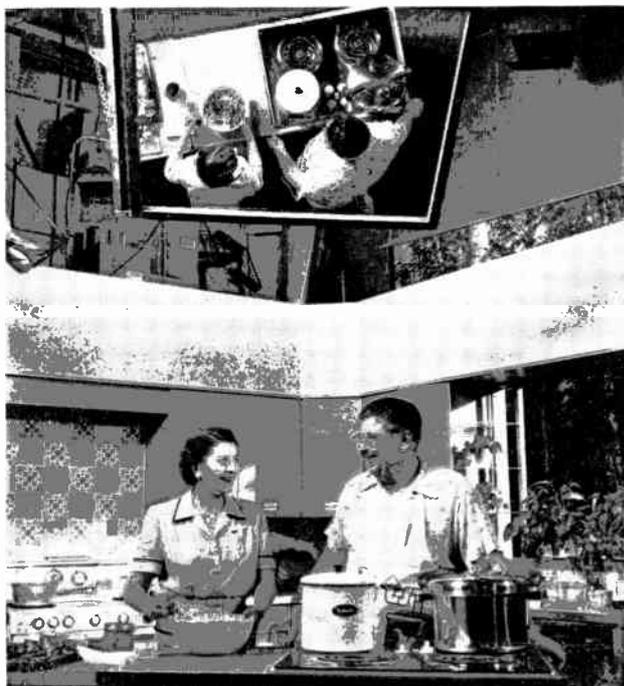


FIGURE 11. EFFECTS WITH MIRRORS. Mike Roy, popular West Coast TV chef, with a guest in his studio kitchen. The camera focuses on mirror to obtain tight and effective close-ups of various dishes and cooking methods. (KNBII)



FIGURE 12. AN EXCEPTION TO MAKE-UP. Former President Herbert Hoover as he appeared on a program produced by the author in 1948. The subject of discussion was football in the 1890's. Mr. Hoover insisted that there be no discussion of politics, and that he not be required to undergo make-up. (NBC)



FIGURE 13. ART LINKLETTER HOUSE PARTY. An ideal studio arrangement for audience participation show. Setup enables efficient entrance of MIC to audience area. Preset lights are turned on the audience and cameras merely wheel around to pick up the action. (CBS photograph.)

of camera rehearsal time, it is necessary to apply much thought and a very sharp pencil to the scheduling of music rehearsals.

The orchestra should not be called into camera rehearsal until it is needed. Usually this would be for the last run-through before dress rehearsal. Prior to that the orchestra should be assigned a separate studio or rehearsal hall for lining up music routines, doing first reading and then brush-up and polish, and making whatever minor modifications of score might be required.

It is a frightful waste of time and money to have to rehearse orchestra and singers on precious "camera time." Schedules should be arranged so that soloists and dancers can rehearse with orchestra in advance of camera rehearsal. With a good orchestra and musical arrangements that are not too difficult, songs or dance numbers can be adequately rehearsed with a read-through, two rough performances, and a final "take," so to speak. The singer or dancers should then be ready to go before cameras and perform as they would on the air. This advance and separate rehearsal, depending on the nature of the number attempted and the artists' skill and familiarity with material, may take anywhere from fifteen minutes to an hour per number. If it requires more than that, the producer had better consider talent replacements.

**Musical Terminology.** The director of any program employing music, even dramatic shows, should have a basic knowledge of instrumentation and musical terminology. To expedite his directions and make them clear to the music director and others concerned, he should be able to refer to musical instruments or orchestra choirs by their proper names; to identify readily passages in a musical score by terms known to musicians (such as coda, introduction, bridge, modulation, vamp, and reprise); to describe musical effects present or desired (such as pizzicato, glissando, forte, pianissimo, "smear," staccato, "scoop," play-on, "curtain," and "chaser"); and to call for moods desired in the terms by which they are known in musical circles (such as pastorale, religioso, ominous, bravado, regal, processional, impending doom, pompous, dirge, etc.).

## PROGRAM SETTINGS AND DRESSING

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**A**LL program settings and furnishings are provided and handled by the art director and his staff of facilities men. In a large station this staff would include scenic designers and painters, as well as carpenters and “prop” men to design, construct, paint, move, set up, “strike” (knock down or remove), and store scenery, furniture, and dressings. Obviously, in less elaborate operations, some of the “prop” men perform nearly all of the more strenuous duties as well as those calling for special talents or artistic training.

### Studio Sets

**Standardization.** It is well to standardize all basic units for interchangeability, with backings (flats) of uniform height, and with plug holes for installation of windows, doors, and fireplaces of similar dimensions. With skillful rearrangement of set components, plus adroit rearrangement of such dressings as lamps, pictures, and flowers, a few basic set pieces can thus provide a great many scenes from day to day without the duplication ever being evident to regular viewers.

For the same purpose, to provide harmony when architectural elements are thus interchanged, all paneling or modeling in painted scenery should have shadows falling in the same direction, possibly indicating all light as cast on the scene from “10 o’clock” or reasonably high on the left.

**Architectural Backings.** Except for somewhat permanent sets in which the use of solid wood or similar construction material

might be justified, most architectural backings (building interiors, brick walls, etc.) are painted flats,—either hard or canvas flats. The latter are made of canvas stretched on frames, sized to give them durability and tautness, and realistically painted. Ordinarily the hard flats are made of plywood or gumwood panels, either painted or wallpapered. (See Figures 7 and 8.)

Such flats are held erect on the studio floor by L-shaped jacks hinged or nailed on the back of the panels. They cannot be nailed to the floor as is often done in the theater or on the sound stages of motion-picture studios. They are held in position securely by heavy sandbags dropped over the horizontal leg of the L-shaped jack.

A uniform height of 10 feet has been found to be adequate for most interior flats—except for extravaganzas. Originally some studios made all their flats 12 to 14 feet high to give greater scope, but experience has proved that this height is seldom necessary even for long shots, and the additional 2 feet or more merely serve to interfere with overhead lighting and movement of sets about the studio floor.

For practical purposes all decorated hard flats are usually 6 feet wide. They can be readily joined to related flats to make a wider wall or a corner. Bland or unfigured flats are also made in widths of 2, 3, and 4 feet for stock purposes. These can be used for “wings,” or extensions to give extra protection at outer limits when necessary, or for backings in doorways, opened closets, and the like.

By an old theater tradition the width of individual canvas flats is usually restricted to 5 feet 9 inches—which is the maximum width for easy storage in boxcars. Folding canvas backings are also made in two or three sections of this width, hinged together in what are called two-folds or three-folds. These are most convenient for quick setup or change, especially if the TV studio is converted from a former legitimate theater with overhead pulley systems to “fly” in or strike sets from aloft. A two-fold is ideal for a small insert section in a dramatic program or for some dramatized commercials. A three-fold, set up in a wide-open U-shape is often adequate for innumerable dramatic scenes involving action in limited space.

**Drape Backings.** Just about every studio, regardless of size, has found it practical to have an assortment of drapes for simple

backgrounds whenever they are found to be permissible, or for strictly neutral locales. Indeed, they are so convenient and economical that their use has been overdone, as most viewers well realize.

Such drapes can be hung from girders if studio arrangement permits. They are more practical, however, if they are tacked (with suitable folds) to light-weight wooden frames 10 or 12 feet high. The frames should have legs to keep them upright and should be mounted on casters for easy movement through the studio. Often they can be wheeled in as wings on either side of a narrow setting—for protection in case the camera inadvertently pans off the set.

Scenic Painting. All scenic art is done with water soluble paints—for speed in production and refinishing, for economy, and to reduce the fire hazard which oil paints would create. Incidentally, in most studios all canvas and other scenic fabrics must be fire-proofed, by law, with a chemical solution for this purpose.

### Basic Sets

Before it is in operation for long a television station will have built and stocked a variety of basic sets, many of which contain interchangeable units. With imagination and intelligent planning, a surprisingly few units can serve a great many purposes and provide good scenic backgrounds for the routine or more common types of programs.

A good assortment of such basic sets or units might consist of the following:

1. A kitchen large enough to accommodate a stove and refrigerator against the wall, and a fair sized kitchen table removed at least 5 feet from the wall. A window contributes to a pleasant feeling of comfort and spaciousness.
2. A modern living room, preferably with plain walls to facilitate interchangeability by varying pictures, drapes, etc. Provision for an entrance hall or French doors (without glass, of course) is very desirable for entrances and exits.
3. An old fashioned living room or parlor, preferably with moderately figured wallpaper.

4. Some brick wall in heights of both 10 feet and 4 feet. The taller flats can be used for varied exterior settings, altered with the addition of such as overlaid lattices, posters, or metal signs. The shorter brick walls are very effective in composing patio settings, with garden or other background.
5. An assortment of neutrally painted 4-foot and 6-foot hard flats which will be used in an enormous number of settings. Best for this purpose are deep grays, mottled gray-greens, and terra-cotta or cocoa color.

### Construction of New Sets and Pieces

As the time elapses and various new programs come on the air, new sets will be called for. If they are station-owned sets they should be designed with an eye toward harmonizing or interchanging with stock settings. Thus the inventory and variety of stock settings will be built. Meanwhile, attention should be paid to proper care, storage, and repair of existing set components.

An exterior of a doorway is a good investment if it is general enough in character so it can be varied as to period, locale, and type of home by simple change of hardware, mailbox, window decoration, name plate, etc. It should be a genuine door in a regulation frame, but otherwise constructed with light materials for easy movement. It is better to have the footboard of the casing sawed out so a camera can dolly through, and it is naturally preferable to have the door open inward. The set surrounding the frame need be only a foot or so above the door and 2 or 3 feet at each side. It is a good idea to have the entire doorway mounted on casters so that it can be quickly and easily struck after its use.

Many other useful architectural pieces and solid props can be built and acquired in short time. Many of them can be so useful and serve so many purposes over a long period of time that their initial cost can quickly be written off. Included in this classification are various types of pillars, sections of picket or rustic fence, arches and trellises, simple stair units or steps, benches, patio tables, a water well, a tree stump large enough to sit on, etc. Whenever building or procuring such pieces for special order, it is always well to bear in mind storage requirements and the future utility of the item.

## Curtains and Travelers

For many scenes in variety shows produced in a theater, the various curtains or travelers provide adequate backing—especially for a master of ceremonies appearing alone, a soloist, or a comedian doing a monolog. Travelers are the stage-width curtains suspended on roller gear tracks overhead. They divide in the middle and pull to each side of the proscenium—in contrast to the curtains which gather at the middle and pull up to each side, or to the familiar old vaudeville house curtain which lifted upward with a roll.

A modern theater will have travelers that operate electrically, moving silently and smoothly. A theater of average size or better may have travelers of various colors and patterns suspended at intervals of from 5 to 8 feet progressively upstage, permitting 3, 4, or 5 different zones and backings in addition to the house (first) curtain. Especially when travelers are geared to operate so that only one-half pulls aside when desired, a variety of such curtains at varying depths enables the use of more scenes per program. A scene in one zone, hidden from the audience by half a traveler, is changed while an exposed scene on the other side is in use.

Because of their size and the quality of fabric required which will drape properly and appear well on camera, travelers are very expensive. Therefore, before they are purchased or rented the fabric should be tested on camera for response of both texture and color. (See next Chapter.) Durability is also an important factor. Because of its expensiveness and tendency to become mussy in appearance, velvet is not popular in TV. Simpler fabrics of varying tones and textures are preferred instead—fabrics which are lighter in weight but drape nicely, without retaining wrinkles or creases.

A traveler with moderate sheen can give an interesting background, as can those with some metallic brilliance woven in the fabric, contrary to most preconceived notions. Even a figuration or pattern in the fabric is permissible in some cases. But again—test it first to be sure! For all-around purposes a completely neutral fabric is best—of *medium* tone—blue, rose, brown, green, or gray.

## Special Backdrops

The “Cyc.” All exterior scenes and many interiors with doors or windows exposing the out-of-doors require backdrops of one kind or another.

The most common and useful backdrop of this nature is the “cyc” (pronounced *sike*; derived from cyclorama). This is an over-all backing for visual protection, shielding out fire hoses, ropes, ladders, etc. on studio walls, and giving the impression of sky. As a rule a cyc is a suspended fabric, usually light blue in color, either flat against the background limits or more traditionally embracing the entire background area in the form of a semicircle.

In between the cyc and the immediate set trees, garden walls and hedges can be positioned, or vines and branches can be suspended.

**Painted Murals.** The next most familiar backing for outdoor settings or views through doors and windows is the painted mural or panorama. This might represent a woodland or garden scene, a desert landscape or the silhouette of a metropolitan skyline complete with lighted windows. (See Figure 9.)

Large painted drops of this type, especially if containing varied atmospheric elements (used only a small section at a time, as behind windows for example) can give great scenic value. The only drawback is that, being large, they require additional manpower and space, and, if constantly used, are inclined to show damage before long.

**Photo Murals.** Except for the most skillfully painted backdrops of this type, the most realistic detailed backings are obtained through the use of photo murals—developed for atmospheric backgrounds in the motion-picture industry and commonly known in Hollywood as “Shipmans,” possibly named after the man who introduced them. By this process a detailed photograph of a scenic subject is blown up and printed on a canvas with a special surfacing. The result is an enormous photograph of great clarity and detail, and of course with absolute fidelity to the scene it depicts, whether it is a morning view of the Coliseum in Rome, an over-all view of Paris in twilight, or the Manhattan skyline at midnight.

One great advantage of Shipmans, especially in the selection of them, is the great variety of scenes available. Concerns manufacturing them issue catalogs containing hundreds of scenes to choose from—everything from mountain meadows and desert views to locales of familiarity and historical importance. From small sample photographs one may select almost any scene or subject imaginable for processing.

In the motion picture industry the size most commonly ordered is 25 feet wide by 18 feet high, but Shipman murals may be had in any size desired for television purposes.

Photo murals of the Shipman type must of necessity be removed frequently from the studio and stored until next called for. This is done simply by rolling up the canvas on a tube or a wooden pole; if due care is employed, the canvas will suffer no rapid depreciation. A remarkable new development in this line, a flexible cloth photo mural process, was introduced in 1952 by a firm known as Backdrops, Inc., operating in New York and Hollywood. This concern develops its pictures directly on a sensitized cloth, which can be folded up for shipment or storage without damage to the picture. The fabric gives off no reflections of light and the murals have great realism and clarity. These backdrops can be produced in any size desired, at a cost comparable with Shipmans.

In all our discussions of painted and photo murals we have been concerned only with still backgrounds. Another method of providing backgrounds is available through rear projection—which not only gives great flexibility and rapid change of scenery but also provides animation. (This will be reviewed in detail in Chapter 13.)

**Flying Drops.** Some of the larger theaters used in television are able to fly their curtains and drops—that is, to hoist them aloft out of sight, or to lower them quickly into position without rolling. Because of the overhead space and structure required, such fly systems are costly to construct, but the cost might be justified in the long run by the wear saved on expensive painted backdrops and photo murals, since they need not be rolled up except for storage when not needed.

Some of the more elaborate flying systems, incidentally, can be rigged to lift aloft not only backdrops but actual sets. When this facility is available, needless to say, sets can be changed in

an amazingly short time. Instead of being carried out in sections by prop men, or what is more modern practice, wheeled out on casters or “wagons” on which some small sets are constructed, they are easily whisked out of way or dropped silently into position in a matter of seconds.

### Set Furnishings

In furnishing or decorating sets for TV, it is important to be as practical as artistic—especially considering size, weight, and cost. For example, it is a waste of money to build a stairway of twenty steps when only the bottom four steps are ever shown on camera and used by members of the cast. Likewise, it is a waste of money and manpower in many instances to build a recessed bookcase in a wall and then fill it with a hundred books—when one might just as well paste on a painted wall photographic strips of “library” available in rolls like wallpaper, with varied books in actual size. Except on the very closest inspection they will appear absolutely real.

**Rugs and Fabrics.** Because they tend to impede camera movement about the floor, rugs are seldom used in TV settings—except on steps or upstage sections of interiors where their absence would be grossly noticeable on wide-angle shots.

In cases where rugs are to be used their position in the setting should be carefully indicated by the director before furniture is brought in. Otherwise, when it is found that they extend so far downstage or to either side that they obstruct cameras in their movement to various positions on the floor, much valuable camera rehearsal time can be lost while prop men move out furniture to reposition the rugs.

Upholstery and drapes should be selected according to TV requirements. Avoid particularly the fabrics with bold plaids or herringbones, or patterns that are too “busy” or contain too much contrast; the former type annoys the camera, the latter, the audience.

**Pictures and Bric-a-brac.** Paintings and other pictures should be chosen for harmony with the over-all tone of a scene. The most suitable paintings are those of medium tone. Facsimile paintings (reproductions of originals) can often be improved by spraying them with a neutralizing coat to gray down white clouds,

collars and other areas that are too light or contain too much contrast.

Of course glass should be removed from all pictures. In rare cases in which this is not practical, special attention must be given to hanging the picture at an appropriate angle and lighting that area of the wall accordingly.

Beware of modern copyrighted paintings or the use of photographs of living persons without permission, unless those persons are public figures.

In the selection of lamps, vases, and bric-a-brac, avoid bright metals or other surfaces which will "flare."

**Use of Mirrors.** Mirrors are not welcome in TV sets—unless used for specific dramatic purpose and with adequate rehearsal to make certain that they will not pick up studio lights that flare in the camera's eyes. When a mirror is necessary for decoration but is not used practically as a mirror—that is, not for the sake of reflection of some person's face—then it is sprayed with liquid wax or other fluid which will kill the reflection but still retain the impression of glass.

Wall mirrors used for practical purposes, including pictures in which it is not permissible to remove glass from the frames, are not placed flat against the wall. Instead, they are tilted slightly forward from the top; thus there is less chance of picking up overhead or side lights. (For further data on mirrors see Chapter 13.)

**Furniture Practical for TV.** For reasons of adaptability to TV's requirements, studios will eventually find it advisable to build many of their own furniture pieces to meet the peculiar requirements of the medium. Most overstuffed or club type furniture is too deep or too wide to be useful, and the sumptuous cushioning in some sofas and chairs is a handicap rather than an asset. A tall man with long legs has a pitifully difficult time rising from a deeply cushioned chair, and the same piece of furniture gives a seated woman the appearance of having more legs than personality. When such furniture is provided the situation can be alleviated tremendously by placing blocks or wood strips under its legs, giving an added elevation of several inches. This supporting equipment can be covered or not revealed in the shooting.

Avoid overstuffed or softly cushioned living room furniture. Select cushions which are firm, or, in lieu of that, have plywood or other supports placed under them to give them necessary firmness. When a sofa has deep and soft cushions at the back it is often advisable to insert firm upright cushions behind the others inconspicuously. This reduces the horizontal depth of the seat and enables short women to lean back gracefully and at the same time keep their feet on the floor.

The elevation of chairs and desks is something to be considered too. A very tall man seated at a low desk will have a tendency to slump over as he leans his elbows on it. Or in reading news copy he will bend over, showing too much of the top of his head and projecting his voice toward the desk rather than outward.

Cooking programs or other shows utilizing tables for demonstrations and displays should have tables of special heights suitable to the performer—low enough to permit good down-shots for close-ups of articles on the surface, but high enough so the performer will not have to bend over while working at it. Ordinarily kitchen tables are 30 inches high. Tables built or modified for TV use should be 34 to 36 inches high, depending upon the height of demonstrator.

In a panel program, or in other cases where several persons are shown in discussion in one set, it is wise to avoid overstuffed furniture, which spreads the scene beyond standards compatible with good camera requirements. This applies particularly when more than three persons are to be shown in one scene, any one of whom might be expected to speak at any time and therefore to be “on camera.”

When the program situation calls for an informal living room setting, in which overstuffed or wide chairs might be expected, the solution naturally is to position the chairs or sofas at angles to each other—avoiding a wide spread of chairs and personalities but at the same time preserving a feeling of intimacy and close association with each other. This still calls for skilled camera placement and adept shooting.

### Set Design

The first step in the design of any set is a meeting of the director with the art director. In large productions where there

are lavish settings or many sets, the predesign conference might be attended by many others, including the producer, technical director, a business representative who watches over budgets and approves expenditures, and in some cases even the star or the author of the show.

This meeting should be held far enough in advance of production to permit adequate time for good creative design, construction, and painting. For a dramatic show the script should be in final form before this conference is held, and it is helpful to have sent a copy to the art director for a review before this meeting.

In shows of other types the art director must first be informed of the general nature of the program that is contemplated, and any special requirements regarding layout or treatment in the matter of sets.

Next comes an understanding of how much money is available for sets and props, and how elaborate they are expected to be. Of course the number of sets must be determined, and the general nature of each described.

Before proceeding further the art director will want to know what studio has been assigned for the production—since the size, floor plan, and other program commitments of each studio are all important factors in determining what can be provided for the new show.

At this meeting the director should point out all specific requirements of his sets which derive from plot action or stage movement. This might include such details as the required size of a banquet table, the position of a stairway in relation to a portrait painting, all necessary doors and windows, and any special needs of space, as, for example, for a sword duel, a reception line, or a ballroom dance.

Certain technical problems may have to be worked out at this meeting: for instance, the relationship of one set to another or their sequence, factors governing lighting, and even the way a set faces on the studio floor in order to get the best angles and space for proper camera work.

Soon after this meeting the art director should submit for approval his rough sketches of the scenic designs, together with a floor plan showing the exact layout of sets to scale, and elevation sketches. The latter, particularly in programs with several sets, are extremely important for lighting, "miking," and camera

movement. They should be carefully reviewed with the assigned technical director before final approval is given. Often minor changes are necessary to permit proper positioning of microphone booms or to allow easy movement of cameras from one set to the next. (See Figure 10.)

After final sketches are made, the sets go into production. Skilled carpenters and scenic painters can have them ready for use in a surprisingly short time.

Meanwhile, photostats of the floor plan or layout of sets should be made and copies provided for the director, technical director, stage manager, and all others concerned—for study and to work out their respective problems in advance of camera rehearsals.

The art director of every TV operation should have on hand printed drafts, drawn to scale, of the floor layout of every studio, showing position of doorways, control room, travelers, and all outlets of wall conduits. Over this he lays a sheet of tracing paper and sketches in his sets in their relative size and respective angles and positions. He also indicates the location of important furniture, stairs, doors, and windows. The direction in which doors swing open is shown, of course. This tracing paper is used in making the photostatic copies for distribution.

A copy of the photostated floor plan of sets should be posted at the first script reading for the benefit of the cast, and it might well be present at all dry rehearsals. It can be a great aid in working out stage movement and in orienting the actors with the arrangement of the sets in which they are eventually to work.

## COLORS AND TEXTURES

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WHILE no two Image Orthicon tubes respond exactly alike to colors (in monochrome television), the tubes do have certain general characteristics which can be described and used as a basis for all cameras.

Cold colors register darkly. Warm colors have a tendency to pale out. Blues and greens, especially, register darker on the video screen than they appear to the human eye. An olive green will seem to have the value of battleship gray, while an emerald green will appear almost black. (Remember, in TV there is no true black and no true white—merely approximations of these tonal values.) Warm colors—yellow, orange, red, brown—appear several degrees lighter.

The color that loses most in intensity is red, especially red shades on the yellow side of the spectrum, ranging from scarlet to tomato red. A crayon of reddish-orange (tangerine) hue is used to mark critical spots on the floor for actors and cameras as well as furniture positions. It is almost invisible on a floor of neutral color such as gray.

The characteristic response of this and “neighbor” colors is a good reason why women wearing low-cut gowns and shoulderless bathing suits in television should avoid colors like apricot, salmon, cerise, watermelon, and creole pink; there is little if any definition at the line where flesh meets garment, thereby giving the impression of nudity.

The composition of colors is important in prejudging video response. For example, it has been pointed out that green goes dark. This would not apply to lettuce green or chartreuse, shades

which contain a considerable amount of the warm yellow element. The more blue there is in the composition of green, the darker it will appear. Red shades composed partly of blue—cardinal, red-violet, and ruby—will not pale out like tomato red and kindred shades on the orange or yellow side of the spectrum.

Lips painted with fire-engine or similar tomato reds blanch out. The proper shade for lips is closer to the blue side of the spectrum, such as crimson or cherry. If the shade is too far in that direction, such as fuchsia for example, the lips appear over-painted and give the user a hard look.

The foregoing suggests a fact worth noting. The camera sees in various colors what the eye is unable to see or appreciate—enough to draw the tube's color response toward greater or lesser intensity than is apparent.

Mahogany red hair and freckles, for example, contain a certain invisible amount of green—making them appear darker in TV than the human eye observes them to be. The camera is seeing color within color.

Mysteriously, the cameras sometimes show slightly different responses to two *apparently* identical colors composed of different chemical elements. For this reason it is wise to test some colors before cameras to ascertain exactly how dark or light they will appear.

White is virtually taboo in television. It burns, flares, or “blooms”—especially on starched fabrics or very smooth surfaces, such as paper. When a man stands in a spotlight wearing a starched white tuxedo shirt, he seems to be wearing a mirror on his vest.

Men should wear shirts of pale green, blue, gray, or tan. The lighter shades in these colors will appear as white. There are tuxedo shirts and starched colors available in pale blue and tan—originally made for technicolor—which every master of ceremonies or other principal in formal attire should own.

If a man making a guest appearance on a program insists on wearing a white pocket handkerchief, ask him to tuck it deep in his pocket so that a minimum of white is exposed. Otherwise the video engineer will have to “fight” the flare of a large white handkerchief in an effort to control quality of his picture. In bringing down the excessive white he correspondingly brings down the light tone of the man's face, making him appear sooty.

A small amount of white is tolerable in *some fabrics*. A girl can appear well, for example, wearing a white collar of limited size, particularly if it is of soft cotton or wool rather than starched linen. This is a case in which the texture or surface of the fabric is also a factor. Furthermore, it should be remembered that not all whites are pure whites. Oyster-shell, egg-shell, and cream white are in this class. The further removed from pure white the more acceptable they are to the camera.

Somehow the word has been circulated rather emphatically in some TV centers that black is absolutely taboo. Not so! Black, especially in soft fabrics like velvet, makes for a magnificent picture when worn in the proper setting.

### Fabrics, Patterns, and Ornaments

Satins, sateen, and metal-cloth garments are usually tolerable, but in some cases the fabrics are undesirable, reflecting too much light.

Sequins are permissible for dancers, tumblers, drum majorettes, and others appearing only in full figure action. They should not be worn by singers or actors appearing in closeup.

Polka dots are not good, particularly light dots on dark backgrounds. At a certain distance from the camera, depending on the size of the dots, they will come into sharp conflict with the video lines which make the picture, resulting in a shimmer or visual vibration that is very annoying.

The same applies to herringbone fabrics with sharply contrasting colors in the pattern. At some distances they are all right, but there is always a point at which the fabric will vibrate or dance. For want of a better term this phenomenon is called a *moiré* effect.

**Use of Jewelry.** Be discreet in the type and amount of jewelry worn. Bright metal tie clips, certain cuff buttons, earrings, and necklaces are taboo. Rhinestones, crystal, glass, and other substances with considerable areas of highly polished surfaces that reflect light are offensive to the camera and very detrimental to the performer, especially in close-up, where the size of the flash surfaces is emphasized. To the viewer the use of such objects is like having sun flashed in the face with a mirror.

When jewelry is to be worn in a program it should be checked on camera at rehearsal. All too often actresses and singers will don objectionable pendant earrings or necklaces at the last minute without consulting the director. The first he knows about the ill-advised adornment is when he sees the naïve culprit on camera in the telecast. It's a detriment, not an adornment.

**Avoiding Flares.** Under the lighting which TV requires, any bright metal or hard polished surface causes glare. For this reason pianos are painted with dull coatings. Chrome is avoided in furniture. Nickel and stainless steel surfaces (as in refrigerators or stoves shown in commercials) are dulled down with the application of floor wax, unpolished. The same treatment is given to guitars and similar instruments, particularly those with hard polished convex surfaces. Bright jewelry, when it must be worn, can be toned down with colorless nail polish, later removed without damage.

**"What Shall I Wear?"** Before anyone in the business can answer the question intelligently he should see the person, know the nature of the intended program, and possibly something about the setting in which the person is to appear.

Clothing should be appropriate for the occasion. Color, however, should be chosen for *tonal value* in relation to the person and setting—not for the sake of color harmony in the normal sense. It should be remembered that the monochrome TV picture is painted not in color but actually in tones of varied grays, ranging from a near white to a near black. Contrast and definition, which are so desirable, can be achieved only by contrasting tonal values—and this is *regardless of actual color!* On the street a well dressed man might shudder at the thought of wearing a wine red tie with a yellow shirt. But in TV this combination would give excellent tonal contrast. In other words, for best TV appearance it is safe to disregard color harmonies that might be in good taste and dress with color combinations that offer the best harmony in color *values*.

For obvious reasons, we dislike seeing women with raven-black hair wearing black chokers and black evening gowns. Such a combination is better suited to a blonde—and even she might consider light-toned adornments on her dress or a light-colored shawl, stole, or belt.

A woman with dark skin or deep tan and bare arms and shoulders does not appear at her best in a gown with a tonal value approximately that of her skin. She should wear a gown that is either lighter or darker than her skin, possibly with contrasting earrings and ornaments also.

The same matter of contrast applies in the apparel of men. A blue serge suit, although dressy, is not necessarily the best for a man with very black hair. He would appear better in a light or medium gray flannel suit, with light blue shirt and very dark tie. If he must wear a dark suit he should have a tie that offers contrast with both shirt and coat.

A man who is very blond appears best in a dark suit with medium tie, or a medium-toned grayish suit with a tie that is not too dark to offer contrast with both shirt and coat.

**Proof by Test.** Of necessity, these rules are generalized. As often mentioned in this volume, the human eye does not always see what the camera's eye observes—and in TV the latter is the factor that counts. Therefore, when in doubt, a guest or inexperienced performer should consult the director; better still, persuade him to test the combination on camera.

In this connection the author is reminded of an incident which occurred when directing a TV series, sponsored by Life magazine, on what transpires in the classrooms of public schools. In advance of one telecast the teacher of a home economics class was informed that the important recipes and cooking rules carefully inscribed with white chalk on a very black blackboard could better be done with light blue chalk. On the day of the telecast it was discovered that the blue chalk chosen for the revised and painstaking work on the blackboards was of a sapphire blue, so deep in tone that it was barely visible to the eye at a distance of 20 feet. When the teacher saw the surprise of our technicians she graciously volunteered to redo the work in a hurry with lighter blue chalk. There was so much work involved that it seemed advisable first to test the sapphire blue on camera—to see it with a video eye instead of a human eye. Much to the amazement of all concerned, when thus tested the writing, which appeared almost absorbed in the intense black of the blackboard, for some chemical reason stood out beautifully on camera! An experienced eye can guess what the camera will see, but only the camera can prove it!

*LIGHTING*

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**L**IGHTING is a highly specialized art in any theatrical medium. Few have mastered it in television. Often the best light directors are unable to approach perfection in lighting because of limited time and space—combined with the requirement for continuous program action, with constant change of scene, camera angles, and direction of action.

In the theater there is plenty of time to plan a scheme for most effective lighting, to set lights, and then to experiment for desired results. There are no cameras to obstruct beams from the sides or throw shadows from the footlight troughs. And there is no swinging mike boom overhead to cast shadows on the walls or the actors' faces. In the cinema there is time to reset lighting for each brief scene, sometimes for each separate camera angle or "take."

Not so in TV. The mike boom and cameras are always there, sometimes of necessity in awkward positions for the best lighting plan. Time to plan lighting and set necessary electrical equipment is seldom fully adequate, and there is almost never much time to experiment or to reset lights—especially with benefit of cast in places, wearing program costume.

### **Problems in Lighting for TV**

Two of the biggest problems for the lighting director derive from studio space limitations and from the fact that there is usually much action in each set and movement from one set to another. Limited space calls for crowding of sets on the stage,

with the lighting in one set affecting the light scheme in adjoining or nearby sets.

It is almost impossible to light a set for perfect results from all camera angles—unless action can be tightly restricted. It will be good from one angle, inferior from another. Therefore, some compromise must be effected—based upon movement, design of scenery, and importance of various stage actions.

Achievement of best possible lighting is, of course, the problem of the lighting director and his crew of electricians or “juicers.” A good TV director should understand lighting problems and should cooperate with the lighting director and technical director by conferring in advance regarding effects desired in each scene, and when necessary, by modifying action or stage business to a reasonable degree when serious lighting problems arise.

All too often too much time is spent attempting to achieve dramatic light for a brief and fleeting scene, while over-all lighting in other and more important scenes is neglected and suffers from lack of adequate preparations.

In the matter of modifying action to accommodate previously set lighting, it is often quite easy to alter slightly an actor’s course of movement or business and thereby correct a fault in lighting—for example, merely being seated before speaking lines in a close-up, instead of standing in a disagreeable shadow which was not anticipated in the lighting plan. Generally such minor changes are simpler and worth more in the final result than breaking rehearsal and standing by idly while electricians move in ladders and climb up to alter the lighting pattern.

Incidentally, even minor alteration of a lighting plan in the midst of dress rehearsal not only consumes valuable time but often invites poor lighting effects elsewhere in the production, more than likely in previously rehearsed parts. It is somewhat like making an erasure while typing one’s own letter, risking a smear or mussing the surface of the paper, when slight modification of the sentence’s structure might solve the problem.

A director should know the fundamental requirements of good lighting. He should know what he wants and be able to call for it in proper terms. And he should have an understanding of lighting difficulties in order to make a decision regarding change of action versus change of lighting when a problem is pointed out to him by the lighting technicians. With these points in

mind we shall consider what makes television lighting, what are the ideal results, and what special effects may be achieved.

### Lighting Methods

Only a few years ago in TV, when camera pickup tubes were far less sensitive and lighting know-how was less mature, sets were illuminated by floods of light from all directions. No modeling was attempted and there was no accent from any direction. The main objective was to give sufficient illumination for adequate pickup of image and to wash out all shadows. This was referred to as "flat lighting."

In some cases flat (flood) lighting was produced entirely by banks of fluorescent lamps, both overhead and on side walls. Often this was augmented by further banks or scoops of incandescent lamps. The result was a frightfully hot setting with uncomfortable brightness. Light intensity registered from 1,500 to 2,000 foot-candles.

With the advent of the Image Orthicon pickup tube, replacing the Iconoscope tube for studio use, the lighting requirement was reduced to an average of 150 foot-candles. In most studios fluorescent lighting was dispensed with, and lighting engineers had their first opportunity in this medium to "paint with light," experimenting with "low keys," directional light, high lights and shadows.

### Lighting Equipment

General lighting now begins with installation of a minimum requirement of "fill" light in the over-all setting. This is provided by overhead scoops, broads, or strips containing 500 to 1500-watt lamps. All of these devices project very broad light. When additional fill light is required in specific areas, "juniors" are used. These spotlights are more concentrated in beam and operate with lamps of 1,000 or 2,000 watts.

Modeling and highlighting is achieved with smaller spotlights known as "babies" or "baby Leicos." They contain 500- to 750-watt lamps and provide highly concentrated, sharp beams of light. More intense beams are derived from a few medium or large Leicos using lamps of as much as 1,500 or 2,000 watts.

When called for in large sets or out of doors at night, even more intense light can be obtained from powerful kleigs containing 5,000-watt lamps.

All still spots and other fixtures referred to so far are suspended from girders, clamped on the tops of sets or on overhead pipe scaffolding (grids) provided for the purpose. Scoops mounted on rolling pedestals (floor scoops) are often moved in at intervals for "front fill" when necessary or to light title cards, product displays, or special devices.

Almost all spotlights are equipped either with irises, shutters, or gobos. Operating like the eye of a camera lens, an iris shuts down a beam to a pinpoint or opens it up to maximum capacity. Shutters (called "barn doors") and gobos merely block off part of the spotlight beams vertically or horizontally—to shut off reflections on camera lenses or to panel light on the set's backing or floor.

When a spotlight beam is too hot or sharp for a particular need, it can be softened down by inserting a scrim in front of the lens in a frame attached for this purpose. A scrim is a plate of spun glass, gauze, or other filtering material which diffuses light.

The same frame in front of the spotlight lens can be used for the insertion of colored gelatin discs known as "gels"—to give color in a setting. Such color is used largely to "dress up" settings in theater type telecasts (for the benefit of the theater audience alone), or to help actors psychologically in establishing mood. However, since colors provide varied responses on camera pickup tubes, there is also a place for colored lighting in black-and-white TV. Utilized with knowledge and skill, it can give wonderful tone values. Colored light can also be used advantageously in special cases for toning down white costumes or areas of a set that are inadvertently too "hot" or conspicuous. A cerise or "pink" gel is most often used for this purpose.

Backlighting—as for skylines, cycloramas, silhouettes, etc.—is achieved with the aid of strip lights or "troughs" placed on the floor behind background pieces like hedges, brick walls, mounds, or steps.

Except for moveable floor scoops, all light equipment discussed up to this point is fixed lighting. Baby spots can be rigged to pan for special effects (such as a distant searchlight sweeping

across a wall at intervals). But generally any moving spotlight work is done with a follow spot such as a Dynabeam. Ordinarily this would be used for theater telecasts only and would be placed in the balcony. It throws a powerful beam, which can be irised down or expanded quite readily. The lamp and mounting are especially constructed to pan easily to follow dancers or other performers on a stage.

Once lights are arranged and connected in various combinations or "setups" they can be brought into service by switches at a master light control board. Switches are not the best devices for this purpose, however. They provide only abrupt change, and the spring switches designed for heavy loads operate with a disturbing clatter.

The answer is a dimmer board—a specially constructed control device operating with rheostats or plate resistors which can alter various electrical combinations easily, silently, and gradually. Rheostat controls are preferred over plate resistors as they give even and completely gradual control, such as is needed in sunrises, sunsets, and cross-fade lighting effects. The plate resistors, on the other hand, give gradation of light in graduating or declining stages, and in dimming they finally reach a point where the light drops out abruptly rather than dimming completely to blackness.

Dimmer boards are usually built to order and ordinarily contain from four to ten handles controlling the rheostats or plate resistors. The apparatus is rather expensive but in relation to importance in artistic production is a good investment. Invariably it is portable and can be moved from one studio to another as programs require. In some cities dimmer boards can be rented by the day from the theaters or from electrical supply houses.

A much more advanced system of light control, which is now being installed in some of the major studios, is the Century Lighting Control System. In this highly versatile and flexible arrangement countless circuits and combinations of circuits are first set up in an intricate patching panel. The panel is governed by the Izenour board which is operated from a control unit resembling the console of a pipe organ. It contains ninety or more rheostats and switches, and provides intricate control of an amazing number of lights and lighting combinations.

## A Theory on Lighting

Many competent lighting directors have been known to state that “what constitutes good lighting is a matter of only one man’s opinion.” The author agrees to the extent that in some of the finer variations of artistic lighting, especially in either “low key” or fantastic lighting, the statement may be true. However, there are certain fundamentals originating in both logic and nature which must apply in lighting as in any art. We believe that the basic points set forth in the following list are always applicable, without exception:

### *Good Studio Lighting in Television:*

Duplicates reality or enhances fantasy.

Illuminates a realistic world; helps to create the visual quality of an imaginary realm.

Brings the out-of-doors indoors, convincingly.

Makes interior scenes appear naturally indoors—illuminated by sunlight from without; electric light, candles, or fire from within.

Has respect for weather, the compass, and the time of day.

Recognizes only one sun and one moon, and never tolerates both simultaneously.

Agrees with receding planes in perspective.

Always harmonizes with painted light and shadows in scenery, whether it be carved marble, wooden paneling, or trees.

Develops depth and solidity; never presses concrete form into a flat plane.

Maintains naturally relevant light tone between all figures and objects in a scene.

Does not cast earthly shadows on sky or clouds.

Does not blanch out or black down beyond levels for good video pickup—especially in relation to contiguous scenes.

And, finally, presents human faces as the human eye sees them to best advantage in real life—not with unbecoming, misplaced shadows so common in “drugstore photography.”

## Lighting Effects

Here are some of the more common lighting effects used in TV, also a few unique effects which have been used with success.

“Cookies” are employed to give the effect of light and shadows cast from one side through an intervening surface. These might represent the diagonal slashes of light through louvers, leaded windows, bamboo screens, scallop-framed windows, jail window bars, etc. The “cookies” are merely sections of the actual subjects (screens, louvers, etc.) placed between a spotlight and the setting’s back wall. Or they can be little metal stencils stamped out on a disc and placed in the spotlight’s scrim frame. Needless to say, all kinds of interesting shadow patterns can be created simply with the latter method.

Shadows of trees, ferns, hanging chains, lanterns, lamp-posts, etc. can be created in similar manner. In the case of trees or ferns, often one or two small branches suspended from overhead or tacked to the side of a setting will suffice.

Interesting effects can be gained through thoughtful use of the iris on spotlights. When employing a spotlight alone against a black background, show first a head only, then open up dramatically to show a full figure. This can be effective in the introduction of singers. (A comparable effect can be accomplished with a camera lens equipped with a special iris for this purpose, either to open or close a scene by expansion or dilation.)

In the use of a Dynabeam, of course, reduction of backlighting or “fill” accents the dramatic effect of the moving spotlight beam. It also heightens the shadow in back. Double shadows—for novelty effect only, and usually with dancers—are created by playing the beams from opposite sides, converging on the subject.

This point should be obvious, but apparently it isn’t, judging by shooting often witnessed on the screen even in big shows. A follow spotlight is not merely for illumination. It is for an effect, and that effect is lost when the perimeter of the beam is lost by taking a close-up of a face within it (that is, without iris-ing down the light). Not only is the effect lost, but under certain circumstances the face is apt to be blanched.

The use of strong spotlights, incidentally, is not advisable in programs being recorded for retecast by Kinescope or other recording methods. (See Chapter 23.)

Silhouettes are created by making backlighting stronger than forelighting on subjects to be silhouetted. Preferably there should be a translucent screen between the subject and the camera.

A novel dramatic effect can be created for dances and song

production numbers by presenting silhouettes of two persons—for example, a boy and a girl in a love scene. One person stands in front of the screen on one side, the other stands on the other side of the “frame” and in back of the screen. By cross-fading lights with the use of a dimmer board, the figure in the foreground can be transformed from a realistic figure to a silhouette; and as the light in the foreground diminishes and the rear lighting increases the second silhouetted person appears. Naturally, the same effect can be worked in reverse, making one silhouette disappear as the other is transformed from silhouette to reality.

In the same arrangement the background figure can be distorted in width or height by proper positioning in relation to lights.

Anyone who has witnessed Jimmy Durante’s now famous sign-off device in his appearances over NBC will recall the dramatic pools of light which give the effect of receding far into the distance. Actually they are only a few steps apart, as one notices when watching critically, but Durante gives the impression of walking away a block or more as he stops in each light pool to say “goodnight, wherever you are.”

This interesting effect is created by projecting coned beams on the floor from considerable height. From the camera’s viewpoint the path of the consecutive pools of light runs diagonally up the screen, and to heighten the perspective the diameter of each beam diminishes as the pools of light recede into the distance. Here is where lighting artistry accents perspective.

Weird effects can be achieved by accenting light from the floor upward. Such treatment would be used in scenes involving witchcraft, sorcery, or eerie locales. It would be appropriate for an intimate view of a fortune teller and “client” looking into a crystal ball.

Interesting and realistic reflections of sunlight on water can be created by the simple device of projecting a beam of light into a small tank of rippling water at an angle that will reflect against nearby faces or wall surfaces.

Other interesting water effects can be obtained by beaming light through a window pane that is being drenched with water—either with a fine spray or with trickles down from the top. Coloring the fluid with ink or dark vegetable dyes gives emphasis to the effect.

Stars in a dark background can be created by the simple contrivance of punching holes in a dark fabric, which is bathed from behind by a moderate light.

A strong starlight or moon effect can be obtained by rear projection of light on a translucent screen, using an appropriately cut "cookie" in a rather hot baby spot. With use of dimmer board, a star or moon can be made to appear suddenly or to vanish. By panning the light, a moon can rise from behind palm trees or mountains, and a star or comet can be made to shoot across the sky.

Exotic and eerie novelty effects can be created with the use of whirling discs in front of spotlights. Discs can be opaque with areas stamped out of them to admit penetrating light, or they can be of transparent material such as glass or plastics with patterns etched or painted on the surface to cause figurations of moving shadows. Coarse figurations on such discs can be whirled. Finer figurations should be slowly turned or the desired effect will be lost.

Stripes of light—vertical, horizontal, or diagonal—can be "painted" on a wall or other flat surface for special purposes by use of shutters on spotlights. With proper rigging the stripe can be panned in any direction. This is particularly applicable to pointing up a section in a large chart shown on the screen, singling out a line at a time in a text, or highlighting a particular area of a scoreboard as an announcer refers to it.

These are just a few of the lighting tricks, methods, and devices to be used in television as the occasion warrants. Certainly many others have been tested and used successfully, and others will be created or invented by imaginative program men and engineers when the challenge is presented.

## *SPECIAL PROPS AND PHYSICAL EFFECTS*

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FULL coverage of this subject would need a textbook instead of a single chapter. Indeed, there are many men in the industry, most of them from motion pictures, whose entire occupation is devoted to the creation and execution of “special effects” alone. Even if all the secrets of these specialists could be obtained, it would not be feasible to attempt description of them here. The purpose of this text is to acquaint production men with the most common specialty props available and to indicate how others may be created with time and ingenuity when they are required.

### **Rear Projection**

In motion pictures rear projection is called a process shot. It is a system of creating a highly realistic background by projection of picture on the rear of a translucent screen resembling rawhide tightly stretched over a wooden frame. The picture shows through to the front side of the screen, where cameras capture a view of actors appearing before a most realistic background.

The pictures can be still photographs (on slides) or action shots provided by motion-picture film, usually shot especially for the purpose. Both provide great realism at nominal cost. The still pictures have an advantage over photomural backdrops in that they don't have to be transported and hung individually, and they can be changed rapidly by merely altering slides (smaller than postcard size) in the projection machine. An extensive library of stock still shots is available with this system, including all the best known metropolitan locales in the world,

ranging from pastoral scenes to famous monuments and interiors of cathedrals.

The action shots increase the production's scope enormously by bringing the outdoors indoors. In its simplest use the device can provide an interesting romantic background for a song or production number, showing waves breaking on a picturesque beach or cumulus clouds drifting over a tropical horizon. A more advanced use of action process shots provides a live background that would be seen through the window of a train or taxicab, or, for further example, a street scene in Paris as viewed from a sidewalk cafe.

Manufacturers of such process film usually have a good stock of typical traffic scenes—both as viewed through the rear window or through the windshield. Typical use of the former would be simulation of a ride down Broadway at night, with all the flashing lights and bright marquees of the theaters visible through a taxicab's rear window. Another good example would represent a fast ride in an open car—either looking ahead from the rear seat (over the driver's shoulder), or viewing the driver's face with a winding highway reeling out at the rear.

It stands to reason that realism will be defeated and the effect will even assume a comic quality if the action—with film—hasn't been thoroughly rehearsed several times. This is particularly important for both the "driver" and the sound effects operator. The driver must make "turns" as the vehicle turns, and of course the sound operator must make "stops" and "starts" with the traffic and the lights.

Translucent screens for such background projection are available in widths ranging from 9 feet (adequate for a view through a car window) to 20 feet or more. Space must be allowed at the rear of the screen for normal "throw" from the projector. This usually ranges from 20 to 30 feet, but the required projection distance can be reduced by special equipment involving refracting mirrors.

### Effects with Mirrors

Mirrors on dressing tables, walls, and doors provide not only interesting angles for picture composition but can be used for great dramatic effect when the situation warrants.

A good example combining both qualities: a man is seated in a library chair, with a wall mirror above and behind him; suddenly he rises and assumes a startled expression; in the mirror behind him we observe that a door has opened and an armed intruder has entered the room.

Still another device would show a "thirtyish" woman seated at a dressing table, applying make-up. We first view her at a three-quarter angle, with her reflection in the mirror offering a counter angle. Suddenly she becomes aware of "crow's feet" at the eyes and leans forward somewhat to examine the telltale signs of age. Now here we could obtain a very dramatic shot—by switching to a camera behind the mirror which would catch a head-on closeup through the glass. In this case it would have to be one of those specially made mirrors which appears innocent on the face but allows a clear view through from behind. It is simple and effective, providing the foreshore is well lit and the reverse area is kept in darkness.

Reflection shots with mirrors are not difficult but they take time to set and light properly. (See Figure 11.) Lighting must be arranged so that no light will be directly visible in the glass, and of course the camera has to find an angle that will capture the subject and the reflected image without coming into view itself in the mirror.

In using mirrors one is always safe in applying the following rule for angle of deflection: the angle at which a camera's lens points at a mirror determines the angle at which a reflected image will be captured. In other words, if a camera points its lens at a mirror from a 50-degree angle at the right it will capture a reflected image at a 50-degree angle on the left.

Another consideration in the setting of such scenes is the background reflected in the mirror. The mirror must be so positioned in the set that it will capture a background within the set. If this is not possible, due to the position of the mirror and the plan of the set, a small temporary wall or other backing must be moved in the downstage area to mask off an undesired view of "back-stage" equipment and scenery.

### Periscopes

A periscope apparatus achieves the effect of shooting directly down from overhead or from great elevations. Referred to as a

“guillotine” because of the shape of its supporting structure, it is nothing more than two parallel mirrors mounted face to face in a large vertical frame mounted on a base with casters for mobility.

The camera points its lens downward into the lower mirror, capturing the image reflected from the parallel mirror above. Elevation and angle of both mirrors can be altered to meet requirements. Actually, 8 or 9 feet is sufficient elevation for the upper mirror in most cases. On some lenses it will give the impression of looking down from great heights and provides an excellent means of showing the patterns of square dances, ballet numbers, and the like.

Varied weird angles for novelty shots can also be obtained by experimentation with this device. Of course it takes time to set for perfect camera results. The position of apparatus and angle of mirrors must be carefully worked out in relation to subject matter. The working area of subjects and position of camera and periscope are all so critical that they should be carefully marked. The camera, too, must have its height and angle of depression carefully noted so it will not shoot its own image or the framework of the mirror.

A most practical usage of the periscope is for looking almost straight down on the tops of tables or a stove. The mirror device, placed slightly to one side, gives an intimate view of what is contained in frying pans, jars, or casseroles. It is particularly effective for cooking programs, enabling a view of cooking or mixing in progress without tilting the container. It is also excellent for showing any demonstrations on flat surfaces—for example, fancy icings on the top of cakes, fingerpainting, or even a game of checkers.

### Breakaways

Breakaways are seemingly solid objects which must be readily shattered, for purposes of plot or comedy, without injury to performers.

Breakaway bottles and vases are made with sterine wax or similar substances which can be melted and poured into molds for shaping. Some solutions can be dyed, others are painted in the finished product. Quart-size beer bottles or large vases made in this manner can safely be smashed over a person's head without discomfort or injury.

Furniture intended for breakaway usage is sawed at critical points and then reassembled with lightweight wooden sections. Balsa wood, which is fragile and extremely light in weight, is used extensively in this work. It is strong enough to maintain good shape but can be cut into paper-thin sections of doors and walls that shatter readily.

Despite the fragile quality of balsa wood it can be carved easily and has good grain—making it excellent material for the very genuine looking violins Jimmy Durante smashes over the heads of his fellow “musicians.”

### Fire and Smoke

Because of the great hazards involved in the use of fire inside studios, real fire is seldom used in TV—except, of course, in gas cooking ranges, Bunsen burners for chemical demonstrations, and the like.

When actual fire is used in other manners, it can be provided with canned heat or containers of butane with adequate plumbing controls. These can be set up to provide a feathery spray of flame through which a camera can shoot for dramatic or novel effects. But again the hazards are so great and fire laws so strict that the device is seldom used.

Insertion of motion-picture film of actual fire scenes is often a good substitute for actual fire. Flames on film can be superimposed over studio scenes with good effect.

Simulated fire, as in a campfire scene, can be created electrically. With inventiveness and a minimum of equipment any competent electrician can “build” a good fire—at least a realistic campfire in the glowing ember stage, or a roaring fire as shown by reflections on trees, walls, and actors’ faces.

Smoke can be created readily by dropping dry ice into water and blowing the resulting gaseous clouds between camera lens and subject with the aid of a quiet electric fan at low speed. Without the aid of a fan the smoke can be shown rising out of a pit, up a chimney, or out of an electric campfire. However, this process has one serious drawback: the smoke is a gas which often causes gagging or coughing.

A much more agreeable smoke, and incidentally one which has substantial pictorial quality, is produced by spraying mineral oil

on a hot electric plate. It has a pleasant odor and produces smoke in good volume, adequate for coverage of large scenes. Use an ordinary electric hot plate (not electrical filament) of the type used for griddle cooking or heating fluids in a sickroom. The mineral oil can be sprayed on the hot plate from a simple spray gun one might use in spraying roses.

Still another device, especially if strong clouds of smoke are required in a limited area, is the "bee smoker." As all keepers of bees know, smoke is important to the apiarist; he uses it to control or subdue the insects in such operations as moving bee swarms or clearing hives. The bee smoker is a device of the business, a simple gadget which can be held in one hand; it includes a metal tank of about one quart in size in which smoke is created, and a bellows device for pumping the smoke in the direction in which it is needed. In this case the TV special effects expert apes the apiarist. He first places red-hot charcoal in the tank and then sprinkles the hot coals with a smoke-producing substance such as granules of gum olibanum (a turpentine product). Now he has smoke of good density, without offensive odor, whose volume can be controlled by mere pressure of thumb or forefinger on the trigger which operates the bellows.

### Weather Effects

**Rain.** Nothing is as wet as water. This fact isn't a revelation, but until you try to produce realistic rain in the open, with the use of fire hoses and overhead tanks, it may never occur to you how rapidly the volume of water accumulates, how heavy the accumulation becomes, how much damage it may cause incidentally, and—pity the property men!—what a job it becomes to dispose of the water. Hence, rain in a TV studio is about as welcome as rain at Pasadena's colorful Tournament of Roses.

All the wetness and fury of rain can be achieved by a competent director through intelligent story construction. Let it rain *outside*—with viewers perceiving it from inside in occasional shots showing rain trickling down a window or actually splashing against the pane. Either effect can be achieved with a pipe or hose fixed above the window with numerous small holes drilled in it. Heavy rain against the pane might call for two or three pipes with the punched holes in staggered positions.

The sound of rain, especially the splashing and dripping off a roof, adds immensely to realism. The sound effects man can very easily produce the sound of rain of any intensity, combined with splashing off the roof or gushing down a tin rainpipe.

Thunder, of course, is also in the hands of the sound effects department. Lightning (theater variety) is in the jurisdiction of the lighting engineers.

**Snow.** Falling snow is sprinkled over a set from various kinds of shakers. One of the most effective of such devices resembles a giant baker's rolling pin. Actually it is a hollow, revolving cylinder made of lightweight wood and rabbit wire, with an axle on each end on which the cylinder can be turned or agitated. The square apertures in the wire or screen walls are just large enough to pass a few flakes at a time as the cylinder revolves or rocks. The apparatus can be suspended overhead with ropes or chains and operated from the floor by ropes.

Where the scene calls for a light snowfall that is not sustained for any length of time, a simpler method is to sift the flakes out manually. The snow-maker, standing atop a high ladder or scaffold, simply shakes the flakes out of a box having a rabbit screen bottom.

Unless the scene calls for a mild and completely windless snowfall, realism is added by sifting the flakes into the wind stream of an electric fan. Another fan placed low and at the side can create realistic flurries.

In some studios there are normally imperceptible currents of air caused by the air-conditioning or cooling systems. These sometimes can be used to advantage for snowfall, smoke, or fog. The condition should be anticipated, and the director should make certain that the air-conditioning system is operating at normal pressure, with studio doors closed, when special effects of this type are tested or rehearsed.

What is to be used for the snow substance? For falling snow the simplest and cheapest material is paper flakes—chopped up newsprint or confetti. But this has a tendency to flutter and doesn't always appear realistic.

The best substances for falling snow, both of them old reliables in the motion-picture business, are soap flakes or dried but untoasted corn flakes.

Fallen snow has a different characteristic, so other substances are used for the effect. Permalite, a building material used in plastering and other construction work, is ideal for this purpose. It is light, fluffy, and has a slight sparkle characteristic of freshly fallen snow. This material is particularly suitable for trimming windows, doors, railings, and ledges. If the snow is to pile up at slant, as we see it on doorstep railings and window partitions, the substance will cling nicely if a light coat of rubber cement is applied before the "snow" is sifted on.

### Extraordinary Effects

Weird, theatrical weather effects can be created by supering white figures or light flashes over production scenes.

The following devices should give inspiration for other effects in this vein:

Tack a strip of crepe-surfaced lead foil to the drum of a roll title. Preferably it should be purple, blue or green. Turn a hot light on the drum to pick up flashes of the highlights and super the effect over the production scene. Result—theatrical rain, with no water involved.

Metal cloth or fabrics containing brilliant threads at intervals can be similarly used for the most novel effects when the flashing high lights are supered over a production number.

Vibration of an entire scene, representing an explosion or earthquake, can be simulated by the very simple device of jiggling a camera on its pedestal.

Rocking of a boat can be accomplished by similar camera action—providing the background does not give the trick away.

A tank of rippling water with strong light on it gives an interesting effect when supered over another scene.

There is no limit to what can be accomplished in the way of unusual effects, but, as a new director will soon discover, many of them take much time and patience to work out and are often not worth the effort. Especially if they involve much camera time, it is frequently better to forget them and concentrate on perfection of straightforward presentation.

**T**ELEVISION make-up is an art which should be attempted only by skilled make-up men with a knowledge of the color responses of TV cameras and other peculiarities of TV production.

Even the most adept make-up men of the theater and films are not readily capable of doing a good job in television make-up until they have learned the peculiarities of camera tubes and TV lighting. Color densities and methods of application differ enormously from theater usage. Even the finesse and perfection of detail employed in motion pictures does not necessarily make for good TV presentation. The principal reason for this, as previously pointed out, is that the television camera's "eye" does not register color values as the human eye does, nor does it respond to color as the film camera does.

It stands to reason that the normal stage make-up—intended for viewing at a distance of approximately 20 to 200 feet—appears gross and absurd when viewed with a camera that brings the subject into the viewer's immediate presence. The shock which this effect would cause on the viewer is equivalent to that which might strike an innocent debutante who is thrilled by the appearance of a romantic leading man at a matinee, and then has the opportunity of meeting her idol face to face backstage after the performance.

### **Personality Problems**

Many personalities will be encountered who present problems in the matter of proper make-up. Some men object to make-up

on the false reasoning that it makes them “sissies.” Business and professional men particularly, are sometimes reluctant to face the members of their entourage after they have been “made beautiful.” Many men also resent having a facial coating applied which will have to be removed later—which stiffens the surface of their skin slightly and makes them feel uncomfortable. If they only knew and appreciated what this make-up did for them and their presentation on the air, they would agree more readily to make-up.

Both men and women are often unaware of their skin blemishes, imperfections, and variations of tone. Men, even close-shaved, do not realize how dark their skin appears over beard areas of the face. Women are not cognizant of freckles, moles, enlarged pores, or other imperfections which the TV camera will pick up and emphasize.

In addition to the natural imperfections mentioned, which will be concealed or minimized by make-up, there is also the matter of what strong lights will do to skin tone. Obviously, it is desirable that no face appears blanched with a ghostly character which undoubtedly would result from appearing before cameras in a strong light. Make-up makes the difference. And it must be proper TV make-up!

Television will always have many nonprofessionals appearing on programs. It must be remembered that many of them resent make-up for many reasons, but at the same time the director should always bear in mind his responsibility to present these persons to their best advantage. Often this requires a great deal of tact. Men with shiny bald heads that would flash in a picture like mischievous mirrors, and women with freckles on their faces (of which they are probably unaware) should be persuaded subtly to submit to make-up. (Often it is advisable for the director to tip off a make-up man in advance, warning him that he is sending in a man with an extra-shiny forehead or purple nose, or a beautiful young soprano whose features are perfect—except for evidence of a mustache which the camera cruelly notices and emphasizes in a close-up.)

So much for the problems of temperament and tact regarding make-up. Hereafter in this chapter it is proposed to deal only with fundamentals and facts regarding the subject of make-up which will be of interest to performers and members of a pro-

gram's production staff. (The matter of proper application of make-up for TV should be left to trained artists in that field.)

### Application of Make-Up

The make-up treatment now employed usually begins with a pancake base, lightly rubbed on the face with a wet sponge which has been applied to a cake of the proper shade. Pancake is tan in color and comes in shades ranging from a slightly brownish cream hue to almost a reddish cocoa shade.

The various pancake shades are identified by number, those used in TV ranging from 1 to 10, becoming darker as the numbers progress. Women usually take No. 4, 5, or 6, depending on skin pigmentation, age, character, and costume. Men ordinarily require No. 6 or 7. When there is doubt as to the proper pancake shade for an individual, it should be tested on camera if the person's importance in the program warrants taking the time.

Pancake is the most popular toning base because it is so easily and speedily applied. Some persons, particularly if they have oily skin, prefer an oil base make-up for tone, followed by powdering. They are very much the exception.

The pancake or tone base should be applied over the entire face, eyelids, ears, and exposed portions of the neck. A bald-headed man requires it over his entire bald area. Women with bare shoulders should have pancake applied over shoulders and chest area to the garment line. Occasionally, it is advisable to apply it also to bared backs having freckles or sun-tan marks. In most cases it is not necessary to pancake bare midribs or legs of bathing suit models or dancers, but there are times when it is advisable, especially if close-ups are to be taken. In such cases a refined make-up man proceeds with his artistry on other faces while the girls take turns applying pancake sponges to each other's tummies, thighs and legs. As a matter of academic interest, the author has witnessed notable exceptions to this practice, having seen courtly male volunteers from the studio staff willingly assist in the operation, and in all cases the patients didn't seem to mind. Of further interest is the fact that a clause in some union contracts stipulates that make-up men are not required to apply make-up to any portions of the body below the neckline.

After the pancake base is on, mascara, eye-shadow, and eyebrow pencil are applied. There isn't time, as a rule, for shading to correct facial defects or to create features which aren't there—except for important stars.

Men require a slight touch of mascara and eyebrow pencil only if they are very blond or would otherwise have a “washed out” look on camera.

All women and most men require lipstick. A woman's lipstick is best applied with a brush. The color approximates a deep cherry in tone.

The male lipstick, a burnt sienna color, can easily be applied simply with the little finger for the coarse outline, followed by closing the lips together tightly to even out the paste over the receded areas.

Since the camera does not pick up normal rouge tones, cheek rouge is not usually applied. Fred Williams, head make-up artist for NBC in Hollywood, sometimes brushes cheek rouge on some women and little girls—for the reason that “it makes them feel pretty.” He refers to this as a “psychological color.”

**Exceptions for Make-up.** Elderly men with non-oily skins, particularly if they have white hair and ruddy or tan complexions, require little if any make-up. (See Figure 12.) Usually just a light powdering will suffice. Some younger men are also fortunate in this respect—if they have pale or pink skin and no “five o'clock shadow” or skin blemishes. Art Linkletter is an outstanding example. He never requires make-up on TV.

Unless they have facial blemishes, children require no make-up whatever. Just powder to reduce shine will suffice. The same applies to most Orientals, Indians, Hindus, Polynsians, Negroes, and members of other darker-skinned races. The paler Negroes with heavy beards should have pancake, at least over the beard area.

Announcers and other male performers who appear frequently in TV are encouraged to do their own make-up. Most of them prefer this. They can do it at their own convenience and do not have to wait for their turn in the make-up chair.

**Beard Cover.** Dark-bearded men require special attention with pancake or beard cover. The TV camera is very unkind to this type. Even though freshly and closely shaved, a man with blue-

black beard appears to have even worse than "5 o'clock shadow" at any time of day. A copious application of the proper pancake or beard cover readily overcomes this handicap.

**Arms and Hands.** Dark-haired women with even slightly hirsute arms should apply peroxide in advance of a telecast if their arms are apt to appear in close shots. Otherwise make-up will overcome this beauty defect. Blotches, bruises, and burns can be concealed with pancake or other make-up substances.

When hands and arms come into important close-up in commercials or other parts of programs they should have pancake make-up applied to conceal freckles, blemishes, or any discoloration. Most important of all, this gives an expected uniformity and smoothness of skin texture. This applies to women in all cases except in character roles in which a worn-looking hand or arm would be apropos, and to men in most cases. Certainly the hand of a man in a commercial, holding a product package or illustrating use of some commercial device, should have pancake make-up. Even more important, the fingernails should be clean and neatly manicured. Women should not wear a fingernail polish with a purplish tone. A medium to deep rose color is appropriate.

**Miscellaneous Considerations.** When a white bridal gown or other very pale garment must be worn on a program, the make-up man should be advised of the person's irregular attire so he can select make-up accordingly. It will be lighter than normally used—so the skin will not appear too dark in contrast.

The TV make-up man gums toupees to the scalp of bald-headed men, sets wigs, and applies false mustaches and whiskers. As a rule, he is not required to dress hair, trim mustaches, cut hair or pluck eyebrows—even if he has the time to do so.

If a vocal soloist or principal in a play has a permanently stained tooth that is detrimental to appearance, the director should call it to the attention of the make-up man—if he has not already observed it in rehearsal. There is usually on hand a dentine fluid to paint over and conceal such defects.

**Time for Make-up.** Ordinarily a man's make-up can be done efficiently and thoroughly in from three to nine minutes. Women require at least eight minutes or more. Older women can be finished much more rapidly than young women. The

former expect to be accepted for their age (very roughly), but the latter expect more accent on beauty, requiring considerably more attention and time on eyes and lips.

The director (or his efficient stage manager, if he is lucky enough to have such a valuable assistant), should budget and allot time for make-up of the entire cast of a program at the most convenient times. This should provide adequate time for a sufficient and appropriate treatment of every member of the cast. It should also prevent idle waiting, save last-minute congestion and confusion in the make-up room, and result in an orderly release of program principals from the "assembly line."

When the cast is large and time is pressing (as is often the case), it is always a good idea to take the make-up artist aside and advise him exactly who should receive full attention and who should have to be satisfied with minimum treatment.

The rule of "first things first" certainly applies in make-up if time is short.

Under the pressure which quite often prevails in TV it is silly to expend valuable time on the eyelashes of a girl in the chorus line who will be seen only in long shots, while the featured vocalist idly awaits her turn in the make-up chair.

After checking the make-up artist's schedule and availability, give definite make-up appointments to all members of your cast. And insist that they appear promptly.

**Removing Make-up.** Professionals know how to remove make-up. But when a program presents nonprofessional guests—unaccustomed to wearing make-up, to say nothing of removing it—the director or stage manager should see to it that someone is assigned to assist them or to advise them regarding removal of make-up.

Of course there will always be some guests who "haven't time to remove the make-up now." Ladies stepping out for the evening after the show might appear especially glorious under subdued lighting. Men like to take their new "face" home to show the wife and children. Others may find time after the telecast to drop into a familiar restaurant or aperitif lounge and enjoy the kidding of friends. . . . "In television, eh? Whyn't you tell us? We wouldn't have watched anyway? . . . Better wear it all the time. Makes you look human. . . . It'll be an awful shock when you take it off and see your real face again. . . ."

## *THE STAGE MANAGER—DUTIES AND FUNCTIONS*

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**T**HE stage manager (sometimes referred to as floor manager) is the director's indispensable assistant on the stage or studio floor. In the case of field (remote) events he is the "captain" at the scene of action, relaying the director's instructions from the control truck and keeping the truck posted regarding developments which might not be visible through the cameras.

In telecasts of lavish or complicated productions the director may have one or two assistant directors to work with him (either in the booth or on the floor), and likewise he may have two or three stage managers. This chapter, however, for the most part will deal with studio programs in which the stage manager is the director's only production assistant.

### **Variety of Responsibilities**

In altogether too many telecasts the stage manager has more duties and functions than seem possible of execution by one man. It is a conservative statement that the most alert stage managers do work that could consume the time, energy, and mental efforts of two or three men. He is almost always on his feet; has to hustle to be at the proper place at the proper time, must keep his eye on script, program action, and camera movement—to say nothing of his stop watch; and he must keep his ear attuned to two channels of sound—what he hears on the stage and what he hears over his PL system from the control booth.

Just how he manages to survive and work efficiently in this mentally and physically taxing operation is a tribute to the endurance and unexplored capacities of youth.

Ordinarily the stage manager is a young man with some little theater experience or training in college dramatics. He is paid only a moderate salary for his very taxing work. His principal compensation is the gaining of valuable experience, which will be a great asset when he advances to program direction or studio operations. (In most stations staff directors are appointed after an apprenticeship of one or two years as stage manager, and every stage manager lives for the day when he can relax(!) on a comfortable seat in the control room and give directions while some younger novice hustles himself thin on the stage.)

The stage manager is not only the director's sole emissary on the stage; when one considers how direction is conducted from a control room removed from the scene of action, with the scene often not visible through windows, it is easy to understand why the stage manager is also often the "director's voice, eyes, and ears." In view of this one can appreciate how much "the booth" depends on the stage manager, and how fortunate is the director who has a stage manager who understands the fundamentals of camera operation and movement, and who is alert, agile, efficient, quick-thinking, and *tactful*!

Now let's consider first some of the stage manager's routine chores, principally relating to "paper work," which is necessary but obviously dull and tedious.

### Routine Forms and Releases

There are many routine assignments involving "paper work" which vary according to local practices and methods of operation. These consist of filing program reports and obtaining signatures on necessary release forms, government forms authorizing payroll deductions, etc.

**Program Reports.** The program report must be filled out accurately for the station's official records, making note of time on and off the air, duration of commercials, and persons involved in the telecast. Any mishaps, mechanical breakdowns, or special "incidents" should be recorded. The report should be accom-

panied by a master script containing all revisions and preferably with running times noted.

**Legal Releases.** Many stations require guests or performers to sign release forms authorizing appearance on TV. This is a legal protection against subsequent suits for violation of right of privacy or other possible "injuries." It grants the station the right to televise the person's presence over TV and to use his name and likeness in attendant publicity. Some release forms go even further, guaranteeing indemnification to the station for any judgments for libel or other damages.

Composed in stern legal terminology as they are, and all too often written with a broad scope concerned only with the welfare of the telecaster, such release forms frequently arouse antagonism when presented to guests for signature. Obviously, the form must be presented tactfully, and it is well to explain that such procedure is standard practice in television, "merely giving us the legal right to use your name and face in a telecast without violating rights of privacy."

On paid political telecasts wherein libelous or defamatory statements are most apt to be uttered, the stage manager need not be required to obtain signatures on release forms—for the reason that station protection is usually guaranteed in the contract pertaining to the purchase of time. In such cases the station makes a disclaimer statement at the open or close of program, or both, disavowing responsibility for statements or claims made and passing on liability to political sponsors.

**Government Forms.** Where appearances are paid for, no matter how small the fee, government forms must be signed and Social Security number given, unless the station already has such forms on file from previous appearances. There are some groups who are not under Social Security who adamantly refuse to sign such forms. Persons in this category are doctors, lawyers, nurses, and other professional people who do not yet have Social Security benefits and therefore may not wish to authorize establishment of an account with attendant reductions. Frequently such cases call for an advance understanding with the accounting department as to method of payment. They have the right to refuse to authorize the usual deductions pertaining to most nonprofessional salaried persons.

## Principal Functions

Naturally, the stage manager's most important duties are on the stage floor during rehearsal and on the air. His contribution toward a successful telecast begins with efficient assistance at rehearsals, helping them to run smoothly so that all members of the cast and crew derive the utmost benefit from the rehearsal time allowed.

**Advance Preparation.** Ideally, in a telecast of any magnitude the stage manager should be assigned to work with the director from the very start of actual production. He should receive a script in advance and have time to study it and to know what is planned and expected, familiarizing himself with story line or program content, layout of sets and sequence of their use, and all titles, special effects, and devices to be used.

He should sit in with the director during "dry rehearsal" and make careful note of staging—in order to know where to give necessary cues on the air or to prompt actors during subsequent rehearsals. He should also note in his script what props are to be introduced or struck, what effects are to be cues, etc.

**Camera Rehearsal.** Usually such "dry rehearsals" take place in a rehearsal hall or room. When the cast moves into the studio and camera rehearsal begins he should see to it that critical spots are marked in the various sets. There might be an X crayon-marked on the floor to designate the exact position for a singer, a line drawn across the stage to mark the downstage limit for movement of dancers, or a critical spot on a table where a book is to be discovered open at a certain angle. Such markings should be readily discernible to the human eye but not conspicuous on camera. Use light pencil or chalk on furniture. Floors, commonly of gray linoleum surface, can best be marked with grease crayons of a tangerine or tomato red color.

When furniture or other large props are to be moved in or out of a set during a telecast it is a good practice to mark their exact positions on the floor.

From the time actual camera rehearsal begins until the telecast is over, the director works in the control booth and seldom appears on the stage or studio floor—except in instances when it

is simpler to give directions or solve problems of stage movement on the scene rather than over the PL or SA systems. While in the control booth he depends entirely upon the stage manager to represent him and to aid in the execution of directions to all members of program personnel—cast, announcer, orchestra leader, sound effects and facilities men. Directions are given over the PL system, and the stage manager gives cues accordingly, or when necessary he relays the director's instructions to parties concerned.

**Use of Tact.** The stage manager must relay directions clearly. He should never shout unless it is necessary to be heard over music or clamor. Above all, he should be courteous and tactful. At times even the best of directions can sound offensive if expressed with a critical tone or with poorly chosen language.

There are often cases in which direction or suggestion can best be withheld until a break in rehearsal when either the director or the stage manager (at the director's request) can approach an individual privately and explain a situation tactfully, or when necessary skirt around the fault by offering a corrective suggestion only. In this instance reference is made to such matters as soiled fingernails on the hands of a man who is to hold jewelry for exhibit in an extreme close-up; freckles or blemishes on the arm of a woman who will be seen in close-up in a commercial demonstration, and who should have applied make-up to the arms; a woman with a low neckline who becomes censorable when she bends over a table in the direction of the camera; a person who presents a rump to the camera when bending over to point to some low object or to pick up an article from the floor—instead of angling the back away from the camera; or better still, from a standpoint of grace, descending by bending the knees instead of the waist.

Professionals are not timid about receiving such suggestions, providing they do not reflect lack of training or judgment. But amateurs must be handled with extreme tact.

**Teamwork with Director.** In the course of rehearsal a stage manager faces many situations in which there is a temptation to give his own directions to members of a cast or guests on a program, especially if such persons are newcomers to TV. For example: "Look toward this camera. . . . Speak louder. . . . Don't

be seen peeking through the doorway. Wait till you're cued in.  
. . . Hold the medallion still while it's being shown in close-up.  
. . . Look at the monitor, etc."

There are times when such directions are valuable and help to expedite rehearsal. At other times they are apt either to confuse the performer or to interfere with corrective measures already undertaken in the booth.

All of this points up the importance of teamwork, and for the sake of such teamwork the desirability of stage managers working frequently with certain directors, becoming familiar with their temperaments, styles of direction and shooting, and general methods of operation. Some directors allow their stage managers no autonomy whatever. Other directors, having faith in their stage manager's knowledge, skill, and dependability, will readily grant a certain degree of autonomy to their representative on the floor and will come to depend upon him to handle certain situations automatically without instruction from the booth.

**Giving Cues.** Of vital importance is the business of giving cues to cast, facilities men, orchestra leader, announcer, and others. Under some arrangements a few of these persons might be wearing headsets which enable them to receive cues or instructions directly from the booth. Ordinarily, however, they will depend upon the stage manager to relay necessary cues to them.

Here is where it is important for the stage manager to have a thorough knowledge of program sequence and camera movement. He must know exactly when the next cue is to be given and to whom, and he moves about the stage accordingly, placing himself in position to be identifiable under the bright lights in advance of an anticipated cue, and then to be seen distinctly to give the cue when called for.

His cues should be given accurately and be clearly discernible. They should be given from a place and direction readily visible to the person concerned, whether it is for an entrance of a model through an arch, a cue for orchestral fanfare, a special effect (e.g., smoke bomb), or roll of a crawl title.

Cues should be given broadly—with arm motions, not fingers as in radio. It is a good practice to anticipate critical cues with a warning signal or stand-by indication with the left arm, followed by a definite "go" signal with the right arm when the important second arrives.

In a few rare instances, especially in dramatic shows, entrances must be made by performers who cannot hear dialogue cues nor see manual cues—such as persons hiding in a closet or trunk or standing behind a remote doorway not in direct view of the stage manager. Other reliable methods of signaling a cue must be devised. The most dependable is a small red or green electric cue light which can be flashed on at the appropriate moment.

**Precautions.** In moving to cuing positions, never cross in front of cameras. Be careful not to drag the phone cable into areas that would impede the movement of cameras as they dolly backward from a scene. Be careful also not to cross in front of floor-light scoops that would throw your shadow across the scene. Be sure to arrive at a spot on the studio floor or stage where your cue can be readily seen by persons concerned; without having to turn from their natural position at the time, and without having to strain to see you through the glare of floor-light scoops. This must be done even if it calls for standing on a piano bench or lying on the floor!

Finally (and the importance of this cannot be overestimated), give cues with an air of authority combined with a sense of composure! Don't *throw* your cues at performers like darts; *bend* cues calmly toward them like graceful but authoritative willow branches. By gesture and expression try to reflect the news that "all is going well." They know you are in communication with the booth. When a stage manager shows tension or panic he hinders the success of the presentation by heightening the nervous strain of the performers. Their minds are concentrating on lines and business; a stage manager can help by giving assurance that nothing is wrong, that everything is under control and proceeding according to plan.

TV veterans have become increasingly aware of what the stage manager can contribute to the efficient performance of a cast by reflecting officially this composure mentioned, and yet, especially in the high-budget national TV shows, one observes stage managers moving about the stage hysterically, giving cues frantically, and generally reflecting a spirit of impending chaos (or worse still, sponsor cancellation!) unless by some miracle the whole debacle somehow pulls together to make a show that "gets off on time."

It has often been said that a newspaper is transitory; that today's news and editorials will not be available for review tomorrow; that the morning paper turns yellow before sunset and tomorrow will be used to line the garbage can. Well, television (except for recorded telecasts) vanishes not during a day but *instantly*, in the fraction of a second. A scene lives now, for a brief moment, and then vanishes into space.

Naturally a production, *your* production is important. But every telecast should not be regarded as a periodic crisis, a trial by fire to test your skill under strain before the eyes of employers, sponsors, and millions of viewers. It is well to contemplate at times, especially when the going is rough and the trials are difficult, that there are millions of set-owners tuned to other channels; that there are hundreds of millions of human beings who don't know what a TV channel means and wouldn't care if they did.

Naturally, it is the objective of the director and stage manager to do the best job possible, to achieve utmost recognition for superior performance. That, to be sure, can best be done by regarding a telecast as a telecast. Do your best to contribute to the over-all success of the program. Be accurate, be alert, be sure of what you are doing, and do it decisively—but *calmly*, without evidencing tension or panic. By being calm and self-assured you can help others to give a better performance!

### Communication with Booth

As described in a previous chapter, communication from the control booth to the studio floor is by PL (direct phone line from the director to the stage managers or others on the stage having headsets and phone cables connected in the program circuit); by portable wireless receiving sets (still rather rare); or by SA (studio address speech carried over loud-speakers at rehearsals only).

In some stations the program PL circuits are two-way systems enabling the stage manager to reply directly to the booth—at rehearsals, and on the air at expedient times when not in the vicinity of "hot" microphones that could pick up his voice.

However, this two-way system is not common except in field operations. In studios communication from the floor to the

booth is usually by way of a microphone on the set (at rehearsals only), or by visual signals given in front of camera that is momentarily idle.

When using the latter method of communicating with the booth, it is advisable to wait for a definite and specific question from the director, who can designate which camera to appear before. The query might be something like this: "Tom—have all the prop changes been made yet in the cabin set? Answer on camera three." If all is in order Tom can reply in the affirmative by placing his hand in view of camera three and signaling "okay" with his fingers.

In another case the director might be concerned about whether a performer has completed a quick change of costume in scheduled time. He might ask: "Tom, is June ready for her entrance yet? Answer on camera two." If the answer is no, Tom would appear before camera two, shake his head and point to the on-stage dressing room. In such an instance the director might respond: "All right, slow down the cast and let me know the very second June shows up. Next time come in on camera one."

A point that should be made about use of the PL systems is that voice levels must be kept moderate. The director should speak in a conversational level and never shout. And the stage manager should see to it that the volume level in his headset is adequate, never louder. Otherwise, especially if he wears his headset loosely and walks near a "hot" microphone the director's voice will be picked up and broadcast on the air. Some PL systems have a volume control device at the receiving end; other systems have the volume control only in the control booth.

### Timing Programs

In big variety programs and others with lavish crews, the assistant director is assigned the responsibility of timing the show at rehearsal—possibly in segments at first, and then noting a running time during dress rehearsal. In such setups, the assistant director would also be responsible for keeping the show on schedule—by advising stage managers of the time situation occasionally over the PL during the telecast—and, finally, charged with the responsibility of getting the show off the air on time. In programs with normal program personnel, however, it is the duty of

the stage manager to time the show and keep it running on schedule.

In rehearsal he times all the program segments—interviews, songs, dances, comedy routines, etc. Before dress rehearsal he submits a total estimated time. Then necessary cuts or additions are made to meet program requirements.

At dress rehearsal the stage manager makes note of running time. These notations are marked in his script at regular intervals—for example, every thirty seconds—but most importantly at significant points in the program, such as the start and finish of musical numbers, the beginning of a dance or routine, etc. Before going on the air he gives the director critical times to mark in his script.

In the course of the telecast the stage manager keeps the entire program cast apprised of time status when necessary, signaling with radio's traditional timing symbols:

**ON TIME**—An index finger tapped "on the nose."

**SPEED UP**—A circular motion of the hand, rapidly or slowly depending upon requirement.

**SLOW DOWN**—Use of both hands in a gesture like that of stretching a piece of elastic band.

**CUT**—Hand, with fingers extended, motioning at throat like a villainous knife.

When amateurs are to appear on a program, it is a good idea to review these signals just before air-time so they will understand them when given.

The cast must accept the stage manager's signals regarding tempo—speeding up, slowing down, or even effecting cuts when necessary.

Between director and stage manager, and with adequate rehearsal and cooperation of all program personnel, most script programs can be kept to schedule without variance of pace even being perceptible to the audience. Such programs need not vary more than fifteen seconds per half-hour.

The most difficult shows to get off the air on time without sacrificing entertainment elements or obviously chopping the final act in the middle are variety shows with comedy routines—for the reason that playing times of such segments have to be estimated. Musical numbers and dance routines can be con-

trolled within five or ten seconds. But comedy sketches or monologues, even when pretested on preview audiences, will never play at the same length twice. A warm audience reaction tends to stimulate overplaying on the part of comedians. A few comics who appreciate the problems involved will speed up or cut routines when given the signal that they are running over. Others are notoriously and blatantly unmindful of the time factor while they are on stage and getting solid laughs.

The estimate for playing time of a comedy sketch is arrived at by timing the routine's actual reading or staging at leisurely pace in rehearsal, without audience reaction, and then adding "spread" for laughs. This spread is based on judgment of the script's laugh value, a knowledge of the comic's performance habits, and an estimate of the audience's mood at that point in the program. A safe average to allow for spread is 20 per cent of reading time. If it runs over that it must be hilariously funny or the comic is letting it drag. Many top comedians estimate that from three to four minutes spread is entirely adequate for a good half-hour comedy program.

Telecasts using unpredictable time elements or extemporaneous inserts should have two or three alternative endings planned, preferably one for stretch and one for very fast but neat sign-off if called for.

The various segments of the program should be budgeted for time and then trimmed or spread accordingly as the program proceeds. The alternate ending must be decided upon as late as possible in the program but in sufficient time to enable the stage manager to give necessary information or cues to members of the cast concerned.

Before leaving the subject of program timing, we should like to include suggestions for a couple of simple methods of computation—in fact, so simple and basic that we hesitate to include them here except for the fact that so many newcomers to radio and TV struggle with other methods of computation until eventually arriving by experience at these.

Especially under pressure, when totaling up a column of segment times it is often a temptation to add minutes and seconds like dollars and cents—which, of course, can't be done. On the other hand, adding a column of seconds by converting them to minutes as you total is a nuisance.

Suppose that we have added separately the column of minutes and seconds for the parts of a program and arrive at a total of 22 minutes and 275 seconds. Now to convert the seconds to minutes we divide by 60, and have  $4\frac{35}{60}$  or 4 minutes, 35 seconds. Adding to the previous total of 22 minutes, we get 26:35.

We are allotted 29:25 air-time (30 minute period minus time for station identification), and we wish to know how much time we have available for a laugh spread and applause. In attempting to subtract running time from air-time we have an awkward combination of figures in this case—one in which it is easy to make a drastic error of one minute in computation:

$$\begin{array}{r} 29:25 \text{ Air-time} \\ -26:35 \text{ Rehearsal time} \\ \hline \end{array}$$

So we convert the upper figure to one which will enable easier subtraction—by taking away a minute from the column of minutes and adding the equivalent 60 seconds to the column of seconds, thus:

$$\begin{array}{r} 28:85 \\ -26:35 \\ \hline 2:50 \text{ Spread} \end{array}$$

It is hazardous to leave the business of any time computations until “on the air.” On the contrary, it is advisable to have all time computations worked out thoroughly and marked in the script. Some stage managers and directors go even further, back-timing the script from the end of the show to about the middle on a clock basis (rather than stop watch) with both *desired* times and *must* times indicated for the start and finish of each segment. It is a good idea to use, as a regular habit, blue pencil for the former and red for the latter.

In other words, if you know sign-off and credits can be accomplished with ease in 1:00 minute and the final act runs 5:00 but can be cut to 4:00 minutes, the start of the act in the script would be marked back both 5:00 and 6:00 minutes from sign-off time, which we assume for example would be 7:29–25 P.M. In blue pencil the start of the act would be marked 7:23–25, the desired time for starting. In red pencil you would mark the latest allowable or “must” time of 7:24–25.

## Directing Traffic and Maintaining Order

In addition to all the functions already described, the stage manager is also responsible for directing all traffic on the stage and for maintaining order at rehearsals and on the air. In the matter of traffic, he should see to it first of all that amateur guests and late arrivals are informed of the proper route by which they are to arrive at the scene—without tripping over cables, walking in front of cameras, or casting unwanted shadows by crossing in front of floor-light scoops. He should see to it that the persons are available as needed, standing by for their entrance when called for, and that they move into position when cued.

He should keep all unnecessary and unwanted visitors out of action areas during rehearsal, and if possible chase them politely out of the studio before air-time. Many programs unwittingly and unintentionally invite numerous hangers-on who are always a source of nuisance—"important people," "celebrities," "tag-alongs," and general busybodies and snoopers who brazenly welcome themselves to a set without waiting for an invitation to enter. They cause annoyance and confusion by constant chatter and ill conduct. They fill ash trays with unwanted cigarette butts and move critically arranged furniture to suit their convenience for witnessing rehearsal, trip over cables, knock over music stands, congest narrow doorways, and even impede camera movement. In an instance which the author recalls only too well one of these VIP's left a half-empty "coke" bottle on top of a grand piano just before "Mozart" was to appear in a historical scene.

The stages should be kept clear of all visitors and hangers-on, even the ubiquitous talent agents representing artists on a program. Their presence here can contribute nothing to the success of the program; more likely, it is apt to disturb the performers and bog down a rehearsal.

When they get noisy or annoying, the stage manager should silence them and request them to move away from the shooting scene. If the annoyance persists and they continue to disturb the rehearsal by loud talk, it is time for the stage manager to go to the booth and inform the director of the source of the disturbance. With the authority of an emphatic voice on the studio

address system, he can issue this type of order which usually has its desired effect: "Attention, please. Will all persons in the studio not taking part in this telecast leave the studio immediately!"

### Contingencies and Emergencies

In television anything can happen. So far just about everything *has* happened. Camera chains have "gone out of business." Light fuses or breakers have blown out. Well-trained animals have forgotten their "indoor manners." Child actors have broken into tears, refusing to continue with their rehearsed performance. Adults have been seized by panic, fainted, or otherwise been indisposed to make their appearance before cameras. Guests having prior engagements elsewhere have become tied up in traffic and failed to appear on schedule. Others have shown up at the last minute intoxicated. Guests or professional performers have walked onto a scene on cue but have neglected to bring with them necessary props or vital charts or other objects they were to exhibit—and so on, ad infinitum. What then?

Such situations call for understanding and immediate extempore action by members of the cast. It may be necessary for the stage manager to apprise the director of a contingency or emergency which has arisen, or the information may go in reverse direction.

In case of camera "blow-up" or similar failure of technical equipment on the air the director will notify the stage manager immediately. He in turn will apprise those members of the cast who might be concerned. In most cases this will necessitate drastic alteration of the plan of camera shooting, and in some instances will call for studied "stalls" or delays during transitions from one scene to another—to permit one of the two remaining cameras to reposition for a dissolve to a new scene which the now extinct camera would have handled.

When one camera "goes out" on a two-camera operation, the remaining camera has to resort to all kinds of devices, dollying beyond normally expected ranges and even switching lenses on the air. Here is where a stage manager can help—providing, of course, he can inform his performers of what has happened and what is required. He can assist the surviving camera by calling

performers to it for medium shots or close-ups, rather than requiring the camera to move in to them.

If the situation can be cleared up and the erratic camera put back into operation in time, the director should notify the stage manager, who in turn can inform the performers that normal operation has been restored, and that rehearsed or planned shooting will proceed again.

In emergencies of this kind it is helpful to have a small blackboard and chalk handy for the stage manager to write out brief messages for the cast to view at expedient moments. The same blackboard can also be an asset to the stage manager in transmitting emergency messages to the booth—by placing it before a momentarily idle camera.

There are times when contingencies can be handled or faults corrected by calling for a close-up which eliminates from view an element in a scene which can cause trouble—for example, the “coke” bottle on Mozart’s piano previously mentioned. The director notifies the stage manager of what he plans, in this manner: “Tom—we’re taking a close-up of the pianist’s hands. Send a man in fast from camera right to remove that ‘coke’ bottle. We’ll hold the shot until you’re clear.”

Regardless of how unorthodox this might seem, the order should be executed immediately according to instructions. If the stage manager is experienced and knows camera work, he will understand. At least he should have confidence in the director’s judgment and not fear being seen on camera himself or allowing a facilities man to commit the horrible error of appearing accidentally in a scene.

Many times such situations do arise in which the stage manager must trust the director’s judgment and carry out his orders to the letter. The direction might even apply to something the stage manager has not observed—coffee has been spilled on a tablecloth or a star’s gown, a picture has been tipped cockeyed on the wall, an infant in a group of youngsters is misbehaving embarrassingly, or the light on a vitally important candle has blown out. Whatever the problem, try to apprehend instantly. Be sure you understand the corrective direction, and then proceed immediately to carry it out.

## Teamwork and Understanding

It stands to reason that a director and stage manager will work together better as a team after they have had an opportunity to work together for a while on the same shows.

To do his best job and contribute fullest initiative the stage manager should familiarize himself with the working methods of each director he is assigned to assist. He should observe how the director blocks out his shots, how he rehearses and directs his cast, what he expects of his stage manager—and, most importantly, just how much autonomy on the stage he will give when he acquires faith in the stage manager's efficiency and judgment.

One can sympathize with stage managers who are assigned to work with disagreeable or unappreciative directors. No stage manager should have to tolerate shouting or reckless criticism. His job is a tough one and even under the best conditions contains more chances for making mistakes than any other in television. When his job is well done he should be respected and appreciated, and a report of his value and efficiency should be passed on to speed up the day when he will be rewarded with a director's job.

## SCRIPT FORM AND REQUIREMENTS

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TELEVISION is not now and probably never will be a field in which to learn *writing*. It's an intricate, hectic business that consumes exorbitant amounts of time and mental energy and demands constant "peak" performance from skilled craftsmen. What one can learn by observing television production and by studying scripts is how to adapt writing talent and training to the video medium.

Therefore, what is included in this chapter on the subject of scripts is directed to those who presumably know the fundamentals of writing in one form or another and wish to direct their talents to television. The subject matter is addressed also to directors and producers with the objective of aiding them in procuring scripts written in a style that is most practical for production.

### Understanding TV's Peculiarities

At the very outset the writer should understand and appreciate both the wonderful attributes and limitations peculiar to this medium alone. In planning and writing scripts he should always be cognizant of both, capitalizing on the attributes of TV, and confining himself within its limitations or circumventing them by clever devices or skillful construction.

In addition to all its obvious qualities, TV's greatest attributes are timeliness and intimacy.

By timeliness is meant TV's immediacy, its power of delivering direct presence, of transmitting a living scene into the home—NOW, as it happens.

TV's intimacy cannot be overestimated. The variety of lenses and camera angles take the viewer right into the scene—for intimate observation and inspection, without any vocal or visual projection being required.

The limitations of television revolve around three vital factors: **TIME—SPACE—MONEY.**

**TIME**—the all too few precious hours in a week, from one telecast to another. Time to design sets, to build them, paint them, set them, and strike them. Time to memorize lines, and above all time to rehearse. Seldom do we have sufficient hours on camera to achieve perfection without fury and inordinate pressure.

**SPACE**—both on the TV screen and on the studio floor. The size of the screen limits the scope. Space in the studios, available for any length of time, is always at a premium. This compresses the settings, crowds the movement of cameras and other facilities, limits the program's action.

**MONEY**—always a bugaboo in this expensive medium. Everything is costly—professional casts, operating personnel, technical facilities, and sets which are often used only once and then destroyed or done over. Budgets never seem adequate for the quality of performance expected. And even in lavish programs the cost sheet of production expense must be watched constantly; a critical eye and sharp pencil must be applied from start of production to the program's sign-off, or the budget will inevitably be exceeded.

A writer can't be successful if he consistently ignores any or all of these factors. This is a highly specialized business, and to be in demand he must conform to its requirements and help effect all economies possible. (These will be discussed in detail in Chapter 26.)

### **Preferred Script Form**

Now let's consider in what form a script can best be written—in so far as style of presentation is concerned.

Unfortunately for the industry and all who work in it, no standardized form yet exists. When television came to life again after hibernating through World War II, a highly complex script format was devised by the writers and directors of the first dra-

matic presentations. It involved the use of three or even four parallel columns on a horizontal page, each devoted to a separate element or interest in the program—for example, dialogue with stage directions in the first column, business or general video in the next, and camera designations or shots in the third. Then it became apparent that this method was not only difficult for the writer and mimeographer but was difficult to follow, being in a sense like trying to read a Polyglot Bible by interpreting all languages simultaneously.

The next step toward the development of a standard form came when personnel from the theater began to do business with men who had come into television from radio. Soon there was a wedding of certain accepted elements of playwriting form with radio script forms. In the late 1940's this union of the two mediums was expressed on paper in a confusing variety of styles. Before long, exponents of the various forms drifted into one or the other of two dominant camps, each with minor variations. These are the two principal systems which exist now.

Each system divides the vertical page into two columns. One (favored by NBC) places all *audio* contents on the left side, with *video* directions on the right. The other system (favored by CBS) has these elements in reverse order. Some thoughtfully divide the page into three equal columns, leaving the third column blank for the director, technical director, stage manager and others concerned to write in notations which apply to their respective functions.

Continued use of two systems so divergent is a cause of unnecessary confusion, as are the minor variations employed. Since actors, technicians, and production personnel move frequently from one program to another, and even from one network or station to another, it would be in the interest of all if a standardized form were adopted in the industry. It certainly could be accomplished by conference and agreement between representatives of the various networks and major advertising agencies.

The author strongly favors the Audio-Video system as opposed to the Video-Audio system for the following reasons.

Since we are not Orientals, reading by custom from left to right instead of right to left, it would seem logical that we should prefer to read in the traditional direction and fashion to which we are accustomed.

Next, it seems logical to assume also that the thought or word motivating an action should precede the action, not follow it. Reading then, from left to right, we would have first the thought or expression and then the action or visual response.

This system applies more favorably not only to the reading of video designations but also to the marking of camera shots, cues for prop actions, time notations, etc. These are most aptly marked on the right—at the *end* of a line of dialogue. It isn't sensible to mark such notations in a blank column on the left side of the page; this requires the eyes to read from left to right to the conclusion of a line and then to flash back again to the left to find the ensuing notation.

Still another reason for placing the blank column for notations on the right is that it is not only easier to read such markings there, but it's easier to write them; a right-handed person writing on the left side of the page is at a disadvantage, for the very reason that every time he places his pencil to the paper there his hand automatically obstructs view of the related audio copy.

Before examining a specimen script written in the recommended style, let's consider what elements in sound and picture a script might contain.

In the *audio* section there will be voice, music, and created sound effects. With dialogue there may be special instructions for interpretation. Music may be by recording or live orchestra, and often special treatment will be called for in script.

In the *video* section there will be directions for members of the cast, titles, devices, props, and possibly slides and film. Script will contain instructions for special expressions and stage business by actors. It may also describe settings and designate certain technical effects, such as "supers" and fade-outs.

Now let's see how all these elements and designations can be expressed for maximum efficiency and ease of reading. In the specimen script which follows, note especially these important points.

1. A third of a page on the right is kept blank except for a minimum of writer's notations, which are brief and abbreviated whenever possible. ("XCU MOM" can be read and interpreted faster than "EXTREME CLOSE-UP OF THE MOTHER.")

2. Lower case is reserved for speech exclusively, all designations, effects, and instructions being written in capital letters.
3. For segregation from dialogue, special elements, such as film, music, and sound effects, are set off deeply indented. For special emphasis, since they are often such critical cues involving many persons, such designations for film and music are underlined.
4. Typewritten camera instructions are those few pertinent shots which the author might include in the script which he submits. Camera numbers and all other penciled notations are those which the director might mark in his shooting script —either in advance or at rehearsal.

- HAPPY DAYS -

TUES., SEPT. 7, 1954

CAM RHSL

9:00-11:30 AM

1:00- 4:30 PM

DIR: GORDON TAYLOR

AIR

7:00- 7:30 PM

ORCH: "I WANT TO BE HAPPY" THEME

DEVICE: WINE DISPLAY

FADE UP DISPLAY

DOLLY IN TO

LABEL

ANNCR: (OVER MUSIC)

The Montebello Wine Company — maker of fine  
California table wines — presents...

DISS - TITLE

TITLE: "HAPPY DAYS"

Happy Days — for your enjoyment.

MUSIC UP - FADE

PICTURE: COTTAGE SCENE

DISS - PIC

Ah, Happy Days!...not yesterday, nor  
tomorrow, but these days...in your city  
...and your town...and of course little old  
Brookdale, U.S.A., where the Dixons live  
— Joe and Jean, and their children, Rocky  
and Kathleen...

SLOW DOLLY IN  
TO DOOR

DISS - INTERIOR

FADE OUT MUSIC

(LIVING ROOM. FATHER IN EASY CHAIR BY TABLE, READING PAPER. MOTHER AND DAUGHTER ON SOFA. JEAN WITH BOOK, KATHLEEN WITH PAPER. ROCKY SPRAWLED ON FLOOR READING NEWSPAPER.)

JOE:

(READS FOR A MOMENT, THEN FOLDS UP SECTION OF PAPER) Has anyone seen the financial page?...I say, has anyone seen the financial page?

JEAN:

(LOOKS UP FROM BOOK) Were you speaking to me, dear?

JOE:

Well, not exactly....What's so interesting?

JEAN:

Interesting? About what?

JOE:

The book you're so absorbed in. Must be good.

JEAN:

Just a novel. One of those historical things.

JOE:

Hmmm...Rocky, do you have the financial page?

ROCKY:

Nope. I'm readin' the sports section.

JOE:

What's on the other side of it?

ROCKY:

(LOOKS AT BACK PAGE) Nothing important. Just society.

JOE:

Kathleen...

KATHLEEN:

Yes, father.

JOE:

Do you have it?

KATH:

What do you mean?

JOE:

What are you so absorbed in?

KATH:

I'm reading the Lovelorn column. Why?

CU TITLE ON  
BOOK: "FOREVER  
AMBER" — PAN  
UP TO HER FACE

JEAN:

Kathleen, your father happens to be looking for the financial page.

KATH:

Oh, that dull section with all the stock market junk on it?

JOE:

(PATIENTLY) Yes, — that junk.

KATH:

It's on the other side of the page here...  
I'm almost through anyway.

JOE:

Fine! I'll wait.

ROCKY:

(RISES, GOES TO DAD) Say, Pop —

JOE:

Yes, son.

ROCKY:

Speaking of financial matters...

JOE:

Yessss....

ROCKY:

Seein' as how tomorrow is Saturday, and...

JOE:

How much, Rocky? And what for this time?

ROCKY:

Just fifty cents — for a haircut.

JOE:

Here you are. (HALF ON TABLE)

ROCKY:

Thanks....Also I was goin' to ask for two-bits more — for the movies.

JOE:

Doesn't your allowance take care of things like that?

ROCKY:

Gosh, no. And besides, I'm savin' most of my allowance these days.

JOE:

Good. I hope you continue to save it and not squander it on some fool thing....

(HANDS HIM QUARTER) Here you are.

ROCKY:

Thanks....(STARTS AWAY, TURNS) Come to think

of it, Dad, the show has gone up. New price is thirty-five cents.

JOE:

(NOW ANNOYED. REACHES FOR DIME) Everything's going up — except my income....

Here you are.

ROCKY:

Pop, you're a pip....(STARTS AWAY)

JOE:

See that you cut the lawn before you go to the show. Then you can do a better job.

ROCKY:

Oh, naturally. (EXITS)

KATH:

(RISES, CROSSES TO DAD) Here's your financial page, Dad.

JOE:

Thank you, Kathleen.

KATH:

(SO SWEETLY) Oh, father, dear.

JOE:

Yes, — dear! You're going to the movies too?

KATH:

Uh huh. You're positively psychiatric, or whatever it is.

JOE:

Sometimes I wonder....I don't have any more change. Here's a dollar, and — (PUTS ON TABLE)

KATH:

(SNATCHES IT) Oh, thanks!

JOE:

— and you can bring me the change.

KATH:

Oh, gee, Dad...Know what?

JOE:

What?

KATH:

The change. It would just about pay for some new nail polish.

JEAN:

Kathleen, I bought you some new nail polish only two weeks ago.

KATH:

I know, Mother — but that shade was Tiger Heart. The trend is now toward Pigeon's Blood.

JOE:

Interesting — but expensive....I wish women would decide what they think men think is the "natural" color to paint their fingernails, and then stick with that color for a while.

KATH:

Oh, Father, don't be ridick!

JOE:

Now I ask you, what's so ridiculous about — ?

JEAN:

Joe, dear — vogues do change, you know.

JOE:

Oh, constantly! Always some new style to sell merchandise before you get any good out of the stuff you have!

KATH:

(RESIGNED) Oh, let's forget it, Dad. I'll go on using that passé Tiger Heart.

JOE:

Hmmm!

KATH:

Of course all the girls will notice it. They'll think I'm a "square" — or that I can't afford to keep up with the vogue.

JOE:

Now see here! That's a lot of nonsense!

KATH:

(DRAMATIC SADNESS) Father, — I think you're getting old-fashioned....Goodnight, all. I'm going up to my room.

JEAN:

Will you be sewing tonight, Kathleen?

KATH:

No, I just want to be alone — to think, and maybe write in my diary...Bon nuit.

JEAN:

Goodnight, Kathleen.

KATH:

(COOL) Goodnight, Father.

JOE:

(FEELS LIKE A HEEL) Goodnight, dear....  
(LONG PAUSE)....Now what would she be writing  
in a diary?

JEAN:

Who knows? At her age the female is  
sometimes hard to understand.

XCU — DAD

JOE:

Why limit it to her age? (LOOKS AT JEAN  
WITH DROLL SMILE)

XCU — MOM

JEAN:

(LOOKS UP FROM BOOK. GLANCES AT HIM OVER  
GLASSES WITH A SILENT REPRIMAND. RETURNS  
TO BOOK.)

XCU - DAD

JOE:

(PAUSE, THEN MISCHIEVOUS GRIN) What did  
you say is the name of that book you're  
reading?

XCU — MOM

JEAN:

(LOOKS UP. A CATTY SMILE) I didn't say.  
...(LET IT REGISTER. RETURNS TO BOOK.)

SLOW FADE TO  
BLACK

ORCH: (SNEAK IN UNDER DIALOG)

FAST COMIC TAG

(FIRST COMMERCIAL)

SLIDE: MONTEBELLO LOGO

DISS TO SLIDE

DISS — GRO CER

GRO CER:

(STANDS AT COUNTER CHECKING PROVISIONS INTO  
BOX FOR DELIVERY)....salt...coffee...two  
packages of frozen peas... and a pound of  
butter....(CALLS) Here you are, Jim. Ready  
for delivery — to the Morris house.

SOUND: PHONE BELL

(PICKS UP RECEIVER) Good morning. Square  
Deal Grocer.

WOMAN: (FILTER VOICE)

Mr. Jones, this is Mrs. Morris again.

GRO CER:

Oh, yes, Mrs. Morris. We're just about to  
make that delivery.

WOMAN:

I forgot something important.

GROCER:

What was that, Mrs. Morris?

WOMAN:

We're having company tonight, and I should serve some nice table wine, — perhaps sauterne....Do you carry the Montebello brand?

GROCER:

Montebello! Indeed we do.

WOMAN:

Then suppose you send me three bottles, please.

GROCER:

Very well, mam. We'll send it along with your order. (HANGS UP....THEN TO CAMERA)

Do we carry Montebello wines? Our customers insist on it. No wonder, because you can't buy better wines at any price....And here's why:

(ROLL FILM)

DISS TO FILM

FILM: MONTEBELLO COMM'L 16mm SOF

(FILM RUNS 37 SEC....AUDIO ENDS:

"So be sure to ask for Montebello wine!" FINAL VIDEO: FREEZE FRAME OF WINERY)

DISS TO GROCER

GROCER:

Now, friends, you know why Montebello wines are so superior — and why so many of my customers insist on it....When you entertain, serve Montebello wine!

DISS TO SLIDE

SLIDE: MONTEBELLO LOGO

RECORD: MONTEBELLO JINGLE

(PLAY CONTINUES)

DISS TO PORCH SET

As previously mentioned, the foregoing script specimen—for purposes of illustration—is a final mimeographed version with the director's notations for camera to be penciled in.

The script author has indicated certain shots believed to be pertinent in the dramatic presentation. In general practice these

directions by the author are kept to a minimum and are offered merely as suggestions. The director will allow them to remain, at his discretion, or will mark them out and indicate others before sending the script to be mimeographed. As a rule, the numbered indications of cameras and the remaining shots will not be determined until script is in mimeograph form and rehearsal has begun—and hence will be handwritten rather than typed.

It would not be the author's responsibility to include the commercial copy in his version of the script. Commercial copy is supplied separately by the sponsor or his advertising agency and is blended into the script before the final version is sent to be mimeographed. At the point in his original manuscript where he has chosen to break the play action to accommodate a commercial the author would merely write:

FADE TO BLACK

(INSERT FIRST COMMERCIAL)

(CONTINUE ACTION ON FRONT PORCH SET. MOM AND DAD SEATED ON PORCH SWING SEAT. KATHLEEN RECLINING ON WICKER CHAISE LONGUE)

DISS TO PORCH  
SET

Unless he is a contracted writer on a regular series the writer of the drama would not include format material in the opening, either. His script would apply to dramatic content only, beginning with actual start of play, indicating separation of acts for commercials and terminating with last line of play and expected video effect such as: "SLOW FADE OUT TO BLACK."

Brevity is important in all directions, even in those applying to setting of the various scenes. In published plays it is common practice to give elaborate descriptions of the scene at the start of an act, including detailed description of furniture and props with their placement in the floor plan, and full instructions for positions and business of actors as curtain rises. This is completely unnecessary in television. The author should include only a brief description of scene with notes on only very pertinent details. There is no need for the mimeographer to consume precious time and paper for information of interest to only a very few persons in the production; those not concerned with such instructions should be spared reading time necessary to

wade through such material which does nothing for them but add to the bulk of what is probably already a massive script.

Even necessary instructions in the setting of scenes should be pruned down by the director before sending to be mimeographed. In the final analysis, they concern only him and the art director; both of these men will have conferred at length regarding necessary elements in the various scenes and the positioning of furniture and other props.

Radio writers coming into television are soon impressed with the fact that they have been leaning heavily on sound effects to express dramatic action. Sound effects are much less important in the visual medium because action is expressed by actual movement which can be perceived by the viewer's eyes, and generally such plot development, even without dialogue, can be accomplished much faster visually.

It should be noted that sound effects should be called for only when they are not created naturally by the cast in action. For example, as previously explained, footsteps across a kitchen floor or the winding of a clock (on camera) are sounds which automatically occur with the action. On the other hand, all off-stage sounds—such as thunder, an approaching automobile, or a church bell—are sound effects and should be indicated as such. To comply with union regulations and to clarify matters for the sound effects operator and the audio man, the script should make careful differentiation between natural and manufactured sounds. Some sounds might be motivated on stage but unless they are actually created by a person appearing before camera they are effects for the sound department to handle.

Finally—and this is a molehill which adds up to a mountain of time—it is absolutely unnecessary to label the *audio* and the *video* columns at the top of every page.

### Film Teleplay Format

The format described and illustrated above applies only to live television—in which the action is continuous throughout, and music and sound effects are recorded simultaneously with the dialogue.

As viewers are aware, a great percentage of dramatic shows in television now are shot on film—with purely motion-picture

technique. The scenes are shot one at a time over a period of two, three, or more days. As a rule only one film camera is used, being repositioned for close-ups—which are usually shot immediately after the wide or over-all shots are taken. Music is dubbed in later, as are most of the sound effects.

Hence, the live television play format is not recommended for filmed plays. Instead, the film play format should be used. It has become highly standardized in the industry and many good examples are available in texts on screen playwriting.

Following is a brief excerpt from a teleplay that is written in a form which is popular in television—the master screenplay form, in which all but the most basic directions are left to the discretion and ingenuity of the director. It is not only a good example of good teleplay format but is a good example of writing. “Stage business” is kept to a minimum, the dialogue is crisp, and the scenes are brief. Obviously, it is from a script for the filmed version of “Life of Riley.” \*

#### INT. WALDO'S GARAGE – CLOSE ON WOODEN BOX

CAMERA PANS SLOWLY UP to show feet, hem of woman's dress and skirt and pulls back to disclose Waldo in a cotton dress and a man's hat on his head, posing. He has a broomstick or an old hoe in his hand.

#### WALDO

Do you want any special  
expression on my face?

(demonstrates)

Fear – joy – anguish – terror?

#### ANGLE SHOT – GARAGE

Front door closed. Small side door is used for entrances and exits. The easel is set up with canvas on it. Riley has on an artist's smock and beret. A palette in one hand, brush in the other. A canvas stool with tin box of paints on it in front of easel. Riley stands, squinting at Waldo. Makes a few strokes on canvas.

\* For permission to quote the following excerpt of script for a “Life Of Riley” program, the author is indebted to Hal Roach Studios and the National Broadcasting Company; to the program's producer, Tom McKnight; to the author of the original story, Ted Young; and to the writer of the screenplay, Harry Clork.

RILEY

I ain't usin' your face, Waldo.  
Just your torso.

SOUND: Postman's whistle o.s.

WALDO

Oh, there's the postman — I'm  
expecting a letter....I'll be  
right back.

He steps down and starts out unmindful of costume. Riley  
has taken a tube of paint from box — reads label.

RILEY

Burnt Sienna —  
(puts it back)  
— I ain't paintin' a fire.

EXT. STREET AT GARAGE ENTRANCE

Waldo, in dress, comes to mail box, opens it and removes  
letter. As he turns a woman passes, reacts to Waldo, who  
turns and tips his hat to her.

WALDO

Good morning, Mrs. Gumbinner —  
lovely day.

Starts back to garage. Woman stares open-mouthed.

INT. GARAGE

Riley has a large tube of white. He gives it a healthy  
squeeze. The paint squirts out all over his hand — as  
Waldo returns.

WALDO

I believe you're supposed to  
squeeze it onto the palette,  
Mr. Riley.

RILEY

I know just where it goes, Waldo.  
I was just testin' it.

Takes an old towel hanging on easel and wipes off paint.  
Waldo resumes his position on box.

WALDO

(moves to strike  
pose)

Have I captured the right pose  
again?

RILEY

You ain't exactly what I got  
in mind, Waldo. Just stop  
wigglin'.

Gillis enters through side door (BACK OF CANVAS TOWARD  
CAMERA IN ALL SHOTS).

GILLIS

Come on, Riley, start brushin'  
before Honeybee misses that  
dress and starts screechin'.

Riley has quickly thrown towel over canvas to keep Gillis  
from seeing it.

RILEY

I can't paint 'til I hit the  
mood, Gillis.

WALDO

Artistic temperament must be  
coddled, Mr. Gillis.

GILLIS

I ain't got time to coddle him —  
I got a lawn to cut. Let's see  
what you got done.

RILEY

(protectingly)

Nobody gazes on it 'til it's  
finished.

WALDO

We'll just have to guess, Mr.  
Gillis.

GILLIS

From your posin', I would  
guess it's Dracula's mother.

DISSOLVE TO:

## PRODUCING EXTEMPORE PROGRAMS

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IN THE few short but busy years in which TV has grown to its present stature in our national scene the industry has tried the presentation of almost everything acceptable as entertainment. Some experiments have resulted in failure. Others have been found impractical for television, too costly or not sufficiently appealing to warrant efforts and expenditures involved.

Drama and variety shows were naturals for the medium when budget permitted. The quiz programs which gained such large audiences at low cost in radio were readily drafted into TV and soon adapted with visual "gimmicks." The requirement for visual elements automatically led to widespread adoption of parlor games that amused children before radio and the movies became standard entertainment, and now we see adults dropping their reserve and bobbing for apples while the audience screams at their exhibitionism. It is natural too that "how-to-do-it" programs, along with more serious educational types, have become numerous and popular.

### The Nature of Extempore Shows

For reasons indicated above, a large percentage of regular TV programming which does not fall into the categories of drama, variety, news, or special events are the extempore programs. (See Figure 13.)

To all appearances, they are completely extemporaneous or "ad lib." However, it stands to reason that there must be some script, or at least a clearly defined format or pattern—in order to



FIGURE 14. THE "IDIOT SHEET." Bob Crosby appearing on his popular CBS daytime program, making use of the prompting aid jocularly referred to in the industry as an "idiot sheet." The device is commonly used by virtually all performers—for commercials, dialogue, comedy routines, and the lyrics of new or unfamiliar songs. (CBS photograph.)

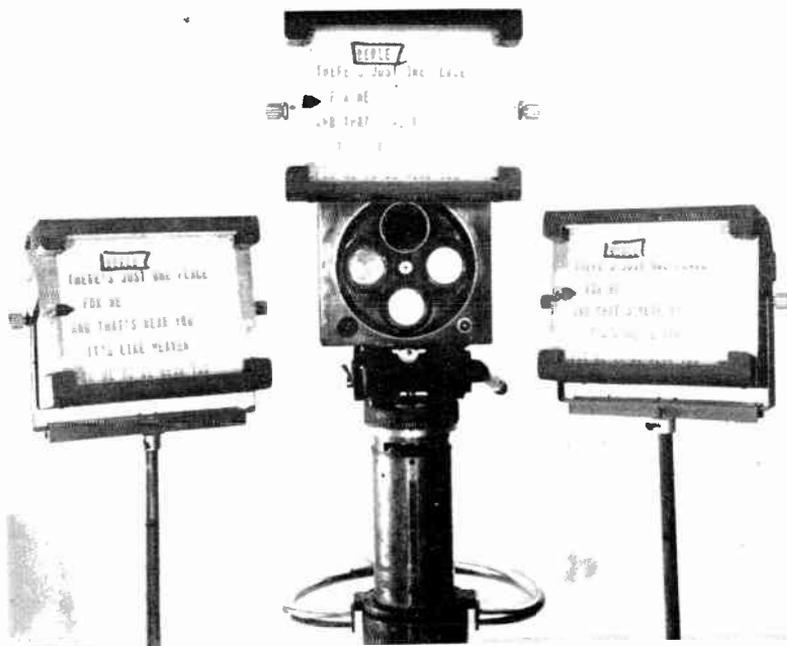


FIGURE 15. THE TELEPROMPTER. Television's most effective memory aid, the Teleprompter, shown mounted on a TV camera and on portable stands which can readily be moved to strategic points on the set for the benefit of actors, announcers, and singers. (TelePrompter Equipment of California, Inc.)



FIGURE 16. MOBILE UNIT IN OPERATION. The scene is at Yucca Flat in Nevada and shows KTLA's mobile unit covering an atom bomb explosion. The picture was taken 90 seconds after the detonation. TV's coverage of the incident, engineered by Klaus Landsberg of the Paramount station, made television history. The mobile unit's truck is in the foreground. Note the microwave disc in lower left corner of the picture. (By permission of KTLA and Klaus Landsberg.)

synchronize performance and camera work, and to regulate timing. Much of the content of some of these programs is completely spontaneous, but the spontaneous sections, one may be sure, are contained in a well organized framework or skeleton. In simpler shows this might consist only of a written opening and close, for an announcer to read off-camera or to memorize if he appears on-camera, together with a routine of departments or major items to be included in the body of the program. The departmentalization might be amplified with a listing of sub-topics, action, or pieces of business.

**Notes and Memory.** In programs of this type memorization of written lines is seldom attempted. Principals acquaint themselves with routine, are briefed on what is expected of them in each department, and then depend on their own wits or familiarity with a subject for extemporaneous speech.

An alternate method is to have notes written on cards and secluded behind desk panels or books, or carried in the pocket and referred to at intervals when off-camera.

Obviously, questions in quiz programs or any statements which must be meticulously phrased for legal or functional reasons should be *read*. In such cases there is no harm in openly reading them in view of camera, either from a script or from notes on cards. If for any reason this is not desirable they should be read from prompting devices.

**Prompting Devices.** Prompting can be done by means of blackboards placed behind cameras, or by what have amusingly become known as "idiot sheets." (See Figure 14.) These are large cards or sheets of paper on which cues or lines are written. At times, especially when amount of copy is limited, they are suspended on front of cameras. More often they are held up by prop men standing immediately next to the camera which will be "shooting" the speaker. Many leading comedians are prompted through long monologs in this manner, either having the copy printed out *in toto* or only with cue lines recalling jokes in the sequence in which they are to be used.

More advanced devices for this purpose can be made available when cost and trouble involved are warranted, as in the case of political speeches which should appear delivered in an extemporaneous manner rather than read from page after page of

manuscript. Foremost among these devices is the Teleprompter, which utilizes a projection screen in view of the speaker but out of range of camera. (See Figure 15. For further data see Chapter 24.)

When script must be carried by an “emcee” or announcer it can be made less conspicuous by proper folding. First, fold each page lengthwise to eliminate the video column. Then stack all pages in proper order and fold the entire script horizontally in the middle. This not only exposes less script to view but provides a firmer package of pages which can be turned as needed to read top and bottom, and which can be discarded page by page as used—either by depositing in a pocket or dropping behind furniture.

The amount of script in view can be even further minimized by having it mimeographed on a light-colored paper instead of the usual flat white. A jade green or “baby blue” are ideal tones for this purpose. Such scripts are not only far less conspicuous in the televised scene, but they are easier on the eyes of men in the control room who alternately glance from script to monitor screens.

All of the foregoing may give a terrifying impression to TV newcomers regarding the memory problem, but the problem is there and might as well be faced and solved—even with the use of such extremes as “idiot sheets.” To paraphrase an old axiom, it is better to have such prompters available and not need them than to need them and not have them!

## Timing

Timing is less a factor in extempore programs than in dramas and variety shows which must present a certain amount of material within a given time without the alternative of abruptly chopping off the program when time has been consumed. However, timing is important from a standpoint of showmanship. Departments or elements in an extemporaneous program should be time-budgeted in advance in accordance with their estimated entertainment value. The nature, number, and show value of guest personalities should also be considered.

Time variations can and should be made when advisable as the program progresses. It is poor business to let a show drag with

features or personalities that turn out to be unexpectedly mediocre or dull and then to rush through or chop off a highly entertaining or exciting feature at the end of a program.

In telecasts of this type it is advantageous to have an element of flexibility at the end, preferably a short feature which can be used or eliminated as the situation warrants. It is also helpful to have alternate closings in the script format, one with normal announcements and titles, another for fast but tidy sign-off when needed.

### Regarding Microphones

Mike types and arrangements should be in accordance with needs in unrehearsed or extemporaneous programs. The clandestine boom mike is not always a requisite. If there is much movement or unpredictable stage action, portable mikes should be used, preferably lightweight hand microphones with plenty of free cable, or the newer and less common lapel mikes which give a speaker complete freedom of movement. With the aid of light equipment carried in a pocket, the voice is transmitted in the latter case by wireless to a receiver in the studio.

In panel shows or other programs in which the voice will be heard at unpredictable times but from fixed positions, the most dependable audio pickup is gained from fixed mikes, either hanging mikes out of view or table microphones frankly visible or secluded behind books, desk panels, or props.

### Selection of Personalities

Presentation of a good extempore program begins with a basically sound premise that affords good entertainment.

**The Role of MC.** Next comes the selection of a good MC or moderator with a pleasant personality and agreeable (not necessarily handsome) appearance, who has the gift of speaking intelligently at all times, either "on his own" or with prepared speech. He should be at ease and put others at ease. Wit and humor are distinct and rare assets for his role and contribute much to the enjoyment of a program, but above these attributes come natural courtesy and tact—the ability to spare embarrassment that embarrasses an audience, to cover up mishaps, to

circumvent danger or to check characters who threaten to step out of bounds.

The moderator or MC should otherwise be attuned to the nature of the program—light-hearted and gay, or somewhat mature or dignified if his role calls for such an impression.

The next quality to seek in this key personality is the ability to learn and abide by TV's production requirements, comprehending rapidly in rehearsal, knowing what is happening on the air, receiving cues and signals and religiously abiding by them. If he gets an emergency signal to cut drastically, he should do so *immediately* and not go on rambling as some are inclined to do, seemingly enjoying the sonorous rumble of their own hollow words or wallowing in the charm with which they imagine they are drenching the stage and spewing into the ether.

**Auxiliaries.** Program assistants and "Girl Fridays" who appear on camera should be chosen critically for their specific assignment. If judgment and tact are requisites, as is often the case when dealing with the public in audience participation shows, then casting should not be done solely on a basis of a model's figure measurements. On the other hand, if the charmer merely has to bring in the decision of the judges and look pretty, then for pictorial reasons she should look not merely pretty but beautiful.

**Selection of Guests.** An MC alone cannot make a good audience participation program. Experience has proved that such shows rise or fall on the strength of personalities appearing as guests or participants. So important is this factor that most shows of this type make a point of "seeding" the audience—that is, having a few dependable amateurs (not professional "stooges," easily detected as such) in the crowd admitted to the theater. They are either preselected or take seats in convenient areas of the theater and by one means or another are easily discovered by scouts who go through the house before air-time to select volunteers. In some programs, you will recall, they come from backstage without explanation of how they casually got there.

As time allows, interrogate all audience guests as thoroughly as possible before they come to the microphone. Discover something interesting about them, where they come from, why are

they present at the telecast, what are their backgrounds and occupations, etc. When selecting children, be sure to interview the parent as well as the child.

When participants can be chosen in advance they should be selected with the greatest of care. Consider appearance, speaking ability, presence, sense of humor, personality, knowledge, and poise—all, of course, in relation to the type of program and part they are expected to appear in. Be conscious of amusing or interesting names, possible relationship to famous persons, appealing accents of speech, or exotic coiffures, jewelry, or other characteristics or affectations which make for added interest.

One word of caution in this strange business of selecting unknown personalities for sudden exposition to millions. Remember that the very nature of the opportunity afforded by the program invites chronic exhibitionists with low IQ's, irresponsible fame-seekers, indiscriminate "wits," and even cranks and mental cases. Beware of potentially troublesome "Smart Alecks." Look for whimsy, wit, and sense of humor, but on the proposition that it is "better to be safe than sorry" weed out any and all candidates who give the slightest indication of irresponsibility in action or speech.

### Rehearsal

Whenever circumstance or time permits, guests on extemporaneous shows should be rehearsed. On audience participation programs, of course, this is often impossible. When it is feasible, participants should at least be "walked through," traveling over the area and course they will be required to pass through while on the air. If necessary they should be coached on walking, manner of entrance and exit, where to sit and stand, and how to speak. If possible the director should give them a voice test on microphone and let them see themselves on camera by means of a studio monitor. This often overcomes problems which might arise later, and it serves to give them self-assurance. Encourage them to walk in directly on appropriate cue, and to leave on designated cue—responding to thanks and other amenities, and then turning and gracefully walking out of the scene rather than backing out as so many persons are inclined to do. It is not advisable to rehearse amateur guests too much on

dialogue, and even if the script is written they should not be compelled to memorize. If they do attempt memorization they will sound stilted; if their memory fails them they will be lost.

It is pathetic to see persons mentally reaching into the back of their brain for the written answer to a question at the bottom of page 12 in the script, when it would be simpler if they were allowed to be at ease—merely to listen carefully to a question presented and then respond intelligently from their own knowledge.

Incidentally, it is the duty of the experienced MC, moderator, or announcer to lead the amateur guest through his or her performance. The former should have on hand intelligently prepared questions, based on advance interviews and knowledge of the subject, and of course he has access to “idiot sheets,” script devices, and other methods of conducting a program in orderly sequence.

The most important function of a “walk-through” or partial rehearsal for amateur guests is to acquaint them with unfamiliar surroundings. They will be far better prepared for the performance if they come to know program principals on a cordial basis, become accustomed to the setting and lights, know where they are to walk and what they are to do, and are assured that their action and voice projection are satisfactory.

Do not rehearse them too much. Above all, do not overcoach them or in any way give them reason for nervousness. The objective is to present them at their best and to put them at ease. If they insist on being nervous—of their own accord, or because they feared they might be nervous—then they are most apt to be nervous. A director can help by being completely composed and calm in all his dealings with guests, and best of all by treating the responsibility of performance before a camera lightly, even kidding with guests and other program personnel to dispel fear and create an atmosphere of friendly surroundings. Above all, the director should insist on dispensing with hectic movement of scenery, shouting among members of the technical or prop crew, and anything else apt to happen in a busy TV studio which might rile rather than soothe an amateur about to appear before cameras in what he or she might regard as a terrifying experience.

## Games and Contests

It is no less than good business to pretest stunts, games, and quiz program questions prior to telecast. Preferably this should be done before an audience—either a theater audience held over after an aired program or a group of very critical observers familiar with production problems. Description of a stunt on paper might seem funnier or more effective than actual performance or test proves it is.

Work out possible action for sake of cameras, and test it for time. If it takes five minutes to blow up an enormous balloon or pile up a box of blocks, then some relief action must be provided. Otherwise the stunt is certainly apt to bog down. "Excitement music" helps but it won't sustain a stunt that takes too long to perform.

In all stunts or visual contests, have something to fall back upon in case of failure, which is always possible. Have an alternate contest for competitors, preferably a short and effective one, in case nothing (which is expected) happens.

Keep the contest—its rules and regulations and scoring method—simple enough to explain rapidly and to be clearly understood by all on first recitation. Many contest programs have died because they have become too involved in regulations or scoring, calling for long and dull explanations of rules which have resulted in nothing more than boredom to viewers and confusion to competitors.

When phone calls are involved, place the call early enough in a program to make certain there is completion of circuit before the required time in the program. If the person called is selected by lottery, choose two or three alternates who can be called if the first party is not at home or does not answer. Incidentally, many programs utilizing the telephone stunt (program-to-viewer) test the call before air-time and ask the party at the receiving end to stand by. Often the circuit is kept open for a half hour or more, to be called upon at the second it is required.

In the matter of questions in quiz programs it is, of course, exceedingly important to have questions carefully and accurately written by writers familiar with the subject under consideration. Preferably a question should yield one and only one correct

answer, and that answer should be provided in the script by the writer. Otherwise an expert on all chosen subjects should be on hand to judge.

The following is an example of careless formation of a quiz program question:

**QUIZ-MASTER:** I am thinking of a city in the West whose name consists of two words, one of them sounding like the name of a girl. What is the city?

(Sioux (Sue) City)

**ANSWER:** Santa Barbara.

Obviously, the answer—although unexpected—is correct. The interrogator, although taken by surprise, must accept it or hear from the air audience by mail!

The question is too broad, or it should be phrased differently. Rather than saying, “What is *the* city?” the quiz-master should query, “Can you name *such* a city?” In that case he would be safe.

Work over your questions carefully for intelligibility, accuracy, and possible duplication of correct answers. Keep them simple enough for viewers and contestants to understand. Nothing is worse in quiz programs than a question which becomes so involved in recitation that neither quiz expert nor home viewer can understand it, much less the suffering subject turning on the “roasting spit.”

## Panel Shows

In this category let's consider first the “Round Table” programs which feature discussions of controversial subjects or topics of general public interest.

**Selection of Moderator.** We begin with a moderator having the personal qualifications formerly described for a good MC. Ideally he should have even more—preferably considerable knowledge gained through education, professional experience, travel, and association with distinguished personalities in education, industry, or public affairs.

Nationally known wits, comedians, or columnists might conceivably contribute more “box office” appeal to a panel program at the start, but if discussions are in a serious vein the better in-

formed and better equipped moderators will win out in the long run—especially if they perform their specific function in the program. Their duty is to aid in drawing out information and opinion from guests, judiciously maintaining a certain amount of decorum in heated controversy, but at the same time subtly promoting entertaining argument or conflict. Through all this, of course, the moderator must maintain an unbiased position toward both sides in the controversy.

**Selection of Subject.** The next step in the production of a successful discussion program is selection of meaty subjects. It is surprising how much interest average viewers will show in a discussion program which deals with a controversial topic which can be readily understood by all—the hotter the controversy, the better from a viewer's standpoint, providing the subject is one which he knows already or on which he can promptly form some opinion.

Keep discussions on truly controversial or at least significant topics. Don't debate whether "Men Are Nicer than Women" or "Blondes Are Prettier than Brunettes." That results in mush. On the other hand, a good controversial discussion always provides excellent entertainment for a surprisingly large percentage of viewers. Persons who would by-pass such discussions via radio seem to enjoy them thoroughly in TV for the reason that, in addition to hearing repartee and conflict of opinion, they have the opportunity of seeing facial expressions or reactions of persons heatedly engaged in verbal conflict.

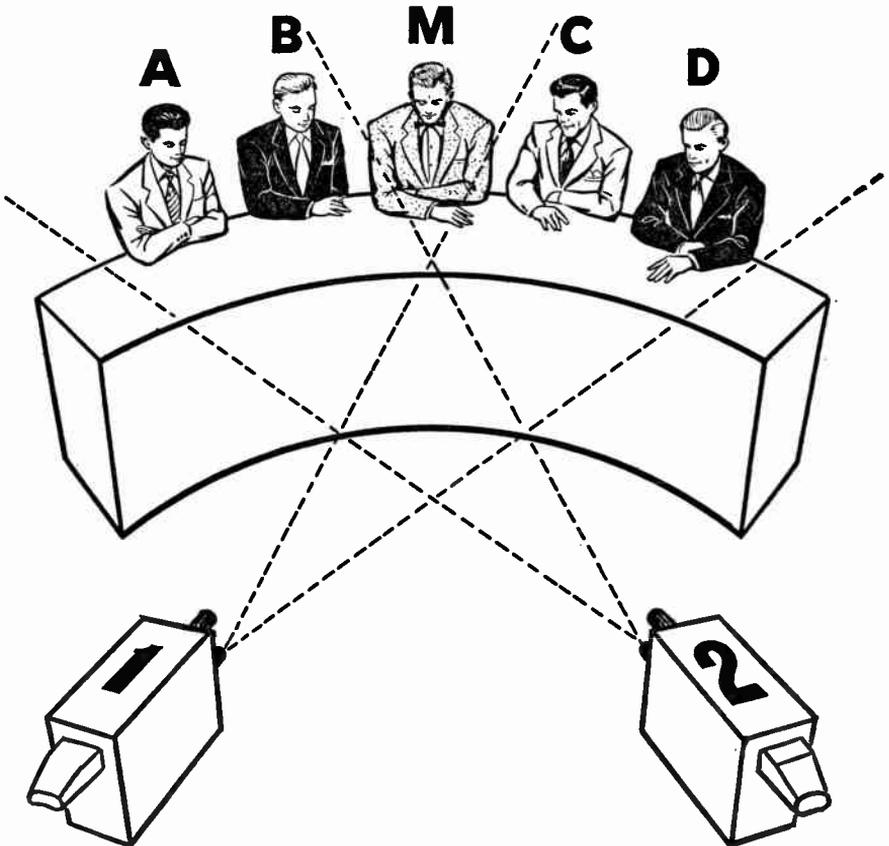
**Selection of Participants.** Next comes the selection of participants. Obviously it is good showmanship to select personalities who can be counted on to "mix it up," whom viewers would like to see in a parlor "free for all."

Choose personalities known to espouse certain causes, who are noted for strong belief in one side of a controversial issue and who have the courage and ability to fight for it. Then you will have a show!

For practical purposes such "Round Table" programs should be limited to five persons—a moderator and two representatives for each side of an issue. Use of any more not only impedes good camera work but tends to hamper the discussion and the viewer's enjoyment of it. Two adversaries per side are sufficient

for the viewer to remember by voice and face, and if they know their subjects and are good speakers, they will more than consume half an hour's time with statement of their belief followed by open discussion.

**Arrangement and Procedure.** Outlined below is a tested setup and format for a successful program of this type, based on "The Editor's Round Table," which was inaugurated by KNBH and the *Los Angeles Mirror* in 1949, with Virgil Pinkley as moderator.



**DIAGRAM 2.** The Round Table. The most effective seating arrangement for a controversial discussion or Round Table program. Cross shooting is illustrated. While one of the two cameras is delivering a 2-Shot the other can always deliver a close-up of any member of the panel. (Diagram by Allen Chechik)

A panel show is easier to shoot with three cameras but can be done quite adequately with two—by cross-shooting and by seating participants at an arc-shaped table which compresses the horizontal spread and provides better angles on faces.

Note that adversaries are seated next to each other, rather than the “pro” team on one side of the moderator and the “con” team on the other. This is done to stimulate heated controversy by proximity of opponents, and more importantly to obtain contrasting facial reactions. A two-shot containing the faces of a spirited speaker and an agitated opponent disagreeing by expression or trying to break in is far superior in interest to a two-shot containing two persons agreeing with each other.

For pictorial as well as psychological reasons participants should be seated as close together as possible without seeming to be uncomfortably crowded at the table. For this reason armless chairs are used, with seats that are not unnecessarily broad.

Diagram 2 shows the program setup with normal shooting plan.

**Camera Shooting Plan.**

CAMERA #1 normally shoots:

- FULL GROUP
- CU-M
- CU-C
- CU-D
- 2-SHOT M & C
- 2-SHOT C & D

CAMERA #2 normally shoots:

- TITLES
- FULL GROUP
- CU-M
- CU-B
- CU-A
- 2-SHOT B & M
- 2-SHOT A & B

Either camera can be freed to shoot charts, photos, or other graphic material. The camera for such insert material is determined by position of person introducing such material.

For direction of shots in such a program it is helpful to the director to have before him a sketch similar to that shown—with names of participants written in for quick reference.

**Format for Discussion Programs.** Following is an exemplary format for discussion programs of this type:

	<i>Time</i>
Signature—Announcer introduces moderator . . . . .	:45
Moderator greets audience, states issue, and comments on significance or import . . . . .	1:00

	<i>Time</i>
Moderator identifies and introduces each guest—30 seconds each	2:00
A—States case, uninterrupted, until bell . . . . .	2:30
B—States case or refutes A . . . . .	2:30
C—States case . . . . .	2:30
D—States case or refutes A, C, or both . . . . .	2:30
Open discussion. Anyone free to speak until moderator intervenes	13:45
Moderator ends discussion, summarizes, thanks guests, announces next week's topic, invites audience comment, bids goodnight. . .	1:30
Closing signature . . . . .	:30
	29:30

**Advance Briefing.** In programs of this type the participants should be thoroughly briefed in advance of air-time. If possible, they should have seen a prior telecast. Be sure they have a clear understanding of the specific topic as it is to be stated, and that they are acquainted with the procedure to be followed. For purposes of orientation it is a good idea to use a conference table for the briefing, seating participants in their proper order. Five minutes before air-time take them to the set, seat them, see them on camera and test their voice levels. If possible, allow them to see themselves on camera via a studio monitor.

In programs of this type, as in all panel programs, participants should be encouraged to aid the director and cameramen by indicating where they intend to throw a question or challenge—thus allowing a couple of seconds to anticipate the next shot: “*Mr. Craig*—do you believe religion should be taught in public schools?” rather than, “Do you believe religion should be taught in public schools, *Mr. Craig*?”

**Varied Setups.** Other types of panel programs naturally use setups differing somewhat from the arc-desk arrangement recommended for round-table or discussion programs. Intentionally they divorce a panel of experts from a guest to be interviewed or quizzed. But for benefit of cameras they keep the two elements adjacent if not contiguous. The most popular panel arrangements in this category follow the pattern of an inverted L, U, or V, enabling cameras to get close-ups on all panelists and participants but at the same time be in position to cover the entire group in one shot, even though sometimes at an awkward angle.



FIGURE 17. CALLING THE SHOTS. Director Bill Garden (extreme left) calling the shots for coverage of a Giant-Dodger baseball game from the mobile unit's "headquarters" set up under the grandstand of the Polo Grounds, New York. The three monitors at the left each pertain to one camera. The monitor on the right shows the picture which has been selected to go out on the air. (NBC photograph.)



FIGURE 18. DR. FRANK BAXTER. (CBS photograph.)



FIGURE 19. BISHOP FULTON J. SHEEN. (Du Mont photograph.)

Not all television is composed of games, drama, or variety. Two outstanding personalities have demonstrated beyond any doubt that the public hungers for something different. Dr. Baxter pleases an audience of millions with discussions of Shakespeare and his times. Bishop Sheen holds and sways an enormous audience with his forthright dissertations on life and philosophy of living.

## EDUCATIONAL PROGRAMS AND DEMONSTRATIONS

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**I**N BUILDING programs within this category, it is vitally important to consider subject, treatment and audience. It is strongly recommended that these three steps be taken:

1. Determine specifically what is the subject, the scope of treatment planned, and the audience intended or desired.
2. Select the proper personalities to present it, and determine how they shall conduct the program to be most informative and entertaining.
3. Design a practical setting and appropriate vehicle for the subject, and incorporate whatever features are necessary for adequate illustration and workable demonstrations.

### **Demand for Informative Programs**

Edward De Roo, of the University of Southern California, who has produced or coordinated more than two hundred fine educational programs, has this to say about the popularity of informative programs when properly presented:

It is encouraging and surprising to observe how well some education programs have been received by a substantial portion of the TV audience. It was to be expected that radio's cooking and household hints programs could achieve tremendous popularity when adapted to television—because introduction of the visual factor makes explanations more palatable and demonstrations possible. However, the popularity of purely cultural pro-

grams—when properly handled and when given a decent broadcast time—has been a pleasant surprise to the most optimistic educators. Success depends, of course, on how interestingly a subject is handled—by whom, and in what manner. Experience has shown that any worthwhile subject can be made interesting by intelligent and showmanly presentation.

The first big successes in the purely educational field have been achieved by science programs, many of them produced by universities and featuring highly capable lecturers or science authorities. They have discussed everything from microbes to Mars and generally have managed to be entertaining as well as informative. Audience response has been enthusiastic and emphatic, proving beyond any doubt that a great percentage of the public hungers for information on all subjects concerning them, their health, the world we live in and what science is doing to combat our ills or to increase our fund of knowledge pertaining to the working of the universe and the creatures that inhabit it.

How-to-do-it programs seem destined to keep a good following as long as they remain interesting. From the time the how-to books (how to speak fluent Spanish, how to perform magic, how to be a success, etc.) came into popularity over a half-century ago, Americans have consistently shown a tendency to appreciate short courses in anything that would improve their well-being. TV offers an ideal opportunity to instruct or entertain in this vein, particularly in matters with good visual or graphic features, such as woodworking, art, interior decoration, playing musical instruments, hobbies, and so on.

The whole field deserves more attention and time than it has received. Certainly, to say the least, evidence available indicates the need for conducting further experiments in this vein under proper conditions.

### **Importance of Personalities**

A dull personality can bog down any program, regardless of time or budget, while a bright and appealing personality is often the element that makes an educational program a success.

Since educational programs start with a natural handicap of prejudice lingering from memories of dull or disagreeable teachers suffered under in one's youth, it is mandatory that informative programs be presented by the most carefully selected personali-

ties. They needn't be handsome or beautiful, although attractive appearance helps. They must have an agreeable presence, naturally, but the most important quality is appealing personality—whether this comes from a certain indescribable attribute referred to as “natural charm” or whether it blossoms out of undeniable sincerity, humor, or evident love of one's fellow man.

In the author's experience, directing a major science program over a long period of time, the professors with the most appealing personalities are those who are (1) naturally amiable, (2) modest, (3) have a true sense of humor even though not always able to be humorous themselves, and (4), most important of all, have an intense love of their subject and reflect an earnest desire to share their knowledge with anyone who might appreciate it.

Personality is purposely placed above natural or acquired speaking ability. The importance of the latter quality cannot be overestimated, but most intelligent instructors and professors having the qualities of personality mentioned above manage to appear and sound like good speakers if their material is well organized. Characteristics of shyness, nervousness, poor voice, pedantry, and even “book-worm” appearance—all these seem to disappear or become tolerable or interesting when a truly appealing personality has an interesting subject that is well prepared for TV presentation.

The gift of lucid expression is a great asset. A man who expresses himself clearly and concisely offers more information in a given period of time. Hence, he keeps the program moving, sustains interest, and avoids boredom.

**Popular Speech.** Beyond the qualifications and requirements mentioned, there is one more point to consider in the selection and direction of demonstrators and lecturers on educational programs. The speaker must be able to speak “American.” Foreign accents are far more acceptable than lofty vocabularies or attitudes; at times they are most interesting and add to the appeal of the presentation. What is referred to here, however, is the ability to speak on a public level. We are not concerned with entertaining morons or illiterates. (They will be watching wrestling anyway.) But we must remember that only a small percentage of the audience is what might be termed “cultured.” The percentage of high school and college graduates has in-

creased enormously in recent years, but even in this group unfamiliarity with certain specialized subjects is to be expected. The speaker should always bear these considerations in mind in the selection of vocabulary and in demonstrations, being neither “low-brow” nor “high-brow.” The proper approach is to assume that some know and some don’t; many of those who don’t know sincerely wish they did, but they find it offensive to be reminded of it.

### Manner of Presentation

The entire manner of presentation should be in harmony with the program’s objective, which should be a worthy objective: to give education or some worth-while information to anyone willing to receive it, regardless of the viewer’s age, occupation, or schooling.

Occasionally a professor must be reminded that he is not addressing his university class, already familiar with basic terms and facts he will mention. Above all, he should be encouraged not to worry what fellow members of the faculty will think of him for a popularized treatment of an academic subject. Any honest educator should find satisfaction in conveying some little bit of knowledge clearly to eager recipients who never had the opportunity to acquire it from other sources—as contrasted with humdrum lecturing to bored college students who are present in the classroom only because the course is required by curriculum for units and a degree.

Explain—But Don’t “Talk Down.” As skilled writers and speakers know so well, there is a manner of being intelligible to broad groups without seeming to “talk down.” Consider this somewhat exaggerated example, “As the meteorologist prognosticated, the precipitation continued for a fortnight, inundating the valley and eventually submerging crops in contiguous areas.” That might just as well or better be expressed, “As the weatherman predicted, the rain continued for two weeks, flooding the valley and eventually covering crops in adjoining areas.”

The use of scientific terms or unfamiliar facts is disconcerting to those not educated in the particular field under consideration. For example, a speaker giving a demonstration in astronomy would be remiss if he referred constantly to “light-years” without

first explaining in very clear language what a light-year is. Any high school graduate should know, but let's recognize the fact that a great many don't—and at this point, as viewers of your lecture, they are curious and even puzzled. In reference to terms or situations of this type, the lecturer would benefit his program and gracefully inform all viewers by using this type of language: "The light-year, of course, is a unit of measurement used in astronomy when referring to the vast distances in the heavens. As most of you will recall, light travels through space at a speed of 186,273 miles per second. A beam of light traveling at that speed for one year would cover a distance of 5,880,000,000,000 miles! (WRITE IT ON A BLACKBOARD.) That's what we mean by a light-year." Repetition of these figures could be of interest even to those who had studied some astronomy. Certainly it would be an appalling realization for those unfamiliar with the subject, and the ethereal dimensions are even more impressive when the figures are written out on a blackboard.

Highly annoying is the attitude expressed as follows: "In case you don't know,  $H_2O$  stands for water." This statement, merely as an example, would be just as intelligible and exceedingly more gracious if expressed in this manner: "Here we have  $H_2O$  which, as you know, represents water in the language of chemistry, or (POINTING TO SYMBOL) a compound containing two parts Hydrogen and one part Oxygen."

In other words, it is tactful to honor your viewers by assuming in your attitude that they *do* know, but subtly informing them again anyway for the benefit of the very few who don't.

On the other hand, when referring to some new substance, instrument, term, or fact—one that would be known only by well-informed professionals in a specific field—the speaker is certainly justified in treating the subject as something new and which must therefore be explained for the benefit of all.

**Use of Graphic Material.** Simplicity should apply to the preparation and use of all graphic material. Illustrations should be clear and carefully selected—to illustrate rather than confuse. Graphs must be simple and not too detailed. Statistical charts should be composed of commonly understood and readily recognized symbols.

A certain amount of motion-picture film is a distinct asset if it is good and contributes to the effectiveness of presentation.

Of course it should be carefully reviewed and edited in advance, and the lecturer should be coached in the method of calling for it as required. The same applies to film slides—and, incidentally, it is important to ascertain in advance whether these are the standard 2 in.  $\times$  2 in. slides which regular studio film slide projectors take, or whether they are the larger slides which can be projected only with Balopticons or comparable machines.

When any kind of apparatus or scientific instrument is to be used, be sure to test it in advance on camera. If readings are to be taken and they are clearly visible on camera, point out this fact to the lecturer so that he will not remark: "I don't know whether or not you can see this, but——." If the reading is not clearly visible (as in the case of very thin dial hands or dull light indicators) the lecturer should say, in effect: "The reading shows——."

**Rehearsal.** It is well always to review all action in any demonstration on camera before the telecast to ascertain that significant elements are clear and visible, and to position or rotate apparatus, instruments, and other devices to appear at best advantage before the camera that will be taking the related shot—whether it be an over-all view or close-up.

Make it clear to lecturers which camera they should address as the channel to their audience and which camera or cameras will be taking close-ups. Show them how to exhibit material in close-ups—for example, rotating small objects in their hands but keeping objects within a limited zone. Where occasion calls for pointing to various portions of an instrument or display they should be encouraged to lead the camera—with both hand and voice—and, as much as possible, proceeding slowly from one object to the next in order of position or in some definite, logical sequence.

When using pointers on maps or charts, a close-up on the tip of the pointer will accent evidence of nervousness by magnifying a tremble that wouldn't be observed by the human eye. Hence, it is well not to grasp a pointer at the very butt end; "choke the bat," as they say in baseball, and grasp the stick as close to the middle as is practical. Another step in this direction is to place the tip of the pointer on the map or chart (for steadying support) and slide it from one position to the next.

It is not advisable to hold a full dress rehearsal in programs of this type, with all voicing of text or lecture—for two reasons. Those unaccustomed to TV are apt to tire or strain their voices; or surprisingly, while on the air they will forget that certain points or facts previously related were disclosed in rehearsal only, not in the actual program; as a result they often assume their audience has already been informed on these matters. Furthermore, too much rehearsal, particularly if close to air-time, tends to destroy the spontaneity which otherwise might be present.

It is best to have just enough rehearsal to put the performers at ease before the cameras, to assure them that their voice projection is adequate, and to orient them in the locale—to know where the clock is, and where the various stages of their lecture or demonstration take place in the set, to be able to call on necessary props or aids as needed, and to find some degree of assurance in being able to view the stage monitor casually.

**Preparation of Material.** Advance preparation of material is the most essential thing to encourage. Review all graphic material in advance with lecturers, discard what is ineffective, and prepare or secure whatever pictures, charts, or other devices might contribute in any way to added interest through graphic means.

**Script vs. Notes.** It is preferable that script not be used on the air. At the same time, particularly in programs with much graphic material of different types, it is certainly important to adhere to a definite schedule of subjects. For this reason it is well to use notes on cards the size of post cards. Preferably these should not be white. Blue, green, gray, or tan cards are much less conspicuous. As in other programs it is a good idea to time-budget the program according to relative interest of various topics. Time notations on the cards are most helpful. At the lower right-hand corner of each card indicate in red pencil the clock-time by which the particular topic should have been completed. This will enable the speaker to stay on schedule, neither ending short nor running over and having to be cut off while still having interesting material to present, even the climax of the lecture.

There is still another point in the use of cards as compared with script. When a speaker leaves the script frequently to

illustrate certain points or to describe certain graphic material, there is always a chance of forgetting just where he left off before departing from script. And finding one's place in a typed script is often exceedingly difficult under the lights and strain which prevail. But, on the other hand, a new place can speedily be found by the simple device of turning over a new card to pick up the trend of thought, even though some minor points might thus be skipped.

Most good lecturers start by writing a script. Then they make notes on cards—a mere outline of important points contained in the script. They start study of material by use of script, then discard the script, and thereafter work only with cards in their period of preparation. By this time their subject matter will be so thoroughly in mind that even the cards serve only as assurance that they “keep on the track.”

### Program Setting

The setting for any educational or demonstration program obviously should be in keeping with the subject matter. A philosophical discussion can best be presented in a library setting, while a demonstration of woodworking certainly should take place in a carpenter shop.

Speakers are usually more at ease when seated. Therefore, if movement or action is not called for, the setting should provide for a comfortable and practical seating arrangement.

Where there is much demonstration of instruments, devices, or props, or where there is frequent movement from speaker's stand to blackboard or chart easel, it is better to require the performer to stand throughout the program.

In cases of this type it is well to provide a high table, workbench, or laboratory desk. The height will enable the director to close in camera shots of both the speaker and his articles of demonstration. It will also prevent a speaker's natural habit of bending over his subjects, showing the top of his head instead of his face, and of course will make it easier for him to project his voice outward instead of down to the table, thus assuring better mike pickup.

Just one more point on the matter of settings. Keep them simple but not drab. Give the locale enough decoration for

interesting atmosphere. But above all, avoid “busy” backgrounds that clash with graphic subjects or distract from the speaker or his presentation.

### Shooting Script

As pointed out previously, even extemporaneous programs must have some basic script or skeleton format. The commentary or lecture substance of many live educational programs will be contained only in the minds or notes of guest speakers or demonstrators, but a script of some kind or other is important for production purposes. This is particularly true of programs which contain several speakers or elements, or which utilize slides, film, or other graphic material.

In programs of this type sound construction in advance is imperative. The manner of presentation must be thoroughly discussed and planned in advance with all concerned. All graphic material must be reviewed and prepared to meet requirements. Each segment must be budgeted for time—with the final (“buffer”) segment so arranged as to allow for flexibility, reducing or stretching as necessary.

## PRODUCING DRAMAS

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**I**N PRODUCING a live dramatic program the very first step is the most important—selection of the play or story. A mediocre cast can do more with a really good play than a magnificent cast can do with a poor play.

### Selection of Play

Consider first the suitability of the play or story for telecasting. Is it really a good story—containing sufficient action and suspense, characterization or humor? Does it comply with the industry's Television Code, or can it be modified to comply and still make entertaining drama? Is it readily adaptable to TV's limitations and requirements—calling for not too large a cast, not too many sets, and not too many production effects to be practical? And finally, is the substance of the story consistent with the time allotted to the program? Some stories are not worth half an hour's or an hour's telling, while others have so much scope they suffer by speed-up and compression.

### Preparation of Script

The producer may be fortunate enough to have purchased a good story already written in TV form. More than likely, though, he will have bought a stage play, a published story, or an original in the form of a story line only. In the latter instances, of course, the next step is assignment of a writer to adapt the story, dramatizing it in appropriate television form.

The play or adaptation should not be considered to be in final form, ready for mimeographing, until the director has studied it thoroughly and tested it for both dramatic soundness and TV practicability. The latter applies to such considerations as size of cast, number and type of sets called for, and general structure—particularly as regards number and length of scenes and breakdown of play into the required number of acts to accommodate commercials and other format requirements.

**Advance Alterations.** All possible alterations should be made before mimeographing. There is no excuse for a play being either exceedingly long or short. The manuscript should be read at proper tempo, timed by stop watch, and necessary cuts or additions made at this point. Radio's practice of writing in lines to "pad" or scratching out lines to cut playing time has no place in TV. The actors should not be burdened with the utterly needless problem of making numerous alterations in memory. To do so invites "fluffs" or missed cues.

**Distribution of Scripts.** Order enough copies of the script to provide two copies for each member of the cast and for all in the production crew who refer to scripts. This is advisable because of the numerous notations and directions which will be written in during rehearsal. Before air-time the director, stage manager and members of the technical crew may each want to prepare a neat version of the final script, with all changes and notations neatly written in for quick and easy reference on the air. On the other hand, actors may want to cut out sections of the script for prompting purposes—to paste in books and magazines they will peruse in the play, or to post behind doorways or other invisible sections of the set.

As soon as scripts are available, send copies to the scenic designer, musical director, and any others who may attend production conferences. They will be more useful at the first meeting if they have had an opportunity to read and study the script.

## Casting

Make every effort to have the play selected and scripts out well in advance of telecast. This will not only permit actors sufficient time for adequate study of parts but will allow more time for judicious casting.

At times the director will know persons ideally suited for certain roles and will have enough confidence in them and his own judgment to cast them without an audition or test reading. If he is well acquainted with actors in his community, he may cast each principal role from auditions of only two or three competitors. But in some cases it will be considered advisable to hold "open auditions," allowing any eligible professionals to try for the assignments.

**Auditions.** Those competing for principal roles should certainly be sent a script in advance of the audition in order to understand and develop the characterization required. An actor reading a difficult role "cold" isn't doing justice to his career, and he may be denying the director the services of the best available actor simply because he isn't prepared.

In television, naturally, we must consider not only voice and delivery but appearance and expression. Therefore, whenever possible, it is desirable to conduct final auditions or eliminations on camera. Make-up can modify appearance to a degree, but natural physique, movement, and expression cannot be radically altered to meet specific requirements.

Most actors, even those with established reputations, are willing to audition for roles on a competitive basis, providing they are not insulted by the class of competition or the manner in which the tryouts are conducted.

In casting principal roles, especially if they are to be played by actors with some degree of importance in the profession, it is good practice to meet them on appointment and to hear them privately, possibly reading with some other candidate for a principal role or, better still, with someone already cast.

Understandably, a seasoned actor finds it disagreeable to be called for an audition and then have to sit in a reception lobby crowded with many other candidates for the role, waiting his turn to be heard. The actor might even consider it degrading if the competition includes notoriously inferior or unrecognized talent. An actor much in demand will not be inclined to read a second time for a director who conducts auditions in this manner.

Under no circumstances should a contender be required to read in the presence of competitors. The necessary trial of

talent and suitability is strain enough without adding the ordeal of nervousness or embarrassment.

The director has an obligation to be highly critical in his casting choices, but his position does not entitle him to be unfair or inconsiderate in any manner. Courtesy is mandatory, even though time is pressing.

On the contrary, because a director's time is usually very limited, he should not be obliged to hear lengthy readings past a point where judgment can reasonably be made. We refer here, of course, to cases where a contender is grossly unsuited for a role—which, incidentally, reflects unfavorably on the director or casting agent who arranged for the audition. Any person honestly seeking to make a living in the profession, who is speculating with unpaid time and effort in the hope of gaining a job, has reason to expect an adequate hearing under favorable conditions. But when it is clearly obvious that the contender is incapable or unsuited for a role, prolonging the audition is (although saving pride) wasting that person's time and the director's too.

**A Word to Beginners.** At this point the author would like to say a few words for the benefit of newcomers. In any field or occupation a person has to find a start somewhere. And in crowded fields, as are all phases of show business, competition is keen. What makes it even more difficult for the beginner is that few persons in authority, who make a living supposedly by talent and judgment, are willing to risk their reputations merely for the sake of giving a beginner a start. Looking at it coldly, why should they—that is, for the beginner's sake alone? They have everything to lose and little if anything to gain.

In some businesses and professions one can make a mistake and only a very few persons will know of it. But make a mistake in television and you are advertising it to the world. That's why in this medium, more than in any other phase of show business, there is a tendency to cast on "credits"—more accurately and more soundly, on the strength of previous performance. An actor who has been seen doing a satisfactory job in several plays is certainly a far better risk than one who has never appeared in an important role before, even though the latter is capable of giving a very good reading in audition. After all, an audition does not prove that an actor is a "good study" (able to commit

lines rapidly and accurately to memory); or that he or she is a dependable performer, free of nervousness or panic on the air, able to remember lines, and to carry out business and directions.

"Everybody wants credits!" the newcomer laments. "Where do I get credits if no one will give me a start?"

Well, that's a reasonable question—to the newcomer. On some occasions there have been beginners, usually graduates of drama schools, or youngsters who had a part in the senior play in high school, who have demanded a chance to be heard in auditions along with seasoned professionals—seemingly on the basis that it was their right as citizens, as if they were competing for civil service jobs. "I can do that part better than she can, but how can I prove it if I never get a chance."

The author sympathizes with beginners, and he certainly understands their plight, having been a beginner himself three times in different fields since graduation from college. Interminably this question was faced: "What experience have you had in this line?" Followed by the encouraging: "Come back and see us again when you've had some experience." Somehow, in each instance, penetration was made through the various Maginot lines. Eventually the "break" does come when one persists. If the front door doesn't open, the side door might; and once established inside, you'll subsequently be granted cordial admittance through the front door.

Actors in television, more than professionals in any other field, must realize the gamble an employer is taking in giving them an assignment. If they fail, it will be public knowledge, and the failure reflects more on the director than the actor. Therefore, beginners should start by beginning. They should first try for "walk-ons," pantomimes, and bit parts, gradually building in reputation and experience while they learn and observe. If they have true talent and persistence, eventually their big opportunity will most certainly come.

**Ascertain Actor's Availability.** Before making definite commitments for roles in a play the director should inform all members of the cast of the exact rehearsal schedule. Some may have radio, theater, or film commitments which will conflict. In a few cases it is often necessary to adjust the TV rehearsal accordingly, and frequently it is worth doing this to obtain the actors desired for

the production. But under no circumstances should the director start rehearsals and then discover that a principal is not available for important sessions.

**Cast for Performance.** One final word before leaving the vital matter of casting. It is highly desirable to have a cast whose members get along well with each other. Steer clear of known animosities or bitter rivalries; they can disrupt rehearsals and cause a tension that keeps the whole cast on edge in performance, "waiting for the bomb to explode." On the other hand, don't be a sucker for professional friendships. And above all, don't cast out of kindness alone, just to give a needy actor a job.

The above statement is written with full knowledge that there are many reasons why needy actors are in need. The field is crowded; in most production centers there are more actors than jobs, and, regrettably, those doing the casting often cast only those whom others cast. Success brings more success to some, while others equally capable but less fortunate find themselves out of demand today because they were not in demand yesterday. Other considerations being equal, the director should most certainly favor a needy actor whenever possible—providing only that he feels certain that actor is capable of delivering just as good a performance as any other.

Charity is a rare and saintly Christian virtue which should be encouraged, but unfortunately its reward is in heaven, not in show business. Twenty years ago in radio a well-known actor made this statement about casting with the heart instead of the head: "A nasty but competent actor who doesn't need the money is more apt to do a favor for you (in performance) than a nice guy you are favoring because he needs the money."

### **Sets and Props**

At the very earliest opportunity the art director or scenic designer should confer with the director regarding sets and furnishings. If he has had time to do so after reading the script he may have rough designs to submit at the first meeting. These usually undergo some modification to incorporate the director's ideas, particularly as to layout in relation to camera angles and planned action.

The next step is the layout of over-all floor plan (staging plan) showing the position of all sets, as well as their angles and relation to each other. Since technical problems can be solved at this point by judicious planning, particularly regarding lighting and camera movement, it is well to confer with the technical director before a final floor plan is agreed upon.

Sets will not necessarily be laid out in a track or line (straight, curved or rectangular) in accordance with chronological sequence of use. The plan should begin with best possible positioning of most important sets—for the most effective control of lighting and maximum movement of cameras. The second consideration is the sequence of scenes. If the play calls for frequent return to one or two locales, then these sets should be placed in central or key positions in the plan, readily accessible to cast and cameras. Sets used less frequently, even though larger or more lavish, will be positioned in areas fanning out from the key points.

When the layout has been approved the art director will supply to all concerned photostat copies of the floor plan, drawn to scale and showing position of all sets, critical furniture and props, entrances, etc.

A list will be made of all necessary props, and these will be purchased, constructed, or rented in time for camera rehearsal.

### **Dry Rehearsal**

Because of space limitations it is almost never possible to rehearse in the studio until actual assigned camera time. Hence, the necessity to provide time and space for dry (without camera) rehearsal.

Skilled directors gain most from rehearsals by thorough organization of time and facilities, and especially by advance plotting of camera angles and stage movement.

**Plotting Shots.** Some of the best directors plot out virtually all of their shots and have them marked in the script before rehearsal begins. They do this with sectional tracings of the floor plan of each set or with very simple sketches in their script, indicating positions of cameras and actors, and diagramming stage movement as it occurs. Actors frequently mark similar diagrams in their script as directions are given.

**Time Required.** For a one-hour play actors should have scripts in their hands for first study at least two weeks in advance of telecast. Programs with adequate budgets allow ten to twelve days for actual rehearsal—four hours a day for five days while parts are being memorized and polished, then five full days in dry rehearsal, followed by camera rehearsal for the best part of two days.

Needless to say, not all plays are produced with such extensive rehearsals. The over-all spread of time, especially, is denied to weekly programs with stock casts. But these are all half-hour shows and practically all of them are kine-recorded or filmed—a fact which provides for less strain and allows for retakes if necessary.

It is almost a standing rule that dramatic programs hoping to present the best quality in production should be granted camera rehearsal time in the ratio of six to one—that is, a very minimum of three hours for a half-hour telecast, and a minimum of six hours for an hour program. The top quality dramatic programs have increased this ratio to as high as ten to one as standard practice.

**Rehearsal Procedure.** Rehearsal of a play begins with simple reading, with all members of the cast present, preferably seated around a conference table. Directions regarding interpretation, characterization, and tempo are given at these preliminary sessions.

Experienced stage actors soon get restless and want to “get on their feet”—to walk through the action and perform required business, even though still carrying scripts with them. They find that recitation of dialogue with action helps them to memorize both lines and business.

If possible, try to retain the same rehearsal room throughout the entire dry rehearsal schedule. Post a copy of the floor plan on the wall for the actors' reference, chalk off the set dimensions on the floor, and simulate furniture arrangement as closely as possible.

For reasons of economy as well as progress it is important to prepare a thorough schedule of rehearsals, scene by scene, and then try to adhere to it. Call only those members of the cast who will be required in each scene. At times it will be necessary

to modify this schedule slightly to comply with the availability of principals having other assignments.

Toward the end of the dry rehearsal term, as camera time approaches, it should be possible to rehearse a complete act at a session. By camera time the cast most certainly should be able to do a complete run-through of the play, with directions pertaining to camera work only.

### **Wardrobe**

At least a week in advance of the telecast the director should review all wardrobe requirements with the cast. Normal street attire is usually provided by the actors. The producer pays for rental of evening clothes, furs, and of course all costuming. When performing in period plays with uncommon costumes it is highly important to appear at the costumer's in adequate time for proper selection, fitting, and necessary remodeling of garments.

Wardrobe is handled through the facilities department or art director whose responsibility it is to make arrangements at the costume house and to provide adequate data on wardrobe required.

### **Camera Rehearsal**

Because camera time is so precious, with so many men and so much equipment tied up at tremendous cost, it is imperative that these fleeting hours be used for nothing but actual and profitable camera rehearsal.

All sets should be up, completely dressed, and lit.

Music for transitions, moods, and backgrounds—whether by recording or live orchestra—should be rehearsed at a separate time and place, to be called upon only in the latter stages of camera rehearsal and, naturally, for the “dress.”

Film inserts, if any are to be used, should have been edited, timed, and fully prepared for projection. Arrangements should have been made to project the film through the system during dress rehearsal.

If there are to be live commercials, the action and voicing should be previously rehearsed dry, with products and all props.

**Setting Shots.** At the start of camera rehearsal it is well to take time for a complete run-through of all action for the benefit of the complete technical crew. This is the first stage of camera blocking—in which the director works on the floor, describing the shots he wants in sequence as related to the action. At this session the various cameramen have the opportunity to make notes on a pad they will attach beside their view finder, keeping a schedule of shots each of them will be expected to deliver in order.

After the entire production has been reviewed once, the director and technical director leave the floor and thereafter work almost entirely from the booth. Shots are refined or modified as rehearsal on camera progresses. Critical points or areas on the floor are marked off in crayon. The position of furniture is similarly marked, as are locations and angles of all essential props.

Early on broadcast day the stage manager should notify all members of the cast of dressing rooms assigned to each and appointed times for make-up.

**Dress Rehearsal.** A dress rehearsal should be a complete “dress” in every sense of the term, a complete run-through with all effects, with no interruptions, and with cast appearing in wardrobe, making whatever changes are necessary.

There are many practical reasons not to require make-up for the dress rehearsal; it is not comfortable when worn for too long a period of time, and it can become mussed up. It is a good practice, however, to review on camera just before air-time all principals and those with unusual make-up.

**Final Preparations.** A well-arranged rehearsal schedule allows adequate time for meals, and preferably an hour or more of relaxation before the actual telecast. In addition to this hour, most directors provide for at least half an hour of final review with cast and principal members of the technical staff.

Immediately before air-time the stage manager should examine all sets carefully, making certain that all furniture is in order, all props in condition and proper position, and that there are no visitors wandering about the stage floor. He should also ascertain that all members of the cast are present or accounted for.

## Marking Script

The preferred format for the script of a dramatic program, with commercials, has been illustrated in a previous chapter. The following specimen, an excerpt from a teleplay titled "The White Furrow," is included for the additional purpose of showing the method by which directors mark camera shots, movements, effects, and time notations in their shooting script. The notations shown in the right column were handwritten in a fresh copy of the script for dress rehearsal and telecast—after shots had been refined at rehearsal and the various movements had been worked out. Before camera rehearsal began, notes on tentative shots and sketches of stage movement had been penciled in. As rehearsal on camera progressed, many shots were revised and notations were altered accordingly. Sketches of stage movement and action were completely eliminated from this final shooting script. By now they were committed to memory by all concerned and would only serve to clutter up the script and add confusion while on the air. In the final stage, notations in scripts should be as clear, simple, and brief as possible. The stage manager and others following the script during the telecast will by now have only those notations which concern their functions alone.

First, a clarification on the notations marked:

<i>Notation</i>	<i>Meaning</i>
DISS 2-Wide	Dissolve to Camera #2—Long shot
Push in	Dolly in
1-CU Her	Cut to #1—Close-up of woman
3-CU Him	Cut to #3—Close-up of man
2 (2)	Cut to #2—2-shot
1	Same close-up—woman
3	Same close-up—man
2 (T2)	Tight 2-shot
(3→G)	Camera #3 go to set G
(Roll proj. film)	Start film in projection machine
1-Med Him	Cut to #1—Medium shot of man
Push in-CU	Dolly in to close-up of man
Pan-Her	Pan to woman
DISS 3	Dissolve to #3—on new set

In fast to rail—look over	Dolly fast to rail—pan down (to see wake over rail)
Fade—Black	Fade out picture
Fade up 1—LS	Dissolve to #1, bringing up picture from black—long shot

The numerals written at border of the column on the right apply, of course, to scheduled running time.

FILM: CLIP #3 NS

37<sup>40</sup>

(NARRATION OVER FILM WITH MUSIC)

ORCHESTRA: BAR ROOM MUSIC B.G.

MILLIE: (VOICE - IN PRESENT - SHOT IS OVER HER SHOULDER. FACE NOT SEEN ON FILM)

They were gone a long time on that stroll around the deck. It was past eleven o'clock when Jeff came to my stateroom. He had a glazed look in his eye and didn't speak to me. At the time I imagined he was stunned by the news his wealthy old uncle had given him — and I assumed Sir George would join us soon — after Jeff and I had time to "make peace," as it were...

*Diss 2-Wide*

(SET B - STATEROOM)

(MILLIE IS PACING FLOOR. DOOR OPENS. JEFF ENTERS, CROSSES TO CHAIR, FLOPS)

*Push in*

MILLIE: (LIVE)

Well, Jeff — aren't you going to say something? Berate me, perhaps?

JEFF: (OBVIOUSLY INEBRIATED)

Why, darling?

*1 CU Her*

MILLIE:

You're not terribly upset, are you?... Well?... What's the matter, Jeff? Are you in the cups again?

*3 CU Him*

JEFF:

Had a few drinks... Tonight, my dear, I propose to sleep — and forget.

*2 (2)*

38<sup>30</sup>

MILLIE: (COLDLY SOOTHING)

Of course you'll forget, Geoffery... Plenty of other women in the world, you know... It won't take you long to forget.

JEFF:

I — I don't follow you...

MILLIE:

Sir George told you the news, didn't he?

JEFF:

No...Hemmed and hawed a bit — but no news. 1

MILLIE:

Of all things! For once the poor dear is scared of you for a change. Probably couldn't get up the courage to break it to you tonight...Well, I'll tell you, Jeff. Brace yourself...I am now your Aunt Mildred! 3

JEFF:

Say that again! You are what? 2 (T2)

MILLIE:

It's true...This morning — in Captain Smith's quarters — Sir George and I were married! (3 → G)

JEFF: (SMILES MEANLY)

You conniving female!.....How romantic — and profitable, I might add! (Roll Projection Film)

MILLIE:

Surprised?

JEFF:

Rather...Surprised at him, the silly old goat! (RISES TO GO. LEANS ON CHAIR FOR SUPPORT.)

3920

MILLIE:

Is that all you have to say?

JEFF:

Oh, — forgive me...Congratulations! You are now a very wealthy woman, Aunt Mildred. Or I should say, you will be when the ship returns to England and the captain files the records.

MILLIE:

Please, Jeff — regardless of what you may think at this point — please don't be uncivil to Sir George when you see him. 1 Med Him

JEFF: (QUIET AND FIRM)

I won't be seeing him.

MILLIE: (CLOSE IN TO HIM)

Why not?

Push in CU

JEFF:

Dear old Uncle, — he and I strolled back to the stern of the ship — to look again at the ship's wake — "the white furrows that boil open, overlap, and fold into the darkness"...

MILLIE:

Yes, yes — go on.

JEFF:

There was a slight accident....Tonight, my beloved little fox — on your wedding night, of all times — you have become a widow!

40<sup>05</sup>

*Pan-Her*

ORCHESTRA: EERIE STINGER

(SET G - STERN DECK - SHIP'S WAKE ON REAR PROJECTION)

*DISS 3*

(CAMERA ROLLS FAST TO RAIL - SEES WAKE - PICTURE FADES)

*In fast to rail-look over*

SOUND: FOG HORN...AGAIN

*FADE→Black*

(BACK TO STATEROOM. MILLIE COLLAPSED ON BED. JEFF GONE. DOCTOR FEELING HER PULSE. CAPTAIN SMITH STANDS BESIDE HIM.)

*Fade up 1-LS*

40<sup>20</sup>

## PRODUCING COMEDY AND VARIETY SHOWS

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SINCE the beginning of fiction and the theater it has been apparent that a very large portion of the public derives its greatest diversion from variety and comedy. It is no wonder that programs in these categories have consistently drawn the top ratings in TV's audience surveys.

After dramas, the first really big shows in television were variety shows, led by the original Texaco Show (now the Milton Berle show) and "Toast of the Town," both of which were launched in the summer of 1948 in New York. For some time practically all comedy on the air was contained in acts appearing in either of these programs. Then came the comedy dramas which have achieved such outstanding success. Now they are battling each other for top audiences, and in many cases the comedy dramas are not only winning out but they are delivering audiences at a lower cost per thousand viewers—the sensible standard by which advertising agencies and sponsors judge the value of their investment in programs.

Big variety shows were originally budgeted at around \$12,000 to \$15,000 for all talent. Before long the cost had climbed to \$30,000. By 1951–52 budgets were set at around \$40,000 but due to extravagance and the fact that many men brought in to produce the shows were from radio and had no television experience whatsoever, the final tab for a show often ran as high as \$80,000.\* No wonder many sponsors were attracted to comedy dramas, which can still be done well for \$30,000 or less!

\* Then came NBC's highly publicized "spectaculars," 90-minute reviews or variety shows in color, budgeted at approximately \$300,000 each. By monumental extravagance and richness, they were intended not only to promote the public's interest in color but to overcome all competitive viewing. They were interesting

### Producing Comedy-Dramas

Programs in this category are also known as "situation comedies," since laughs are derived more from comic developments of plot and humorous clash of characters than from jokes. This fact indicates the necessity for good writing—containing not only sparkling dialogue but clever development of plot which makes the resulting dialogue and situations funny. Virtually all such programs are written by teams of three or more writers, and usually one member is responsible only for development of plot or story line.

**Staging and Performance.** According to an established theory, we laugh at a comedy when others laugh, or at least then we laugh better. Through years of theatergoing and radio-listening we have become so accustomed to hearing laughter from others "in attendance" at the performance that a comedy does not seem funny if this laughter is missing.

The few live programs of this type which are shot in the manner of any regular TV show are staged in a theater or in a large studio with seating facilities installed to accommodate an audience of 300 or more persons. Most of the comedy dramas, however, are shot on film. Some are staged with action more or less continuous as in a live TV drama, pausing only at the end of an act for change of scenery, brush up on dialogue, or other business. Laughs and applause are recorded as the performance takes place, and of course in this method the actors have an opportunity for appropriate waits and timing for laughs. A third method, which is very common, is to shoot the program like a motion picture film, scene by scene, bit by bit. Then the film—with dialogue sound track—is played before an audience in a theater; their laughs and other reactions are recorded as the film is shown and subsequently their separately recorded response is dubbed into the sound track of the film.

Still another method is to shoot the program like a motion picture and subsequently dub in "canned" (recorded) laughs and applause. In view of the previous method described, this

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experiments eagerly watched by the industry, but the results were disappointing. Viewers watching on monochrome sets seemed to resent the emphasis on color rather than program quality, and the surveys all showed that the viewing audience soon tuned them out—at an average ratio of two or three to one—in favor of established programs in black and white.

seems unnecessary and inadvisable. The results are artificial and the public soon gets wise to it. The only justification—if it can be called that—is that the sound mixer can give the program bigger laughs than it deserves or would get if played before an audience. What is even funnier is to see writers in attendance at such a dubbing session, estimating the kind, volume, and duration of laugh each of their precious “gems” deserves.

**Direction.** Principles of direction and shooting which apply to dramas pertain as well to situation comedies—except in these respects: (a) dialogue must point up laugh lines; (b) timing must build to laughs and wait for them; and (c) camera direction must take into consideration what view, object, or facial expression will “punch up” a laugh.

### Producing Variety Shows

Of all traditional forms of theater entertainment the vaudeville type of variety show is most readily adaptable to television—especially if the program originates in a large and well-equipped theater. This type of program embraces everything from music and dancing to magic, gymnastics, and comedy. It is designed solely to satisfy the senses by kaleidoscopic change of elements. It has no continuity, and it certainly doesn't pretend to be anything more than an entertaining review of varied types of entertainment.

More and more, variety shows in TV are undergoing a change in the form of presentation. The master of ceremonies is becoming a more important element in the over-all production, and there is a tendency to make the show more than a succession of unrelated acts. A good vaudeville-type program will always be of interest, but there is much to be said on behalf of the new trend. The following remarks by Jack Van Nostrand, vice president and Hollywood manager for Sullivan, Stauffer, Colwell & Bayles Advertising agency, are of interest. In the past twenty years Van Nostrand has written, directed, or supervised more comedy and variety shows than anyone in the industry.

As I recall my Saturday matinees at the Orpheum in San Francisco, the acts—no matter how great—were introduced only by a card at each side of the stage which said, in effect: “Doakes & Doakes With Funny Jokes.”

With the advent of radio it became impossible to see a sign, so the little piece of cardboard was replaced by what we called a master of ceremonies, a personality angle adapted from the then-popular Broadway revues. Actually, in what is basically a vaudeville show, in which each act has no particular reason to be in juxtaposition to any other, all the master of ceremonies can say in essence is, "here they come—there they go." In practice, strenuous efforts were made, and are being made now, to give the introductions warmth and humor. I hate to admit it, but I remember that in the very first script I wrote (1932) I introduced a comedy team by having the hapless MC say: "These newcomers of our Merry-makers family, Gill & Doemling, escaped from jail to be with us tonight. Gill got the measles and Doemling just broke out!" I hope I've managed to live it down.

While television variety shows started off in exactly the same vein, with the Milton Berle and Ed Sullivan shows as examples, there is a definite tendency among the better shows to get away from the run-them-on-and-run-them-off technique, no matter how good the MC. The deviation from the system of presenting unrelated acts has taken at least two major directions. First is the story-line technique, introduced into the Berle show by one of the finest craftsmen in the business, Goodman Ace. The other is the thematic approach which "Toast of the Town" has used on such occasions as Rodgers & Hammerstein nights, George Gershwin tributes, etc. While the performers themselves have nothing in particular in common, the theme itself gives them an excuse for being together. I am no prophet, but I believe that the story, thematic or so-called "book" show will finally replace the disjointed hangover from vaudeville.

The success of any variety show, regardless of the format of presentation, depends foremost on the quality of the acts it contains. A good MC is an asset, and a theme will give cohesion and added interest, but in the final analysis the entertainment curve will rise or fall according to the caliber of acts in the show. The first step in building a good variety show is the discovery and "booking" of good talent. After that comes order and style of presentation.

**Programming.** We refer to the strategic routining of acts as programming,—that is, positioning them in an order which will present each to best advantage to itself and the over-all show, with consideration of pace, appropriateness, and contrast.

Good programming utilizes every psychological device possible to tickle and amuse the audience, to sustain interest, and above all, to avoid even the slightest restlessness or boredom.

Timing, contrast, and balance are factors which govern good programming. There is a lot of wisdom in the old adage of show-business: "Always leave them laughing." In other words, build to a big laugh or at least a happy mood for the finish, and when you've achieved it, *finish!* Don't stay on and "build up to a letdown."

Programming is a subtle art understood by some of the best French chefs, and their method of arranging cuisine deserves study by TV personnel interested in the mystic business of determining how to please the public. Whether it is by studied intention or accidental intuition, the skilled chef tops his menu with something which immediately excites interest and stimulates speculation as to other epicurean delights to follow. Thereafter the menu consists of dishes which offer variety to tempt the palate and stimulate appetite—contrasting sweet and sour, hot and cold, bland and bitter, softness and crispness. He blends or contrasts not with flavors alone but with temperatures and textures, and to add interest and appeal to the senses even further, he provides harmonious colors as well.

Emulating the art of the French chef and constructing our show as he plans a menu, we most certainly should open with an exciting act. It needn't be the best and it certainly shouldn't be the biggest in scope, but it must set a high standard and give promise of other good acts to follow. Thereafter program the acts with an eye toward contrast and "welcomeness." A crooner is a welcome relief and contrast, for example, after a noisy act filled with action. On the other hand, a fast and bright comedy act is well positioned if it follows a pleasant but sedate ballet number.

Consider time as well as substance. Don't program two long acts in sequence. The rules of good variety performance call for good short acts for separation or contrast of timing as well as material.

**Practical Considerations.** The producer of a variety show in television must build his program on a basis of practical considerations—keeping in mind both limitations and assets of the medium. He has less time than is allowed for a theater performance. But, on the other hand, because his show is primarily for the benefit of the air audience, not merely for the

few hundred persons in the studio theater, he is allowed privileges denied to the theatrical producer. He has the opportunity of using only a small section of the theater stage at a time—even though occasionally exposing a “backstage” atmosphere to the theater audience.

A variety show demands the presence of an actual audience for the sake of laughter, applause, and other evidence of response. Therefore, we automatically assume that every TV variety show will be performed in a theater.

A good-sized stage will allow for setup of separate scenes on each side of the stage. New scenes can be set, and used scenes can be struck, while the show continues with a singer, comedian, or other performer appearing in front of one of the travelers. Programming must take this as well as showmanship into consideration.

It stands to reason that it is easier to strike difficult setups than to set them. Hence, production of a program is made easier if routine allows for installation of such sets in advance—to be struck while on the air and replaced by simpler sets in intervals when other stage zones are in use. Otherwise, when an extravagant set is called for, as in a finale, it is imperative to allow adequate time in the program. If full stage and full depth are required for another number, then it behooves the director to position that number early in the program. Better still, under such circumstances, it is advisable not to call for the ultimate up-stage zone until the finale. Utilize central or downstage zones instead. It is better to sacrifice some space and scope in mid-show scenes for the sake of a lavish finale if the setting in the latter is extravagant or important.

It is said that a good story or play must have a beginning, a middle, and an end. In variety shows the middle must not be neglected, but as far as the TV audience and critics are concerned, the two most important acts are the first and the last.

Because audience laughter often depends on pointing up some facial expression, mannerism, or object, it is advisable to have large monitors within easy view of the studio audience. Thus they can switch their glances from the actual scene of action occasionally to see what the viewers are receiving at home. Theater studios which have been especially adapted for variety shows often have giant monitor screens overhead, the size of

normal cinema screens. They have proved invaluable, especially for comedy acts.

**Direction and Staging.** Staging of a variety show may be done by the director, producer, or a staging director, depending upon arrangement. Whoever does the staging should see to it that every act is presented in a manner which utilizes to full advantage its best elements for the medium. This may call for slight modification of action, restriction of space, or even change of tempo.

Naturally, no alteration should be asked for which will actually handicap the artists. Dancers, gymnasts, magicians, and others in the variety field who come into television are usually most cooperative when informed of the problems their acts present to the medium. Almost always they readily compromise and adjust their style or action to meet requirements. The important thing is to show them clearly what the problem is, then to solicit their aid in solving it—of course without injuring elements of an act that has been developed through years of trial and test before audiences.

In the case of established acts which are intended for use in their customary manner of presentation, it is well for the director to review all action and business on stage—that is, before going on camera. Here he can see the act in entirety, with all refinements, and can more easily give suggestions or directions to the performers.

This on-stage review is also highly beneficial to cameramen, enabling them to see the act in entirety by eye (rather than through the view finder) and to understand what is significant in a certain performance and be able to point it up by camera work when called upon.

After viewing an act on stage the director views and rehearses it on camera, selecting angles and shots which will portray what is most entertaining or important.

Directions as to movement are given in one or two ways—either in the traditional language of the theater, or in the newer terminology of TV. In the theater actors are directed according to their own viewpoints. Movement right or left is according to their own right or left, not according to the directions which might naturally be expressed by a director sitting in the audience's

place in the show house. Upstage applies to the rear of the stage. Downstage is in the direction of the apron or footlights. Thus, in theatrical language, an actor might be directed to move "stage right" or "stage left," or "downstage right" or "upstage left." This is simpler for the actors, but such usage calls for constant mental reorientation on the part of the director or cameramen.

In TV the directors and others frequently refer to "camera left" or "camera right"—meaning right or left as the direction would be viewed on the screen. The terminology of "upstage" and "downstage" still applies commonly in this medium. No matter whether the scene is in a drama, a variety show, or a dramatized commercial, "upstage" means away from camera, "downstage" means toward camera.

**Rehearsal.** More than any other type of program a variety show calls for the utmost care in the organization of rehearsals. Due to limitations of time and the enormous costs involved in paid-for time of talent and technicians, it is imperative that every minute is used to fullest advantage.

All elements in the show require time to rehearse and polish their performances, but the separate elements do not depend upon each other until the final stages of rehearsal, when the elements are put together to form a total picture like the pieces in a jigsaw puzzle.

The orchestra, for example, requires time to run through and brush up on musical numbers. Then singers require time with the orchestra that accompanies them—but only after the orchestra has done a preliminary run-through or first reading. A gymnastic act requires musical punctuation, but this can be worked out in detail with a piano first, followed by subsequent rehearsal with full orchestra. And so on—always considering the limited number of hours available, the time cost for rehearsal, and the availability of performers.

The biggest transcontinental variety shows operate on the principle that many short rehearsals of acts are more beneficial than a few long rehearsals. They rehearse, polish, and rewrite almost daily throughout the week preceding telecast. By D-minus-One (the day preceding telecast) they are in shape for first complete run-throughs dry. In the final hours of this day they will rehearse with all sets and set changes, and possibly

with orchestra, but the full rehearsal with cameras generally does not come until late in the week, usually the day of broadcast.

In the very busy week that precedes a telecast the orchestra and song numbers are often rehearsed in a separate studio while specialty acts, commercials, and other program features are being rehearsed in the broadcast studio or theater.

Shown below is an actual and typical schedule of rehearsal for an "All Star Review" originating in Hollywood and telecast nationally over the NBC network. Rehearsal of individual acts began with preliminary readings and writers conferences on Monday, and continued daily from 10:00 A.M. to 6:30 P.M. throughout an entire week. All acts were rehearsed at a specified time on each day from Monday through Wednesday. From Thursday until telecast time on Saturday rehearsals were conducted according to the following strenuous schedule, quoted verbatim from actual official postings:

#### THURSDAY:

10:00- 1:00	Run Through, Dry in Set
1:00- 2:00	LUNCH
2:00- 2:50	Fisher & Ross and Dancers
2:50- 3:20	Living Curtain (Notables and Girls)
3:20- 3:45	Cut Ribbon Scene: Russell & Cast
3:45- 4:30	Milton Berle Spot
4:30- 4:45	Green Room. Russell intros Dinah Shore
4:45- 5:30	Russell's Wrestling Sketch
5:30- 6:15	Comedy Commercial
6:15- 6:45	Harpo Marx Sketch
6:45- 7:00	Set . . . Dinah's first song
7:00- 8:00	Berle & Harris

#### FRIDAY:

10:00-11:00	Berle & Harris
11:00-11:30	Harris Song
11:30-12:00	Berle Spot
12:00-12:15	Living Curtain Reprise
12:15- 1:00	Dinah's First Number
1:00- 1:15	Green Room Intro to Fisher & Ross
1:15- 2:15	LUNCH
2:15- 2:45	Fisher & Ross

- 2:45- 3:15 Russell and Jessel  
 3:15- 3:30 Intro to Dinah's Second Number  
 3:30- 4:30 Dinah—Second Number  
 4:30- 5:30 Comedy Living Curtain & Finale  
 5:30- 7:00 DINNER  
 6:30- 7:00 Camera Conference  
 7:00- 8:30 Run-Through (Cameras and Piano)  
 9:00-12:00 Complete Run-Through (Orchestra and all concerned)

#### SATURDAY:

- 10:00-10:30 Clips, Crawls and Clean Up  
 10:30-12:30 Run-Through (with Orchestra)  
 12:30- 2:00 Break & Ready for Dress  
 2:00- 3:00 Dress  
 3:00- 4:00 Conference. Department Heads. Make-up  
 4:00- 4:30 Cast Notes  
 4:30- 5:00 Ready  
 5:00- 6:00 Air-time. THIS IS IT!

Times shown are Pacific Standard Time. The 5:00-6:00 P.M. telecast was released on the Atlantic seaboard at 8:00-9:00 P.M. E. S. T.

The extensive time of the foregoing schedule is outdone in variety shows only by the Saturday Night Revue which, after an exhausting week of dry rehearsals, starts rehearsal at 7:00 A.M. and goes on the air at 6:00 P.M.!

**Variety Show Scripts.** Scripts for variety shows are best set up in departments—by acts, routines, or other integral units. This makes it possible to reroutine sequence of acts, if necessary, by interchanging complete segments in the script without remimeographing.

The billboard, which follows, usually appears on the first page of the final script. It is extremely valuable to all concerned in the production—at rehearsal and on the air. The departments are indicated as "A," "B," "C," etc., and the pages within these departments are indented both alphabetically and numerically. For example, the pages in section "C" would be labelled "C-1," "C-2," "C-3," "C-4," and so on to the finish of the act. If it were necessary to transpose Dennis Day's act with Walter O'Keefe's, the entire segment C would be interchanged with segment M in the script.

## - RED FEATHER VARIETY SHOW -

(COMMUNITY CHEST)

9:30-10:30 PM

<u>ACT</u>	<u>ARTIST</u>	<u>SPOT</u>	<u>CLOCK</u>
A.	OPENING.....	1:00	31:00
B.	LINKLETTER - INTRO..... (MC SET)	1:00	32:00
C.	DENNIS DAY & CHARLIE WEAVER..... (BASEMENT SET - INTERIOR RIGHT)	5:30	37:30
D.	BARBARA BRITTON - RED FEATHER..... (LIBRARY - INTERIOR LEFT)	2:30	40:00
E.	BOB HOPKINS..... (IN FRONT OF ONE)	5:30	45:30
F.	FLORENCE CHADWICK - INTVW & PLUG..... (MC SET)	2:30	48:00
G.	FRANK VELOZ & JEAN DAVI..... (FULL SET)	3:00	51:30
H.	JOAN CAULFIELD - CHEST PLUG..... (IN FRONT OF ONE - LEFT)	1:30	53:00
I.	CAROLE RICHARDS (2 SOLOS)..... (IN FRONT OF ONE - RIGHT)	5:00	58:00
J.	JIMMY WALLINGTON..... (IN FRONT OF ONE - LEFT)	3:30	01:30
K.	JOHNNY DUGAN (2 SOLOS)..... (IN FRONT OF ONE - RIGHT)	5:30	07:00
L.	BOY FOY (UNICYCLIST)..... (FULL STAGE)	8:00	15:00
M.	WALTER O'KEEFE..... (MC INTROS & SPREAD).....	6:00 6:55	21:00 27:55
N.	SIGNOFF & CREDITS.....	1:30	29:25

## REMOTE TELECASTS

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A "REMOTE" or field event is any telecast or part of it which originates outside the studios of a network or station.

Edward R. Murrow's fine "Person to Person" program over CBS is done as a combination of studio origination and remote. Such events as football and baseball games are done entirely as remotes, except for occasional switchbacks to a studio for live or film commercials.

### How Remotes Are Handled

Remotes are made possible by transporting necessary technical gear to the scene of action. There the program or event is covered somewhat as it would be in a studio. The audio portion is carried to the studio or transmitter by short-wave radio, or over telephone lines when they are available. The video is usually sent directly to the transmitter by microwave. Both, of course, are broadcast from the transmitter like any other programs.

At times all the necessary pickup equipment (cameras, power units, video and audio controls, microphones, etc.) is sent to the point of origin by ordinary truck or station wagons. There it is set up in a conveniently located structure, whether it be on the second floor of an office building to cover a parade, or in a barn close to the scene of some disaster.

A well-financed TV operation handles remotes with special portable equipment, including a truck containing the equivalent of a studio control room. This is referred to as a mobile unit.

## Make-up of Mobile Unit

The first essential for a mobile unit's equipment is a large and sturdy truck, capable of moving with reasonable speed to a scene of action, and designed to contain necessary controls and other basic video and audio gear. The section of the truck in which control units are contained should be adequate to provide space for equipment and still allow comfortable seating room for a technical director, video man, audio engineer, director, and possibly a director's assistant.

Control equipment includes the necessary video panels and monitors, an audio board with switches and faders, a switching unit for the technical director, an "on the air" monitor (showing the picture being received back from the transmitter), an electric clock, and all necessary telephonic equipment.

In another section of the truck there must be space for the video transmitter and operator, and more than likely a radio transmitter and operator—either for intercommunication between relay points or for program audio transmission when telephone lines are not available. The mobile unit's truck should also have sufficient storage space for cameras, lenses, pedestals, "dish-pans" (or horns), basic lighting equipment, and several hundred feet of cable—both coaxial and microphone.

In actual practice a mobile unit is not really complete for extensive service without additional trucks or station wagons to carry personnel and necessary extra equipment. Cables sometimes stretch for hundreds of feet and consume much space. Lighting equipment is bulky and cannot always be carried along with the control truck. Tools, ladders, and great lengths of rope are often necessary and must be transported to the scene. Often an auxiliary power unit is towed along and space must be provided for several cans of gasoline to feed the motor. And lest we forget—when crews go out on long stretches to cover floods, fires, earthquakes and other disasters, fuel and some comfort must be provided for them in the way of sandwiches and hot coffee, cots and blankets, tarpaulins, tents, boots, rain hats, and slickers. At times the movement of such manpower and equipment is an enormous undertaking that requires much expenditure of thought and facilities as well as money.

## Types of Remotes

Subjects for remote pickups usually fall into one of the following classifications:

1. Scheduled news events—such as parades, circuses, pageants, graduations, or public ceremonies; sometimes indoor meetings or occasions—jury trials, conventions, or events like the now famous Kefauver and McCarthy hearings.
2. Contrived events—such as a visit to an art gallery or library, a tour of a zoo, or an inspection of a factory.
3. Sports—including everything from games to races, ski jumps, and rodeos.
4. Unscheduled news events—usually such as fires, earthquakes, train wrecks, and other disasters which occur without warning.
5. Anticipated events—riots, floods, and similar events which are unscheduled but can often be anticipated by warning signs.

In most cases the mobile unit has time in advance to make necessary plans and to take care of the multitude of arrangements required. The plan is either to go out on schedule or to be on a stand-by basis, ready for call. There have been many times, however, when crews, alerted on short notice and called in from home in the middle of the night, have hurriedly packed up equipment and rushed out to the scene of a disaster before news cameramen have arrived. That's where flexibility and organization count—both in equipment and crews.

## Advance Preparations

The director of a remote operation is fortunate if he has at least two or three days' advance notice. In most events of importance, however, he will start to work on the project two or three weeks in advance. The first step is to gather up all pertinent information relating to the event or occasion. Next comes the survey.

**Importance of Survey.** The preliminary survey should be made jointly by the director and the technical director or other re-

sponsible member of the mobile unit's technical crew. They go together to the scene, determine how cameras will be positioned to cover the event to best advantage, and then work out other technical and production problems.

The position of cameras depends upon the action expected, the direction of available light, and suitable space and location for cameras and operators. Because of the light factor, an outdoor scene should be surveyed at the hour of day the event is scheduled to take place. Thus cameras can be more accurately positioned so they will not be shooting into the sunlight, and the director can make note of any heavy contrasts of light and shadow. The best light for daytime outdoor scenes is available when there is a slight overcast. Extra bright sun is agreeable in some respects, for camera lenses can be stopped down accordingly, but trouble results when there are numerous heavy shadows in the scene.

The director must determine from what vantage points the expected action can be viewed. In this connection it is important to know exactly what will take place, where crowds might be expected to interfere with camera view and movements, etc. If he doesn't have all such information he should consult persons thoroughly familiar with the affair as it has taken place in the past, or with those acquainted with plans and arrangements of an event which is to take place for the first time. He should also make careful note of any possible problem sources—such as trees or posts in the line of view, dead ends in contemplated camera tracks, and advertising signs which might loom up boldly in backgrounds.

**Technical Considerations.** The location for the control truck is determined by several factors. It must be as close as possible to the scene of action—to reduce the length of cables required. Extra long stretches of cable are a nuisance and often a hazard from many standpoints. The next consideration is a source of electrical power—to operate the truck's equipment, and to power lights if the event takes place at night. If electrical power is not available, the auxiliary power unit, operated by gasoline motor, must be towed along and set close to the truck. A third consideration is the nearest point where access may be gained to telephone lines; if they are not available, plans must be made to transmit all audio via radio means. Final technical

consideration is a place to locate the microwave disc—high enough to project its beam without obstruction.

The technical director or members of his crew will work out details regarding power sources, telephone connections, etc. They will also determine if the microwave beam can be sent directly to the transmitter, or if relays will be required.

**Operation of Microwave.** The point of a remote telecast's origin might be only a few miles from the studio or transmitter, or it might be many hundreds of miles away. In cases of the latter the video signal is beamed to the nearest pickup station in the Bell Company's transcontinental coaxial cable and microwave relay system, or it is relayed in a series of "hops" through a system of temporary stations set up at strategic points by the broadcaster.

The technicians will work out such problems, but it is helpful for a director or producer to know how the microwave system works in order to make program plans accordingly.

A radio wave will follow the curvature of the earth, but a microwave beam (which carries video only) will not bend or curve. It shoots in a straight line like a searchlight beam. It will bounce off solid objects but it will not penetrate or circumvent them. If the distance between point of origin and reception is so great that the curve of the earth's surface becomes a factor, even with supposedly level ground, an intermediary point of relay must be set up between the point of origination and final reception. Obviously, the higher the transmitter, the easier it will be to beam a signal from a distant point without incurring interference from the earth's curvature or from obstacles such as hills, forests, or tall buildings.

The longest system of such temporary microwave relays on record was set up in 1952 and 1953 to cover the atom bomb tests at Yucca Flat. (See Figure 16.) Engineered by KTLA's ingenious manager, Klaus Landsberg, it made television history and startled many critics who said it couldn't be done. Landsberg set up his pickup cameras on News Knob, 7 miles from the scene of the blast. From there the video signal was transmitted 53 miles to Charleston Mountain, a 9,300-foot peak in Nevada; and from there relayed 60 miles to Mount X (unnamed on maps) on the California border; again relayed 145 miles to a peak in the San Antonio Mountains in California (reportedly

the longest such “hop” ever used in TV); and from there relayed a third time to Mt. Wilson, the 5,700-foot mountain near Pasadena which is the site of all transmitters in the Los Angeles area. From there the video was made available to normal trans-continental channels.

The relay actually amounts to reception and retransmission. The beam is sharply focused on a critical point where a video receiver is in operation. An adjacent transmitter sends the signal along—perhaps at an angle or to a different elevation—to the next point where the process is repeated.

In normal remotes, relay systems are usually used to get out of “canyons” (like clusters of tall buildings) or to get over or around hilly or mountainous terrain. If it is not feasible to put a signal over a mountain or other obstacle, then the signal is beamed out of the canyon—through a clear passage—to a remote point which can refract the beam without obstruction to the transmitter. The principle is comparable to shooting a searchlight beam down an alley and making it turn a corner when it hits a mirror at the first cross street.

On surveys the engineers try to find a point where video transmission can be made directly. If the transmitter is in view on a direct line of sight, the direct beam will suffice. Obviously there must be no nearby office buildings or other structures in the line of this beam at its start, and no hills, mountains, or forest growth that would obstruct the beam between the point of transmission and the point of reception (transmitter). If the transmitter is not in view, due to weather conditions, it is usually advisable to make a test—regardless of knowledge of prevailing terrain. The test is done by actually transmitting a signal with microwave equipment from the location to the transmitter. If the transmitter phones or radios that the beam is not coming through, then it is necessary to select one or more relay points—and to test them, to be sure.

**Reference Data.** A well-organized mobile unit which has been in operation for any length of time in a given area will have become thoroughly familiar with the terrain. After each survey and remote origin notes are made on topographical maps, showing various “blind spots” and obstacles. Likewise, accurate records are made regarding valuable contacts and sources of information in various areas, location and condition of highways,

sources of power, telephone lines, etc. It is always helpful to survey these records in advance of any remote telecast.

**Production Preparation.** While the engineers on a survey are working out such technical problems as those described, the director will have an opportunity to survey the locale from a program standpoint. Depending on the nature of the event, this may be done in several ways. Often it proves most worth while to talk to local residents, to interview local personalities who might appear on the program, and to consult various local sources of information which might prove helpful—the police department, chamber of commerce, and newspapers.

Information collected in this manner can frequently be most useful in script material, and quite often the director will gain ideas and tips which will improve his TV coverage of the event.

**Final Arrangements.** When the survey has been completed, the director places an order for installation of telephone facilities if they are to be used. In addition to a first class private line to convey the program's audio to the studio or transmitter, such facilities might well include installation of a business phone in the truck—for direct (off-the-air) communication between the truck and the studio or transmitter.

Many other arrangements are often necessary—especially where crowds are expected. Police and fire departments should be consulted regarding necessary safety precautions and permits, and often it is necessary when working on private property to obtain permission (for a nominal fee) to occupy and work on the ground. If the event is apt to be covered by competitive stations also, and providing the selection of an especially good origination point is a distinct asset, the director might arrange for exclusive use of the property or a specified section of it.

### **Script and Telecast Production**

No commentator or announcer, no matter how skilled or glib, should be turned loose on the coverage of a remote telecast without thorough briefing, adequate script or notes, and, if possible, at least a run-through rehearsal. Knowing something about the subject and occasion is vitally important. Likewise it is essential to know how the director plans to shoot it, and how he wishes the over-all subject to be presented.

This type of coverage requires much advance preparation by the director, and if possible a well-planned outline script which can be a great aid to the announcer, the stage manager and the entire technical crew. Such a script is of inestimable value to the director while he's on the air. Anticipated problems of position and movement have been worked out, time has been budgeted, and the commentator has been given appropriate skeleton material—with full directions as to camera shooting and movement.

The specimen script which follows shortly illustrates how details of this nature can be taken care of in advance. The occasion was an inspection tour of a modern public grammar school. After a preliminary survey of the location, considerable time was devoted to a study of the "story" and how it might best be related over television, with full consideration of several physical problems present.

The school which was the scene of this telecast is a rambling one-story structure spread out over an enormous area. More accurately it is a cluster of structures laid out somewhat in the pattern of the letter "E" and joined by interconnecting cement walks covered by roofing for shade and shelter. Direction of entrance to classrooms is varied. One was on the east side, while others were on either north or south—factors which had to be considered in relation to light, so that cameras would not be shooting into the sun and so that light would be on the subjects.

In addition to access to classrooms, it was necessary to consider space in each room for cameras, what scenes, material or subjects would be available from those locations, distance from one class to the next, and time required for movement from one scene to the next.

Since there was only one commentator making the tour of inspection with the principal of the school, it was not possible to switch directly from one location to another on all occasions. In some instances, due to remoteness, it was necessary to divert one camera for these transitions, and of course to provide appropriate "fill" commentary for these scenes while the speakers moved from one location to the next.

In some of the moves advantage was taken of the opportunity to show exterior views of the school and its ultramodern archi-

ture. When this was not practical—for logical or physical reasons—some “staging” of action or business was done for the sake of interest.

Classrooms to be visited were those chosen on a basis of pertinence to the over-all story, compromised slightly in some cases by accessibility and other factors. Then a course of the tour was plotted out with necessary camera movement, which is shown in the script. A plan of such camera traffic is vitally important in a telecast of this type.

The next step in construction of the script was assembly of all pertinent data in two categories—that which applied to this school and others in the same grade bracket, and facts applying to specific classes. Questions and observations for the commentator were selected for each classroom to be visited. Then the general information was allotted to various sections of the telecast according to logical sequence, appropriateness, and in some cases by personalities of teachers.

Time was budgeted according to interest of subjects at various stops, and in relation to time required to move cameras and personnel from one locale to another. For quicker and simpler reading during the telecast, the running time schedule in the script was converted from stop-watch time to “clock” or on-the-air time. Figures at the top of each section indicate time allowed for that portion of the program; figures in the right-hand margin of the program show clock times by which each segment was to have been completed.

Obviously, camera shots indicated in the script applied only to basic shots and to points wherein it was imperative to “spring” certain cameras to the next locale to open the succeeding scene.

This kind of traffic planning—the responsibility of the director in remotes of this type—is essential to provide orderly movement from scene to scene. It isn't sensible to ad lib camera traffic in telecasts involving complicated movement of cameras. To do so invites disaster. There is nothing worse nor more distressing than to have cables tangled up and cameras crossed or unable to move ahead into position—while the commentator or announcer, not knowing what to say or where to go, has his confusion and puzzled predicament pointed up by the fact that he is pictured on the air.

When considerable movement is contemplated or possible, particularly over large areas, it is essential that the director decide in advance what camera is to end each scene, and which is to move ahead to a new position to open a succeeding scene.

These critical shots must be planned and marked in script. In between transitions, of course, the director may extemporize shots with cameras available. Naturally, he will always retain one camera for over-all or "cover" shot, preferably on a lens which will permit dolly in or out as occasion requires. The other one or two cameras will be used for close-up or supporting shots from varied angles.

### Specimen Script

- INSIDE OUR SCHOOLS -

(#1)                      RHSL 8:00-9:00 AM  
                                  AIR 9:30-10:15 AM

(Remote from Kester Avenue School in San Fernando Valley)

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RECORD: <u>THEME</u>	HIT MUSIC
SLIDE: KNBH and LIFE	FADE UP SLIDE
ANNCR: (IN FILM STUDIO) In collaboration with LIFE MAGAZINE, KNBH presents... "INSIDE OUR SCHOOLS"...	(FADE MUSIC)
SLIDE: "INSIDE OUR SCHOOLS"	LAP TO NEW SLIDE
This series of special programs is designed to inform all citizens, especially parents, of what public education is like today — taking you on visits behind-the-scenes in actual classrooms, showing you teaching methods, the school environment, <u>what</u> our children learn and <u>how</u> they learn... <u>For our</u> <u>tour of inspection today we take you to</u> <u>Kester Avenue Elementary School in San</u> <u>Fernando Valley.</u>	(SWITCH-OVER CUE)
.....(SWITCH TO REMOTE).....	
(COME UP ON FLAGS FLYING. CHILDREN ARE LINED UP, READY FOR PLEDGE OF ALLEGIANCE)	UP ON 2 - FLAGS PAN DOWN TO CHILDREN

CHILDREN: ON CUE, RECITE THE PLEDGE. THEN  
PROCEED TO CLASSROOMS.

CUT 1 - PIERCE

PIERCE:

Good morning, ladies and gentlemen. This is Paul Pierce greeting you from Kester Avenue School in the heart of San Fernando Valley, near Magnolia and Van Nuys Boulevards. You have just witnessed a pledge of allegiance to the flag by members of the kindergarten. In just a few moments you'll see them at work and at play. Later we'll visit classrooms of the first and second grades...Now I'd like to have you meet the principal of the school, Mrs. Ella Williams, who has kindly consented to conduct us on this unusual television tour...Mrs. Williams. (SHE ENTERS)

TIME SCHEDULE

(2 MOVE INTO  
POSITION)

Tell us something about the school.  
Modern type. When built?  
Number of pupils? Grades?  
Full time - or split sessions? .  
Number teachers.  
Is this representative elementary  
school in this district?

9:34-00

FIRST KINDERGARTEN CLASS (5:00 MIN)

Why two classes?  
Purpose of kindergarten.  
Point up what students are doing.  
INTERVIEW TEACHER  
How long kindergarten teacher?  
Average teaching experience of K.  
teachers.  
Where trained?  
INTERVIEW KIDS  
What are they doing?  
Age? Career ambitions? Like school?

(END FIRST CLASS ON CAMERA #2 - MOVE #1  
TO SECOND CLASS)

9:39-00

SECOND KINDERGARTEN CLASS (5:00 MIN)

(In this session accent purpose of Kindergarten, teaching methods, why children doing various things.)  
INTERVIEW TEACHER...THEN KIDS

OPEN ON 1  
(MOVE UP 2)

(END ON 1.....RELEASE 2 TO FIRST GRADE CLASS)

NUTRITION - MILK DISPENSED, ETC. (3:00 MIN)

(AS PIERCE & MRS. WILLIAMS MOVE TO NEW AREA DESCRIBE WIDE ACTION PICTURE OF WHAT THIS IS AND GENERALLY WHAT IS TAKING PLACE...COME IN ON CAMERA WHEN ARRIVE)

DISS 3 - NUTRI-  
TION AREA

(CAM. 1 MOVE TO FIRST GRADE, OUTSIDE)

Do they pay for milk? How much?  
Note collectors, dispensers, etc.  
Question teacher???

9:47-00

(ON CUE, WALK TO FIRST GRADE — ON CAMERA)

Discuss building structure.

CUT 1 - WIDE ON CLASSROOM APPROACH

Outdoor classrooms?

Buildings portable? All one-story.

CUT 1 - INDOORS

(ENTER CLASSROOM)

FIRST GRADE (9:00 MIN)

(CAM. 3 POSITION FOR TRUCK DOWN SOUTH WALK TO END OF BLDG.)

CHILDREN READING FROM CHARTS

(CAM. 2 COME INDOORS)

How learning?

What others are doing?

INTERVIEW TEACHER

Teaching experience?

Average teaching experience in district?

Where trained?

Is the teaching method uniform?

Full day or split session?

Any limit to number in class?

(RELEASE CAM. 2 to 2ND GRADE)

INTERVIEW CHILDREN

Examine independent work.  
Questions to fill.

9:56-00

TOUR DOWN SOUTH WALK TO FIRST GRADE (4:00 MIN)

Number of classrooms?  
Auditorium?  
Library?

DISS 3

DISCOVER BOY WITH BOOK CART  
MOVE ON TO NEXT SET...NEXT...ENTER  
2ND GRADE CLASS...

CUT 2  
(MOVE 1 INSIDE)  
(SET 3 FOR  
PLAYGROUND)

SECOND GRADE 10:00 MIN

Children writing stories.  
How to spell.  
Dictionary boxes..etc.

INTERVIEW TEACHER

Average experience 2nd grade  
teachers?  
Age of students?  
Are they up to, or ahead of second-  
graders when you were in school?  
Have they progressed much in mental  
attitude (receptivity) since kinder-  
garten? First grade?  
Split sessions too?  
How selected for morning - afternoon?

SEE INDEPENDENT WORK AT LIBRARY,  
TABLES

(RELEASE #2  
FOR OUTSIDE)  
10:00-00

END INDOORS.....

PLAYGROUND (3:00 OR TO FILL TO 10:13-15)

CUT 3 - PLAY-  
GROUND  
(2 AVAILABLE)

ABOUT SCHOOL GROUNDS

Size of grounds - 19 acres.  
All enclosed?

What hours open for play?  
 Blacktop surface.  
 Play apparatus.  
 What games?  
 Segregation of areas for classes?  
 Teacher supervision?

SIGN-OFF

PIERCE:

(10:13-15)

Thank you, Mrs. Ella Williams, etc....  
 Today we have presented the first in a new series of programs for the benefit of citizens of the Southland, especially parents, to show what is happening behind-the-scenes in our public schools. Today we visited kindergarten, first and second grade classes. Next Friday at this time we'll take you to another public school to visit higher elementary grades. Next Wednesday afternoon at 3:30 KNBH and LIFE MAGAZINE will present an interesting report on our over-all school picture in the Los Angeles area, featuring Dr. Alexander Stoddard, Superintendent of Schools, and others....  
 Until then, this is Paul Pierce, reminding you that it is your responsibility as a parent or citizen to keep abreast of the activities of our public schools....We return you now to our studios at KNBH.

(SWITCH TO FILM STUDIO)

RECORD: THEME

SLIDE: KNBH &amp; LIFE

FADE IN THEME  
 ON SWITCH  
 HAVE SLIDE UP  
 ON SWITCH  
 (FADE MUSIC)

CLOSING ANNOUNCEMENT FROM STUDIO 5

ANNCR:

KNBH, in collaboration with LIFE MAGAZINE, has presented the first telecast in an informative series for the citizens of Southern California, — "INSIDE OUR SCHOOLS," giving a first-hand report on the operation of our public school system...Next program

LAP TO NEXT  
 SLIDE ("INSIDE  
 OUR SCHOOLS")

in this series will be telecast over KNBH, Channel Four, next Wednesday afternoon at 3:30 o'clock. We urge you to join us then... Field engineering supervisor for this morning's remote telecast from Kester Avenue School in San Fernando Valley was Ralph Clements. The director of the program was Carroll O'Meara.

LAP TO SLIDE:

MUSIC UP TO FILL

(DIRECTED BY)

### Anticipated Events

Up to this point consideration has been given to telecasting remotes of events which are scheduled or contrived. Nothing can be said regarding preparation for emergency news events—except to have all gear and personnel prepared to move fast when the unexpected happens. The call usually comes when least expected. A mobile unit which is well organized has a head start over opposition when it has taken time to contemplate what would be done under certain circumstances. If all mobile gear and equipment is kept in good order and ready to move on short notice, and if personnel can be readily assembled when the alarm is sounded, then the unit has done all it can do in the way of preparation; from that point on all operations are extemporized according to circumstances. An ingenious and energetic crew will usually succeed by making the best of what is available, by applying inventiveness and foresight, and—quite often—by fast consultation and daring decisions as to the course of action to be followed.

A major fire, earthquake, or train wreck cannot be anticipated. But there are some emergencies and disasters which can be anticipated and planned for. Typical examples are floods (prediction based on weather reports and past experience), threatened strikes and riots, and similar news events which can be foreseen as possibilities—and which can be prepared for in the event that what is indicated as a possibility becomes a reality.

Preparation for such contingencies requires foresight and hindsight. It also takes imagination, good judgment, a spirit of speculation, and a willingness to take chances for the sake of

scoring a "scoop." It isn't often that newsmen or cameras are present when the crisis comes under such circumstances, but when they are present the credit and acclaim gained by being "on the spot" more than compensate for the speculation.

There are many instances in which major news events have been covered by television cameras because some imaginative and progressive program manager had the ingenuity and foresight to anticipate them, to invest time and money in advance preparation—just in case.

COVERING SPORTS

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COVERAGE of sports is one of the most pleasant assignments that can be given to a director who knows and enjoys the sport he is shooting. But it is often quite strenuous work, with extreme alertness being demanded through every minute over long periods of time.

Boxing and a few other sports are quite simple to shoot. But others, involving fast action over large and varied areas of ground, can often be quite taxing on the nerves, especially if the director carries out what is expected of him—that is, presenting as much intimacy as possible without ever losing sight of over-all action which might be an important factor in the contest.

In the author's opinion, the two most difficult sports to shoot are our nation's two favorite sports—football and baseball. In football the course of action is at all times unpredictable. In baseball, on the other hand, the action is more confined; although points of interest are somewhat predictable (if the game is played by orthodox procedure), the areas of interest or critical action change faster.

Fencing, wrestling, boxing, and other sports which are performed in confined areas can be adequately covered with two cameras. Sports which extend their action over wide areas of ground not only require more cameras for adequate coverage, but the director and cameramen must be more alert and provide a much greater effort in the way of teamwork. In the latter category it is imperative that cameramen are well acquainted with the game they are shooting and that they adhere

strictly to an established pattern of procedure—what camera gets what shot when what happens. Action is so fast that there often isn't sufficient time for the director to ask for the shot that is needed. One camera must always be where critical action takes place; quite often the director merely takes the shot when it is available, without specifically calling for it.

In television coverage of all sports *orientation* is of utmost importance. Viewers merely become annoyed and confused when their viewpoint of a contest is constantly changed by switching from one camera to another in different sections of a stadium or ball park.

In a majority of our games involving contest between two teams the main course of action is back and forth between two goals. This applies to football, soccer, polo, basketball, hockey, and many less popular sports. All of these should be viewed from midfield and on one side of the field only. Tennis and baseball are two popular sports which call for other viewpoints. After years of experimentation it has been decided that the use of three varied viewpoints for baseball is not only permissible but desirable—because of the shape of the playing field, the course of action, and the traditional arrangement of dugouts. Preferred seats at a tennis match are on the shady side of the court, center section. However, because of optical factors, tennis must be shot from one end of the court only. Of course there can be no fixed viewpoint for golf, yachting, or crew races; coverage of these sports calls for not only several cameras at varied points but two or more mobile units.

It will be the objective here to present complete plans for the coverage of football and baseball, and to include also brief treatments of a few other popular sports with suggestions which will be applicable to all sports.

## Football

**Camera Placement.** Good coverage of football begins with proper placement of cameras. They should be shooting at a right angle to the field on a side of the stadium which is not looking into the sun. A game can be shot with two cameras, particularly if one camera has a zoomar lens, but adequate coverage of an important game calls for at least four cameras.

With four cameras, three can be placed on the roof of the press box on top of the stadium, or at least high in the stands in spots where spectators will not interfere with the view. A fourth camera can be placed in the announcer's booth—to shoot the commentator occasionally and to pick up titles, commercials, photographs, and scores. It can also be pointed out on the field for use when needed. A fifth camera—if the mobile unit is fortunate enough to have such facilities—can best be placed down on the field on the same side of the stadium. It can be used for intimate shots of players on the bench, conferences of coaches and players, etc., and of course can be panned around for action shots of spectators or a rooting section.

In the author's opinion, use of another camera at one end zone (looking downfield through the goal posts) not only represents waste of a camera but contributes nothing to enjoyment of the game. Cutting to that camera for scrimmage close to the goal line is the only good use to which it can be put, but that bounces the viewer in a confused manner from the 50-yard line to the end zone. Place kicks and conversions after touch-down—as seen from this angle—are very seldom presented in an acceptable manner. If the camera pans up to catch a high ball it shoots sky in the background and usually loses relationship to the uprights of the goal post. If the kick is low the view of the ball is muddled by the crowd at the other end of the stadium.

If only three cameras are available it is best to place two cameras side by side on the press box roof or high in the stands, with the third camera in the announcer's booth for reasons mentioned.

Hereafter in this chapter, for purposes of description, it will be assumed that four cameras are available. They would be positioned thus: one in the booth and three high in the stadium at or near the same elevation. A camera with zoomar lens would be placed in line with the midfield stripe. The other two would each be placed to look down on a 40-yard line stripe. At the elevation which usually prevails the spread of the three cameras over 20 yards will not be perceptible to the viewer. In the discussion which follows they will be identified as Camera #1 (left), Camera #2 (zoomar—center), Camera #3 (right). Camera #4 will be in the booth.

**Camera Lenses.** Lenses in football coverage as in all other sports will depend on the size of the stadium. The gridiron has a standard size of 50 by 100 yards, with goal posts outside each end. But many football fields are surrounded by a racing track, which puts the field farther from the grandstand, and of course the total elevation and degree of slope of the grandstand are also factors to be considered in the selection of lens complements. The zoomar should be adjusted to take in at least half the field for its widest shot, and to close in to a width of no more than 5 yards at the opposite side of the field. Camera #1 or #3 should have a lens wide enough to take in the whole stadium. Otherwise the lenses of these two cameras should be able to shoot half the field; a width of 20–30 yards; reasonable close-ups of a tight group of two or three players; and extreme close-ups.

**Pregame Briefing.** Since the cameramen and the director will be “playing the game” after a fashion, along with the members of the two teams, it is expedient that they familiarize themselves with the style of play of the two teams, the ball carriers, the kickers, and other players who might be singled out for special assignments. If possible an attempt should be made to see one or both of the teams in action in a game prior to the telecast.

Sometimes a friendly coach or member of his staff can be persuaded to brief the director and camera crew immediately before a game, pointing out what might be expected of the opposition—based on scouting reports, and more or less what is planned by the home team. Jordan Olivar, now head coach at Yale, used to be of great aid to us at NBC in this respect when he was coaching Loyola University at Los Angeles. While the team was at lunch or dinner he would meet with all of us in a hotel room and give us the most specific hints and suggestions regarding what might be anticipated from both teams. He pledged us all to strict secrecy, of course, and he never had reason to believe that any member of our unit ever let him down—except for a few occasions in which our cameramen gave viewers reason to believe they were in collusion with the quarterback.

**Shooting Procedure.** As emphasized previously, coverage of a game of this kind calls for the ultimate in teamwork between

director and cameramen, based on some kind of established rules of procedure. Some directors choose to extemporize more or less with camera shots as the game proceeds, but doing this invites trouble. Under this system a camera, when needed for a vital shot, might be flipping a lens. The flip might be shown on the air, which reflects on the director; or if the director doesn't call for the shot until the flip and focus have been completed, it may be too late to capture the action. Hence, the advisability of adopting a strict pattern of procedure in which the cameramen should be thoroughly drilled in practice games or in theory before attempting to shoot a major gridiron contest. There are several systems, to be sure. The one offered here has been thoroughly tested through several seasons of actual football coverage and has proved to be as dependable as any—and in many respects, more interesting than most of them from a viewer's standpoint.

Traditionally, we go on the air in advance of the game, briefly tell something about the significance of the contest, and give the viewers an over-all picture of the stadium and campus within view. The booth camera (4) will probably be used for identification of the program by title and may be used for sponsor's commercial—unless there is a switchback to studio immediately after the start of the telecast. Any of the top-side cameras can be made available for the over-all shot of stadium and campus.

Pictures of the coaches, players, or campus scenes can best be shot with the booth camera. (It is assumed that a flip board will be available there, with a man to change pictures or make the flips.)

The game begins with the meeting of the two team captains and the toss of coin. Close in with zoomar or other camera for a tight 3-shot. Thereafter show the official indicating who won the toss, who will kick off, and which teams will defend what goals.

On the kickoff show first the formation of the receiving team and then pan to the lineup of the team kicking off. This should be done with the zoomar. Close in just before the kick but leave a good area of the field in view—say, a width of 30 to 40 yards. After the kick pan easily to the defending team. Do not pan up with the ball. When it becomes evident where the receiver is, close in for the catch—to include about 20 yards. Now

stay with him. When he is about to be tackled, close in further. If the tackle has taken place near either side of the field, pan to the nearest yard marker and zoom in to the limit. Otherwise cut to a shot which will show the linemen setting their sticks and 10-yard chain.

From this point on, until a touchdown is scored or unless otherwise directed, all cameras will follow the ball at all times. It is a good policy to have Cameras #1 and #3 follow this plan: when the kickoff is received on the left end of the field #1 will carry a medium shot (about 15 yards) and #3 will carry a wide shot for protection (about 30 to 40 yards); at the first opportunity after the ball crosses the midfield stripe, this procedure is reversed. Camera #4, looking out from the reporter's booth, can fish for extreme close-ups of anything of interest. Providing #1 and #3 are always alert and on the ball, #4 might be given the liberty of searching around occasionally. He might also be designated to watch officials to catch their signals of violations.

In the few seconds in between scrimmages it is wise to cut to #1 or #3. This gives #2 relief and an opportunity to zoom back for his next wide shot. Constant zoom back and forth on the air is not desirable.

In this interim it is well to show the formation of the defensive team first, then to cut to the huddle of the offensive team—providing it is worth seeing. All too often the huddle presents only a static array of rumps.

From this point on the director and cameramen have to start “quarterbacking” along with the offensive team. A squad with a deceptive attack will give trouble to the TV crew as well as their opponents. It is good judgment to play the game conservatively, never closing in too tight too soon and thereby running the risk of losing the ball if there is a fast pass, cross buck, or fake hand-off. Viewers prefer a reasonably tight shot, of course; they will tolerate a wide shot but will never forgive you if you lose the ball.

While the ball is in motion no shot should be so tight that the relationship between the ball carrier and players in his vicinity, or with the all-important yard lines is lost. When a man is in the clear, running for a possible touchdown, it is exceedingly important to see what progress he is making down the field and to see how close any potential tacklers are.

Cut to the zoomar at the start of each scrimmage—on a shot wide enough to contain the entire offensive line and backfield. The only exception would be when a team constantly sends out a wide flanker as a pass-receiving threat. If it makes the shot too long when he is contained in the picture it is permissible to lose him, providing we have seen the flanker go out and know he is outside the frame.

Pan with a pass but never with a close-up shot on the ball. The same rule applies to kickoff and punts. The viewer is concerned not so much about the fact that the ball is in the air but where it is in the air, and in what relationship to possible receivers. Furthermore, a close-up on a ball in flight is apt to be a blurred wipe on the screen, particularly with a crowd in the background.

When there is a fumble, close in on the free ball—either with zoomar or by switch to a medium or close shot on another camera—but keep the picture wide enough to see the players as they scramble in to recover the ball.

When a punt is probable or inevitable, cut to a tight shot on the punter after the ball has been snapped to him. Hold the shot on him until he gets the ball away, then cut to a wide shot and pan to the receiver. This close shot on the kicker is not only dramatic but often yields an exciting view of a fumble, blocked kick, or roughing of the kicker. The same shooting and reasoning applies when there is a signal for a free catch.

When there is a place kick or conversion kick after touch-down, open with a shot on the lines. As the ball is snapped, pan back to the kicker and hold for a fraction of a second. If he gets the kick away pan to the goal posts. Immediately cut to a close-up on the umpire to see his signal as to whether the kick is good or bad. Then cut to a shot which will show reaction, one rooting section whooping it up, or the reactions of the players on either bench. By this time the scoreboard should have been changed, and it's good practice to cut to a close-up on the score, then possibly pan to the clock (if time is significant).

The clock often yields a diversion and subject of interest during time-outs, but it shouldn't be used too often unless the remaining time of play is significant—which, of course, applies only at the end of the second and fourth quarters. When the

issue is in doubt in the closing minutes of the game, it is advisable to cut frequently to the clock. Particularly if it has white hands on a black face, a close-up of the clock can be supered over the picture of the playing field. The super should be pulled out fast, however, when action is resumed.

Some mobile units operate with a policy of never showing an injured player. In such operations it is necessary to "get off" the injured man by cutting to a relief shot. Obviously, no one enjoys seeing a player in agony, but on the other hand the viewer feels entitled to know if a star player is able to resume action in the game or to see how badly he seems injured as he hobbles off the field. It's a matter of taste and discretion. It's unpleasant to see a player carried off the field on a stretcher, but there is some satisfaction in knowing that an injured player is able to leave the field under his own power.

**Adding Color.** Half-time and time-out periods are times which should be utilized to the fullest with shots which capture the color of the game as a spectacle.

Viewers enjoy scenes of the crowds, rooting sections, cheer leaders, and close-ups of the players and coaches on the sidelines. Often much can be told by the conduct of a head coach—whether he sits motionless on the bench, or whether he strides nervously back and forth, gesticulates with his arms or otherwise shows his displeasure with the officiating or progress of the game.

If commercials are to be inserted in the half-time, which is usually necessary to justify the sponsor's investment in the game, they should be arranged to appear at intervals which will not cover up the most spectacular half-time stunts by rooting sections and marching bands. Here's another case in which thorough advance preparation counts!

**The Announcer's Role.** In the coverage of football or any other sport or event in television the announcer should have in mind at all times that the event is being covered by two reporters—himself and the camera delivering a picture on the air. And he should remember the familiar proverb about a picture being worth a thousand words. His job is not to tell the viewer what he is seeing; it's to augment or explain the significance of what he is seeing.

The TV announcer must have a monitor before him, set and shaded so he can see it clearly and alternate his glance from the playing field to the monitor screen.

As much as possible he should confine his comments to what is being shown on the screen, and never go into lengthy references to subjects which he is able to view but which are not shown on the screen.

At the start of each half he might well refer to the colors of the two teams' uniforms, then identify them by monochrome descriptions and position on the field, thus: "The Trojans are wearing red and gold jerseys. The Stanford eleven is wearing cardinal and white. The Trojans appear on the left side of your screen in the dark jerseys, defending the west goal. On the right side of the screen we see the Stanford team with the dark numerals on white jerseys." Thereafter, once or twice per quarter it is advisable to identify each team only by dark or light jerseys.

## Boxing

Boxing matches can be covered adequately with two cameras placed side by side (about 10 feet apart) in the very front of the gallery, if one is available, otherwise from a platform giving a down-view on the ring. A third camera can be an asset if it can be placed close to ringside for up-shots, or wheeled around for facial expressions of fans. However, such placement is seldom practical as it either obstructs the view of paying customers or invites the risk of fans popping their heads up in front of the lens.

In a 2-camera setup one keeps an over-all shot on the ring, the other is set for a tight 2-shot. If the situation warrants, lenses can be flipped to reverse the width of coverage.

In between rounds the director can alternate close-ups between contestants. Between the first and second rounds he can show a closeup of one boxer receiving treatment and coaching; between the second and third rounds he can show the other contestant. Or there is time to show both contestants, if desirable. If one boxer is in serious condition and needs special treatment, then of course it would be showmanly shooting to reveal the treatment he is receiving and how he is responding.

These two cameras will give adequate coverage, since the action takes place in such a limited space. However, if supers or titles are to be used for advertising purposes, a third camera should be set aside for this use, possibly in or near the truck.

If the commentator is to be shown on camera for remarks in between rounds or matches he should be positioned somewhere within good camera range of the two main cameras, where lights can be turned on him without disturbing spectators or getting them obnoxiously in the scene.

### **Wrestling**

The same camera setup as that used for boxing can be applied here. However, the fact that the "gladiators" spend a good part of their time on the mat, plus the fact that their grimaces and body-bending tactics have become such an established part of their repertoire, it is preferable to have the cameras much lower and closer—to shoot up at them and through the ropes.

### **Basketball**

Two cameras are completely adequate here. On a few occasions it will be advisable to show the entire stadium or court. Otherwise one camera can cover half the court and pan with the movement of the ball, and the other can be kept available for close-ups.

The action is fast but not so rapid as to require coverage of the entire court at any one time during the progress of the game. A view from a few rows above the floor, taking in half the court, is adequate to cover the action—with easy pans as the ball is dribbled or passed from one end to the other. The close-up can be set for the vulnerable basket. Obviously, the cut to the close-up should not be made until the ball is shot to the basket. Immediately after the ball has dropped through the hoop or has bounced off the backboard, the director should cut to the wide shot to capture the ensuing action on the floor. After this switch has been made, the close-up camera—if a basket has been scored—can pick up the scoreboard, usually without a flip of lens.

## Horse Racing

A horse race takes place in the matter of a minute and a few seconds. The race itself is the thing, of course, but traditionally there is much that goes along with the sport besides the actual race. Hence, the number of cameras and the placement of them depends on the broadcaster's budget and the extent to which he wishes to report color scenes—such as customers lined up at the parimutuel windows, the tote boards, activity in the clubhouse or grandstands, and the all-important ceremonies following the race when the winning rider, horse, and owner receive their honors.

As for coverage of the race itself, a skilfully operated zoomar, placed high in the stands directly in front of the finish line (with view unobstructed by posts) will probably give the best possible report. If the horses string out, one wide shot showing the position of all horses might be justified in the middle of the backstretch. Otherwise, a well-operated zoomar can carry the race to the satisfaction of all viewers except those who bet on nags tagging along at the rear.

It must be remembered, there are only three positions that matter when the race is over—win, place, and show. In a hotly contested race the winner is never certain until the finish, and those contending for place or show might be running in fifth or sixth position until the final turn on the track. Here's where the director and cameraman, working together, must use discretion. The distance across the infield is so great that it's difficult to discern what horses are in what position without a fairly tight shot—which automatically eliminates other horses if only the leaders are shown. Logic dictates that obvious losers are not important (in the final analysis) at this point. But possible contenders must not be dropped from view. Therefore the zoomar operator should show horses running in first, second, and third positions at all times—and if the intervening distance is not unreasonable, include the horses running in fourth and fifth positions, particularly if they are still contenders. If the field spreads out drastically after fourth position, the director is probably justified in concentrating on the first four horses only.

As the horses round the fourth and final turn there is justification for a quick cut to a camera on the far left side of the grandstand which would show a cross view of the leading contenders and their relative positions. Then there should be a quick cut-back to the zoomar, following the horses down the home stretch, and panning only to the finish line. It is imperative to stop the pan here, not following the winner; what is important now is the order in which the other horses cross the finish line.

After all horses have crossed the line the next shot the viewer wants to see (as soon as available) is a close-up of the tote board with official results.

### Tennis

The ideal position to view a tennis match is high on the shady side of the court. But because action is so fast, back and forth, it is not feasible to attempt shooting a tennis match from this position. The fast pans from right to left, left to right, which the human eye seems to manage without discomfort or inconvenience are not for television. Hence, cameras are placed at one end of the court and the contest is viewed from this vantage point only. Other cameras might be positioned at the side for relief shots or color, but the action must be seen from one end of the court only.

As stressed heretofore, it is important not to shoot into the sun. Usually tennis courts are positioned in a north and south direction, and matches normally take place in the afternoon. Thus the sun will come from the south or west, indicating the south side of the court as the proper position for cameras. Important tournament matches are staged in courts providing a solid dark background of 12 feet or more behind the end zones, to save contestants the eyestrain of trying to follow a ball against a crowd background. To avoid distortion and oblique angles, the two cameras should be placed directly in the middle of the end zone, one being placed high and the other camera low.

When service begins with the contestant in the near half of the court the low camera should be used. Show this competitor to best advantage while he is serving. Arrange a shot which will show him at full length (including feet in relation to service line) and also include a good view of the opponent. The high

camera can carry a wide shot for protection. Or it might even reasonably carry a medium shot set on the opposing side of the court which can be cut to for dramatic or significant shots.

When service comes from the opposite side of the court cut to the high camera—to look over the net and include the entire figure of the server, again observing feet in relation to the service line.

In this sport as in all others using a ball (and it's surprising how many games all over the world are built around advancement of a ball in some direction or through or over some obstacle) it's a safe and sane rule to "stay with the ball."

## Baseball

For a particular reason baseball (still America's favorite sport) has been reserved for last in this review of television coverage of our most popular sports.

The following comments on shooting baseball for television are by one of the nation's top experts on the subject, William A. Garden, a pioneer in the televising of sports and now Supervisor of Production in the Public Affairs Department of NBC, New York.\* In the light of his extensive experience he concludes emphatically with a point the author has stressed so much and so often, namely, that in TV there's nothing like teamwork!

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Baseball is probably the most difficult sport to televise properly, with the possible exception of golf. The action in so many situations is spread out all over the ball park, and requires split second timing on the part of the director, plus the coordinated efforts of his cameramen, to do the job intelligently and without incurring the wrath of the armchair managers. Let's take a hypothetical example, to illustrate the point:

A team has men on first and second with one out, and Jones laces a line drive to right centerfield. The ball falls in front

\* The author expresses his thanks to Bill Garden for writing this material on baseball especially for this book. His advice carries much authority since he has shot virtually all major sports on TV for many years, including the first televised World Series (1947), Rose Bowl games and countless other top sports events.

of the charging rightfielder, takes a crazy hop past him, but the centerfielder, backing him up, prevents it from going through. The runners hold up briefly to be certain the ball will not be caught, then streak around the bases. The man on second tries to score, the man on first tries to go to third, and Jones, who got the hit, tries to stretch it to a double.

Here then are the possibilities that the television director and crew are faced with in this situation, and *must* catch for you.

1. The outfielder may make a fine catch.
2. One of the runners may be doubled off base.
3. The runners may try to advance after the catch.
4. If it falls in for a single, there might be a play at home plate on the man trying to score from second *or*
5. There might be a play at third base on the runner moving from first *or*
6. The outfielder's throw may be cut off by the second baseman, who fires to the shortstop covering second to nail the hitter who is trying to stretch it to a double.
7. The batted ball may go through to the wall for a triple or inside the park home run, with both base runners scoring, and a play on the hitter sliding into third or home.

These are only some of the potential happenings on this one batted ball, and the director must have a camera *on* the play, *and* punched up *on the air* at the precise moment or he'll miss it.

To cope with the complexities of a situation like this, (and there are many in the course of a game) requires a careful plan of coverage, with each cameraman having a specific assignment on any given play. Baseball coverage cannot be hit or miss.

Camera Placement. A fairly standard pattern of camera placement, which provides adequate coverage is:

- a) One camera, elevated, directly behind home plate.
- b) One camera, elevated, along the first base line (20 or 30 ft. from home plate).
- c) One camera, elevated, along the third base line (20 or 30 ft. from home plate).

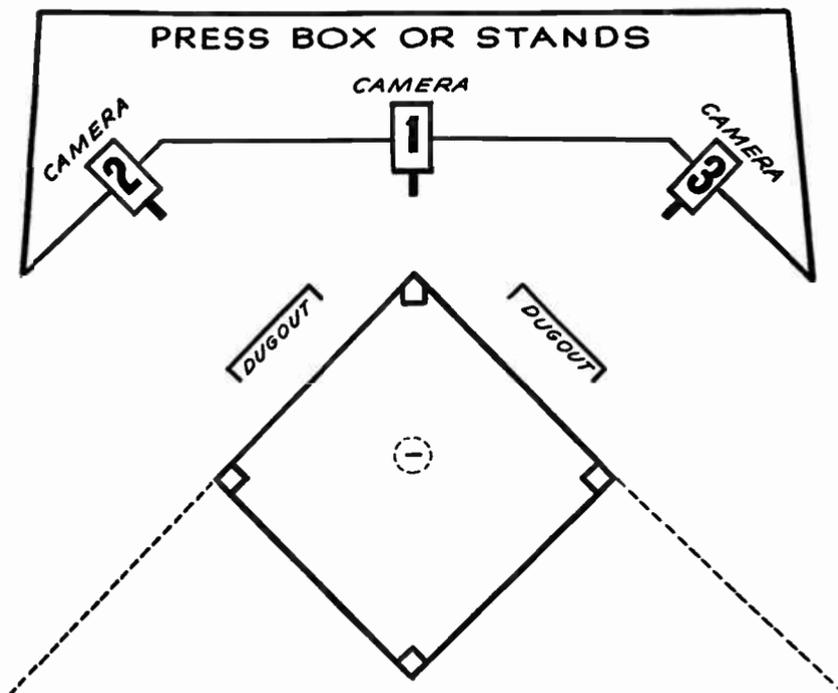


DIAGRAM 3. Televising Baseball. Ideal setup for 3-camera coverage of baseball. Camera #1 might have a Zoomar lens if desired, but it is not necessary with this arrangement. Many field units favor a Zoomar lens on this camera, however.

**Plan of Coverage.** This type of arrangement provides for:

- a) *The workhorse* (#1) behind the plate for balls and strikes, and to follow the ball when hit.
- b) A camera on each side of the plate to cover:
  - (1) Balls hit to the outfield.
  - (2) Frontface close-ups of either right or left handed batters.
  - (3) Color shots into both dugouts.
  - (4) Close-ups of base runners, and attempted steals.
  - (5) Close-ups of the pitcher or any individual on the field or in the stands.
  - (6) Bullpen close-ups.

Some television stations, with the equipment to spare, and a cooperative ball club, have augmented this basic setup with

cameras at dugout or field level on either side of home plate, *and* an additional camera behind home plate. These provide some rather interesting angles or good color shots, but I classify them as extra icing on the cake, although the extra camera behind home plate provides insurance on your most important camera position. However, the basic three camera setup outlined above, properly utilized, will provide sound and adequate coverage.

**Shooting Procedure.** Let's go back now to the hypothetical situation outlined in the second paragraph and see how our three cameras could cover it.

Camera #1 is covering balls and strikes.

Camera #2 is on the runner on first base in the event of a pick-off attempt by the pitcher or catcher.

Camera #3 is on the runner on second base—same reason.

The batter hits a line drive to right centerfield, and Camera #1 *goes with the ball*.

Cameras #2 and #3 go to the outfield to get a semi-close-up of the outfielder trying for the catch.

The director sees that *Camera #3* has the shot and switches to it.

Camera #1 has been instructed that as soon as he "loses his light" (talley light, indicating he is on the air) he is to pick up the advance base runner.

Cameras #2 and #3 have been instructed that whichever one does *not* "get the light" on the outfielder picks up the second base runner, so Camera #2 quickly picks up the runner who was on first.

Camera #2 stays with the ball, as the centerfielder backs up the rightfielder, and *pans in* with the throw.

Now the director can show his mettle—and quick reflexes—in giving you the entire story pictorially.

He has switched to Camera #2 on the rightfielder, and sees the ball get by him, with the centerfielder retrieving it.

Now a quick switch to Camera #1 shows the runner from second base scoring.

A quick switch to Camera #2 shows the runner from first base sliding into third.

Meanwhile Camera #3 has followed the throw in from the outfield, and out of the corner of his eye the director sees the ball being relayed in on Camera #2 monitor. The announcer unquestionably is yelling—"And there goes Jones—trying for two." A quick switch to Camera #2 and we see Jones in a cloud of dust—out at second base in spite of a good hook slide.

**The Value of Teamwork.** It can be done—in fact is done many times a day. But it's a team operation, with everyone alert, a basic plan of coverage, and each man's responsibility under certain circumstances clearly understood. Add to this a thorough understanding of the game by *every* member of the crew, a liking for the job, day-in-day-out teamwork, and a large portion of luck, and you'll have the perfect game.

The whole philosophy of baseball coverage on television could be boiled down to four words, which, if scrupulously observed, would provide a good job of coverage. The four magic words are: "Stay With The Ball."

## TV RECORDING—KINESCOPE AND TAPE

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LIVE television programs are recorded for future use—either for reference purposes or retelecast—by either of two methods developed especially for this purpose: (a) kinescope recording, which has been used with increased success since 1948; and (b) video tape recording, introduced in 1953 and still undergoing refinement and improvement.

### What Is a Kine Recording?

A kinescope, per se, is actually the picture tube—in receivers, in monitors, and in the electronic view finder of cameras. The word, popularized as kine (“kinny”), has been misappropriated to mean video recording on film and is commonly applied to both the film and the process.

A kinescope recording is any telecast or TV program segment captured on motion-picture film from the surface of the kinescope tube—somewhat like a motion-picture camera might photograph scenes appearing on a receiver screen. Special camera equipment is required for this purpose. The TV cameras pick up a live scene which is relayed electronically to the recording studio where the picture appears on a very clear kinescope about the size of a post card. There the kine camera, focused on the face of the receiver tube, captures the picture optically on film. The recording on film, after being processed, can be projected on standard TV projection machines. (See Diagram 4.)

The first and foremost method of kinescope recording was developed jointly by RCA and the Eastman Kodak Company. It was introduced in 1948 over WNBT, New York, its primary purpose then being to rebroadcast at night scenes of news events previously telecast earlier in the day. The first network telecasts by kinescope recording occurred in June of 1948 in connection with the Republican National Convention in Philadelphia.

Before the cable and microwave systems were extended across the country, the kinescope recordings made network operations possible, the films being shipped by air for release usually a week later. This practice still applies in many cities not yet linked with the cable.

Kine recordings serve many other purposes beyond that of delayed broadcasts. They are used for reference and permanent file, for auditions of programs for sale, for prerecorded inserts in live programs, or for complete program production by the stop-and-go method.

Prerecording of program segments is done to facilitate production or to solve problems involving time, space, or cost. For example, the method would permit the use of a large ballroom scene or extravaganza which could not be accommodated in a studio with other sets. This scene would be recorded on one day and then dovetailed into the live production the following day.

Other typical uses for prerecording would be to include a scene with a celebrity not available at time of telecast, or to incorporate a scene with sudden and drastic change of costume and make-up—as in a flashback to youth.

The stop-and-go method of production by kine is not extensively practiced. In some cases where it has been tried experimentally it has proved too expensive. Not only are cameras used four or five times longer than in a straight-run live telecast, but the system calls for extensive film editing. The method does have its merits, however. It permits retakes in event of error, easy change of scene and costume, and, above all, relief from the strain of continuous performance, with actors having a chance to rest and brush up on dialogue in between "takes."

**Improvement in Methods.** The first kinescope films left much to be desired in both sound and picture quality. Pictures were grainy, faces were blanched and often substantial portions of

the borders were cut off by a natural shrinkage which occurs in the process.

These faults have been almost entirely overcome by (a) improvement of the process, and (b) intelligent production which takes into consideration certain limitations or requirements for kine reproduction.

The greatest strides in this direction have been made by the technicians in Hollywood. This has been accomplished out of necessity, arising largely out of the distance between East and West coasts and the resulting time differential.

Before the transcontinental microwave and cable systems crossed the country the West viewed all the big New York programs by kine recording. Quality was so inferior that viewers soon showed a preference for live local programs with good picture quality. The Western recording technicians seriously studied the faults of these films and the reason for them. Then, conducting experiments with the aid of directors, scenic designers, and lighting engineers, certain standards and regulations were devised for application to all programs which are to be kinescoped.

As a result, rebroadcast by kine recording is now common on the West Coast and in many cases the quality is hardly discernible from that of a live show. Many of the biggest Hollywood programs are actually staged in the late afternoon or early evening, thereby being received in the East at a popular listening hour. While the program is being fed to the Midwest and East over the microwave system it is also being recorded by the quick kine (called "hot kine") method for rebroadcast in the West two or three hours later. Likewise, New York shows are transmitted to the West for recording while they are being telecast to the East, for later release in the West.

### **Recommended Practices for Kine Quality \***

The following remarks are by Ralph E. Lovell, NBC's kinescope recording supervisor in Hollywood. A veteran technician in the science of video recording, he has not only contributed

\* This material is a digest of various directives Ralph Lovell has issued over a period of years for the benefit of directors, lighting men, and other technicians engaged in kinescope recording. The author expresses his thanks and appreciation to him for permission to quote this authoritative material in this text.

greatly to development of present high standards in the process but he has trained a staff of technicians now turning out TV recordings unsurpassed by any in the country. As a matter of fact, the quality of some of his kines ("The Dinah Shore Show," for example) has been so faithful as to have deceived many television experts, causing argument as to whether the show is a live repeat or a kine recording when telecast on the West Coast.

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Avoid excessive contrast range between faces and backgrounds.

1. Never use a Dynabeam or similar hot spotlight as the *only* source of light against a black background.
2. Provide small objects in each picture which are 5 to 10 per cent whiter than faces on control room oscilloscopes.
3. Avoid scenes with large areas uniformly and predominantly black.

Select backgrounds, costumes and makeup which do not blend into each other.

1. A random pattern of lights and shadows in the background is preferable to a large mass of uniform grey or black.
2. Avoid black tuxedos and white dress shirts, particularly against black backgrounds.
3. Select makeup which provides contrast with clothing and background, yet not so light that the face will be the whitest thing in the picture.

Avoid extreme long shots.

Allow extra margin in framing pictures—to compensate for possible shrinkage.

Open and close all shows being "kinnied" with either a clean camera switch or a fade. Do not use a lap dissolve from or to adjoining video.

The use of motion-picture film as part of a kinescoped show is not recommended. When it must be used, try to obtain clean 35mm film. If the kine is to be rebroadcast, arrange to obtain 16mm duplicate negatives of the film sections which can be spliced into the kine negative.

It is a great temptation to violate rules stated above, especially in the matter of low key lighting, because the pictures so pro-

duced look dramatic and artistic on the carefully adjusted control room monitors. The same pictures do not necessarily look as delightful on home receivers, however, even on the live show, because many receivers are improperly adjusted, causing an increase in contrast; that is, the faces become whiter and the blacks become blacker. Even the coast-to-coast microwave circuit has a tendency to chop off the maximum white information, thus making faces become whiter as the signals hop from one tower to another across the continent. Kinescope recording and reproduction does this also to a slight degree, hence faces which are on the verge of washing out on live shows become completely washed out when recorded and then reproduced and seen on improperly adjusted receivers.

**Lighting Considerations.** Faces should never be the whitest thing in the picture because all detail will be lost if they are. Some small object, such as a lamp, a picture, a shaft of light, or even backlighting on hair, should be some 5 to 10 per cent whiter on the control room oscilloscope than are the faces of actors and actresses. These "spikes" of light serve as a protective margin to preserve the detail and expressions so important to enjoyment and understanding of a picture. It is for this reason that the use of a Dynabeam as the sole light source upon an actor is discouraged. The Dynabeam when used alone, immediately makes the face the whitest object in the picture, removing all semblance of gray-scale separation, i.e., density variations, in the face area. From a technical standpoint the use of a Dynabeam as the only source of illumination is positively detrimental to picture quality, both live and quick kine. On the other hand, if a Dynabeam is diffused and used along with other lights merely as a "fill" light to augment other "key" sources, it can be an asset to good lighting technique.

It is often said that flat lighting is best for kinescope recording purposes. This is not exactly true. We do *not* want the stage completely flooded with a uniform amount of light from diffuse sources such as scoops, broads, or strip lights. Optimum lighting is achieved with columnated light such as spotlights to achieve a "hard" type of key light on the principal subjects. However, there must be a considerable amount of "fill" light to remove the deep shadows produced by a scant supply of spotlights. To phrase it another way, optimum lighting for kine

is achieved with an abundant supply of spotlights, some used as "key" lights, the rest used as "fill" lights, with the ratio of "key" to "fill" illumination being only about one and a half to one, not twenty to one, as some people prefer. Realizing that it is often impossible to control and predict the exact movements of stars on lengthy and complex productions, it is nevertheless recommended that stars occupy predetermined stage positions where the proper balance of "key" and "fill" spotlighting has been tested, rather than flooding the whole stage with flat light in the belief that the light will be suitable regardless of where the star may perform.

**Set Design in Relation to Kine Quality.** As stated previously, there should not be large, uniformly black areas in the backgrounds. Neither should the sets be a completely uniform middle-gray mass. The density of the backgrounds should be broken up by sets, props, skillful set painting, or by artistic lighting in such a way that a random pattern of density variation exists. On those shows fortunate enough to have specially constructed sets, much can be done by the scenic artist to provide optimum contrast by skillfully painting in highlights and shadows on the flats which comprise the sets. On local shows where budget limitations are such that flats must be used repeatedly for numerous shows of differing character, it then falls to the ingenuity of the director, the prop man, and the light direction engineer to provide a random pattern of highlights and shadows. When curtains provide the backdrop, deep folds and cross lighting can provide the desired effects of highlights and shadows.

**Shooting for Kines.** For optimum film quality, whether it be kinescope recording or direct photography, the use of extremely long shots must be avoided. The present television system is simply not adequate to resolve all the fine detail in an extreme long shot jam-packed with dozens of people flitting about the vast expanse of a full stage. You will notice that the better film programs shot especially for TV have neither the extremely long shots nor the excessive contrast range which are in current practice on some live TV programs. This is no accident; the successful TV film producers have learned the limitations of the television system and strive to stay within those limits to obtain maximum picture quality. Producers and directors of live TV

shows must likewise recognize the technical limitations of the current television medium and plan shows within those limitations.

**Timing for Projector Changeover.** It may be news to some readers that kine recording cameras and 35mm film projectors employ only enough film for one half-hour of program time (with possibly a two-minute surplus). Therefore, on one-hour shows like "The All Star Revue" and "The Colgate Comedy Hour" it becomes necessary to change from one projector to another sometime within two minutes—plus or minus—of the thirty-minute point in the show. Often this occurs in the middle of a comedy skit or dance routine where the slight change in music tempo, word overlap, or picture contrast is very noticeable.

It therefore becomes desirable from a quality reproduction standpoint, to plan one hour shows so that a fade to black with applause will occur sometime between 28:00 and 32:00 minutes into the one hour program. This permits a smooth projector transition from the first half hour to the second, often without the knowledge of the viewing audience.

**Audio Considerations.** The sound on a kine recording should have a clean opening and closing, hence should not be cross-faded or chopped in the middle of a sentence or musical phrase.

Opening fanfares, announcements, etc., should *never* precede the accompanying picture. In fact, for editing purposes it is better if the picture can appear on the program monitor for at least a second prior to the start of associated sound. This is particularly important in making inserts or commercials which have to be cut into other film.

No one likes to hear a highly distorted sound coming out of the loudspeaker. Yet this is exactly what happens when the V.I. meter is allowed to exceed 100 per cent and constantly hits the pin. Fortunately the magnetic sound recording used for quick kines is not too susceptible to such distortion. However, the photographic, or optical, recording used to make release prints for other stations is very susceptible to distortion produced by excessive audio levels, hence it is desirable to maintain audio within the limits specified on the V.I. meter. Another audio recording problem occurs when a high volume, percussion type instrument, tap dancing, or even rhythmic handclapping over-

rides a musical background of moderate and unchanging volume. The effect as heard on release prints is one of having the orchestral background go up and down in volume every time the handclapping, tap, or percussion instrument beat is heard. This is seldom noticeable on the 3-hour playback of a quick kine which uses a magnetic sound track, but it is often noticed on release prints for other stations where a photographic sound track process must be used. The solution, of course, is to avoid high intensity sounds of short duration which override a quiet musical background.

To summarize these remarks, let me say that kine recording can only turn out a product in accordance with the quality of the incoming picture. If weird and extreme lighting effects are employed, they will not look good on most receivers even on the live show, and they will look even worse on the quick kine reproduction. On the other hand, if pictures of good resolution with proper lighting and contrast are delivered to kine, the recording and reproduction process can be so faithful that the kine pictures will closely approach the live show for quality.

### **Types of Kine Recording**

For prompt rebroadcast of a program nothing up to this time is superior to the quick kine method. It entails:

1. Rapid development of 35mm negative.
2. Projection of negative directly into the TV system, with polarity reversed. This not only saves time that would be required to print a positive but it spares picture the slight loss in quality that takes place in the transition from negative to positive.
3. Recording of sound on a 16mm magnetic film or tape.
4. Reconversion of sound on a separate projector in sync with the 35mm picture.

Regular kine recording can be done with either 35mm or 16mm film. When sound is recorded on the film it is called "single system." For technical reasons it is best to record sound separately when the best sound quality is important. The latter method is known as "double system." It is far superior when much editing is to be done.

The best picture quality is obtained with 35mm film. For reasons of economy when many prints are desired, plus the fact that many stations do not have 35mm projection machines, the 35mm film can be reduced without appreciable loss in quality to 16mm film. In such cases the 16mm sound track is readily dubbed in the composite print.

When a kine recording is used for reference purposes only, or for low-budget auditions, a single system 16mm kine is generally ordered. On this film both video and audio appear together.

### Video Tape Recording

Next to the introduction of color television, undoubtedly one of the greatest technical advances in the industry in recent years is the invention of video tape recording. This revolutionary system, which operates by a method basically similar to the recording of sound on tape, makes it possible to record a live TV program electronically—in either black-and-white or color—and replay it immediately, without any photographic development or processing.

Research men in several companies have been working on this project for the past few years. The history of the development begins in Europe before World War II. German scientists invented and perfected the method of electrically recording sound on tape. After the war their patents were taken over by the United States patent pool. The scene then shifts to Hollywood where a young man named John T. Mullin, a former major and research man for the United States Army in Europe, began to record the Bing Crosby radio program on tape. Because of its high fidelity and the simplicity it offered in cutting and editing, tape recording soon became adopted throughout radio, replacing the old electrical transcription discs. Mullin is then credited with having conceived the idea of recording video signals by the same method. In 1950 he went to work in the laboratory of Bing Crosby Enterprises, Inc., a firm created by the famous crooner and his brother Larry to promote and develop scientific inventions, among other projects. By November of 1951 they presented the first public demonstration (in black-and-white) of "VTR"—video tape recording.

The imminence of color television prompted others to press their research programs for recording of color by tape—since all known methods of recording color for retelecasting promised to be costly and time-consuming, with quality not always predictable.

The first public demonstration of tape recording in color took place at the Research Center of RCA in Princeton, N. J., on December 1, 1953—just two weeks before the Federal Communication System approved standards for commercial broadcasting of compatible color television. A live color program originating in New York was beamed by microwave to the laboratories in Princeton. There it was recorded and replayed to the audience just as soon as the tape reels could be rewound. Although the quality astonished the spectators, it was admitted at that time that the system was “still in the development stage”—with perhaps two more years of experimentation being required before certain refinements would bring the system to commercial reality.

**How It Works.** The RCA video tape recorder is an intricate but rather compact apparatus which captures the television picture and sound on a single strip of specially treated plastic tape not much thicker than paper and varying in width from  $\frac{1}{4}$  to  $\frac{1}{2}$  inch. (See Diagram 4.) The coated surface of the tape is magnetically treated. By means of an electromagnetic recording head, incoming electrical signals are recorded by changing magnetic polarity of magnetic oxide particles on the tape. For playback the tape is drawn across a similar head in the same machine, and the magnetically recorded “information” reproduces the original current impulses and thereby re-creates the original picture and sound.

In recording a black-and-white telecast  $\frac{1}{4}$  inch tape is adequate to carry the two parallel channels of picture and sound. The necessary synchronizing signal is carried along with the video signal.

Tape  $\frac{1}{2}$  inch wide is required for recording color telecasts, for here there are five parallel channels—one for sound, one for the synchronizing, and one for each of the three primary color signals (red, blue, and green).

The tape can be stored without treatment and kept for permanent reference purposes or frequent reuse. Or it can be “wiped

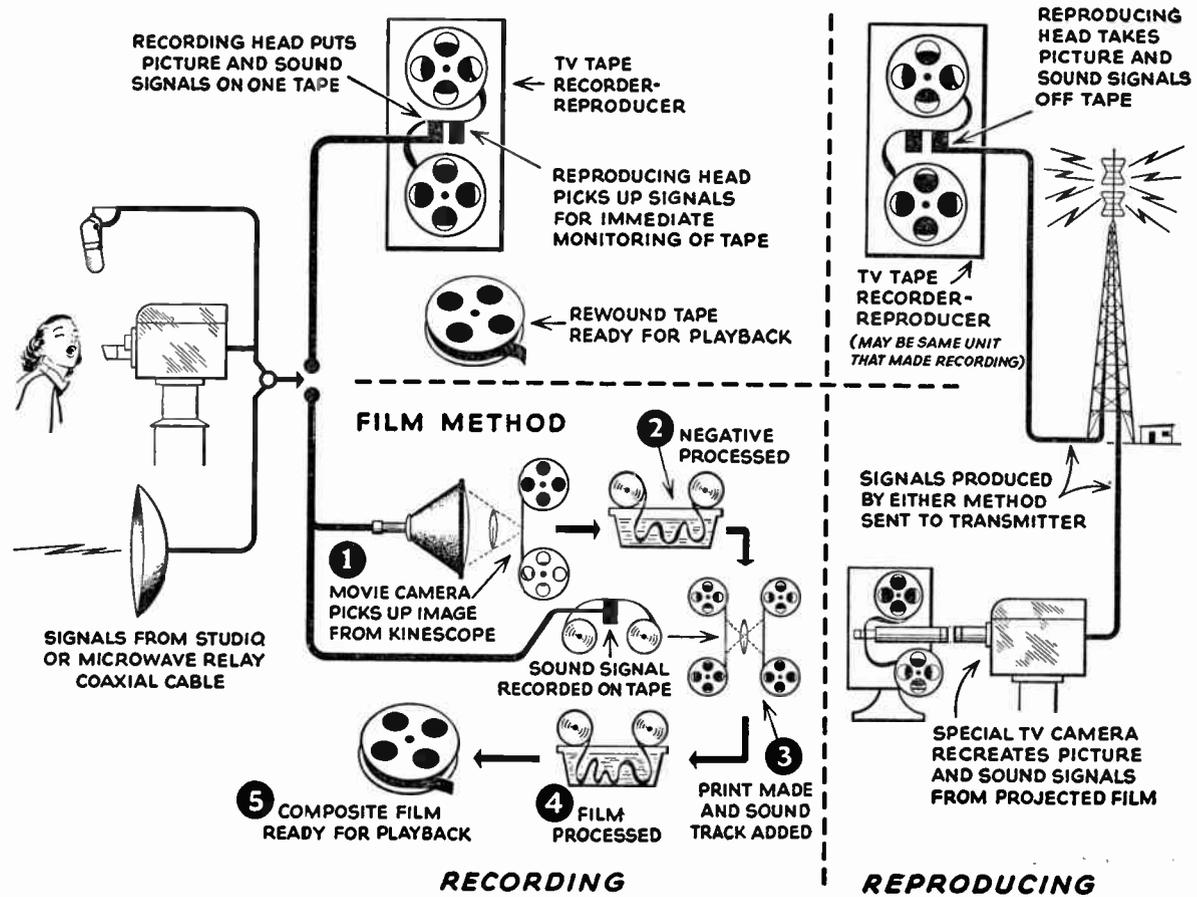


DIAGRAM 4. Tape vs. Photography. Comparative simplicity of video recording by tape in contrast to kinescope recording on film

off" (as is done with audio tape) and used over and over again with the same efficiency as raw tape provides.

**Problems To Be Solved.** It may be said that audio tape recording has reached perfection. But the system of recording video by tape—especially color—has many problems to solve. One arises out of the fact that audio signals have a range of from 20 to 20,000 cycles per second, whereas video signals range up to 4,000,000 cycles per second. This indicates why the tape in the first video color recorders was required to speed through the machine at the enormous rate of 30 feet per second, or twice the speed of audio tape. (With the Crosby-Mullin system of monochrome recording the speed is only 10 feet per second.)

Since video tape can be reused, the initial cost in comparison to film is not so much a factor as bulk of tape and the number of reels necessary to record and replay a half-hour program. At the rate of 30 feet per second, tape requires exactly 50 times more footage than 16mm film. A half-hour program on film contains 1,080 feet of film and can easily be wound on one large reel. A half-hour on video tape at the original rate of consumption would require 54,000 feet of tape!

Video recording by tape has so many outstanding advantages, particularly for photographing or rebroadcasting of color, that the present problems must and inevitably will be solved.

## THE TELEVISION ANNOUNCER

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THE producer or director is more than likely to select and assign a program's announcer—that is, if he is to act in an MC capacity or otherwise to participate actively in the structure of the program. But if the announcer's principal duty is the reading of commercials, he is very apt to be chosen by the sponsor or advertising agency.

The usual procedure in selection of an announcer is to choose him out of competitive auditions, or to select him on a basis of fame or performance on other programs. If name is not important, and if the sponsor desires a new and fresh "face" to sell his product, the process of selection will generally run about like this. The agency will inform the producer of the sponsor's product, his established selling methods, and the preferred style of commercial delivery. The producer will then comb through his files and talent directories, selecting a dozen or more likely candidates to be heard in the first auditions, reading sample commercials. He will choose five men he deems most appropriate—on counts of delivery, personality, and presence. The agency may reduce the list of candidates to three or four. Then the sponsor is usually invited in to view the final auditions on camera. Some agencies may make recommendations regarding their preferences to the advertiser, but in general practice they feel safer to let the sponsor make the final decision. If he's happy everybody is happy; if the announcer proves a failure, the agency is above reproach. The advertiser pays the agency 15 per cent commission on all billings for the benefit of expert judgment, but agencies often adroitly maneuver the client into making crucial decisions, thereby accepting the responsibility.

## Announcer and Sponsor

The announcer holds a position unique in the broadcasting industry. He is the voice and presence of that corporate being, the sponsor, the "man" who pays the bills. The role is indispensable but the person who plays it is often readily replaceable or expendable by whim.

Theoretically, the sponsor makes no mistakes. By virtue of the regal power invested in control of the purse strings, he is incapable of error. The announcer, however, being human is subject to human frailties, and in his case an occasional slip is considered par for the course.

Although the sponsor's judgment is above reproach, officially, his emissary on camera does not enjoy this immunity. He must do and speak as he thinks best, or more aptly, as his sponsor's representative would think best.

The announcer's remuneration is good. Compared to other tasks in TV production, his work is easy. The greatest strain he undergoes results from the knowledge that his performance is always under hypercritical observation. But this psychological tension can be greatly relieved by issuance of a long-term contract.

With the exception of a very few dominant personalities in the profession, the announcer is a unit that fits into the pattern of a program, harmonizing with it in character. Depending upon his assignment, he either goes along with the program inconspicuously or he guides and motivates its action.

To the sponsor whose commercials he reads the commercial announcer is often considered the most important element in a program, regardless of the fact that the commercials he recites would be worthless if not encased in entertainment.

## Qualifications for TV

The TV announcer must be able to memorize lines and business, and preferably he should be "good with the ad libs," able to speak lucidly and pleasantly in frequent situations calling for extemporaneous performance. He must have stature, poise, and good presence. His appearance must be agreeable and should

not conflict with the character portrayed by voice or manner of speech. Above all—especially if he is to handle commercials—he must have personal appeal and be convincing.

**Audience Appeal.** What gives an announcer appeal? That's a question like "What makes a show entertaining?" Appeal cannot be completely defined. We can state why we like some people, why we dislike others, but in many cases it is difficult or impossible to explain the reasons for our degrees of preference.

An individual who is very likable in person has a good start toward appeal as an announcer. But the personality doesn't always retain its appealing characteristics before the cameras. That's why, in selecting announcers for TV, they should always be auditioned on camera. The presence of some is enhanced by the transition, while others depreciate immeasurably and often without evident reason.

**Conviction.** Conviction, or the ability to persuade others, begins with one's own conviction regarding the truth or importance of statements to be made. Then comes sincerity—which, incidentally, becomes saccharin when overdone. The forced sincerity of the "deep-down goodness" school of announcing is revolting to most viewers and doesn't sell anything. When the effort to be sincere is carried that far it is obvious to all that there was no sincerity to begin with.

**Courtesy and Discretion.** TV quickly points up those who talk too much, are uninformed about their subjects or are guilty of inaccuracies.

Talking too much is an inexcusable fault in any medium or company. It is particularly obnoxious in television. Radio tolerates no "dead air," so by standard practice its voices carry on a constant patter whether there is anything to say or not. In TV, remember, there is always picture to sustain interest and to assure the audience that the program is still on the air. A constant stream of prattle or commentary is not only unnecessary but annoying. The announcer certainly doesn't have to explain what the viewer sees and understands. His duty is to add sideline or background information only, unless a scene or situation calls for explanation.

**Accuracy.** A sportscaster covering a football game via radio can get away with being sloppy, as many of them do. He can

say that the ball was advanced to the 45-yard line instead of the midfield stripe, and if he compensates for the error in the next play or so (which is not uncommon!) no one will know the difference. But in TV the viewer won't be fooled by such inaccuracies.

Anyone interested in learning to cover a public event or sport in TV has an excellent opportunity for a good lesson when some event such as a football game or boxing match is being broadcast over both TV and radio. Tune in the TV set but cut off the sound. Then tune in the event on the radio set. After observing the difference for a while, or perhaps the crying need for different methods of announcing, then turn on the audio of the TV set and compare the announcing in the two media.

**Reserve.** In TV the announcer will most certainly make a fool of himself if he is guilty of trying to "hypo" a scene or event by breathless, excited reporting. Quite to the contrary, he should normally exercise reserve, letting the visual scene and crowd reactions convey whatever excitement is present. Bob Stanton's friendly coverage of sports events is a good example of the effectiveness that can be achieved by such reserve and frequent spells of silence when appropriate.

**Specialized Functions.** Presentation of commercial copy will be discussed in the next chapter. It should be remembered that this function, important as it is, is only one duty of a versatile announcer. A man who aspires to become more than just a "commercial voice" must train and equip himself (1) to take an active part in script or continuity programs; (2) take a leading role in extemporaneous programs, many of which consist largely of interviews; and (3) be on the alert at all times to act as the director's "traffic cop" in the scene before the cameras, maintaining order where a stage manager cannot appear, keeping the program in line and on the track, and finally, winding it up or verbally cuing change of scene when necessary.

In view of the above, it seems appropriate here to include some purely practical suggestions. Although directed to announcers, the points are intended not only as an aid to newcomers in the announcing profession but as suggestions for directors who will have to coach the newcomers and direct the veterans.

## Practical Suggestions

When you are a regular member of the cast, and especially in extemporaneous programs in which there are few regulars or professionals, the director will tend to lean on you for cohesion of the performance. Your ability to facilitate rehearsals, to pick up tempo when it is dragging, or to pull together a section of the program that is getting wobbly—all these opportunities enhance your value as a member of the cast.

Be attentive at all times, in rehearsal and on the air. Be on the alert for occasions when you might unexpectedly be cued into the action.

Watch for cues and heed them explicitly. Try to keep a constant pace in your reading, so that timing on the air will approximate rehearsal timing. If you are cued to stretch, by all means do so—either by slowing down or by injection of appropriate and judicious ad lib lines or visual action. Even more important, when you are given an emergency cue to speed up or cut, comply without question. Timing of a program is not your responsibility, but it is your duty to cooperate in every way possible in this all-important factor in the production.

When it is practical and convenient, spend some time in the control booth. By observing programs in rehearsal and on the air you will have a better understanding of production problems. Learn something about camera angles and techniques. This knowledge will make you more flexible and valuable on the studio floor. With an understanding of camera procedure, you will be able to act and move with more assurance, and you will be able to receive directions better and respond more readily.

Incidentally, when you observe the commotion that sometimes takes place in the booth at rehearsals, you will appreciate why unnecessary conversation on the stage is so annoying to the director and others concerned with the production. Thereafter, in rehearsals you will avoid the company of the “flannel-mouths” who are forever telling stories, wise-cracking, or laughing while waiting their turn to perform.

**Use Monitors.** Take advantage of the monitor whenever one is present. In extemporaneous reporting, refer of course to what is on the screen—and by all means beware of commenting on

things you are able to observe on the scene but which do not appear on the screen.

The picture you see on the monitor is the same picture viewed on the home receiver. Therefore, when advisable, you may call attention to figures or items within the picture, as follows: "The President's plane is just coming into view on the upper right-hand corner of your screen. At the lower left, you will notice, the honor guard has come to attention."

Contrary to some notions, there is no reason why colors can't be mentioned in black-and-white TV. Indeed such descriptive notes are often desirable if they contribute to appreciation of a scene without disturbing viewers by reminding them of what they cannot enjoy. For example: "The beauty queen from Florida is wearing an orange colored gown—while Miss Wisconsin, who follows her, is dressed in a sapphire blue outfit." Without previously having identified the colors of their attire, of course, you would not refer to "the girl in the blue gown." Instead, you would say: "the girl in the dark gown" or "the girl in the lighter colored outfit."

**Interviews.** The subject of interest in any interview is the person interrogated, and that is what an interview should accent. We want to hear and see the person speak, give information or answer questions.

The interview should not be dominated by the announcer. Give your subjects a chance to speak. Better still, ask questions which will encourage their volubility.

Don't ask leading questions. Keep your questions brief and direct. If the person insists on answering with a mere "yes" or "no," reframe your questions to make him or her open up.

Do what you can to put your interviewees at ease. Don't interrupt or overlap their speech unless it becomes necessary.

When using a hand mike, be casual with it and keep it as inconspicuous as possible. It isn't necessary to wave the mike back and forth between yourself and your subject like you were taking breath samples. Most microphones are capable of picking up speech easily when held between two persons standing reasonably close to each other. Constantly shoving a mike into the face of a person interviewed can terrify him, and it most certainly is monotonous and annoying to viewers.

Keep introductions short and to the point. It is embarrassing to be called before the cameras and then have to stand there speechless while an announcer rambles on at great length explaining who you are or why you are present.

Learn to “stage” a small group for best camera angles on them. Position yourself in a direction which will force them to appear to advantage without having to tug them by the sleeve or instructing them which way to face.

Complete an interview before it becomes dull. Then, or at a designated time, thank the person—or otherwise make it clear that the interview has been terminated, and proceed gracefully to the next person or program bit.

In pre-arranged or scheduled interviews, chat with the person in advance. Get to know him on a friendly basis. Observe his characteristics and manner of speech. Learn all you can about his subject and decide how it can be most interestingly presented in the interview. Probe for interesting sidelights that might add color to the interview.

If the interview is written for you, study the sequence of questions and have notes available—on a hand pad or prompting sheet. (See below.)

If the interview is not written or outlined, make your own outline—mentally or in note form—in order to present the questions in orderly fashion, to avoid rambling and repetition while unintentionally disregarding interesting facts.

Such an outline should be arranged to cover the subject matter in the time allowed, with questions in proper sequence. This will enable you to perform your job of leading the interviewee through the subject matter, exposing the facts and general information in proper order for utmost interest.

Finally, *don't bluff*. If you are not adequately informed on the subject of discussion and do not have an opportunity for “briefing,” you will be treading on thin ice if you attempt to convey the impression that you are informed. It is safer and better to be honest; admit that you don't know, then proceed with an attitude reflecting that you earnestly want to know. The audience will think better of you for it, and as a result the interview is likely to be more informative and entertaining.

**Memory Aids and Prompters.** A little experience in television has given most seasoned performers from radio and motion pic-

tures a new respect for the old-time stage actors who could retain in memory the dialogue and action of three or four full-length plays, including many long soliloquies. Few TV performers have that inherent gift of memory, and fewer still attempt to develop it. Furthermore, the text in TV is constantly being altered, and frequency of performance doesn't allow the time for study. Hence, the prevalent fear of "blowing up lines"—or of going momentarily blank under the strain of performance in a medium one knows might be carrying the words and actions into the homes of millions.

There are many simple devices which are used to aid memory, one of the most dependable being a prompting board or "idiot sheet." (See Chapter 17.) Some announcers have their entire commercials written out. If they have studied and rehearsed the announcements sufficiently, they may never have to refer to the "idiot sheet"—but the mere presence of the device, available if needed, serves the purpose of giving confidence. In serious interviews it is a good idea to have some such prompting device available, listing pertinent questions in logical order.

A much more advanced memory aid is the Teleprompter. (See Figure 15.) This is an apparatus invented for actors in television a very few years ago, but which has since become adopted in motion-picture production, and by newscasters, public speakers, and others.

The Teleprompter presents dialogue or text in type five-eighths of an inch high on a continuous roll of paper that runs through a frame about the size of a large tablet. At first the frames (there can be three or more of them) were mounted on pedestals situated at strategic points about the set, where they could be viewed by actors facing the various cameras. Later one of the frames was mounted on a camera, either above or below the lens turret. (Public speakers use the device hidden behind the frame of a desk or lectern.) The roll of text is controlled electrically from a remote point by an operator following a script. It can be speeded up, slowed down, or halted as required. The machines can contain sufficient text for continuous presentation of a 90-minute speech or a one-hour play. Obviously, copy must be available in sufficient time to be typewritten in triplicate on a giant typewriter. Last minute corrections or cuts can be written in by hand with a black crayon or poster pen.

## Newscasting

The matter of presentation of news telecasts has been the subject of much discussion and experimentation for years. Originally, it was regarded as poor production to present a newscaster at a desk merely reading copy as he might do in radio. All kinds of devices were contrived to take advantage of the visual element of the new medium. Where budgets and facilities allowed, newsrooms were created and efforts were made to capture the exciting atmosphere of a newspaper office. Teletypes were seen and heard banging away in the background, bells and extraneous voices were heard in the distance, and copy boys scurried back and forth. Occasionally someone burst into the scene with copy of a bulletin hot off the wire. Then it became evident that the "atmosphere" was distracting to viewers; what they expected was *news*, not an unintelligible scene from *The Front Page*.

Some telecasters wisely concluded that news should be presented forthrightly in an intimate manner. They presented the newscaster in an appropriate setting, perhaps resembling the office of an editor. For visual material they used inserts of still pictures (many of them timely wirephotos), maps, weather charts, etc.

At the start of commercial television motion-picture film was rarely available. But the networks and some of the more progressive stations soon set up their own film news services and began to include several timely film clips in each newscast. A forerunner in this field was NBC's excellent "Camel News Caravan," with John Cameron Swayze, originating in New York but frequently cutting to Hollywood, Chicago, or other points where important news scenes were available—live or on film. The program has sometimes presented filmed scenes shot, delivered and processed within the hour. Many local stations have likewise won acclaim for news "scoops" on film shot by their staff cameramen.

**Style of Delivery.** Regardless of what are used for visual elements in the program, there is much in favor of an intimate style of delivery for the newscaster. Generally speaking, although his audience may include millions, he is addressing them only in

very small groups, usually in living rooms. There is most certainly no need to shout. Those who do indicate an attempt to hypo the news with interest and excitement by mere volume in the recitation, giving all the news only in terms of 76 point headlines. Naturally the news must be read in a manner that will give it full interest value, but this can better be accomplished with appropriate intonation, interpretation and facial expression—with a dramatic voice and serious countenance when news is grim, a chuckle and a smile when a comic note appears.

**Copy vs. Memory.** In recent years some newscasters have made use of Teleprompters and “idiot sheets” to a degree that is ridiculous. Why should any person, no matter how well informed an authority, recite 15 minutes of news from “memory”? It may impress a few viewers, but a majority detect the fraud and resent it. In the first place, some will reason, if it has all been memorized it can’t be very “hot” news. Secondly, we know that the newscaster isn’t Superman; he didn’t see all the news happen, if he saw any of it at all; he got it from sheets of news copy or tear sheets off the wire service’s teletype. There is a lack of authority when we don’t see at least occasional reference to news copy.

Providing a newscaster does not constantly bury his face in the copy on his desk, how can there be objection to the fact that he is *reading* the news? Again, what the viewer wants is NEWS—complete and accurate—not a memory exhibition or a demonstration of how well the newscaster can read his prompting devices without divulging the fact in his eyes.

News copy should be placed on a desk lectern—at a sufficient angle to it so that the newscaster will not have to bend his head over to read the material. Jumbo type is, of course, preferred. It can be read with greater ease if the newscaster has taken the time to familiarize himself thoroughly with copy; he can look directly at his viewers a good part of the time, glancing at copy only at intervals or when he is narrating over newsreel clips. Pages can be turned unostentatiously but they needn’t be turned or slipped out secretly.

**Direction of Newscasts.** Early in the telecast, possibly at the very start, an over-all view of the scene is desirable—particularly if there are clocks, maps and other atmospheric props. This

should then be closed in to a medium shot which includes the telecaster's hands and at least part of the desk. The shot allows expression of both face and hands and is tight enough for the intimacy desired. The shot can be varied by discreet dollying, or by repositioning of camera while film is on. If two cameras are available, it is good practice to vary shots at appropriate intervals by direct cuts from one to the other. The newscaster should be instructed to follow the red tally lights on the cameras, and to address the camera showing the light. If he looks up from copy and finds he has lost the light on the camera he was previously addressing, he should not pop his head toward the other camera; instead, he should casually drift his glance to that direction. In this matter the director can help by making his cuts at appropriate times, possibly at the end of an item or a change of subject.

Both cameras should be at the same elevation. Here there is no reason for dramatic angles, and we don't want to look up at his jowls or down on the top of his head. Best results can be obtained when the camera lenses are at about the height of the newscaster's eyes, or just a little bit lower. This makes it easier for him to alter his glances from news copy to the cameras.

## WRITING AND PRODUCING COMMERCIALS

**T**HE purpose of a commercial is to **SELL**—whether it is a product, a service, a cause, or an institution. The “sell” may be intended to gain new customers, retain the favor of present customers, increase the consumption of a product, introduce new uses of the product to old customers, or gain favor for some viewpoint, person, or institution.

### **Selling Methods**

The best commercials in TV employ basic selling methods in use for generations, developed and refined through a half-century of advertising experience. They combine techniques of visual presentation mastered in published advertising with the oral approach learned in radio. The result is an entirely new form: either it brings the printed page to life or it gives visual quality to a spoken message. Preferably, it makes the best use of both speech and vision in accordance with the product advertised; the substance of the message is given forcefulness by proper vocal interpretation of the written phrase; the visual aspect of the advertisement is given impact by interesting action and demonstration, which an illustration in the printed page cannot give.

In the past few years television has undergone not only enormous expansion but drastic evolution in all its phases, including styles of commercial presentation. Fortunately, the blasting, shouting, horn-blowing techniques of early TV commercials are seldom present today. The “hey, you!” approach is on the decline; advertisers quickly learned that it belongs on the midway

whence it came. Even the medicine men (a few are still present) have refined their methods. No longer do they perform as if they were addressing a crowd on the street, competing with the noise of traffic, calliopes, or other barkers and spiellers. Now they have wisely moved indoors where they have your exclusive attention. So why shout and bang the table?

What should have been apparent from the very start is that (a) TV is a most intimate medium, and (b) by the very fact that it addresses both the eyes and ears, it commands full attention of its audience.

Several advertisers have proved beyond any doubt the value of an intimate approach to prospective customers, achieving spectacular sales results with commercials performed with such restraint and good taste that they stood out from others by comparison and thereby demanded attention and a friendly reception. Some of them have delivered their messages in a soft voice approximating a whisper. Others have used appealing jingles, catchy musical effects or entertaining animated cartoons. The style is worthy of emulation.

The commercial announcer is like an uninvited guest in the living room—whose arrival was expected but whose presence was not sought. The public will accept him with patience if he doesn't come too often, stay too long, or misconduct himself.

A guest who talks incessantly, especially if he shouts or has a harsh voice, cannot be welcome in any orderly home. Likewise, one who talks down to his listeners in an offensive manner, boasts all the time, or tells obvious lies proves himself an obnoxious nuisance and will not be invited or even admitted again.

These facts of human nature should be considered well in relation to advertising copy and manner of presentation. It is important to strive always for good will. A commercial that annoys or offends is worse than a failure; it is a liability which the sponsor is purchasing as an asset.

### Some Rules for Writing Copy

Plan a story line that makes the message as interesting, informative and entertaining as possible.

Utilize TV's attributes in relation to the product or message. Don't tell in words what you can show pictorially.

Use speech only when necessary to augment the graphic aspect of the message.

Don't try to tell too much in too short a time. It is better to drive home one or two sales points and leave a favorable impression than to attempt too much story and leave the viewer confused and annoyed.

Use music when possible for added interest and appeal. For punctuation it adds emphasis. In the background it contributes to palatability.

Use a sufficient variety of scenes. For the sake of interest and action make cuts or dissolves to various subjects, graphic material, product displays or labels. But don't overdo it. Consider how many seconds it takes for each picture to "register," then change. Don't let still scenes become static, but, on the other hand, don't race from one to another.

Make copy coincide with picture—both as to subject matter and duration of its appearance on the screen. Don't permit the reading of excessive copy to drag the presentation of pictures, and don't allow an excessive number of pictures to force a speeded-up reading of copy.

Keep signs and titles simple. Don't attempt to squeeze too many words in a frame.

In the script indicate clearly what video material or action is intended—and specifically *when* in relation to audio copy.

Indicate definitely when an announcer or demonstrator is "on camera" and when "off camera." This helps in memorization and enables the announcer or demonstrator to refer to script (by "idiot sheets" or other memory aids previously described). It results in a more confident delivery and assures greater accuracy.

Use film integrated in live commercials if something can be gained by it which cannot be achieved by live dramatization of the commercials in a studio. Otherwise do not employ such film insertions and thereby avoid the extra costs and hazards involved.

Good examples which justify the use of film would be insertion of an animated cartoon with jingle, or, in an automobile commercial, the shot of a roadster gracefully speeding over a winding highway—neither of which could be included without film.

**Script Format.** Script for commercials should follow an orthodox dramatic form, such as has previously been described. There can reasonably be one difference, however: since the commercial copy is submitted to the sponsor for approval, often without layout sketches, more descriptive material and directions regarding sets, music, and interpretation are called for.

The following is a specimen of a simple, "easy to take" commercial, written in the style referred to:

TREE TEA COMMERCIAL ... "LEE HOGAN PRESENTS" PROGRAM

(INSERT IN FASHION SPOT)

LEE:

(ON LEE &  
PEGGY)

Before we see more of your stunning gowns modelled for us, Peggy Hunt, how about a tall glass of iced tea?

PEGGY:

I'd love it, Lee.

LEE: (POURS TEA FROM PITCHER, PLACES LEMON SLICES ON DISH)

My favorite, — the world's best blend of teas — as romantic as your lovely style creations...TREE tea!

(THEY BOTH SIP)

SOUND: SOFT GONG

DISS TO CEYLON-  
ESE SET

RECORD: PLEASANT ORIENTAL THEME  
SNEAK IN...BUILD...FADE

(TEMPLE SCENE.  
STATUE OF  
BUDDHA WITH  
SMOKING IN-  
CENSE. ON ONE  
SIDE A BOX OF  
TEA, ON OTHER  
SIDE A MINIA-  
TURE TREASURE  
CHEST.)

ANNCR: (OFF CAMERA - READS LEISURELY OVER MUSIC)

There's a reason why TREE Tea is noted for its unique, tantalizing flavor...It's truly a treasure from India...rich in Dar-

DISS TO FILM

jeeling - slow-grown on the high slopes of the Himalaya mountains...blended with choice garden Ceylons and Indias — in such perfect balance that you enjoy the full-bodied goodness of each...(PAUSE)

(TEA PLANTATION. IN B.G. CLOUDS FLOAT PAST HIMALAYAN PEAKS.)

DISS TO TEA SET-UP

(FROSTY ICE TEA GLASS WITH LEMON ON RAFFIA MAT. SLANTING LIGHT THRU RATTAN LOUVER IN B.G.)

If you already know the delightful flavor and cooling effect of iced TREE Tea, this is just a friendly reminder. Why not enjoy some this warm, summer night?...But if you haven't tried it, get Tree Tea at your grocer's tomorrow — in bags or packages... You'll recognize the bright red box with the large white letters spelling the name — T - R - E - E — TREE TEA...For the most refreshing tea and distinctive flavor, iced or hot, insist on TREE TEA!

DISS TO SLIDE (TREE TEA PACKAGE)

DISS BACK TO LEE HOGAN ON SET

## Casting Commercials

Selection of announcers and demonstrators takes time and keen judgment. In the final analysis they reflect the character and personality of the sponsor, and therefore he should obtain the most appropriate representatives to convey his message.

Don't judge on voice or face alone. Judge on *personality*—a quality that is conveyed by delivery as well as voice tone, by gesture and facial expression as well as facial features. Some of the most successful radio announcers have failed in TV because the warmth and charm of their voices are lost when other aspects of their personality are exposed. On the other hand, many exceptionally handsome newcomers have lost out because they

did not have the faculty of speaking convincingly with appeal.

A pleasant and interesting face, especially in a man, is often a better attribute than a handsome countenance. By the same token, a rich and sonorous voice is pleasant to hear but is not necessarily the best to be heard frequently in the delivery of commercial messages in TV.

Auditions, at least the final round of eliminations, should be conducted on camera. Judge the performer's personality on the basis of what the camera sees and the microphone hears.

In the selection of all commercial demonstrators one has a right to be highly critical of all physical characteristics—figure, height, hair, grace of movement, and most certainly the shape and condition of hands.

Consider physical characteristics in relation to the product or service to be sold, as the following points illustrate: (a) A man with an extremely youthful face is not the person to lecture on life insurance or investments. We resent his assumed wisdom and maturity. (b) A tall woman standing beside a refrigerator will make it appear smaller than it actually is, a small woman will make it appear larger. By the same reasoning, if you wish to stress the size of a package of king-size cigarettes, don't show the package alone in the palm of a large hand. (c) A woman's tapering hand with well manicured but overly long fingernails is hardly the hand to hold a package of washing machine soap. (d) A fat man might be an accomplished beer drinker but, for obvious reasons, he is not the type to sell beer.

Be sure to give clear and specific instructions as to the style of delivery you desire. To do that you must *know* what you want. Some advertising agencies indicate they don't know what they want in the way of interpretation. They choose announcers with various styles of delivery and then use them as guinea pigs to ascertain what type of delivery makes the copy sound best. Since many announcers are capable of delivery in several varied and distinctive styles, the director is not being fair to them or himself in auditions by not knowing specifically what is wanted and making this desire clear to those competing in an audition.

Along with the consideration of voice and personality comes the matter of dependability—which is proved only by test. This applies particularly to memory and the ability to receive instructions and carry them out.

Too often this factor results in the selection of what we call "tired faces"—persons who have repeatedly proved their dependability and thereby consistently get the nod over competitors on this basis. As a result we see some announcers in TV testifying with great authority on all of such varied subjects as life insurance, laxatives, shampoos, engine power, and the nicotine in cigarettes.

Television is bursting with fresh talent in the announcing field. The selection and development of "new faces" is up to the advertisers and their agencies.

### Producing Live Commercials

The very first step is to obtain commercial copy in time to do full justice to it—to cast it properly and to give performers sufficient time to memorize it; and to obtain desired props and sets. For some reason that is hard to explain, there is a tendency in the business to submit commercials at the latest practical moment, sometimes even later. Too frequently the copy comes in at the last hour ("sorry—held up for client approval") and then during the hectic, precious hours of rehearsal, time-out has to be called to effect "just a few changes." (Even minor changes, especially in memorized copy, unnerve performers and worry the production crew.)

In most production setups the commercials are delivered to the program director. He should have at least three sets, one for the continuity editors, one for the facilities department (to order props and sets), and of course one for inclusion in the mimeographed script.

If the commercials are the least bit complicated in action or presentation, try to obtain all the time possible for adequate setup, lighting, and rehearsal on camera.

Allow adequate time to set up product displays and test them on camera for desired effects. The proper presentation of some products, particularly perishable foods, requires an enormous amount of painstaking care and testing on camera. Textures have to be altered and colors have to be doctored to give proper definition in the black-and-white medium. Often, as in the case of puddings and salads, it is necessary to provide duplicate props—one for rehearsal and one kept on ice or prepared im-

mediately before air-time. Otherwise the air and hot lights would melt or wilt them.

Strive for interesting backgrounds on walls, table covers, and plates. But avoid busy decorations or figures that distract from the point of interest, the product itself. For example, a cake plate might have an exceptionally pretty pattern when seen alone, but with a cake on it the pattern becomes a nuisance, giving the impression that the cake is running at the base. The same reasoning applies to the use of sexy models. A pretty girl in a bathing suit seated on the fender of a new car might well attract attention; chances are she will also hold attention while the announcer is describing and referring to features of the car.

As stressed, much time must be consumed to set up and light commercial displays—even those which remain completely static. Proper camera angles must be arranged by test, shadows washed out, flares on metal toned down by wax sprays, etc. When commercials week after week show the same automobile at the same angle, the close-up of a can of coffee or the label on a bottle of catsup, or even a crisp salad beside a jar of mayonnaise, why expend time, effort, space, and manpower to set, light and shoot the same subject each time? It is more sensible to set and light the subject to perfection, then photograph it. A good photo will appear just as realistic to the TV camera.

Many packages, labels, and trade-marks, which may have good definition in color, become muddy or lose tone density in black and white. Reds, a predominant color in many labels, have a tendency to pale out; blues and greens often go too dark. Therefore it becomes necessary to retouch them or even recolor them for use in displays. This job should be done by a good graphic artist thoroughly familiar with the TV camera's responses to color.

It is important to rehearse thoroughly all movement and action. Pay careful attention to timing, making certain that a demonstrator has sufficient time to cross from refrigerator to stove in the seconds allowed by a spoken line that accompanies the action, and that a bottle of beer doesn't have to be poured so long that the glass overflows.

Mark critical areas and angles, and insist that they be noted explicitly by announcers and demonstrators. It is particularly important that they not block a shot with their bodies, that

they not throw unwanted shadows over a product display, and that they face labels exactly in the proper direction.

Beware of and take precautionary steps to avoid disasters. Don't have an announcer sip steaming hot coffee if it's going to burn his tongue, gulp beer and come up with foam all over his mouth, or taste lemonade that's so sour he reflects the fact in his expression. In other words, to generalize the situation, don't invite dogs to sample dog food unless you're positive they're hungry and love the particular brand; more than one independent canine in TV has given catastrophic testimonial by sniffing the product, then disdainfully walking away.

### Commercials on Film

Film commercials and film inserts for live commercials should be produced by experts in that field, or at least by collaboration between advertising agency and a competent film producer. So much depends upon perfection in a commercial which is to be used repeatedly all over the nation, and there are so many costly hazards and union entanglements involved that by now virtually all advertising agencies have their film commercials made by professional film producers. In New York, Detroit, Chicago, Hollywood, and elsewhere there are many excellent companies which specialize in this field along with industrial films. In Hollywood there are many fine companies which do nothing but TV commercials. Some of them not only produce, process, and handle shipping of films to their destinations all over the country; they actually write the commercial copy and compose jingles complete with commercial lyrics.

Film commercials for station breaks are either ten or twenty seconds in duration. In these every fraction of a second is important, both in audio and picture message. Other commercials are usually made in lengths of one minute. Film sequences to be inserted in live commercials can run to any length within reason, providing the accompanying live action brings the total commercial within the prescribed limits.

Most film commercials are SOF—that is, with all audio material recorded on film. In that way there is assurance that the sponsor will get exactly what he wants, no matter where the film is used. There is the added advantage also of making many

“takes” and then selecting the one which is deemed most effective, and the possibility of “bloops” is avoided. In some cases there are reasons why it is preferable for a local announcer or program personality to read copy over the film insert. Then of course the film is made NS, or silent.

Film commercials are very expensive—at least for production of the initial print. They begin at around \$250 for a very modest job and run as high as \$4,000 or more for one minute commercials that contain animation and music. Hence, an understanding of production costs and procedures from the very inception of a commercial to be done on film is necessary. There are many ways and devices to keep costs down within reason, but these must be applied in the writing as well as the production of a commercial.

**Procedure for Production.** The advertising agency begins by preparing preliminary copy for two or three commercials. This is accompanied with artists’ rough sketches, showing what transpires videowise scene by scene. Copy and sketches are submitted to the sponsor or his advertising manager for approval. Discussion and criticism may result in elements of all three preliminary commercials being incorporated into one. Final copy is written for approval, and a detailed “story board” is drawn, showing now in complete detail what is desired in every scene or segment of the film.

The agency may deal exclusively with one film production company whose work has previously proved satisfactory. But the common practice now is to submit a photostat of the story board (with accompanying copy and instructions) to three or four production companies for competitive bids. If the commercial is an animated cartoon, the agency will naturally select companies known to have good animators on staff or otherwise available to them. If it is straight film, obviously companies should be chosen which have demonstrated the highest quality of cinematography at reasonable costs. Some producers emphasize pictorial and sound quality regardless of price. Others show a tendency to work with the agency to reduce costs, even offering suggestions for minor modifications in sound or picture which will save money in costs for talent or processing of film.

**Production Time and Methods.** It is vitally important that the agency not contract for station time without first ascertaining what period of time will be required for delivery of film. Some film studios ask sixty days for any finished film with live action, ninety days for an animated cartoon, one hundred and twenty days for cartoons in color, ninety days for stop-motion and puppet films. Some work much faster as a matter of general practice, and virtually all of them will testify that they are never allowed the desired time.

The live action for simple one-minute commercials can be shot in a day when necessary, but additional time must be allowed in advance for casting, selecting or building sets, obtaining and often treating props; and following the shooting, time is necessary for processing, approval, and printing.

The first step in making an animated cartoon is to draw rough sketches of characters and scenery for approval. The next step is the recording of the entire sound track (on film or audio tape). The animation artists (animators) work from that, synchronizing action and lip movement with the words and music.

A commercial with voice and live action will record voice as the scenes are shot—providing characters in the commercial speak “on camera.” If all the action is silent or pantomime, for use with an “off-camera” voice or music over it, the film is shot first; sound is recorded later—with performers viewing the film to synchronize voice and sound with action. The sound track is later dubbed into the film.

To obtain better picture quality and to have prints which are preferred in network operations, most commercials are shot on 35mm film. Many of the films and most animated cartoons now being produced—both 35mm and 16mm—are shot in color, both in anticipation of eventual use in color TV, and because some get better quality from color film. A few producers have another reason for shooting in color; they have devised a method of creating lap dissolves and fades at a great saving in process costs, making the effects directly on color positive from color negative without the use of duplicate negatives as heretofore.

**Production Costs.** The cost of film commercials depends on many factors. The studios have various standards. Some consistently charge high prices but continue to get business on a

basis of quality of production, promptness, dependability, and special facilities. Others deliver their product at half the cost by effecting various economies in production and processing, and often the quality of their films is just as good as those the higher priced producers turn out. Smaller studios can effect economies by being given an order for three or four kindred commercials for the same sponsor at one time, and then being allowed leeway to shoot when it is most practical. This enables them to use crews and facilities at times when they might otherwise be idle, and to save money by re-use of sets and props.

Talent costs have become a big factor since the Screen Actors Guild (SAG) won their fight to represent all actors and singers in films. Since most of the big producers have signed their contract, any person whose voice is heard or whose face is clearly seen in a film commercial comes under their jurisdiction, and SAG's rates apply.

The advent of SAG into the film commercial picture has been a great boon to those actors lucky enough to get work in this field. Previously, some sponsors would make one film commercial and repeat it hundreds of times all over the country, thereby (a) keeping other actors out of work, and (b) wearing out the welcome or value of the actor whose face was seen too often. Under the SAG arrangement now the actors are paid for performance and a *limited* number of playings on the air. For all subsequent playings they are paid residual fees—which total up to substantial amounts and incidentally entail an enormous amount of bookkeeping. Previously, actors were paid a minimum of \$50 per day for film commercials, and often two or three commercials were shot in that time. Now the minimum is \$70 per day with additional remuneration for more than one commercial, plus residual fees when they are earned by the commercials' playing schedule on the air. The work a few actors formerly did for \$50 now often yields them a total of several hundred dollars when residuals mount up.

From the above it can be seen that the final cost of a film commercial can never be determined until it has served its purpose and been stored away, or until the cost of residual fees for the entire schedule is projected. Obviously, before an advertising agency makes commitments to a client regarding costs of a film commercial, this projection of schedule must be made.

Better still, the cost might be estimated as so much for production and a limited number of presentations on the air—PLUS the cost of any additional playings which might subsequently be scheduled.

**Technical Precautions.** At this point it might be well to consider the outline of standard film practices contained in Chapter 8.

In addition to points mentioned, it is important to allow sufficient picture without sound at both ends of the film. In a 20 second commercial, for example, it is a standard requirement that the sound track be not longer than 18 seconds in length, preferably allowing 1½ seconds of picture before sound begins, and at least ½ second of silence at the end. This practice assures smooth fade-in of video at the opening with a clean start for sound, terminating with a smooth fade-out of picture without chopping sound.

The procedure of allowing silence at both open and close also increases the life of the print. When used frequently at different hours of the day the clip will often be spliced and patched at both ends to place it in tandem in reels with related film subjects. Each splice results in the sacrifice and loss of one frame. Hence, inclusion of additional silent frames enables longer use of the vital sound track section before replacement is called for.

### **Time Standards**

The total amount of time allowed for commercials is restricted by the broadcasting station or network in accordance with an announced schedule. All networks and most stations keep a careful watch on commercial performance and insist that sponsors conform to regulations. Most independent stations announce similar regulations but some of them are extremely lax in enforcing them.

The general standard for amount of advertising copy per unit of time is expressed in the Code of the National Association of Radio and Television Broadcasters (known as the NARTB), to which most telecasters subscribe. The Code "suggests" that the following schedule contains the maximum times allowable for commercials:

TABLE 3. TIME FOR COMMERCIAL

Length of Program	Length of Advertising Message (minutes and seconds)		
	News Programs	All Other Programs	
(minutes)	Day and Night	Class "A" Time	All Other Hrs.
5 .....	1:00	1:00	1:15
10 .....	1:45	2:00	2:10
15 .....	2:15	2:30	3:00
25 .....		2:50	4:00
30 .....		3:00	4:15
45 .....		4:30	5:45
60 .....		6:00	7:00

In amplification, the Code further states:

Stationary backdrops or properties in television presentations showing the sponsor's name or product, his trade mark or slogan may be used only incidentally. They should not obtrude on program interest or entertainment. "On Camera" shots of such materials should be fleeting, not too frequent, and mindful of the need of maintaining a proper program balance.

Any viewer of current television knows that this regulation is being violated consistently and blatantly—to a degree which is most tiresome and annoying to the audience. Sponsors are dressing their sets with giant packages of their product which are in view half of the time. Trade names, labels, and slogans are boldly emblazoned across panel desks and contest scoreboards, or they are placed on backdrops behind key characters and innocently exposed to view virtually all the time by a shot wide enough to accommodate the entire sign.

At least one network made an earnest effort to discourage or eliminate this nuisance as early as 1948—by clocking the exact number of seconds the signs were exposed to view on each shot, and then counting this as commercial time consumed. The advertisers and agencies fought it strenuously, even threatening to take their business to other networks where, they insinuated, their ingenuity wouldn't be hampered by such silly interference.

### Policy on Products and Treatment

Without exception the telecasters have banned the advertising of hard liquor, the occult "sciences," racing tip sheets and

services, and any service or product which might border on illegality. Most of them accept advertising for beer and wine, laxatives, reducing agents, depilatories, deodorants, and those patent medicines which are not in disrepute with the Food and Drug Act authorities or do not make outright claims of cure.

It is a telecaster's privilege to reject advertising deemed illegal, objectionable, or simply not in good taste. The restriction, of course, must apply uniformly to all competitors.

In the matter of presentation of advertising, the NARTB Code makes the following specific recommendations:

- a) Advertising messages should be presented with courtesy and good taste; disturbing or annoying material should be avoided; every effort should be made to keep the advertising message in harmony with the content and general tone of the program in which it appears.
- b) A sponsor's advertising messages should be confined within the framework of the sponsor's program structure. A television broadcaster should seek to avoid the use of commercial announcements which are divorced from the program either by preceding the introduction of the program (as in the case of so-called "cow-catcher" announcements) or by following the apparent sign-off of the program (as in the case of so-called "trailer" announcements). To this end, the program itself should be announced and clearly identified before the sponsor's advertising material is first used, and should be signed off after the sponsor's advertising material is last used.
- c) Advertising copy should contain no claims intended to disparage competitors, competing products, or other industries, professions or institutions.
- d) Since advertising by television is a dynamic technique, a television broadcaster should keep under surveillance new advertising devices so that the spirit and purpose of these standards are fulfilled.
- e) Television broadcasters should exercise the utmost care and discrimination with regard to advertising material, including content, placement, and presentation, near or adjacent to programs designed for children. No considerations of expediency should be permitted to impinge upon the vital responsibility towards children and adolescents, which is inherent in television, and which must be recognized and accepted by all advertisers employing television.
- f) Television advertisers should be encouraged to devote portions of their allotted advertising messages and program time to the support of worthy causes in the public interest in keeping with the highest ideals of the free competitive system.
- g) A charge for television time to churches and religious bodies is not recommended.

## STORY AND PLAY ADAPTATION

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**A**N adaptation for television transposes any literary work into final form presumably ready for immediate production. The script must be suitable not only in form but must be written with full consideration of TV's requirements, particularly as to size of cast, costuming, number of sets required, structure of story, the accommodation of commercials, and the standard openings and closings.

### Source of Material

When a writer is given an assignment to write a TV adaptation, it is almost a certainty that the producer has already purchased the original story or has secured performance rights for a published story or a play which has been produced in another medium.

Exceptions might include cases wherein the producer is still negotiating for rights. Or perhaps he has enough money in the budget to experiment with an adaptation before completing the deal for story purchase. (Incidentally, it is not good practice for an independent writer to spend time in adapting a copyrighted work on speculation, gambling that he will be able to sell the adaptation and that the producer will be able to purchase performance rights at a reasonable price.)

Quite often adaptation assignments call for dressing up and converting to proper TV form certain scripts purchased from amateurs or professional writers not thoroughly conversant with TV form or requirements. Sometimes this is quite a task,

calling for a complete reconstruction job. More often, however, it is simply a matter of thorough editing.

**Public Domain.** Other sources for TV adaptations are literary works in public domain (PD)—that is, plays and stories on which copyright has expired and which are therefore now available for public performance without royalty or permission. Under United States copyright laws, such works enjoy benefits and protection for an initial period of twenty-eight years. This protection is renewable for a second, consecutive period of twenty-eight years at the request of the author or copyright owner. After fifty-six years all copyright protection expires and the piece automatically enters public domain.

TV's best source of material in public domain is fiction, particularly the short stories written by the first masters of this literary form when it became popular in the last half of the preceding century.

Except for the classic plays, PD dramas do not offer much for presentation today. They are so highly "dated" in viewpoint and story substance that they seem like comical satires of drama.

The short-story masters, such as Kipling and De Maupassant, have either a sophistication or a quality of dealing with subjects of universal and lasting human interest that make their stories good dramatic stock. Furthermore, the mere fact that their works are "short stories"—enough but not too much—makes them more readily adaptable to TV presentation.

**The One-Act Play.** The same reasoning applies somewhat to one-act plays over three-act plays. A good one-act play of about twenty minutes duration offers an excellent start for a good TV play.

The one-act play, however, frequently has two inherent characteristics which become faults if translated directly to TV. There is first of all the static set—with all plot and action being called into the one scene, sometimes artificially. Secondly, the action is so compressed because of the time limitation that often too much plot occurs in too short a time to be logical. The static scene becomes tiresome in TV. The production should be broken up with small occasional sets for relief. This in turn, with the transitions between scenes, will make time lapse seem more logical.

**Original Stories.** So far we have been concerned largely with published fiction or produced plays—because good stories in these fields, with proven appeal and possibly name value, are dependable sources of dramatic entertainment.

However, the fields have been thoroughly explored, prospected and mined for a long time by all mediums of entertainment. It is a real chore to find an exceptionally good play or story which is available for presentation and has not been done too frequently.

This situation presents a challenge to writers of “originals,” authors who can conceive and construct good stories or plays especially for TV—stories that are suitable, exciting, and entertaining.

### Evaluating the Story

In selecting material for adaptation and in writing original plays, full consideration should be given to the “size” of a story. Here reference is not to length in pages and words but to solid story substance.

There should be enough story to fill the required time with sound action at appropriate tempo, without “padding.” There should not be so much story that the telling of it becomes choppy and episodic—in short scenes, with no time allowed for character delineation or creation of mood.

Radio has erred badly and often in this regard. In attempting to present some plays and novels within the frame of an hour it has succeeded only in creating highly tabloid versions of the original spirit and substance, completely lacking the color, character, or humor which made them famous. Going to the other extreme, radio has taken short short stories or mere lengthy anecdotes and stretched them out to half an hour with superfluous and often boring dialogue to fill for time requirements.

After some experience in TV, when one has learned to make every second count, and to call for no unnecessary scene or item, it's easy to become restless when viewing many motion pictures. They often take so much time to establish a point, and they incorporate so many scenes having nothing whatever to do with advancement of the plot or even in enhancement of entertainment. The only explanation is that they have to consume

approximately one and a half hours in time, and they have more raw film stock on hand than they have story.

### Construction of the Teleplay

Before beginning to write the adaptation, judge the story for "size." Build it judiciously or whittle it. Then lay out the general framework of the story in the required number of acts customary for the program for which you are writing. For a half-hour program this will be two acts, possibly three.

Budget the time by acts. Programs normally allow 10 per cent of the total time for commercials, with extra time for format—opening, introduction of play, closing, and announcement of following week's play.

Psychologically, the final act should be the shortest. The first act of a three-act TV play should be only long enough to establish the characters and plant the seed of the story. The second act should be the big act, concluding on a note of high interest or suspense.

In sketching out the acts, make note of what is to be accomplished in each, how the act ends and how much time is allowed.

Next, lay out the scenes necessary for each act. Allow enough for variety and interest but not so many as to be impractical for reasons of expense or space. Don't call for a large set unless its size is important and can be used to advantage, preferably in a central or key scene which reoccurs. Don't call for the front of a cathedral if all the action takes place merely on the steps in front of a Gothic door.

Use of five or six sets is not uncommon for a half-hour play with a reasonable production budget. Often more are used, but it stands to reason that some of them must be very small, consisting of no more than a hallway entrance, a section of a tree with a picket fence, or even a telephone booth against a six-foot flat.

### Writing the Play

It is not the purpose in this text to teach writing. That is a related subject but one which is a craft complete in itself,

requiring talent and much study and practice. What follows here is a list of practical suggestions for writers of TV plays and the directors and producers who will have to deal with them. To obtain the services of gifted writers from other mediums it is often necessary for a producer or director to coach them considerably at the start regarding television's mechanics, attributes, limitations, and requirements. The detailed advice given here is offered with that thought in mind.

**Cast of Characters.** Especially if the teleplay is to be an adaptation of a stage play, it's advisable at the start to examine the cast of characters. Are they all necessary? Can some minor roles be dispensed with—in the interest of both economy and simplicity? If so, mark them out and plan to give their essential "business" and plot lines to other characters who can appropriately enact them.

Speaking of the number of characters, within the time limitation it is possible to do justice in the way of characterization to only a few principals. The viewer finds it inconvenient and taxing to have to meet and keep track of too many. And the director finds it difficult to properly stage too many—especially if they are all to appear in one scene. All these are added reasons for keeping the cast down in size.

Where dialogue is fast and there is much significant action it is not advisable to have more than four principal characters in any one scene. For clarity and effectiveness, try to arrange action, entrances and exits accordingly.

**Dialogue.** In adapting successful stage plays or novels by accomplished writers, try to preserve as much of the original dialogue as possible. Remember, it takes a lot of genius to improve on the dialogue of master prose writers—and a good deal more than genius to improve on the effectiveness of dialogue lines which have been written by expert playwrights, polished in rehearsal, improved in performance, and then repolished before publication.

**Sound Effects.** Write in sound effects as necessary, remembering that these pertain only to sounds which must be made artificially or off-stage—not the sounds which are automatically created by actors on the scene, such as walking, knocking over a chair, dropping a book, pouring a drink, or ringing a handbell.

**Stage Directions.** Write in only those directions which are necessary, pertaining to plot actions or significant pieces of business not conveyed in dialogue.

Remember, you are concerned only with a TV script, not a play meant to be read by persons who might not have imagination. It is not necessary to describe in great detail how the actors should perform. If the play is good and the actors are good they'll work out better business than most writers can normally conceive or are capable of accurately describing.

**Description of Characters.** It is not advisable to take up time and space within the body of the script to describe the appearance and personality of the individual characters as they make their first appearance on the scene. This is better done all on one page which can be tacked into the script at front or back. The page is useful for casting and audition purposes and can be discarded after it has served its purpose.

**Use of Names.** Use names economically and discreetly. Some names carry a lot of meaning when applied to certain personalities. But what is gained—even in the “billboard,” or cast list—to name a banana peddler Don Juan Cervantes y Bandini if he is referred to throughout the play as Juan?

If an amusing maidenly aunt is named Miss Penelope Van Borstenhagen but is referred to only as “Aunty” or “Aunt Penelope,” then “Aunt” should suffice to designate her lines.

When surnames are not used it is only sensible to omit them. Of course a butler has a family name. But is it necessary if he is known only as Arthur?

Designations of names should be reduced or abbreviated after their first appearance in script. A girl might be named Katheryne-Joanne, and she might always be called that in dialogue. But in designating her lines isn't it just as well (to save time in typing, mimeographing and reading) to list her as “KATH”?

**Designating Camera Shots.** Do *not* try to direct the performance in script. Obviously, any good writer will have ideas as to how he would like to see the play shot. But the final shooting is the responsibility of the director, who ostensibly understands story values, dramatic presentation, and camera techniques.

There are times, to be sure, when designation of a camera shot is part of the writer's job of relating the story in dramatic

form. For example, a woman might be introduced as "Miss Smith" in a certain situation. No one in the scene might refer to the fact that she is actually married. But the camera might catch a quick close-up of her left hand, exposing a wedding ring, which "Miss Smith" quickly covers up with a glove. In cases of this type the writer most certainly should "call the shot." It is a part of his method of relating the story. That, in this medium, is "writing." But the writer is going beyond his functions as a writer when he demands in his script insignificant 2-shots, dollies, or other camera effects or movements.

The author may have suggestions for camera treatment at times. If so, and if the director is not the type of person to be antagonized by such contributions, by all means offer them in the script—tactfully—as "suggestions." Otherwise, do not intrude in the director's domain with indications of camera shots which might be considered officious.

The writer will have done his job if he turns out a soundly constructed script, consistent with TV requirements, and which does not require cutting or rewriting.

One final thought: hand in a neatly typed script, clean and devoid of errors, even if you have to hire a stenographer to do it. And have it ready at the time promised.

## ADVENT OF COLOR TELEVISION

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### Background of Compatible Color

**C**OMPATIBLE color applies to television which can be transmitted in color and received in black and white on standard TV sets—without adaptors or special attachments. Specially constructed color receivers present the telecasts in full color. The standard sets, of course, present the telecasts on their screens only in monochrome, but the quality of picture is equal to or close to that of most black-and-white programs.

The government's action in forcing the industry to adopt one standardized system is definitely in the interest of future investors in color receivers. The further fact that the system is compatible is a protection for all the millions of Americans who have already owned black-and-white sets or will purchase them in the future.

Most observers will agree that color has come too soon. It was introduced at a time when monochrome telecasting was still in its infancy, when there was still much room for advancement of programming and techniques, and long before it was even available in large areas of our country containing many millions of potential viewers. The truth of the matter is that its rapid development and early introduction resulted largely from brisk competition between research laboratories and manufacturers of television equipment.

**Prior Methods.** Inventors were working on color television a quarter of a century before the compatible standards were adopted. In the late 1920's there were several demonstrations,

each method using mechanically revolved discs or drums for scanning—as did the first monochrome systems. After the invention of the electronic cathode ray tube (which scans electronically rather than mechanically), there were attempts to combine use of this tube with scanning discs for color reproduction. Any delicate apparatus that depends upon moving parts is obviously inferior to a system that operates entirely by electronics. By 1940 RCA was able to demonstrate a completely electronic color system, but the receiver was bulky, requiring three cathode ray reproducer tubes, optically superimposing the primary colors of each. The objective then was to devise a system that would reduce the number of receiver tubes to one. Progress was being made in this direction when the war put an end to research for a number of years.

**The Fight for Recognition.** By 1950 there were two major systems of color transmission contending for public acceptance, each representing an investment of many millions of dollars in research, and each striving for control of a future market worth billions. RCA (NBC's parent corporation) led the field in an all-electronic system of transmission and reception. In the opposing camp was the Columbia Broadcasting System, which had gone into research with the aim of becoming a manufacturer as well as broadcaster. The CBS system was known as the "field sequential" system—because it transmitted the separate primary colors in rotating sequence instead of simultaneously. It is said that they hoped to develop a tube that would scan electronically, but up to this time their method still required operation of a mechanically revolving disc in the receiver, spinning at a very high rate of speed.

The Federal Communications Commission invited competitive demonstrations between the two systems. In the tests made at this time CBS won a majority vote on the basis of quality of picture, particularly as to fidelity of color. Their system, using the scanning disc, was therefore officially adopted and experimental broadcasting in color by this method was officially authorized. The Korean war brought an impasse. Critical materials were withheld and there was little or no manufacture of equipment. Meanwhile, the RCA group, militantly led by the veteran figure of radio and television, David Sarnoff, took advantage of the time lapse to refine the quality of their system's

color. Leading scientists expressed themselves regarding the logic of an all-electronic system over one involving moving parts. Leaders in the manufacturing of television equipment, foreseeing great financial upset in the industry if millions of sets were to be outmoded or eliminated, brought pressure to bear.

**Work of the NTS Committee.** In the interest of the industry and the viewing public, the National Television System Committee was formed by manufacturers and broadcasters for the purpose of formulating standards for a compatible system. The best research men of many companies pooled their knowledge and resources and soon came up with a very sensible solution to the problem.

On July 21, 1953, the Committee completed development of technical signal specifications for compatible color television, and petitioned the FCC to adopt them as standard for commercial television broadcasting. The Committee further asked the FCC to adopt the compatible color system in place of the field sequential system. The recommendations were accepted. The following December the Commission officially announced its decision and authorized the start of commercial broadcasting by the NTSC Color Standards.

### **How Color TV Operates**

To a layman, particularly to one who has not studied advanced physics, the system is highly complicated. Development to its present state of perfection is certainly a tribute to the scientists who, as a matter of daily routine, deal in physical principles, realms, and methods far beyond the knowledge—much less the comprehension—of even well-educated men in other fields. The task here is to make the subject intelligible by avoiding intricate details and unnecessary technicalities, and by describing factors in the color television process in the most general language possible.

**The Nature of Color.** Color depends on light. Light is contained in a relatively small segment of Nature's radiant energy frequency spectrum, which begins with Hertzian waves (used in radio, TV, and radar) and ends with X-rays and Gamma rays.

When sunlight is dispersed by being directed through a glass prism (or through raindrops) we see that it contains color—

“all the colors of the rainbow,” as is applicably said. The resulting spectrum shows the gradation of sunlight’s elements from cold to warm colors. In the order in which they appear, an artist would describe the dominant spectral colors as blue-violet or indigo, blue, blue-green, green, yellow, orange, carmine, and crimson.

What is important to know is that color is a property of light, the various colors being determined by their wavelengths of radiation. At the “cold” or blue end of the spectrum the wavelengths are short. At the other end (red) they are longer and travel faster. Black results from the absence of light. White is the presence of all colors in mixture—as in the case of sunlight before it is broken into its component wavelengths by the prism.

According to a widely accepted theory of human vision, the retina of the eye contains three elements of reception, each sensitive to the wavelength of a primary color, and connected with the brain by a complicated system of nerves. The brain perceives color by relative stimulation from each of the three types of receptors in the eye’s retina. When this delicate system is out of balance “color-blindness” results. What is of special interest is that the *primary* colors detected by the eye’s receptors are red, blue and *green*.

In the study of art we are informed that the three primary colors are red, blue, and yellow. By demonstration we see how all other colors can be created from this basic trio. They are used not only in painting but in color printing and color photography. They are known technically as “subtractive primaries” —because they are absorbers of light, used in layers or mixtures to create a new color by removing certain wavelengths from a light source.

In the truest physical sense (divorced from art practice or pigmentation), any three colors can be used as primaries so long as no two of the colors can be mixed to duplicate the third.

The basic colors used for reproduction of color in television (known as “additive primaries”) are *red*, *blue*, and *green*. These were chosen not only because they represent the primaries the human eye detects, but because they more readily produce the greatest range of colors contained in nature and daily life. In the compatible system they are electronically blended together

to produce a white signal, in these proportions: 59 per cent strength for green, 30 per cent for red, and 11 per cent for blue. An experiment with superimposed beams, using the same relative degrees of intensity, would prove the logic of this selection of primary colors.

**Color Cameras.** Optically a color camera operates in identically the same manner as a monochrome camera—up to the point of refracting the image on the face of pickup tubes. Instead of having one Image Orthicon tube, however, it has three—one for each of the primary colors. The color in the image or scene is separated by means of dichroic mirrors and filters, the “information” of each color then being refracted on the sensitized face of its respective pickup tube. Thus the three channels of light energies are converted into separate electrical signals—to be transmitted simultaneously and reconverted by the receiver into a reproduction of the original colored image.

**Transmission of Color.** Owing to the nature of the electronic scanning process, the video signal's frequency band generated by the monochrome camera contains certain voids in which there is no electrical energy being transmitted. Up to the introduction of color, they served no useful purpose. By ingenious application of engineering principles (perfected and prescribed by the NTSC), these voids are now used for the transmission of color information.

The normal width of the video band for each broadcasting channel extends in frequency from sixty cycles per second to more than four million cycles per second. The color information is conveyed within this over-all band on a subcarrier with frequencies ranging as high as 3.5 megacycles, selected so that the color information in its side bands falls into the voids mentioned above.

Audio transmission parallels video transmission in another band within the allotted channel. All video transmission takes place simultaneously (rather than in sequence of colors as in the opposing system). The color information interleaved in the video band is coded electronically so that it can be decoded and separated for reproduction in the color receiver.

**The Color Receiver.** Reception of color in this system depends upon a remarkable picture tube called a Tri-Color Kinescope.

The basic principle is the same as applies to the monochrome tube but its operation is obviously many times more complex. Instead of one electron gun it contains three, each of which bombards its respective barrages of electrons through a delicately perforated shadow mask onto the glass phosphor dot plate (where the picture is re-formed for viewing from the opposite side, or receiver screen). The screen or dot plate of the tube is surfaced with an orderly array of extremely small phosphor dots arranged in triangles, closely spaced in interlaced positions. They are so small they are imperceptible to the human eye at normal viewing distance. Each trio of dots contains a phosphor that will respond to each primary, emitting red, green, or blue as it receives an electrical impulse from its respective electron beam. Secondary colors are created by relative intensities on each of these three phosphors.

Thus, the original image has been captured optically by the camera's lens; split into three color components; each component has set up its own electrical impulses based on light intensity; the impulses have been transmitted simultaneously through the air in separate carriers within one broadcast band; at the point of reception the three color signals have been separated and conveyed to their respective electron guns, which in turn have shot their respective impulses on a screen to activate phosphors which emit a color they each represent, thereby reproducing the original image in full color.

The fine resolution of the color screen is due to the fact that its array of phosphor dots totals 585,000, or 195,000 dot trios. The intricacy of this tube, with its three electron guns, also gives some idea of the necessity of painstaking assembly by hand—a factor which affects costs and rate of production.

### **Status of Color \***

Obviously, good color reception is naturally far more enjoyable than monochrome. It stands to reason that greater realism results from viewing a scene on the TV screen somewhat as it appears to the eye in life rather than a contrived black-and-

\* The author wishes to make it clear that all opinions and conclusions expressed hereafter in this chapter are his own and do not necessarily reflect the viewpoint of engineers who have been credited with assistance on technical data pertaining to color.

white translation. Therefore, it must be conceded that universal adoption of color television is inevitable, and its introduction is certainly an advancement of great magnitude. Quite understandably the advent of color has caused much discussion and excitement. But there is no cause for alarm or panic. Color is here, to be sure—just as control of atomic energy is here. Its development has been so rapid and its potentialities are so fantastic that it makes an intriguing subject for speculation and ballyhoo by its promoters, but unquestionably there will always be black-and-white television, just as there will always be radio. According to the best estimates, it will be many years before a majority of transmitters and receivers will be concerned exclusively with color.

Color has such tremendous possibilities, and it calls for such radically different standards that the industry is, quite understandably, seriously concerned about what should be done now to protect present investments against the inevitable change. No thinking person who expects to be active in the business five or ten years from now should ignore color or fail to prepare for its invasion of the national scene. Therefore, let's examine the innovation from all pertinent aspects.

**Quality of Picture.** For the benefit of those who haven't seen color television under the most ideal conditions, it can be stated that both picture quality and color are magnificent. It must be emphasized that reference here is made to optimum conditions—when pickup, relays, transmission, and reception are perfect. Under less advantageous conditions the picture frequently varies in quality. In many demonstrations which the author has viewed, it has been frequently necessary for color video experts to readjust receiver controls to maintain a constancy of reception or to correct unbalance of color which sometimes occurs when it is relayed over long distances.

In all honesty, it must be stated that the sensuous delight in viewing color for the first time results largely from the mere thrill of seeing color instead of black-and-white. By comparison it makes monochrome reception seem drab. But after seeing a few colorcasts the more critical viewer realizes that the initial pleasure of perceiving color subconsciously yields at times to a craving for a monochrome picture with constancy and sharpness of definition. This is particularly true when viewing

programs in which perception of detail is essential. Hues are commonly so vivid and extravagantly rich that it's like trying to represent a picture of life in the color values of stained glass windows.

Compatible color telecasts offer very good black-and-white reception on monochrome receivers, but in the author's experience—based on critical comparison when both color and monochrome originations were available from the same scene—pure monochrome pictures are sharper than color pictures received on a monochrome set.

Conversely, the quality of black-and-white pictures as viewed on a color receiver are not always as good as those viewed on the screen of a monochrome set. Quite often there are disturbing color fringes around figures in a scene. Of course, from all standards of economy and common sense, a color receiver should be used only for color; it doesn't seem prudent to burn up the life of an expensive tricolor kinescope tube on black-and-white reception when color isn't available. Hence, in the transition period, two receivers will be in order from a practical standpoint—one for color, one for monochrome telecasts.

In the first sets issued by all manufactures the color picture was presented on the equivalent of a twelve- to fourteen-inch screen, a size which had become obsolete or undesirable on monochrome receivers. Soon several major manufacturers brought out screens ranging in size from nineteen to twenty-one inches.

**Color Programming and Facilities.** In the first year of commercial colorcasting (1953-54) it was only natural that NBC, a subsidiary of RCA which had so much at stake in sales of color sets and equipment, would have led the way. The network launched a schedule of two colorcasts a week from New York and one weekly from Hollywood. In addition to these regularly scheduled programs, the web announced a plan for presentation of a number of extremely costly variety shows in color termed "spectaculars"—undoubtedly derived from the name applied to Broadway's famous animated electric billboards.

CBS, on the other hand, equipped studios in both New York and Hollywood at a cost of \$1,500,000 or more each to present their own colorcasts in competition. The network chose Ed

Sullivan's "Toast of the Town" for the inaugural telecast, and promised a regular schedule of dramas and musicals in color.

At this stage in color TV's infancy the Du Mont network started colorcasting from its New York station, WABD. At the same time the ABC network's vice president in charge of engineering, Frank Marx, stated significantly: "ABC has no stake in promoting the sale of color sets and therefore will not produce color shows until it is financially profitable to do so."

WKY-TV in Oklahoma City was the first independent station to start broadcasting local live programs in color. By the end of 1955, it was estimated then, only 20 stations in the country (exclusive of network operation) would be equipped for color-slide and local-origin programs in color.

At the start of the first year of colorcasting there were only 1,000 color receivers in the country, and many of these were used for demonstration purposes only. Of necessity, production of sets was very slow at the start—due largely to the amount of skilled manual operation required in the manufacture of tubes, but the most optimistic manufacturers expected to increase production by new methods or devices, and estimated that the year 1960 would see from ten to thirteen million color sets in use in America.

In the first year of colorcasting there were four hundred commercial TV stations in monochrome operation. Fewer than forty had the equipment to pick up and retelecast network-originated programs in color. Half of the stations hoped to be able to retelecast color by the end of 1955—with the installation of equipment costing \$30,000 or more per station.

**Economics of Color TV.** A magazine writer, referring to the future of color TV, aptly likened the situation to the parallel development of automobiles and highways. Each aids and promotes the interests of the other—just as the quality and availability of colorcasting promote the development and sale of sets. The viewing public must be convinced that the cost of a color receiver is worth the investment; on the other hand, the broadcasters and sponsors must know they have a sufficiently large audience to justify the added expense of color.

Roughly, colorcasting costs at least three times what monochrome telecasting costs—and this rule applies as well to everything from home receivers and their maintenance to program

production. A monochrome camera chain (complete with camera and control equipment) costs in the neighborhood of \$15,000. A comparable chain for color costs \$50,000. In 1954 good black-and-white receivers sold for \$200 to \$300. Color receivers of comparable quality (but with much smaller screens) were offered for sale in the neighborhood of \$1,000. It very soon became apparent that the public might be reluctant to accept the smaller picture tubes. Before 5,000 sets had been sold by RCA, CBS-Hytron, and Du Mont announced that they were going into production with much larger tubes, providing screens of from 19 to 21 inches—which the public had become accustomed to in black-and-white reception. RCA quickly announced its development of a comparable screen and promptly rebated substantial sums to owners or dealers possessing the small screen of early models.

Sets with the new, larger screen went on sale at approximately the price of the earlier models. Keen competition between manufacturers was thus foreseen, and at this time it was estimated that the cost of good color receivers might be as low as \$350 or \$400 by 1960. It was anticipated then that the costs of installation and maintenance would drop correspondingly. At the start of color TV, monochrome sets (exclusive of antenna) were installed and maintained for a year at approximately \$50; installation and maintenance of color sets for one year averaged from \$150 to \$200.

TV stations—already in operation with monochrome TV—faced the fact that the minimum cost for installation of equipment to originate programs in color would cost them \$165,000. And this provided for only one camera chain and limited auxiliary equipment.

Program production costs mount up in a comparable degree. Much more attention must be paid to the quality and color of scenery, to fabrics, set dressings, wardrobe, lighting, and make-up. Ironically, the three primary colors—in replacing the monotony of monochrome which once satisfied us—are multiplying costs at least three times.

**Perfection of Receivers.** Although accustomed to larger screens in monochrome sets, the first owners of color receivers didn't seem to mind adjusting their vision and whims to smaller screens. The sets seemed quite adequate for reception in any

normal-size room. What naturally bothered viewers most was the delicacy of tuning required for best reception, plus the added number of control dials. Old-time radio fans, recalling the complicated tuning required on the "wireless" receivers of 1925-30, confidently looked forward to the day when color sets would be simplified to the present degree of radio sets. The industry, recognizing the demand for simpler tuning of color sets, announced that newer model sets would be considerably improved and refined in this respect.

- Color is so vastly more complicated than monochrome that most dealers, demonstrators, and repairmen can't possibly be as adept with it as they have been with monochrome. It requires a thorough understanding of the basic principles of color and the operation of the receiver to repair or adjust it. Competent coaching and practice are necessary to learn how to tune a color set properly. Furthermore, when one colorcast succeeds another—even on the same station—the set often requires re-adjustment of the fine tuning dial, chroma control and phasing control.

**Technical Problems.** As already pointed out, there are many technical problems to be solved before color TV reaches the stature which monochrome TV achieved in so short a time.

A major problem which is naturally receiving much attention applies to the use of color film. Originally it was thought that any good motion-picture film in color would be suitable for television. This assumption was so general in the industry that many producers of TV programs on film in the precolor years shot their programs in color; they issued black-and-white prints for current release and stored the original color print for contemplated future use in repeat telecasts. Critical tests proved, however, that many of these did not meet the technical standards required. The same applied to many old theater films in color. Before long, it can be reasonably expected, the television and film industries by working together (at last!) will devise methods and standards to make color film equally acceptable to theater projection and colorcasting.

Color requires more light than monochrome TV. In the latter, lighting requirements have been reduced from the original 1,500 to 2,000 footcandle requirement to 75 to 150 footcandles. (In TV's earliest days the cameramen wore pith helmets to

shield their heads from the intense heat.) Color requires considerably more light, and under present conditions most color sets are illuminated with light measurements running from 250 to 300 footcandles. While this is nothing like it used to be, it is a strain on the performers' eyes and in most studios is hot enough to cause excessive perspiration, which is highly undesirable in colored garments which disclose the unfortunate fault so readily.

While the research engineers are perfecting the intricate devices engaged in pickup, transmission, and reception of color, there is much need for intensive study and experimentation by competent persons in all phases of production.

Lighting offers one of the greatest of opportunities in this field. Originally all lighting in TV was what is known as "flat lighting"—having intense light coming from all directions, thereby killing all shadows and, naturally, reducing the solid aspect of figures in the scene. Eventually the lighting men (encouraged by the added sensitivity of pickup tubes) attempted modeling with light, and some of them became very skilled in the art. Pictures assumed new depth and figures were seen in their natural solidity instead of appearing as flat planes like cardboard cutouts. Students of color photography are often taught that sufficient definition and modeling results from separation of color alone, and this theory seems to prevail in the lighting of most colorcasts viewed to date.

For the sake of realism and artistry, we can hope that lighting directors will eventually model with light—even in color. And, understanding the problems involved, especially when there is much movement about a stage, we can hope they will be given adequate time to test and rehearse, and good, flexible *equipment* to do the job properly on the air.

Color television presents a challenge of great magnitude to those in scenic design, painting, and wardrobe. After all the centuries in which gifted men have been studying and experimenting with color in painting, the time has come when a new study of the subject of color must be made. In this approach the artists will not be concerned with the grade or texture of canvas, oils and pigmentation, brush strokes or other matters in the techniques of paint application. In this new medium they will be concerned with colors and their effect on each other—both

in the matter of adjacency and resulting harmonious effect, and the very critical matter of reflection of color under the intense light. (We don't like to see one side of a singer's face turn green merely because he has a green cape thrown over one shoulder.) The problems confronted concern not only color and its eccentric whims but the nature of textures and surfaces as well.

What makes color television all the more a job for the utmost degree of teamwork by all concerned is the fact that the presentation of perfect pictures in color merely begins with artistic scenic design and wardrobe; lighting and camera direction are also tremendously important factors. And remember, in this medium the subjects of the picture are not statically posed as in a painting or photograph. There is constant movement, and the factors of lighting and color move with the action.

Reviewing the problems which the industry faces in the perfection of color recalls a remark which one of radio's very best actors made at the rehearsal of his first television show in 1950: "Gad! I wish I'd died a year ago or that television had never been invented!"

Well, television began as a dream that was *impossible* to accomplish. It *was* invented and perfected. Then color was added. Now color television presents new challenges which sooner or later, by the ingenuity, imagination and industry which have been characteristic of the medium, will certainly be met.

## *CENSORSHIP AND EDITORIAL JUDGMENT*

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ANYONE experienced in dealing with the American public will readily admit that any publication or medium of communication which freely enters the home must have some degree of responsible regulation or censorship.

In the United States the standards of television program content are regulated by:

1. The broadcasters—who must operate “in the public interest.”
2. The Federal Communications Commission—which has the power to issue or revoke licenses.
3. The American public—whose voice assumes thunderous proportions when it is angered, offended, or aroused.

The standards of decency and acceptability applying to radio and television are higher and more strictly enforced than in any other entertainment field or means of communication.

There are magazines published in this country and sent freely through the mail which would cause concern and embarrassment if found on the living room table in most homes. There are variety, burlesque, and similar shows in some American cities—drawing large and appreciative audiences, and operating without restraint—which would draw jail sentences if presented in other locales.

All of the foregoing statements emphasize this point which should be remembered in judging program material: what is acceptable to broad-minded night club audiences in Manhattan, Hollywood, or Las Vegas is rarely apt to be fare for admission

into *homes* in any city or town, including even the cosmopolitan cities mentioned.

They are distinctly different audiences. Jaded and liquored celebrants in a night club will accept as sophisticated humor and wit what is actually nothing but smut. Patrons expect it and are prepared for it. Even the occasional tourists who visit such places of entertainment seem to adopt temporarily a relaxed attitude—which in no way modifies their position regarding what is admissible to their homes.

What many entertainers fail to realize, *actually*, is that the areas containing the bistros, night spots, and bright lights are only a minute segment of America. And yet, somehow, they insist on broadcasting to the entire nation comic and other material which is definitely not acceptable in the average American home, especially homes with children who can tune in a television show with the turn of a wrist, who would never be permitted to see a traveling variety show that comes to town.

All of this might seem to indicate that the American public is narrow-minded. On the contrary, for the benefit of those who don't know, and who use smutty language and profanity as if it were Oxford English—our nation consists of 160 million citizens, most of whom live in small towns, go to church on Sunday, attempt to bring up their children decently, and do not regard burlesque shows as the ultimate in theater.

Long ago radio learned the danger of tampering with decency. The networks set up certain standards of acceptability and earnestly attempted to enforce them. Decency was not the only standard or cause which had to be respected. There were others—at times too many others—some of which seemed to be carrying their banner too far and too vigilantly. Causes and minority groups took up their swords, made their weight felt, and threatened boycotts or political action. The broadcasters, already conscious of their obligation to offend no groups if they were to hold their licenses, bent over backwards to “give pleasure to all, offense or injury to none.” Stations and networks formulated their own codes regarding acceptability of program material, based on plain “horse sense” plus guidance derived from voluminous mail from listeners.

The advent of television obviously introduced other problems, principally through the addition of the sight factor. In addition

to things formerly *heard* we now had to consider things *seen*—gestures, costumes, facial expressions, physical actions and even scenery.

### Code of Decency

In 1951 the National Association of Radio and Television Broadcasters (NARTB) wisely formulated and adopted a code of standards and restrictions for the industry known as *The Television Code*.

Quoted here are the NARTB standards of acceptability regarding program material in TV:

- A— Profanity, obscenity, smut and vulgarity are forbidden, even when likely to be understood only by part of the audience. From time to time, words which have been acceptable, acquire undesirable meanings, and telecasters should be alert to eliminate such words.
- B— Attacks on religion and religious faiths are not allowed. Reverence is to mark any mention of the name of God, His attributes and powers.  
When religious rites are included in other than religious programs, the rites are accurately presented, and the ministers, priests and rabbis portrayed in their callings are vested with the dignity of their office and under no circumstances are to be held up to ridicule.
- C— Contests may not constitute a lottery. Any telecasting designed to “buy” the television audience by requiring it to listen and/or view in hope of reward, rather than for the quality of the program, should be avoided.
- D— Respect is maintained for the sanctity of marriage and the value of the home. Divorce is not treated casually nor justified as a solution for marital problems.
- E— Illicit sex relations are not treated as commendable.
- F— Sex crimes and abnormalities are generally unacceptable as program material.
- G— Drunkenness and narcotic addiction are never presented as desirable or prevalent.
- H— The administration of illegal drugs will not be displayed.
- I— The use of liquor in program content shall be de-emphasized. The

consumption of liquor in American life, when not required by the plot or for proper characterization, shall not be shown.

- J— The use of gambling devices or scenes necessary to the development of plot or as appropriate background is acceptable only when presented with discretion and in moderation, and in a manner which would not excite interest in, or foster, betting nor be instructional in nature. Telecasts of actual sport programs at which on-the-scene betting is permitted by law should be presented in a manner in keeping with Federal, state and local laws, and should concentrate on the subject as a public sporting event.
- K— In reference to physical or mental afflictions and deformities, special precautions must be taken to avoid ridiculing sufferers from similar ailments and offending them or members of their families.
- L— Exhibitions of fortune-telling, astrology, phrenology, palm-reading, and numerology are acceptable only when required by a plot or the theme of a program, and then the presentation should be developed in a manner designed not to foster superstition or excite interest or belief in these subjects.
- M— Televised drama shall not simulate news or special events in such a way as to mislead or alarm.
- N— Legal, medical and other professional advice, diagnosis and treatment will be permitted only in conformity with law and recognized ethical and professional standards.
- O— The presentation of cruelty, greed and selfishness as worthy motivations is to be avoided.
- P— Unfair exploitation of others for personal gain shall not be presented as praiseworthy.
- Q— Criminality shall be presented as undesirable and unsympathetic. The condoning of crime and the treatment of the commission of crime in a frivolous, cynical, or callous manner is unacceptable.
- R— The presentation of techniques of crime in such detail as to invite imitation shall be avoided.
- S— The use of horror for its own sake will be eliminated; the use of visual or aural effects which would shock or alarm the viewer, and the detailed presentation of brutality or physical agony by sight or by sound are not permissible.
- T— Law enforcement shall be upheld, and the officers of the law are to be portrayed with respect and dignity.

- U— The presentation of murder or revenge as a motive for murder shall not be presented as justifiable.
- V— Suicide as an acceptable solution for human problems is prohibited.
- W— The exposition of sex crimes will be avoided.
- X— The appearances or dramatization of persons featured in actual crime news will be permitted only in such light as to aid law enforcement or to report the news event.

### Visual Offences

In matters pertaining to decency and decorum, the NARTB Code is amplified to include these points regarding possible offences which might be committed visually:

1. The costuming of all performers shall be within the bounds of propriety, and shall avoid such exposure or such emphasis on anatomical detail as would embarrass or offend home viewers.
2. The movements of dancers, actors, or other performers shall be kept within the bounds of decency, and lewdness and impropriety shall not be suggested in the positions assumed by performers.
3. Camera angles shall avoid such views of performers as to emphasize anatomical details indecently.
4. Racial or nationality types shall not be shown on television in such a manner as to ridicule the race or nationality.
5. The use of locations closely associated with sexual life or with sexual sin must be governed by good taste and delicacy.

### Director's Responsibility

Continuity editors review and pass on all script material. The items referred to in the foregoing excerpt from the Television Code pertain only to what is described in the script. Therefore final responsibility for passing on the visual element of a program's content falls on the director.

Possible offenses in this regard can often be detected initially in the script, and they will be deleted or prohibited by the censorial staff. Quite often, especially in variety programs, one or more representatives of this department will attend dress rehearsals to review costuming, dances, and expressions or gestures which might be intentionally suggestive or offensive.

In the final analysis, however, the director is the ultimate censor. He can frequently avoid offense by discreet shooting. Camera angles and lighting can accent or minimize the display of physical features or attire which borders on indecency. The close-up of a curvaceous woman in sweater or bathing suit might be completely acceptable if shot head-on but dangerous if shot in profile. A woman in low cut evening gown might appear modest in a medium shot looking upward; the same woman could be made to appear indecent in a close-up from a high angle looking down. It must be remembered, too, that lighting affects the perception of curves and the like.

Approval for acceptability is one of several good reasons to see all performers on camera before going on the air. For that reason dancers, acrobats, and other variety performers should be required to wear performance costumes at dress rehearsal.

So much for precautions regarding respect of the moral standards. Other than obvious indiscretions pertaining to nationality, race, or religion, the restrictions next in importance come under the heading of good taste.

Matters which cause no concern when witnessed on a farm, in a butchershop, or in the kitchen can be most disagreeable and offensive when presented in television—sometimes only because the camera accents and magnifies, but more importantly because the viewer has come to know that every picture is selected for viewing. On the farm we are not upset by accidentally viewing natural functions of animals. In the butchershop we are not necessarily disturbed by the sight of a butcher drawing a chicken, but the same procedure viewed in TV would be absolutely revolting.

### Editorial Judgment

In the course of some programs many situations arise which call for editorial discretion. Sometimes it is good showmanship to show a person who unexpectedly breaks into tears; under certain circumstances this would be very poor taste.

A good rule to apply: "*When in doubt, leave it out!*"

An experienced director will expect certain contingencies and anticipate them with protective shots. This applies particularly to the use of animals, even the best trained animals. When

showing, for example, a prize stallion, a milk cow, or even a turkey, it is always advisable to keep a protective shot on the animal's head alone or on some other area in the general scene which can be cut to instantly in event of emergency.

Before concluding treatment of this subject, it should be pointed out that the nature of a program and the time of day it is telecast are factors which should influence a director's decision as to what is acceptable and what is not. Purpose is another factor which can justify or invite condemnation of a shot or scene.

### **A Guide for Children's Programs**

The Code, referring to children's programs, admonishes telecasters to exercise care in the following regards:

- In affording opportunities for cultural growth as well as for wholesome entertainment.
- In developing programs to foster and promote the commonly accepted moral, social and ethical ideals characteristic of American life.
- In reflecting respect for parents, for honorable behavior, and for the constituted authorities of the American community.
- In eliminating reference to kidnapping of children or threats of kidnapping.
- In avoiding material which is excessively violent or would create morbid suspense, or other undesirable reactions in children.
- In exercising particular restraint and care in crime or mystery episodes involving children or minors.

## TELEVISION'S POWER AND FUTURE

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WITHIN the present knowledge of man, television is probably the ultimate development in communication. The miracle of transmitting voice and visual image through the air for a hundred miles or more was achieved through the combined efforts of many brilliant scientists who began their experiments with the benefit of amassed knowledge gained through centuries of research. Suddenly the impossible was accomplished. It was demonstrated and proved to an amazed public. Abruptly it became not only accepted but commonplace.

To a large degree the magnitude of the invention far surpasses the use to which it has been put since the authorization of commercial telecasting. As a medium of information and entertainment it has been going through its puberty. As in the case of human beings, therefore, we presume certain allowances must be made. The medium has developed amazingly within its first decade, gone through growing pains, shown great improvement and promise—but there is still vast room for advancement now and in the future.

On the favorable side of the ledger it can be recorded that the industry in this period has treated the public to some exceptionally fine programs. History has been made by such excellent telecasts as the political conventions of 1948 and 1952, President Eisenhower's inauguration, the coronation of Queen Elizabeth, and other events of great significance. In the realm of document "Crusade in Europe," "Victory at Sea," and "You Are There" have been magnificent. A few operas and symphonies have been outstanding cultural treats. In the field of sports several seasons

of the World Series, championship tennis matches and major football games have given the public enjoyment and the privilege of witnessing newsworthy contests they would never otherwise be able to see. Likewise the coverage of many traditional regional events like New Orleans' Mardi Gras celebration, the Tournament of Roses, Western rodeos, New Years' Eve in Times Square, etc., have served to make sections of our broad nation better acquainted with the atmosphere and customs of each other.

A few dramatic programs (almost all of them network originations from New York) have most consistently presented entertainment that approaches the quality of the best theater presentations. Enormous investments have been made in variety shows, but very few of them have managed to maintain a consistently high standard throughout. Most of them have had memorable high spots, but the over-all performance standard has frequently fallen down with mediocre talent and poor material. Situation comedy serials, although often very broad and contrived in plot and performance, have established an enviable record for popularity with viewers.

Thereafter, the curve of entertainment value descends sharply. We find the evening schedules filled with crime and mystery stories—some of them more criminal than mysterious; the endless chain of banal quiz programs; puerile parlor games; amateur shows which constantly feature contestants without specialties or natural talents adequate for even the start of a career; and the jolly panel shows with oh-so-clever experts, mystery guests, and unctuous moderators hilariously matching wits with each other.

Such is the scope of TV programming over most stations from 6:00 to 10:00 P.M. or later, seven nights a week. Why is it so limited? And why are so many programs in each classification so like so many others in the same category? That brings us to the question of who chooses the programs and why.

Well, since the networks and most of the stations have indicated a willingness to sell all of the prime viewing time seven nights a week, reserving no regular time for sustaining or truly public service programs, almost all programs in this time slot are commercially sponsored. The sponsors or their advertising agencies seldom create the programs—as they have done to a large degree in radio. Instead they have purchased programs made

available to them by the stations and networks, or exposed to them by talent agencies and package producers.

The quiz programs which had a field day in radio were readily adapted to television, and could be done at relatively low cost. Because of the cost factor also, the parlor game programs became numerous at the start of commercial telecasting. Both established surprisingly high ratings at a reasonable cost to sponsors. Then came imitations and assorted variations of imitations. In the process some have become highly entertaining, it must be admitted. But it would seem that originality and American ingenuity could devise other economical means of entertainment, more worth-while programs that would interest the entire family while also contributing something in the way of cultural benefit, moral uplift, or inspiration. But so far, regrettably, there is no pressure on advertisers to move in such a direction. Perhaps the time will come when the present types of programs have worn out their welcome and the public begins to expect something better.

There are some obvious faults in this peculiar structure that concern the broadcaster, sponsor, and the viewer.

Admittedly, the advertiser is not engaged in charity, and he is not necessarily interested in financing educational or cultural advancement of the public. At times he might contribute to such a worthy cause, as many advertisers sometimes do, but his primary purpose in being in television is to advertise his product or service and to increase sales. A basic requirement for advertising's effectiveness is public attention—in readers, listeners, or viewers. It must have an audience.

But, since so little advertising money or effort has been expended in determining what the public *wants*, rather than what it will accept, it seems strange that so much credence and emphasis is placed on the popularity ratings of only what is available. All of the major rating services concern themselves only with the question: "What programs are the greatest percentage of viewers watching?" Few if any major surveys ever inquire: "What does the viewing public need or want?"

There is already much evidence that the public is beginning to tire of the present program offerings. Parents in particular are becoming concerned about the tremendous number of hours their children devote each week to viewing run-of-the-mill pro-

gramming, and especially the amount and type of crime stories they see. They would certainly welcome programs that compensate in some degree for TV's distraction from reading and studies, programs that contribute something to knowledge and character development rather than merely numbing the viewer from boredom through every evening in the week.

We should be grateful that we do not have government subsidized or controlled television in the United States. Nothing would be more conducive to dull programming and lethargic operation, lacking in enterprise and originality. All who are familiar with television and radio in this country as compared to operations abroad feel strongly in favor of the commercially sponsored system. But isn't it time to question whether our system is living up to its opportunity and obligation?

Most of us know only too well the tremendous costs of operating a TV station or network. We recognize that huge investments are necessary, and that the launching of many stations has involved not only considerable speculation of capital but heavy financial losses before the balance sheet swung from red to black. They are certainly entitled to a good return on their investment, but profit alone can never be the basis for justifying a broadcasting station's existence—either to the stockholders or to the public whose authority gives it the license to operate.

As previously mentioned, most successful stations are now "sold out" during their prime hours of viewing. Many of them are practically sold out also on their Class B time, the better hours in the daytime and late evening. The validity of this policy seems questionable. Since their license is granted with the understanding that they will operate "in the public interest," how can they turn over *all* of their prime hours to commerce alone?

The Federal Communications Commission frequently prods the telecasters with a reminder of their obligation to serve the public's interest in their programming. It suggests firmly that certain percentages of total broadcasting time be devoted to religion, education, agriculture, and general public service. But what happens in actual practice? Broadcasters are "winking" at the authorities. They search for programs in these fields which cost little if anything; they give them minimum facilities; then

they assign them to oblivion by scheduling them in time slots which cannot be sold—early on Saturday or Sunday mornings, or against the toughest program competition, which no sponsor would care to fight. The public service programs are practically always at the mercy of the sales department and the frequent shifts they undergo in scheduling are always a detriment to their success.

One day the viewing public may become alert to this situation. And perhaps the Federal Communications Commission will make a more astute examination of a station's program logs, appraising the operation's public service contribution by *weighing* and not merely totaling the hours devoted to such activity.

Then we may expect to see at least one good hour or half-hour over every station each night which is not devoted purely to entertainment. Then we may enjoy up-to-date travelogues, science demonstrations, graphic lectures in the arts, and other subjects of cultural value.

Frankly, the author believes it is quite likely that some progressive and imaginative advertisers will lead the way in this direction. There is strong evidence of the need, and the few programs which have been done well in this vein have clearly demonstrated their popular appeal. Mail response in such instances has shown that a surprisingly large percentage of the TV audience hungers for knowledge on almost any worth-while subject. Science programs originating in Philadelphia, Los Angeles, San Francisco, and elsewhere have instructed and entertained large audiences of both children and adults.

In a modest little program launched over KNXT (CBS Hollywood) in the summer of 1953, Dr. Frank Baxter floored the critics and prophets by proving that—in a pure lecture series, aided only by interesting graphic material—he could charm and delight viewers with the subject of "Shakespeare and His Times." In the following summer he became a popular figure on the entire Columbia network. (See Figure 18.)

In a somewhat similar form of presentation over the Du Mont network, "Life Is Worth Living," discussions of religion and philosophy have been enjoyed by weekly audiences of thirteen million persons—thanks to the fluency, charm, and humor of Bishop Fulton J. Sheen. Among his ardent followers the noted Catholic cleric now includes viewers of all denominations—

another interesting point relating to the penetration and scope of the medium. (See Figure 19.)

Cultural programs which have been successful point up the importance of selecting the best personalities for the assignment and then giving the program the benefit of good production guidance and facilities. In line with this thought it is to be hoped that advertisers will not judge the field of education television by programs which have been done poorly, with meagre facilities, without adequate supervision of professional television personnel, and presented at unattractive hours of the day. Some of the most successful game and quiz programs would be horrible failures if they had been introduced to the public with the same handicaps.

Any sensible person will admit that good entertainment, which offers relaxation and escape from mundane problems, is good for the body and soul. In that respect commercial television is contributing much to the pleasure and peace of mind of our nation. But television is an instrument of such tremendous potentiality that it should not be used for commercial entertainment alone. It should have some of its incredible power diverted to the education, moral uplift, and social improvement of our nation.

As previously pointed out, the quality and nature of programming is determined by the broadcasters, the sponsors or the viewers—or all three. In the next few years we are bound to see vast improvements and radical changes. It will be interesting to observe which of these three related elements brings them about.

## GLOSSARY OF TELEVISION TERMS

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**I**N any industry which employs a great number of young men it is only natural that the New Deal and military tendency of identifying any office or organization by initials would be carried over into television. The truth of the matter is that any occupation which calls upon instant sight reading of directions would naturally welcome abbreviations. Therefore, in this medium abbreviations are common. In the following glossary of TV terms it is the intention of the author to include all abbreviations in common use which are of importance in production.

**ABSTRACT SET**—A decorative background or setting for musical, variety, or ballet programs composed of drapes, architectural units, geometrical or artistic figures in a pleasing composition which does not strive for realism in a definite locale.

**ACOUSTICS**—The science of sound, including creation, transmission and physical treatment. Term also applies to the resonant characteristics of an auditorium or studio.

**AD**—Assistant director.

**AFM**—American Federation of Musicians.

**AFTRA**—American Federation of Radio and Television Artists.

**AGMA**—American Guild of Musical Artists.

**AGVA**—American Guild of Variety Artists.

**ANN**—Announcer. Also written Annncr.

**ANTENNA**—The device (rods or wires) in a receiving or transmitting system which picks up or transmits waves into the ether.

**ASCAP**—American Society of Composers, Authors and Publishers. (Controls broadcast rights of most American music.)

**ASPECT RATIO**—The proportion of picture dimensions in TV; relation of height (3 units of measurement) to width (4 units).

- AUDIO**—The sound phase of television (music, voice, sound effects).
- BG**—Background. Usually applies to background music or sound effects. Background also refers to scenic backdrops, cycs, photomurals, etc.
- BMI**—Broadcast Music, Inc. (Music licensing organization in competition with ASCAP.)
- BALOP** (Balopticon)—A picture projection machine which transmits picture to tube or screen by reflected light (using photos) rather than by penetrated light (as with film negatives or transparencies). The term is derived from the name of Bausch & Lomb, famous manufacturer of photographic and optical equipment.
- "BAT BLACKS"** (or "hit black")—Applying to video control of a picture. Calling for accent on black for purposes of a "super" or to darken a picture for illusion of night or darkness without benefit of stage lighting control.
- BEAM**—A directed flow of electronic energy into space—as with the beam of electrons in a TV tube or a beam of impulses through air in the transmission of a signal.
- BILLBOARD**—The lineup of talent in a show, usually announced at opening of program.
- BLOOM**—Brilliant glare resulting from strong light on white or polished subjects in picture, as with flares off bright metal. Also caused by maladjustment of a camera's video control unit.
- BLOOP**—An obvious error in performance, by cast or production crew. (Also referred to kiddingly as a "boo boo" or "goof.")
- BOOM**—The mechanical structure for moving a suspended microphone overhead. Also the action of moving a camera crane up or down.
- "BREAKAWAY"**—Any prop especially constructed to disintegrate easily—e.g., a bottle smashed over a comedian's head, or a section of wall a performer is hurled through.
- BRIDGE**—Material used for transition from one scene to the next in a drama. Visually it would consist of slides, a photo, miniature or other device. Audibly, it could be done with music or sound effects.
- BURN**—Phenomenon of image retention on a pickup tube after intended appearance. More common in older I.O. tubes, and especially when strong contrasts of dark and light areas (as in titles) prevails.
- CAMERA RIGHT** (or camera left)—Direction on stage or set as viewed on the TV screen. Exact reverse of the theatrical directions "stage right" or "stage left," determined by actors' right or left.
- CHAIN**—Complete facilities necessary to operate one camera, including a regulated power supply, camera, cable, and video control unit.
- CLAMBAKE**—A messy program, poorly constructed, and possibly filled with "bloops."
- CLIP**—A selected segment of film for insertion in a program.

- CLOSED CIRCUIT**—A live television program not telecast but shown on monitors or viewing screens for the benefit of a selected audience. Used for auditions or private showings to restricted groups.
- CONTRAST**—The range between high lights and deepest shadows in a picture. Also referred to as “gamma” in film—emulsion density.
- COVER SHOT**—An over-all or wide angle shot which can be switched to immediately with safety when a close-up becomes obstructed or disorderly. Also called a protection shot.
- CU**—Close-up. Designation of a close-up camera shot.
- CUE**—A signal, verbal or visual, to proceed with action as rehearsed or indicated in script.
- CYC** (pronounced *sike*)—Derived from cyclorama. Any completely neutral background, usually a semicircular cloth backdrop representing sky.
- DB**—Decibels. A unit of sound measurement.
- DB**—Delayed broadcast.
- DEFINITION**—The degree of clarity in a picture. Good definition reflects good focus, sharp outlines, and realistic depth. (Excellence of resolution.)
- “DEMO”**—Demonstration. TV’s equivalent for program audition. May be recorded by Kinescope for subsequent review or merely shown once in closed circuit.
- DIORAMA**—A large setting (usually architectural, landscape, street scene, etc.) reduced to miniature for practical purposes in “establishing shots.” Specific sections of diorama are produced in realistic size when necessary.
- DISSOLVE** (also known as “lap”)—An electronic transition from one scene to the next. One scene vanishes at the same time the succeeding scene overlaps.
- DOLLY**—The action of moving a camera steadily toward or away from a scene or figure.
- DOWNSTAGE**—The area of a stage closest to a theater’s footlights. In TV the direction “move downstage” means bring it closer or move closer to cameras.
- DRY RUN**—Full rehearsal or run-through without cameras.
- ET**—Electrical transcription.
- FACILITIES**—Elements or services required in program production. Applies to scenic materials, settings, costumes, make-up, properties, titles, graphic art, etc.
- FEEDBACK**—Howling in a speaker caused by a kickback of sound waves from one element of an audio system (amplifier or loudspeaker) to a prior element (microphone) within acoustical range.
- FLAT**—A wall which provides background for any indoor setting. May be solid or canvas on frame—single flat, twofold, or threefold.

- FLUORESCENT**—A form of cold lighting by means of gaseous tubes, as contrasted with more common incandescent lighting.
- FLY**—A term applying to hoisting or lowering scenery from above by means of ropes and pulleys.
- FOOT-CANDLE**—A unit of measurement applying to light intensity.
- FRAME**—The area contained in a picture with customary aspect ratio. Used as a verb, it means “compose it.”
- FREEZE FRAME**—A few seconds of static picture at the end of a film (usually commercial) for purpose of allowing smooth fadeout without losing picture or message.
- GHOST**—A fuzzy secondary image on the screen, caused by halation from an original image, or more commonly from improper electronic control in transmission or reception.
- HEADROOM**—Free space on the TV screen between the top of any figure or a performer’s head and the upper boundary of the screen.
- HITCH-HIKE**—A short commercial immediately after signoff of a program but still within sponsor’s contracted time. The commercial usually pertains to another of sponsor’s products.
- IATSE**—International Alliance of Theatrical Stage Employees (stagehands).
- IBEW**—International Brotherhood of Electrical Workers. TV engineers union—parallel to NABET.
- ICONOSCOPE**—A camera pickup tube widely in use before the Image Orthicon was perfected. It has some superior attributes for picture quality but requires extremely strong light for effectiveness, causing excessive heat and eye-glare. It is still used for pickup in film projection cameras. Referred to as an “Ike.”
- ID**—Station identification. In TV it is usually by both video title and audio announcement.
- “IDIOT SHEET”**—Script copy or cue lines written in bold letters on a large sheet or card to prompt actors or announcers.
- “Ike”**—Iconoscope pickup tube, now used principally in cameras for pickup of motion-picture film or slides.
- IMAGE ORTHICON**—The successor of the Iconoscope pickup tube for studio or outdoor usage. Far more sensitive, it calls for only 10 per cent of the light formerly used. Called an “I.O.” or “Orth.”
- “INKY”**—Any incandescent lamp used for lighting a scene.
- INTERLACING**—The electronic scanning action in TV pickup and Kinescope tubes wherein two sets of alternate lines are interwoven to give a visual impression of solid picture rather than horizontal stripes.
- JIC**—“Just In Case.” An abbreviation frequently written into scripts, applying to program elements prepared for fill in case of emergency or change of original plan.
- KILL**—To eliminate immediately; turn off lights, cut sound, stop action.

- KILROY**—The improper framing of a person or small group of persons which places lower faces too close to base of frame or even cuts off chins.
- KINESCOPE**—An RCA trade name for picture tube; any cathodic ray tube used for reversion of electronic impulses into a picture. The term applies to the electronic screen in a camera's view finder, the screens in control room monitors or in home receivers. Use of the term has been bastardized to apply to TV recordings, which are photographed from the face of a Kinescope tube.
- KLINKER**—Obvious error in performance, usually applied to playing of wrong musical note.
- LAP** (otherwise known as "lap dissolve")—A dissolve from one picture to another.
- LEADER**—Film in advance of picture, for threading through projector and giving projector time to gain operating speed before picture is "taken."
- LIMBO**—A scene shot outside and independent of regular action locale; applies particularly to commercials or graphic inserts.
- LINE**—The trace of an electron beam horizontally across the screen, containing impulses of varying degrees of intensity which, with 525 lines, form a picture.
- LIP SYNC**—Synchronization of live sound with projected film; or the reverse in TV—synchronizing action and lip movement with recorded sound.
- LOOP**—A segment of film which has been spliced in a loop for projection with continuous use for an indefinite time. Usually contains subjects which are pictorially repetitive, such as clouds, waves breaking on a beach, etc.
- LS**—Long shot. A wide shot or establishing shot.
- MC**—Master of ceremonies. Often spelled "emcee."
- MCD**—Master Control Desk. Also referred to as MCR (Master Control Room). The "nerve center" or traffic control point in a station's operation, the final step before release of picture and sound over the local transmitter.
- MED**—Designation for medium shot on camera. Also indicated by abbreviation MS.
- MICROPHONICS**—Electronic disturbance in picture, presenting undulating horizontal bars through the scene.
- MOBILE UNIT**—Gear and technical equipment mounted in specially constructed trucks for pickup and transmission of remote or field events.
- MOIRE**—A shimmering effect in a picture resulting from the use of fabrics (such as polka dots and herringbone tweeds) which clash with the electronic system that re-creates an image.
- MONITOR**—Equivalent to television receivers. The screen shows per-

- formers what is actually being put out on the air at moment of viewing.
- MONTAGE**—A special dramatic effect created by fast dissolves from one related scene to several others, or by quick supers.
- MOVIOLA**—A special projection apparatus used in film editing. Allows film to be stopped at any time and rolled back for re-examination of picture or sound.
- MUFF**—To misread lines by mispronunciation, loss of memory, transposition of words or syllables, etc.
- MURALS**—Scenic backdrops, usually enormous photographic enlargements of exterior scenes, buildings, or landscapes.
- NABET**—National Association of Broadcast Engineers and Technicians. (Engineers union—parallel to IBEW.)
- NARTB**—National Association of Radio and Television Broadcasters.
- NEMO**—A coined word loosely meaning network, or any radio or TV circuit which might be switched to outside of the studio currently originating a program.
- N.I.**—Network identification. Usually both audio and video identification of network in between programs.
- NS**—No sound. A designation for silent film. Possibly there is commentary over the film, a fact which vitally concerns the audio engineer.
- “Orth”**—Image Orthicon (I.O.) camera pickup tube.
- OSCILLOSCOPE**—The vibrant and fluctuating “green butterfly” which appears encased under each Kinescope in control rooms. An instrument that registers light values from white to black in the picture each camera is delivering. Useful primarily to the video operator.
- PA**—Public address system. The loudspeaker in the studio, more accurately referred to as SA.
- PAN** (from “panorama”)—Smoothly swinging a camera in any direction (usually horizontally or vertically) to follow action or to carry the eye from one section of a set or object to another.
- PD**—Public domain. A literary or musical composition on which copyrights have expired is considered to be in public domain; therefore available for performance without permission or royalty.
- PIGEONS**—Horizontal white spots flying through picture owing to technical defect.
- PLUG**—An architectural unit that fits into stock stage sets, such as fireplaces, bookshelves, windows, etc. Also praise by a performer for a commercial product.
- PL**—Private line. The telephonic communication between the control booth and the studio floor, whether it be to the stage manager, facilities, or cameramen.
- PRE-EMPT**—To remove a local program from regular air time to accommodate network program desiring same time spot (or “slot”).

- PROP** (property)—Any material article used to dress or equip a set for prescribed design or action—from furniture to small devices (hand props) such as a pistol or a pen.
- OK**—Quick kine. Rapid recording of a telecast for rebroadcast.
- RDTG**—Radio and Television Directors Guild.
- REAR PROJECTION** (also “background projection”)—A method of projecting still photos or motion pictures on a translucent screen to provide a background for a studio setting.
- REMOTE**—Pickup of a program or event outside of a studio—by field equipment or mobile unit.
- RESOLUTION**—The degree with which the electronic system reproduces a picture of the original image.
- RWG**—Radio Writers Guild.
- SA**—Studio address system. The loudspeaker in a studio which enables men in control room to speak over loudspeaker system to men on the studio floor.
- SCHMALZ**—Oversentimental or saccharine rendition of music. (Also “schmalzy” plot or acting).
- SEGUE**—A musical term applying to direct blend from end of one number to start of next.
- SESAC**—Society of European Stage Authors and Composers. Controls most modern European music for licensing and collection of royalties.
- SIMULCAST**—Broadcasting a program simultaneously by radio and TV.
- SLIDE**—A still picture or title for direct projection into film studio cameras. Usually on transparent film and mounted in a 2 in. × 2 in. frame.
- SM**—Stage manager.
- SNOW**—White spots of interference in picture resembling snowfall, resulting from low level signal.
- SOF**—Sound on film. A designation for film accompanied by sound.
- “SPEW”** (SPU)—Special power unit.
- SPOT ANNOUNCEMENT**—Short commercials injected in station-break time, or longer commercials inserted in participating programs.
- STAGING PLAN**—Arrangement of a stage set or settings expressed in scale by diagram, showing position and angle of walls, entrances, major furnishings, etc.
- STATION BREAK**—The pause in regular programming to give local identification of station—on the hour, half-hour, or quarter-hour.
- STILL**—A photograph or similar illustrative material used for pickup and insertion in program.
- STRIKE**—To remove furniture, sets, or props from a scene at a designated cue or time.
- “SUPER”**—A superimposition of one picture over another by electronic means. There is also an optical super achieved by shooting through

- glass or other transparent surface on which lettering or designs have been inscribed.
- SYNC** (pronounced "sink")—Abbreviation of synchronization. Refers to synchronization of action and lip movement on film with accompanying voice and sound. Sync also refers to pulses which lock the scanning beam in the camera pickup tube with that in the receiver picture tube.
- TAC**—The finish of a musical number, sketch, or comedy routine. Also the music used for "play-off" following a comedy bit, otherwise referred to as a "chaser."
- TC**—Transcontinental. Applied to network programs which are released coast-to-coast.
- TD**—Technical director.
- TEARING**—A technical defect in picture; breakup with horizontal zips of interference.
- TELOP** (telopticon)—Projector for opaque slides (as opposed to film transparencies).
- TEST PATTERN**—A schematic design containing an arrangement of geometric lines, circles, or other figures used for testing TV sets or aligning cameras electronically. Accurately tests expansion of picture in relation to center and corners.
- TITLE**—Graphic material inserted in a program, such as program titles, credits, addresses, etc.
- TRANSCRIPTION** (also known as electrical transcription or "ET")—A disc recording of sound, voice or music. Usually applies to musical selections or complete programs.
- TRANSITION**—A device or graphic object used to cover video between two consecutive scenes in a program. Also the accompanying "bridge" music.
- TRAVELER**—A theatrical term applying to curtains on a stage that draw from the center to the sides, operating by means of pulleys and tracks overhead and out of view.
- TRUCK**—Camera movement paralleling a scene or backdrop, as contrasted with dolly which is movement toward or from a scene.
- UHF**—Ultra high frequency. Refers to the band of broadcast frequencies used by educational or institutional channels. (The commercial TV band is usually VHF.)
- UPSTAGE**—A theatrical term applying to movement within a stage, or to that area of the stage furthest removed from footlights. In TV the direction "move upstage" means to move away from the camera. "Upstage"—used as a verb, the term applies to an actor's snide method of positioning himself in a dialogue scene so as to compel his partner to turn his or her head or back to the audience, rather than allowing each to appear in profile. Also means "snooty."

- VHF—Very high frequency. The band of broadcast wave lengths assigned to commercial television.
- VI—Volume indicator. The instrument which registers sound volume in decibels, 100 per cent being the maximum allowed under normal broadcast conditions.
- VIDEO—The visual or pictorial phase of a telecast, as contrasted to the audio phase which contains only sound.
- Wow—A disagreeable distortion in sound caused by variation from recorded speed in transcriptions, records or the sound tracks of motion picture films. Particularly noticeable in music.
- XCU—Extreme close-up. A designation of a camera shot which delivers very tight close-up of subject.
- Zoom—A camera action: a fast and smooth push in to or pull out from a subject, usually accomplished with zoomar lens.



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