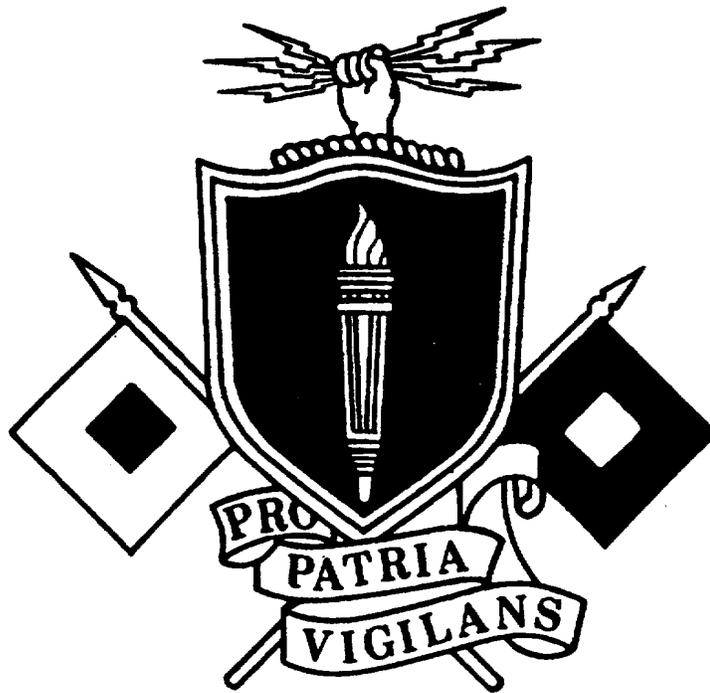


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# INTRODUCTION TO PORTRAIT PHOTOGRAPHY

DEVELOPMENT DATE: September 1994



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT  
ARMY CORRESPONDENCE COURSE PROGRAM

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# INTRODUCTION TO PORTRAIT PHOTOGRAPHY

Subcourse Number SS 0510

EDITION A

United States Army Signal Center and School  
Fort Gordon, GA 30905-5074

6 Credit Hours

Edition Date: September 1994

## SUBCOURSE OVERVIEW

This subcourse presents the information and techniques necessary to enable you to shoot official Army portraits. Essentially, there are three types of portraits required for military purposes: identification, formal, and informal. You will learn to identify these types of portraits and select the correct camera and lens requirements for proper perspective. In addition, you will learn about portrait lighting; selecting the best type for the situation; and setting the light ratio. Also contained within this subcourse are suggestions on posing the subject. Finally, you will identify the proper films and learn to produce and evaluate the final product--the print for overall quality.

There are no prerequisites for this subcourse.

This subcourse reflects the doctrine which was current at the time it was prepared. In your own work situation, always refer to the latest official publications.

Unless otherwise stated, the masculine gender of singular pronouns is used to refer to both men and women.

## TERMINAL LEARNING OBJECTIVE

- ACTION:** You will identify and describe the basic principles of portrait photography to include the three types of portraits and proper selection of lighting and camera equipment.
- CONDITION:** You will be given information from TM 11-401-1, TM 11-401-2, and STP 1125S13-SM-TG.
- STANDARD:** To demonstrate competency of this task, you must achieve a minimum score of 70% on the subcourse examination.

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## LESSON 1

### INTRODUCTION TO PORTRAITURE, PORTRAIT EQUIPMENT, AND LIGHTING

Critical Task: 113-578-1011

#### OVERVIEW

#### LESSON DESCRIPTION:

In this lesson, you will learn to identify the three types of portraits generally required for Army use. You will also learn to select the proper camera and lens requirements for various portraits. In addition, you will describe the correct techniques of lighting, including selection of equipment and light ratios, for a variety of situations that you may encounter.

#### TERMINAL LEARNING OBJECTIVE:

- ACTIONS:
- a. Identify the three types of portraits: identification, formal, and informal.
  - b. Identify the proper image placement of the subject within the viewing area of the camera selected for the type of portrait required.
  - c. Describe the overall purpose, pose, and backgrounds used to obtain the portrait.
  - d. Identify the proper camera for a given portrait type along with the minimum lens focal length required to prevent distortion and to maintain a comfortable working distance both in front of and behind the subject.
  - e. Identify the proper film for various camera formats.
  - f. Identify placement of electronic flash, calculation of exposure, and lighting ratios for outdoor portrait.

CONDITION: You will be given information from TM 11-401-2 and STP 11-25S13-SM-TG.

STANDARD: Identify and describe the three types of portraits and the cameras and lighting equipment used in portraiture in accordance with TM 11-401-1 and STP 11-25S13-SM-TG.

REFERENCES: The material contained in this lesson was derived from the following publications:  
TM 11-401-1 and STP 11-25S13-SM-TG.

## INTRODUCTION

A portrait is a likeness of a person, especially the face. This definition isolates one essential point in portraiture. A portrait should emphasize the person rather than the person's environment or something associated with the person. However, a pictorial representation which portrays only a recognizable likeness of a person is not enough. A portrait must be more than just a photograph. It must have mood, personality, and characteristics from which the viewer can draw conclusions about the subject. By manipulating expressions, posing, lighting, and environments, a portrait photographer can portray any mood from happiness to gloom as well as the personality of a subject. Posing the subject with familiar objects and environments can produce a more natural expression and pose because the subject will be more at ease. Articles or props included in the scene can help to tell more about the subject.

Success in portraiture requires a thorough understanding of the techniques involved, an artistic ability, and a talent for directing the subject of a portrait into the desired expression and pose. The portrait photographer should have a sensitivity for, and an understanding of people. Portrait photographers vary considerably in their styles and techniques. The subjects of portraits vary in their likes and dislikes. Thus, there is no one blueprint or formula which will ensure success.

Of all the subjects passing before our cameras, the portrait subject is the most interesting and challenging to many photographers. In portraiture, the subject is always changing and challenging the photographer. If you are to meet this challenge, you must have vision, be capable of good judgment, and have an ability and willingness to seek out the best in your subjects and show them to their advantage.

How you visualize the picture, how you pose and light the subject, and how you capture the right expression are more important than the mechanical operation of the camera. What takes place from behind the lens in no way alters the lighting, pose, or the expression, which are the prime factors of good portraiture.

Most people have their portraits made because they want someone else to see how they look. They want others to see them to the

best advantage and to think highly of them. A beautiful woman knows she is beautiful and in a picture she wants to appear beautiful--so make her beautiful. A slight flattering may be called for, but not over flattery. Men know their features; they know whether they appear dignified; they know if they appear to have great strength of character; and they are right in expecting the photographer to emphasize these good points. The subject expects a true portrait--a good expression and natural pose, a portrait that shows whatever beauty or strength she or he has, and one that shows his or her character and features.

Character is formed by life. A frown or a smile today leaves no trace, but continued use of facial muscles to form a smile, a laugh, or a frown leaves lines on the forehead, around the eyes, nose, and mouth. And it is these lines and expressions that form facial character. Lines of character are scars won in our battle of life, and as such, must be carefully considered by the portrait photographer. They can be subdued or exaggerated by the way you light your subject. Exaggeration is what most of your subjects will not like; however, you should not eliminate character lines either, rather only soften them with lighting. A face has features: two eyes, a nose, a mouth, and two ears, but photographically these features are not equally important. To the portrait photographer, the most important and most expressive are the eyes.

The face is constantly moving, the expression changing, lasting only momentarily. No happy expression or frown lasts long enough for us to take full notice of it--until we photograph it. And if you picture it at the wrong instant, it is captured to be looked at, and all the bad points appear exaggerated.

To be a good portrait photographer, you must learn to study each face as it appears before the camera and light it to accurately represent the natural features and character. Do not try to capture that fleeting expression. It is an expression of only one moment out of one hour of one day of a lifetime. It is not the expression which shows that person's character nor is it the one by which he is known. What you want is that person's natural expression which is a composite of many fleeting ones. A softness of expression is best: neither too sharp or too faint; not too happy or too gloomy.

## PART A - TYPES OF PORTRAITS

This part of the lesson describes three types of portraits: identification (ID), formal, and informal. Also, we will discuss correct placement of the subject within the viewing area of the camera, general posing, and backgrounds. Appendix B provides sample photographs of the various types of portraits.

## 1. Types of Portraits.

There are three basic types of portraits which you will be required to shoot for official Army use. These include: identification, formal, and informal. An identification portrait shows a person as he ordinarily looks. A formal portrait shows a person to his best advantage, and an informal portrait shows a person as he appears in his natural environment. Figure 1-1 illustrates the three types of portraits.

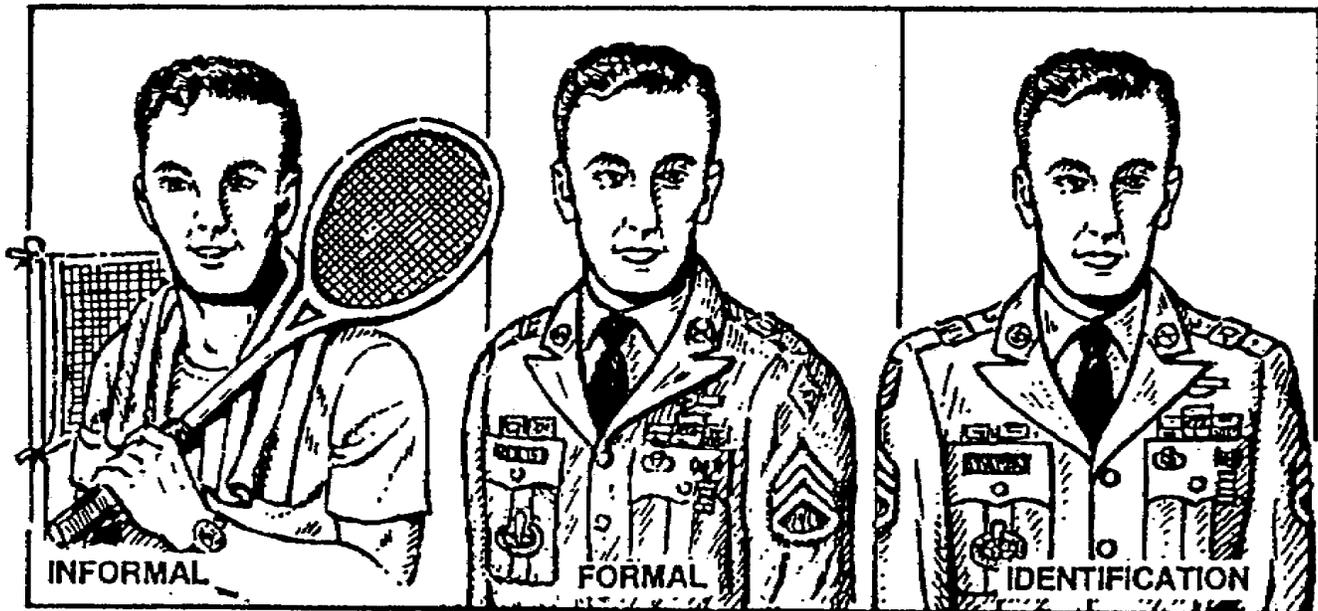


Figure 1-1. Three basic types of portraits

Your assignment will tell you directly or indirectly which types of portraits to take. For example, the assignment may say to take a picture of Sergeant Jack Jones for an ID badge, or to take an identification portrait of the sergeant. In either case, you know you must take an identification portrait.

Although you usually do not choose the type of portrait, if you can recognize which type is required, you will then know what procedure to use for taking the picture. In general, all portraits are similar, and the procedures for making them are the same; but, as you learn more about producing portraits you will find there are some differences in the various types.

a. **Identification Portraits.** Identification portraits are used for badges, ID cards, gate passes, and formal records; in other words, for security and legal reasons. The purpose of the photograph is so others who are unfamiliar with a person can recognize that person on sight. Thus, an identification portrait must show the person as he ordinarily looks.

Passports are also part of identification photography. They are not normally done by Army photographers. Passports have special requirements published by the State Department and are included when you receive an application. Passports are made in civilian clothes, even for military personnel on official business. Check the requirements provided on the application.

We are accustomed to recognizing people by their faces, because their clothes are often changed or their uniforms may look like everyone else's uniform. Therefore, identification portraits are usually either fullface or profile photographs. They should clearly show all the person's facial detail, and the lighting should be low with no distinct shadows so that no specific characteristic stands out.

b. Formal Portraits. Some of the uses of formal portraits are for records, formal display, and news release purposes. For example, this is the type of portrait displayed on bulletin boards or elsewhere to recognize accomplishments such as "Soldier of the Month." Formal photographs are also distributed to identify those in the chain of command. It is obvious from their uses that formal portraits should show the person at his best.

When taking formal portraits, you should pose the subject in a studio against a neutral background - gray, light blue, or white. The subject should wear class A military dress with full decorations. Any object appearing in the portrait with the subject must be subordinate to the subject in tone, placement, or size.

c. Informal Portraits. Informal portraits are used for display and promotion in similar but more informal and unofficial circumstances than formal portraits. When you want to indicate the subject's position, job, agency, or a particular event, take an informal portrait.

(1) Environmental portrait. Show the subject of an informal portrait in his natural environment, but do not have him engaged in any activity. The environment serves only as a background to connect the subject with some organization or event. The subject should be dressed properly but not necessarily in a class A uniform. The environmental portrait can be considered as a subcategory of the informal portrait. This type of picture may be classified as a "working portrait." The subject of an environmental portrait is photographed outside of the studio. The purpose of this picture is to show the person in a setting surrounded, perhaps, by props that indicate something about the individual. For example, a medical lab

technician could be shown in the lab, dressed in a white jacket, with a microscope and test tubes on the desk. Another example is a portrait of a soldier who has been given an award for outstanding community service for participating in recycling efforts. The person may be shown surrounded by stacks of recyclable materials.

(2) Informal vs. casual. Do not confuse "informal" portrait with "casual snapshot." The individual will not necessarily be dressed in street clothes or performing some recreational activity. Rather, he will be suitably attired and, once again, shown in a natural environment with props instead of in the studio.

## 2. Subject Placement within the Viewing Frame.

You determine just how much of the subject to show in the picture by several factors. Generally speaking, there are three standards: head and shoulders, three-quarter length, and full-length. These are not meant to be exact measurements. For example, a head and shoulder photograph could show most of the subject's chest or none of it.

Identification and formal portraits usually show only head and shoulders. This is because we recognize people by their faces and because it is difficult to make a full-length picture look pleasing without any detail in the background.

Informal portraits often are three-quarter or full-length photographs because it is easier to fit the proper background into photographs showing more of the subject.

## 3. Backgrounds.

a. For identification portraits, the background should be plain white or neutral gray.

b. For formal portraits, use a plain white or neutral gray background. The background should not have any pattern; on the other hand, though, a monotone is dull, uninteresting, and undesirable. You can get around this contradiction of no pattern and no monotone by varying the brilliance of the background. By properly positioning lights, you can produce an effect that will improve your portrait without placing any detail in the background.

(1) The lightness or darkness of the background depends on the subject and his clothing. You can add depth to a portrait by having distinct separation between subject and

background. For this separation, the background should be either darker or lighter than the subject. For example, when photographing a subject with light blond hair, the most appropriate background is dark around the head and fade to light.

(2) Two other ways of varying the background are to: 1) use a light background behind the subject which fades into a darker background at the edge of the photograph or 2) use a light background just above the shoulders that fades into a darker background at the top of the photograph. The change from light to dark should be too gradual for anyone to see where the change takes place.

c. For informal portraits, you should use as a background an uncluttered scene that indicates the subject's job or background. For example, picture a pilot with a plane in the background, an instructor with a chalkboard in the background, or a commanding general seated at his desk with a map or picture of his command on the wall. The background should not be so detailed or complex that it distracts from the subject. In fact, you might even consider having it out of focus to reduce the sharpness.

d. Be especially careful not to include any classified material when you are photographing in or around a security area. Avoid accidentally causing a security violation by knowing beforehand what is in the background.

## PART B - PORTRAIT CAMERAS AND LENSES

In this part of the lesson, you will learn to select the proper camera and lens requirements for a given portrait. The perspective of a person's facial features is influenced by the position of the camera, as well as by the focal length of the lens that is chosen for taking a portrait. Since various camera formats may be used at times, you must consider the focal length lens chosen relative to the film size.

### 4. Perspective.

The perspective of a portrait will be determined by the position of the camera in relationship to the subject. Whether the camera is near or far, high, low, or at eye level will make a difference in how the subject will appear. Perspective is also influenced by the focal length lens you have selected for any given film format.

a. Camera Positioning. First, let's consider camera positioning. Normally, for a head and shoulders portrait, the camera is level, and the height of the center of the lens is

between the subject's lips and the tip of his nose. For a three-quarter figure shot, the center of the lens is level with or a little below the waist. Maintain a good working distance to prevent distortion.

b. Selection of Focal Length. Second, you must consider which focal length lens is required for various types. Head and shoulders portraiture requires the use of long focal length lenses, which produce less distortion than shorter focal length lenses. They also provide a good image size at comfortable subject-to-camera working distances. If you are taking a head and shoulders portrait, the focal length of the lens should be equal to or more than the sum of the short and long dimensions of the film format.

(1) Long focal length lenses are recommended for portraits. Long focal length lenses are better for head and shoulders portraits because they give a more pleasing perspective, a larger image size, and more freedom with lights. Because of the close camera viewpoint, photographs made with short focal length lenses appear to distort perspective, making those parts of the body nearest to the camera (such as the nose or the shoulder) look much larger than they should. When you use a normal or short focal length lens, you can improve the perspective by having a greater distance between the subject and the camera. The increased subject-to-camera distance relaxes the subject as well as improves perspective, but it also reduces the image size. You can increase the image size by using a longer focal length.

(2) When photographing in cramped quarters or using a short focal length for some other reason, try to keep as much of the subject as possible in the same vertical plane. Keep the subject's hands close to his body or below his head because if the hands are out in front they will appear excessively large on the print. When you must use a short focal length lens, use as much distance as possible. Also, consider using a view camera; the camera's swings and tilts may be manipulated to lessen distortion.

(3) For a three-quarters or full-length portrait, a shorter focal length lens may be chosen. Since you are at a greater working distance because these poses require you to include more of the subject, distortion from the shorter focal lengths will not be apparent. The focal length should be equal to or greater than the film diagonal, but less than three film diagonals.

## 5. Camera Selection and Film Formats.

You must consider the camera which you have selected to use, its accompanying film format, and the type of portrait assignment when determining the proper focal length lens.

We will consider three primary camera formats: (1) small format (35 millimeter (mm)), (2) medium format, including 645, 2 1/4 x 2 1/4, and 2 1/4 x 2 3/4, and (3) large format 4 x 5. Although much of the portrait work that you will be required to undertake will involve the 35mm format, you should be knowledgeable about the others because they may be required in certain instances. For example, if retouching is anticipated, such as for covering blemishes, you should select a large format film, e.g., 4 x 5.

a. First, we will consider the 35mm camera. The normal focal length lens is considered to be 50mm.

NOTE: For any format, measure the diagonal of the negative to determine the normal lens. Anything smaller than 50mm, i.e., 35mm, 28mm, 24mm, or 21mm, are short focal lengths. Lenses larger than 50mm, i.e., 85mm, 105mm, or 135mm are long focal lengths.

b. Second, medium format cameras are generally broken down into 645, 2 1/4 square, and 2 1/4 x 2 3/4.

(1) 645 and 2 1/4 square film formats may be considered together since the effective working area of the 2 1/4 is the same as 645 when making standard size prints. The normal focal length is 80mm. Smaller sizes are considered short focal lengths, and larger sizes are considered long focal lengths.

(2) 2 1/4 x 2 3/4 medium format has 90mm as normal. Again, smaller sizes are considered short, while larger are long.

c. Last, a 6-inch lens is normal for the 4 x 5 large format cameras. Smaller lengths are short, large lengths are long.

## 6. Proper Selection of Lens Focal Length for a Given Film Format and Portrait Type.

Use figure 1-2 to determine the necessary focal length lens for a pleasing perspective for head and shoulders, three-quarter view, and full-length poses for various film formats. A suggested minimum working space has also been included.

<u>Film Size</u>	<u>Type of Portrait</u>	<u>Suggested Focal Length</u>	<u>Minimum Working Space (in feet)</u>
35mm	Head and shoulders	75mm	16
	3/4 and full-length	50mm	17
645 and 2 1/4 x 2 1/4	Head and shoulders	120mm	16
	3/4 and full-length	80mm	18
2 1/4 x 2 3/4	Head and shoulders	135mm	16
	3/4 and full-length	90mm	15
4 x 5	Head and shoulders	8 1/2" to 10"	15
	3/4 and full-length	6"	16

Figure 1-2. Focal length requirements

### PART C - PORTRAIT LIGHTING

In this part of the lesson, you will learn about light sources for portrait photography, to identify the five lights used in portrait work and their placement in relation to the desired lighting technique, and lighting ratio to be employed. The function of each light in the setting will be discussed. In addition, the basic portrait lightings will be covered. Also, you will learn to use reflectors, diffusers, and barndoors.

The success of a portrait is equally dependent on the lighting and the posing (which will be covered in the next lesson) of the subject. The manner in which the subject is lighted can actually set the mood of a portrait. The best portrait lighting will simulate natural sunlight. This is because we are accustomed to seeing faces illuminated from above and to one side, with shadows cast downward and to one side or the other. Light coming from below eye level casts shadows upward and produces an unnatural, ghostly effect. Good portrait lighting shows off the subject to the best advantage, emphasizing the form and expressiveness of the facial features. Lighting which appears most pleasing and natural in a portrait produces prominent highlights on the forehead, nose, cheeks, and chin with sufficient shadows to round out the facial features.

## 7. Light Sources.

Almost any type of light can be used for portrait photography. This includes natural light such as the sun, as well as artificial light such as electronic flash.

a. Sunlight. The sun, with its different forms of illumination, (daylight, skylight, and window light) is the major source of natural illumination for portraits. Although the sun can be used as a source of light for studio portraits, it is used primarily for location portraiture.

b. Artificial Light. Most types of artificial light can be used for portrait photography as long as the intensity is sufficient to permit fairly short exposures. Short exposures are desired because it is difficult to keep a subject motionless during a long exposure.

For color portraits, the color quality of the light source should be the same as that for which the film is balanced. Of all the artificial light sources available, electronic flash is the best light source for portrait photography because:

- It provides a large output of light without the annoying heat produced by incandescent lights.
- The extremely short duration of the flash will stop any subject movement.
- The color temperature of the light is compatible with daylight and the flash can be used with daylight film.

(1) Studio electronic flash units. Electronic flash units specifically designed for portraiture usually have tungsten modeling lamps incorporated in the center of the reflector and are physically located near the electronic flash tube. The modeling lamps provide constant, low intensity illuminations on the subject or background. This allows the photographer to see the lighting effect that will be produced when the electronic flash units are fired.

Studio electronic flash units are divided into two broad classifications: those that project a relatively narrow cone of concentrated, crisp light and those that project a broad area of softer, more diffuse light.

(2) Spotlight. A spotlight projects a narrow, highly concentrated, crisp beam of light produced by an undiffused clear flash tube. A fresnel lens, either alone or with a small mirror-finished reflector, is used to direct and focus the

light. The light produced by a spotlight is very much like direct sunlight on a clear day. The light rays are nearly parallel and not diffused. This specular light imparts its quality of crisp sharpness on the subject. The shadows cast by a spotlight are hard with sharply defined edges which add a feeling of crispness. A spotlight is usually used to highlight or accentuate a feature of the subject or as a hair light or background light.

(3) Floodlight. A floodlight produces a broad area of partially diffused, soft light, very much like sunlight on an overcast day.

(a) A frosted globe is often used over the flash tube so the light produced is somewhat initially diffused. The light is further diffused by the reflector which causes the light rays to cross and interfere with each other. The rays projected from the front of the flash tube, however, are not as diffused and have a crisper quality. The light thus produced by an electronic flash floodlight has a crisp quality at the center and a softer quality toward the edge.

(b) When you want to use just the softer part of the light, allow only the outer part of the light beam to fall on the subject. This technique is called feathering the light. If you want the entire beam of light to be diffused and very soft, use a diffusing screen over the light source. There is also a type of light unit known as capped light. This type of unit has an opaque metal cap placed in front of the flash tube in order to block any specular light from reaching the subject. All light projected by a capped unit is diffused.

(c) A floodlight is usually used as the key light in portraits, especially where a fairly soft effect is desired. It is also used as a fill light because a fill light is always diffused.

## 8. Five Portrait Lights.

When you are called upon to light a subject for a portrait, the single most important principle you should remember is that there should be only ONE dominant light source. All other lights should be subordinate to it; to do otherwise will cause ugly and unnatural shadows. There are five basic lights used for portraiture: main (also called key), fill (or fill-in), hair, background, and back. Most portrait light setups call for the use of at least two of these lights; the main and fill. The other three lights are used to enhance the subject's features but do not provide the main visual effect.

9. Placement of the Five Lights in a Portrait Lighting.

The correct placement of the five lights for a portrait set-up is imperative in order to obtain the proper modeling of the subject's features. By modeling we mean creating a three-dimensional effect by either emphasizing or deemphasizing the curvature and characteristic features of the face with highlights and shadows.

a. The Main Light (figure 1-3). This light should always be the dominant light source in a portrait lighting. Its direction establishes the nature of the portrait lighting technique.

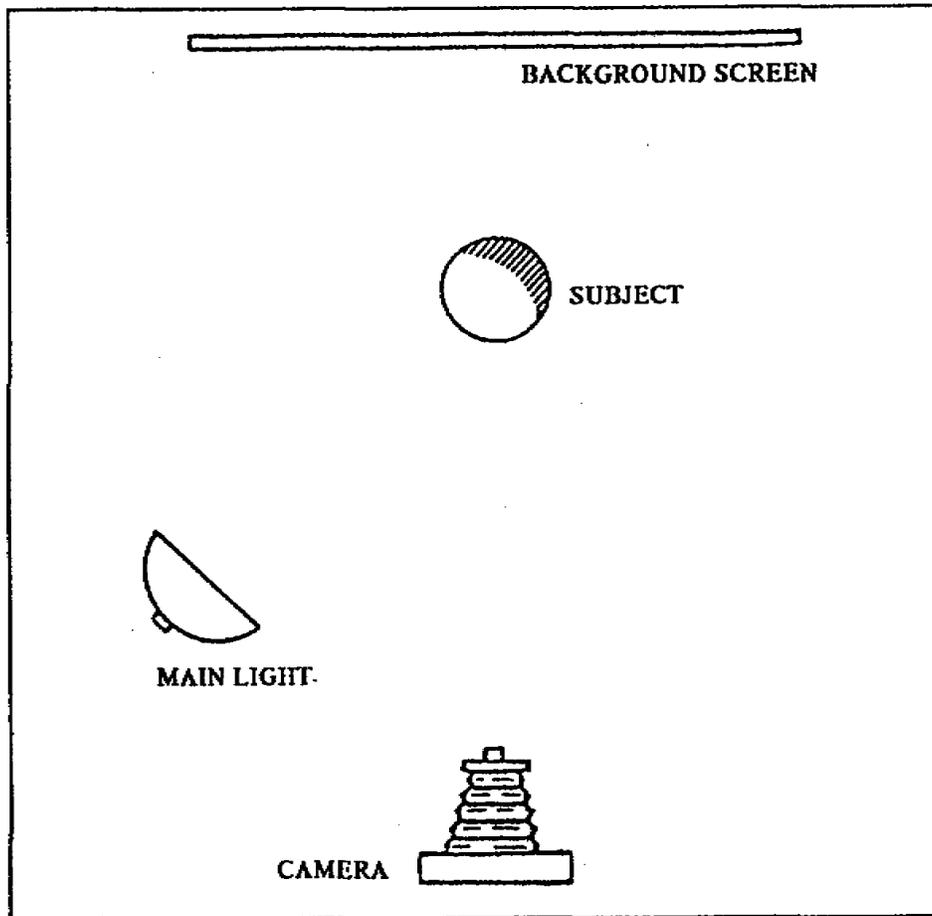


Figure 1-3. The main light

(1) Location. The main light is located higher than the subject's head and at approximately 45 degrees to one side of the camera-subject axis. The light can be diffused with a screen to reduce facial textures or eliminate harsh shadows. The positioning of the main light is the key to your lighting technique in addition to establishing the exposure; therefore, it must be considered with great care. You will use it to establish the lighting technique.

(2) Catchlights in the eyes. One method of placing the main light, regardless of the type of lighting technique, is to watch the resulting catchlight (reflection of the light) in the eyes. The catchlight adds life and brilliance to a portrait and gives the eyes sparkle. As seen from the camera-lens position, these catchlights should be located at approximately the 1 o'clock or 11 o'clock position in the eyes. There should only be one catchlight in each eye and it should be high in the iris of the eye.

Adding fill and subsequent lights to the main light may create more than one catchlight in each eye. These extra catchlights should be spotted or retouched out in later operations because more than one catchlight in an eye is distracting.

If the main light does not create the catchlights or causes them to be low in the eye, a proper catchlight can sometimes be obtained from the fill light or even another low intensity light placed in front of the subject where it produces the catchlight reflection where wanted.

NOTE: To position electronic flash units, you will have to rely on modeling lights. Modeling lights are small, incandescent bulbs that are contained in the flash head unit to provide illumination for the proper placement of the lights. The use of modeling lights takes experience because they are often much weaker than the resulting flash.

b. The Fill Light (figure 1-4). This light is used to lower the lighting ratio (filling in the shadows created by the main light) and should not create any shadows itself.

(1) Location. Generally the fill light is diffused, used close to the camera at lens height, and placed on the side of the camera opposite that of the main light. Almost inevitably, the fill light will add a lower pair of catchlights to the eyes. As stated before, these secondary catchlights are usually considered objectionable, not so much because they tend to refute the basic principle of one main light source, but because they often create the impression that the subject has a directionless stare. Consequently, this second pair of catchlights should be removed.

(2) Caution. Fill light height can sometimes eliminate the second catchlight, but take care not to nullify the fill-in effect. The cause of most of the poor quality in civilian or military portraits is the improper use of the fill light.

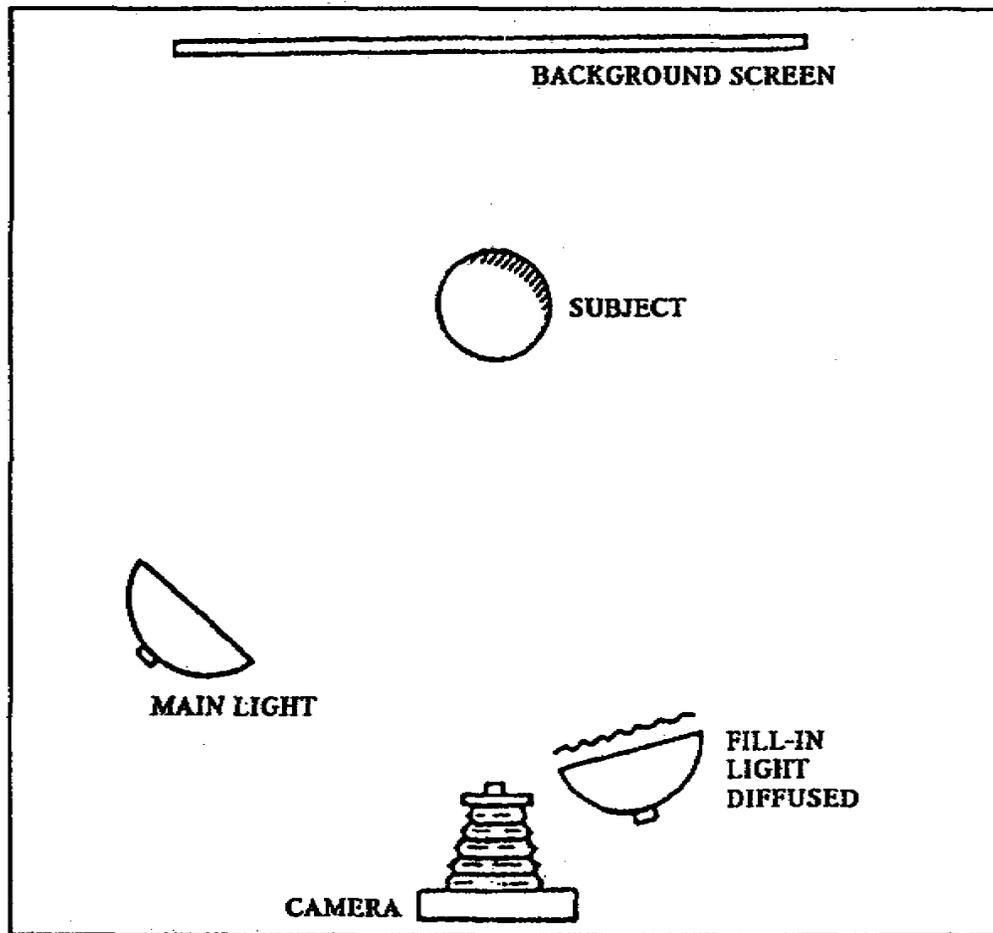


Figure 1-4. The fill light

c. The Background Light (figure 1-5). The background light is a small lamp on a short stand placed close behind the subject and the background. This lamp lights the background and provides good tonal separation between the subject and the background.

d. The Hair Light (figure 1-6). This small lighting unit, generally used on a boom from above and behind the subject, is almost a necessity. It not only adds detail to the reproduction of the hair but also provides a useful means of subject background separation. In any case, the hair light should not be allowed to spill over onto the face or ears, since this may cause small but distracting highlights and refute the basic principle of a single light source. A suggestion for placing the hair light properly is to bring it forward gradually until its illumination just strikes the forehead or the cheeks, and then move it back until the highlights on the skin disappear.

e. The Back Light. This is a spotlight aimed at the back of the subject to outline the shoulders and separate the subject from the background.

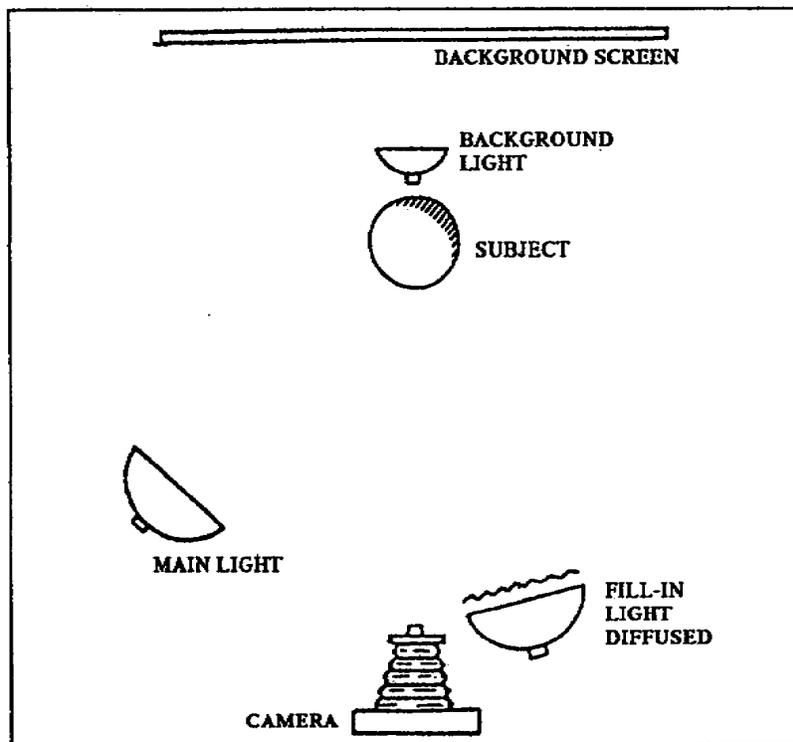


Figure 1-5. The background light

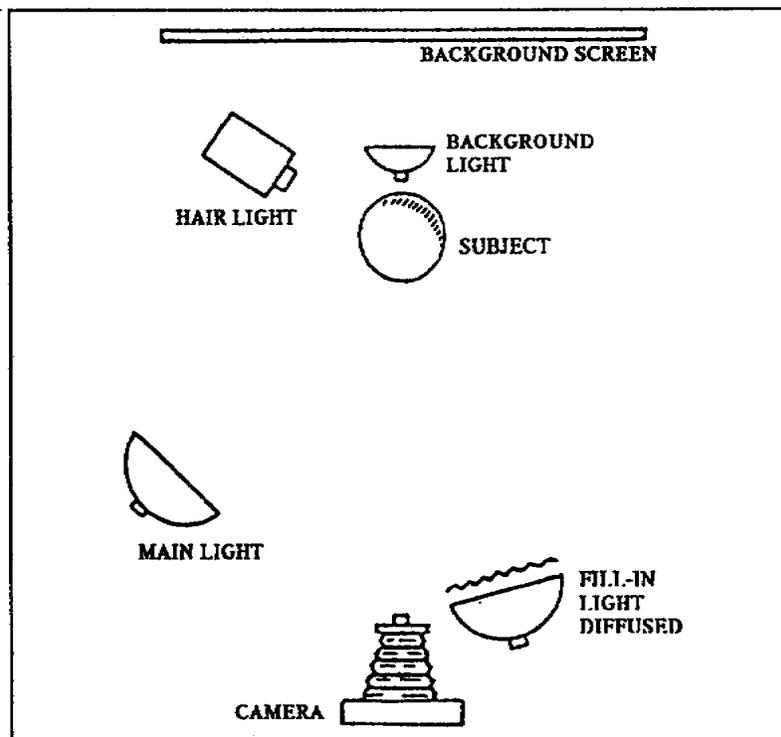


Figure 1-6. The hair light

When positioning lights to establish the desired lighting, it is best to position each light separately with the other lights off. Some photographers start with the background light, then move to the main, fill, and hair lights.

Numerous variations can be incorporated in light positions to satisfy the individual aspects of each subject such as spectacles, baldness, and prominent facial scars or skin blemishes.

#### 10. Lighting Ratios.

The lighting ratio refers to the relative intensities at the subject position of the main light plus the fill light, as compared to the fill alone. This ratio creates the contrast of the portrait. The lighting ratio for portraits should usually be about 3:1 or 4:1. Higher ratios are more dramatic but are likely to be unacceptable for official record portraits. Generally, 3:1 is considered the maximum ratio for good color portraits.

There are four methods of determining and adjusting lighting ratios: square root method, f/stop distance scale method, power setting method, and flash meter method. Let's discuss each of these methods individually.

- a. Square Root Method. This method involves using a formula for setting up a ratio:

$$\text{Fill Light Distance (FLD)} = \text{Main Light Distance} \times \sqrt{(\text{Ratio})-1}$$

**Example:**

$$\text{FLD} = 8 \text{ FT} \times \sqrt{(3:1)-1}$$

$$\text{FLD} = 8 \times \sqrt{3-1}$$

$$\text{FLD} = 8 \times \sqrt{2}$$

$$\text{FLD} = 8 \times 1.4$$

$$\text{FLD} = 11.2 \text{ FT.}$$

NOTE: Square root values for the ratios which you will most commonly encounter are as follows:

$$3:1 \quad \sqrt{2} = 1.4$$

$$4:1 \quad \sqrt{3} = 1.7$$

$$5:1 \quad \sqrt{4} = 2.0$$

b. F/Stop Distance Scale Method. Just as f/8 puts twice as much light on the film as does f/11, a light positioned at 8 feet puts twice as much light on the subject as when it is positioned at 11 feet.

Example: The fill light should produce no shadows on the subject, and when positioned at 11 feet will put one unit of light over the entire subject.

The main light creates shadows and when positioned at 8 feet will put twice the amount of light on the area of the subject it illuminates. The shadows have one unit of light from the fill, while the highlighted areas have one unit from the fill and two units from the main. This produces a 3:1 ratio.

If the main light was moved to 5.6 feet it would be putting four times more light on the subject than the fill light at 11 feet. Therefore, the main plus the fill as compared to the fill alone would give the photographer a 5:1 ratio.

c. Power Setting Method. To establish a 3:1 lighting ratio you can also establish both the main and the fill light at equal distances from the subject, but cut the strength of the fill by one-half. This can be done through power settings or by using a diffusing screen over the fill light.

d. Flash Meter Method. Use a flash meter for optimum exposure and lighting ratio control. Guide numbers are adequate, but for more precise measurements you should use a flash meter. A flash meter will also enable you to establish your own guide number for each flash unit.

Flash meters measure the incident light coming from the flash units. You use a flash meter by placing it at the subject position and pointing it at the camera. Trip the flash and you get an immediate and accurate flash exposure reading. One of the greatest advantages of a flash meter is that you can easily compute exposure if you are using more than one flash unit or if you are using bounce flash. Take a flash meter reading at the subject, of the main alone, and then the fill alone. This way you can calculate your ratio.

Example: Using an incident flash meter at the subject position, adjust the fill light so it is not metered. With the main light at the desired position and distance from the subject, take a flash reading of the main light alone (f/11 is read). Adjust the main light so it is not metered. Adjust the fill light and take a reading (f/8 is read). Since the main light is putting twice the amount of light on the subject as is the fill, the ratio is 3:1 (ratio = main light + fill light: fill alone).

If a higher ratio is desired (for example 5:1), adjust the fill light until  $f/5.6$  is read on the flash meter. The main light is now putting four times as much light on the subject as is the fill light.

Any ratio may be obtained using this method. After establishing the ratio, meter both lights striking the subject to obtain the exposure.

#### 11. Using Flash Outdoors.

Sometimes it is desirable to use flash outdoors in order to fill in shadows. For example, the overall lighting conditions may be sunny and positioning the subject so that their face is lighted may cause them to squint. Moving them so that they do not face the sun may help to solve this problem but may create another dilemma; there is now enough general illumination for the scene but the face might now be in shadow. In order to provide good, overall lighting, you should use flash. You must, however, account for the ambient light that exists in the scene and set your flash accordingly. In other words, you must consider the daylight plus the flash.

a. Procedure for Correct Settings. The following procedure can be used to provide the correct settings.

- Set both camera and flash to manual operation.
- Set your camera shutter speed to the correct speed to synchronize with flash.
- Focus on your subject.
- Meter the lighter part of the scene.
- Set your lens to the  $f$ /stop that combines with your shutter synchronization speed to produce correct exposure for available light.

b. Adjusting the Flash Light. For natural-looking fill, you need to adjust the light from the flash so that it is about one stop less than the scene overall.

This may be done in either of the following ways:

- (1) If flash has adjustable power setting:
  - (a) Follow steps under paragraph a.
  - (b) Set film speed on flash calculator dial.

- (c) Line up on the dial the flash-to-subject distance with the camera f/stop.
  - (d) Note the power setting that the dial indicates (i.e., full power, 1/2 power, 1/4 power).
- (2) If flash does not have adjustable power settings:
- (a) Follow steps under paragraph a above.
  - (b) Set film speed on flash calculator dial.
  - (c) Locate the f/stop (from step 5 above) on the flash calculator dial and find the distance that is opposite it.
  - (d) Position the flash that distance from the subject.

## 12. Portrait Lightings.

Portrait lighting has been divided into various types called lightings. Six of the most frequently used lightings are:

- Broad lighting - the main light completely illuminates the side of the face turned toward the camera.
- Short lighting - the main light completely illuminates the side of the face turned away from the camera.
- Butterfly lighting - the main light is placed directly in front of the face and casts a shadow directly under the nose.
- Rembrandt lighting (can also be referred to as 45° lighting) - the main light is placed high and to the side of the face turned away from the camera. This is a combination of short and butterfly lighting.
- Split lighting - the main light is placed to completely light one side of the face while placing the other side of the face in shadow.
- Rim lighting - the main light is placed toward the back of the subject and places the entire face in shadow.

These names have been given because of the visual effects the lighting creates when it falls on the subject from a given direction. This visual effect is derived primarily from the main light source. Other light sources are added to the main light as needed to enhance the subject. Figures 1-7 through 1-12 provide an illustration of each of the six portrait lightings.



Figure 1-7. Broad lighting



Figure 1-8. Short lighting



Figure 1-9. Butterfly lighting



Figure 1-10. Rembrandt lighting



Figure 1-11. Split lighting

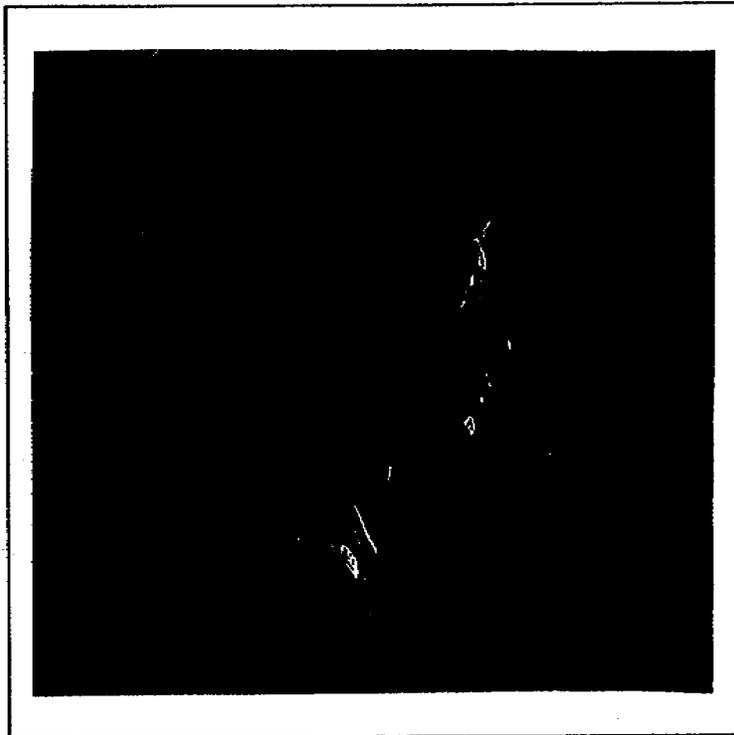


Figure 1-12. Rim lighting

The six names mentioned before have been traditionally used to identify portrait lightings. As you read other literature on lighting you will encounter these terms, so it is necessary that you be familiar with them. Instead of using these terms in this text, however, we will call the lightings exactly what they are as follows:

Three-quarter Lighting = Broad, Short, Rembrandt

Side Lighting = Split

Front Lighting = Butterfly

Back Lighting = Rim

### 13. How to Set Lights for Typical Portrait Lightings.

a. Three-quarter Lighting. This type of lighting can be used with almost any type of face. It is flexible in that once set, the subject can move his head from fullface to profile and the lighting remains good at any point you choose.

#### (1) Main light.

(a) The distance of the main light. To determine the main light distance, start with the light about four feet from the subject and about two feet above the subject's eye level. The light should be at about a 45 degree angle to the lens axis. Observe the forehead highlight and move the light closer to the subject; as the light gets closer to the forehead, highlights spread out to a large flat area and begin to get washed out and lack character. Now start moving the main light away from the subject. As you slowly move it back you will find there is a point where the forehead highlight becomes relatively small and bright. If the light is moved back much further from this point the highlight spreads and disappears. Between the point where the highlight is brightest and where it starts to disappear lies the range where the highlight still has character and you get the most pleasing effect; not too hard, yet not too soft. Once you have found the distance where the main light gives the desired effect for this subject, the distance should remain the same for this subject no matter what position you may later decide to direct the light from.

This main light distance must be correctly established, otherwise a satisfactory portrait cannot be made. If the main light is too close or far away, highlight accent is lost. This main light distance should always be considered as the starting point of portrait lighting.

In lighting your subject you should always start with the main light and add other lights as needed. If you start with fill or secondary lights, by the time you get to the main light you may have so much light that the subject is uncomfortable, and you may need to use such a small f/stop that excessive depth of field is created.

(b) The height of the main light. To determine the correct height for the main light, move the light directly in front of the subject while maintaining the distance determined for the forehead highlight. Raise or lower the light until the shadow cast by the nose is just long enough to touch the top of the upper lip. This is the height the main light should normally be no matter at what position you place it in an arc around the subject. Be sure to watch for the resulting catchlights.

REMEMBER: There should be no more than one catchlight in each eye located at either the 1 o'clock or 11 o'clock position. If more than one exists, the light should be repositioned or the extra catchlights can be retouched in the final print.

(c) The direction of the main light. By the time you have determined the main light distance and height for a given subject you should have a pretty fair idea of the direction you want the main light to come from. To establish for certain the direction from which this light should come, move the main light in an arc, to the right or left, around the subject. Remember, while moving the main light, its established distance-and height should be maintained.

The shadow cast by the subject's nose is your key to main light direction. If the top edge of the nose shadow is allowed to fall along the crease or "smile" furrow from the nose to a point beyond the corner of the mouth, it tends to emphasize this crease and is usually a bad placement for the main light. Instead, the light should be moved farther around until the shadow cast by the nose merges with the cheek shadow and leaves a small triangular highlight on the cheek in the area of the cheek bone. When this is accomplished, the main light is in position. Remember, the main light must always be the dominant, directional, shadow pattern-forming light.

(2) Fill light. Once the main light has been established, add the fill. This fill light is a secondary light; do not allow it to overpower the main light. Its purpose is to fill in and soften the shadow areas, making them lighter and providing shadow detail.

The fill light is normally placed slightly above the subject's eye level, on the opposite side of the camera from the main

light and near the camera lens axis. It should be of lesser intensity and softer quality than the main light. This light is often diffused even when the main light is not.

By placing the fill light slightly above the subject's eye level, a shadow is cast under the chin. This shadow separates the head from the neck. This chin shadow should be soft and not well pronounced.

Control the intensity of the fill light by either adjusting the power setting of the electronic studio light set and/or adjusting the lamp-to-subject distance. The fill light can be moved in an arc, left or right, further to the side of the subject away from the camera. However, it must not be allowed to produce conflicting shadows that point toward the main light.

(3) Hair light. Once the main and fill lighting has been established, other lights may be added to the setup. One of these is a hair light. A hair light is usually a small lighting unit placed on a boom so that it shines down from above and behind the subject. It is used to lighten the hair (or hat) and shoulders, add detail to the hair, and separate the subject from the background, giving an illusion of a third dimension.

The intensity of the hair light varies with the subject since it is dictated not only by the color of the person's hair (or hat), but also by the amount of sheen the hair has.

The hair light is usually placed on the side of the subject opposite the main light and toward the back of the subject. It should be used from an angle about six to eight feet high and from a position close to the center of the subject area without the light stand or boom showing in the picture. Light from this unit should not be allowed to spill over onto the forehead or tip of the nose. The hair light should be shielded so that light from it does not strike the camera lens.

Be sure the hair light is turned off when making any exposure readings. This light does not affect your basic film exposure, but it could influence your meter.

(4) Background light. A background light is usually placed on a low stand about midway between the background and the subject. When adjusted right, it provides good tonal separation between subject and background. The intensity of the light falling on the background should not normally be greater than the intensity of the light from the main light falling on the subject's face. Realize, however, that by increasing or decreasing the intensity of the light on the background, you can control the tone or color reproduction of the background in the finished print.

Although this fundamental three-quarter lighting serves you well and is very useful for the great majority of your portraits, there are other lightings with which you should be familiar.

b. Side Lighting. With side lighting, the face is lit more intensely on one side than the other. This type of lighting is well suited for young women who have smooth skin and regular facial features. It is also a character lighting for men with strong features. Side lighting is not as flexible as three-quarter lighting in that once established, it does not allow for movement of the subject's head without readjusting or repositioning the lights.

(1) Correlation with main light. With side lighting, the main light should be a nondiffused floodlight shielded to prevent its light from falling onto the background or camera lens. The distance for the light is determined by using the forehead highlight test discussed under three-quarter lighting.

To start, locate the main light well to the subject's side so that it is at a 90-degree angle to the camera lens axis. With the light in this position and the subject turned toward the camera, the cheek and eye on the lighted side of the face are naturally rounded out. A dark shadow is cast in the smile furrow and between the corner of the nose and eye on the shadow side of the face. These shadows must be softened as much as possible without destroying the shadow pattern itself. To do this, move the main light toward the camera as far as possible without spilling light onto the shadow side of the face. If main light is allowed to spill over, the face gets pocked by small bright spots and a distracting shadow pattern is created. A very small amount of spill light that just barely touches the upper eyelid on the shadow side of the face may be allowed.

By moving the main light toward the camera as much as possible while maintaining side lighting, highlight accents on the bright side of the face are brought as far toward the front of the face as possible. If the main light is left at 90 degrees to the camera, highlight accents which it creates are so far around the side of the face that they cannot be seen by the camera and the face lacks modeling.

(2) Correlation with fill light. After the main light has been established, the fill light is positioned. The fill light for side lighting should be placed near the camera and on the opposite side from the main light. If the fill light is too far to the side of the subject shadows may be cast in the inner corners of the eyes and along the smile furrows.

The height of the fill-in light should be just enough to cast a slight, soft shadow under the chin. The fill light should also be less intense and softer than the main light, and the lighting ratio should not exceed 4:1.

Because the main light in side lighting comes from a relatively low angle, the hair does not receive very much light and what it does receive is only on one side. To capture the form and character of the hair and to help separate the subject from the background, the hair light is directed onto the hair from the back of the subject and from a high angle. The hair light should be on the opposite side of the subject from the main light and should not be permitted to spill onto the forehead, cheek, or tip of the nose.

The background light is employed the same as in three-quarter lighting.

c. Front Lighting. Front lighting is often used when making portraits of women. Although not as flexible as three-quarter lighting, front lighting does have some flexibility. The subject's head can be posed from fullface to profile; however, the nose shadow must always remain under the nose. Therefore, the main light must be moved with the head, and as the head moves to the three-quarter or profile position, the hair light must also be moved. The fill light is not moved.

(1) Placing the main light. To start, place the main light very close to the camera lens axis and at about subject eye level. This creates an almost flat lighting, and facial feature characteristics may be lost. By moving the main light higher, a certain amount of modeling is created. The light, although now creating some modeling, is still very flattering and almost foolproof. This lighting is considered flattering because it does not emphasize lines around the eyes, wrinkles on the forehead, or shadows around the mouth. It does, however, emphasize eyes and eyelashes.

(a) The main light should be just high enough to cast a shadow of the nose, about a third of the distance from the nose to the top edge of the upper lip. As each subject's face and nose are different, the correct height for the main light varies slightly. If the subject has a long nose, the light should be low to shorten the shadow. When the subject has a short nose, raising the main light to lengthen the shadow has a secondary effect in that it adds form below the eyebrow and accentuates any slight hollowness in the cheeks, giving a more provocative look.

(b) When making a portrait of a person smiling, the nose shadow must be shortened because the upper lip draws up and the shadow goes over the lip. The nose shadow should not be allowed to extend over or even touch the edge of the lip. When it does the lip form is destroyed and it appears unnaturally small.

The main light to subject distance is again determined using the forehead highlight test.

(2) Placing the fill light. The front lighting fill light is positioned directly below the main light; close to the camera lens axis, and slightly above subject eye level. The intensity of this light should be about one f/stop less than the main light. The main to fill light ratio is established by moving the fill light closer to or farther away from the subject to increase or decrease its effect on the subject. Balance can also be controlled by using diffusion screens over the fill-in light.

If the main light is putting enough light on the hair, the hair light might be dispensed with. However, if you decide a hair light is necessary to enhance the subject or complete the tonal balance, the light is used as in our other portrait lightings. That is, high and from the back.

The background light in a front lighting again serves to separate the subject from the background and to control the color or tone reproduction of the background.

d. Back Lighting. Back lighting is often used when making portraits in profile. Once the back lighting has been set, it does not permit subject movement. However, the camera position can be changed to achieve a somewhat off-profile portrait.

(1) Main light location. The main light comes from the back and should be as far into the set as possible and from the side toward which the subject is turned without the light stand showing in the picture. For back lighting, a small spotlight is generally preferable to a floodlight. The lighting should be started at about subject eye level and produce a rim of light around the profile. The light can be raised or lowered to give the best effect. The backlight should be shielded to prevent it from spilling into the camera lens.

(2) Fill light location. The fill light is located about halfway between the main light and camera. If the fill light were placed at or very near the lens axis, objectionable

shadows would be cast in the corner of the eye and along the smile furrow. The intensity of the fill light should not reduce the rim effect of the main light.

The hair light again is used from a high angle and is placed opposite the fill light.

The background must be lighted with care so as not to destroy the profile outline effect produced by the main light.

#### 14. Lighting Accessories.

Many accessories are available for use with studio lighting units. Accessories are important tools that make your portrait lighting units either more dependable or more versatile. They aid in creating the exact lighting effect you want. If accessories were not available, compromises in the lighting that would alter the effect you want and the quality of your portraits might have to be made.

a. Diffusers. You use diffusers when you want to change specular light to a softer, more diffused light. Diffusers are made of translucent or mesh materials that, when placed in the light beam, break up or diffuse and soften the light. The finer the mesh, the more pronounced is the effect. If only a small amount of diffusion is needed, a wide mesh material such as gray window screen works well. For more diffusion, two pieces of screen can be placed together and slightly out of alignment, or a finer mesh material such as white cheesecloth can be used. Diffusers are most often used with spotlights. Floodlights initially produce a fairly diffused light but diffusers can also be used with them. Diffusers can be mounted on the light unit or placed somewhere between the light unit and your subject.

There are many reasons for using a diffuser instead of a light that already produces diffused light. A diffuser may be needed if you do not have a soft light to begin with. A softness that is in-between, produced by two different lights, may be needed, or you may want to produce a small, controlled area of light that can only come from a spotlight and yet want the light to be a softer quality.

b. Barndoors. Barndoors look and operate much like miniatures of their namesake. They are made from opaque material, usually metal painted black, and are attached and hinged to the front of a light unit. They can be positioned to block or feather a selected portion of the light produced by the unit. Barndoors are made for both spotlights and floodlights. They are good accessories for controlling spill light.

c. Snoots. Snoots are cylinders, open at both ends, usually made of metal and painted black. They are used at the front of a spotlight to limit and control the size of the circular light beam projected by the unit. Short wide snoots give a large circle of light. Long narrow snoots give a narrow circle of light. A cardboard tube or black rolled paper can be used for a snoot when you need to improvise.

d. Umbrellas. Umbrellas work much like the reflectors used on floodlights and provide an excellent means of converting specular light into soft, diffused light. They are usually used with a spotlight. The light unit is pointed away from the subject; the umbrella is attached in front of the light and reflects or bounces the light back and onto the subject. The reflected light falling on the subject is of a softer, more diffuse quality than the light originally emitted by the source.

The reflecting surface of the umbrella determines the quality of the light. Umbrellas are usually made with a matte, white surface that provides a very soft, completely diffused light. Some umbrellas are constructed with a shiny, metallic surface. Metallic umbrellas throw a somewhat specular light but the light will be softer and spread over a larger area than the light emitted by the original light source.

#### 15. Summary.

This completes lesson 1 and your introduction to portraiture, portrait equipment, and lighting. Before proceeding to lesson 2, complete the practice exercise on the following pages. Check your answers with the practice exercise answer and feedback sheet. If any of your answers are incorrect, review the area indicated until you understand the material. After successfully completing the practice exercise, proceed to lesson 2.

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## LESSON 1

### PRACTICE EXERCISE

The following items will test your grasp of the material covered in this lesson. There is only one correct answer for each item. When you complete the exercise, check your answer with the answer key that follows. If you answer any item incorrectly, study again that part of the lesson which contains the portion involved.

1. When taking a portrait of a person, you should try to do which of the following?
  - A. Try to capture a softness of expression.
  - B. Try to capture the subject while he is laughing.
  - C. Try to exaggerate any features that show character.
  - D. Try to capture a fleeting glimpse that shows the personality.
  
2. For which of the following purposes would you take an informal personnel portrait?
  - A. A badge
  - B. An event
  - C. A news release
  - D. Chain of Command

Situation: You are assigned to make a head and shoulders portrait using a 4 x 5 camera. Use this information to respond to items 3 and 4.

3. Which of the following describes proper camera positioning?
  - A. The height of the center of the lens is between the subject's lips and the tip of his nose.
  - B. The height of the center of the lens is between the subject's neck and chin.
  - C. The height of the center of the lens is at the forehead.
  - D. The height of the center of the lens is eye level.
  
4. Generally, which focal length lens should you select?
  - A. Variable
  - B. Normal
  - C. Short
  - D. Long

5. When using the f/stop method to determine a light ratio, if you use f/4 as a guide for the main light, how many feet away should the fill be set for a 3:1 ratio?
- A. 2.8
  - B. 4
  - C. 5.6
  - D. 8
6. When adjusting the camera settings for fill flash, which of the following must you do?
- A. Always use a shutter speed 1/30 or below for fill.
  - B. Meter the darkest part of the scene to obtain settings.
  - C. Ignore the ambient light because the flash will overpower it.
  - D. Adjust the light from the flash so that it is about one stop less than the overall scene.

## LESSON 1

### PRACTICE EXERCISE

#### ANSWER KEY AND FEEDBACK

<u>Item</u>	<u>Correct Answer and Feedback</u>
1.	<p>A. Try to capture a softness of expression.</p> <p>It is best not to take a portrait of a person when they have extreme or exaggerated expressions on their faces since these are only temporary. Rather, it is better to capture them as they look naturally, but still at their best (page 3, para 4).</p>
2.	<p>B. An event</p> <p>Informal portraits are used to show a person in a situation outside of the studio. For example, a soldier could be shown at an event such as a blood donation drive (page 5, para 1c).</p>
3.	<p>A. The height of the center of the lens is between the subject's lip and the tip of his nose.</p> <p>When shooting a head and shoulders portrait, the height of the center of the lens must be positioned at this point for correct perspective. Higher or lower will exaggerate facial features, producing a distorted appearance (page 8, para 4a).</p>
4.	<p>D. Long</p> <p>A long focal length lens is generally used for head and shoulders portraits because shorter lengths introduce distortion (page 8, para 4b).</p>

Item                      Correct Answer and Feedback

5.                      B.        4 feet

Just as  $f/4$  produces two times as much light as  $f/5.6$ , a light 4 feet away will be two times as intense as one at 5.6 feet. For a 3:1 ratio, this would then be the proper distance for the light (4 feet for main, 5.6 feet for fill) (page 17, para 13b).

6.                      D.        Adjust the light from the flash so that it is about one stop less than the overall scene.

When using fill-in flash outdoors as supplemental light to the already existing daylight, you must consider exposure from both of these light sources. Setting the flash about one stop less than the reading for the ambient light will give a natural appearance to the lighting (page 18, para 14e).

## LESSON 2

### DIRECTING THE SUBJECT AND FINISHING THE PRINT

Critical Task: 113-578-1011

#### OVERVIEW

##### LESSON DESCRIPTION:

In this lesson you will learn the proper techniques to pose the subject for the type of portrait requested. You will identify the correct films, papers, and chemistry for various portraits. In addition, you will identify printing techniques to obtain optimum results.

##### TERMINAL LEARNING OBJECTIVE:

- ACTIONS:**
- a. Identify the proper pose for the type of portrait requested.
  - b. Analyze the corrective techniques needed to photograph the subject at their best.
  - c. Identify the verbal actions necessary to direct the subject into the correct pose.
  - d. Determine the correct black and white (B/W) or color film for portraiture and the proper chemistry for their processing.
  - e. Identify the printing techniques needed to obtain optimum results for various portraits.
- CONDITION:** You will be given information from TM 11-401-1, TM 11-401-2, and STP 1125S13-SM-TG.
- STANDARD:** Identify and describe the procedures to pose the subject and select the proper film for portraiture in accordance with TM 11-401-1, TM 11-401-2, and STP 1125S13-SM-TG.
- REFERENCES:** The material contained in this lesson was derived from the following publications: TM 11-401-1, TM 11-401-2, and STP 1125S13-SM-TG.

#### INTRODUCTION

In this lesson you will learn the proper techniques to pose the subject for the type of portrait requested. Also, you will

learn about corrective techniques that you can employ to help photograph the subject at his best. In addition, you will learn to identify the correct films, papers, and chemistry for various portraits. Printing techniques to obtain optimum results will also be covered.

## PART A - POSING THE SUBJECT

### 1. Setting the Appointment.

Portrait sittings should be made by appointment. Using an appointment system gives you a good start towards making a successful portrait. For one thing, it tells your subject that he is important enough to get an appointment and that he will not be wasting his time waiting to get into the studio. This brings the client to the studio with a positive attitude, and that's half the battle. An appointment also helps you. When an appointment system is used, even for ID and passports, you know how much time you have to work with each subject and you do not have to rush through a sitting because someone else is waiting. Between appointments you have time to straighten up the studio, load film holders, complete job orders, screen processed portrait film, and so on.

a. Timing Appointments. Appointments should be made so you have at least 15 minutes between sittings. This way you have time to take care of little things that seem to come up and, if one client is a few minutes late, time to catch up.

Appointments should be made for the convenience of the customer, but usually only during normal working hours. Make sure that you consider the lunch period as normal working hours. There are occasions, however, when a customer will want an appointment earlier or later than normal working hours. This should be avoided if possible, but also remember that one of your primary duties is to provide official photographic services. If an appointment outside of normal working hours is necessary, it should not be just the duty man who shoots it. The regular trained portrait photographer should still get the job.

b. Suggestions for Clients. When clients call for an appointment, suggest to them that they come early in the day. Most people look their best and their clothes are fresher at this time of day. Men, especially those who develop a heavy beard (five o'clock shadow) need to have their portraits made at the beginning of the day. However, they should not shave and then come right in for the sitting. This gives time for facial blemishes caused by shaving to disappear.

Men should have a haircut and look sharp, but the haircut should be a day or two old. Uniforms should be pressed and well-fitted

with grade, rating insignia, and all awards properly placed. A chart of military awards and decorations should be posted in the studio in case there is any question regarding the proper wearing of ribbons and medals.

## 2. Taking Command of the Portrait Sitting.

When posing the subject, you, as the photographer, take command even if the subject outranks you. Be direct and firm but never demanding or offensive. Do not irritate or tax the subject's patience; be tactful and polite. Remember, you are in command only because you know what makes a good portrait.

Be courteous even if you outrank the subject. Put the subject at ease; relax him. The smile of contentment in a photograph makes a better portrait than a scowl of anger or grin of laughter. It is your responsibility to try to anticipate a subject's peak of expression and capture it.

Direct the subject's movements but do not touch him. Tell the subject to turn his head to the right or left, but do not move it for him. Do not tire the subject by asking him to pose in uncomfortable positions or for long periods of time. Do as much preparation as possible before the actual sitting so that the sitting only takes 2 or 3 minutes. You can do many things in advance to shorten the posing time, like placing the lights in approximately the correct position.

## 3. Check Clothing.

The subject should wear the proper uniform with all his military decorations. A class A uniform is required for identification and formal portraits. Informal portraits may not require class A uniforms, but the dress should always be in accordance with regulations. The subject also should be bareheaded for identification, formal, and indoor portraits but can wear a hat, cap, or other headgear outdoors.

The subject's clothing should fit properly without bulges or wrinkles. Be sure to check collars because they tend to turn upward, and sleeves because they tend to wrinkle. Sleeves also tend to ride up on the arm, exposing too much of the wrist or shirt cuff.

## 4. Determine Side of Subject's Face to Photograph.

The assignment for an identification portrait usually specifies fullface. If the assignment does not state or imply which view to use, then select the view that will most clearly show any identifying marks or characteristics. For example, pointed noses and chins show up more in profile than fullface.

In portraits, you should try to hide blemishes and make the subject look his best. You can hide birthmarks by turning the subject so the marked part of his face is away from the camera or so a shadow falls across that part of his face.

## 5. Posing.

Employing the following suggestions should enable you to pose the subject in a proper yet relaxed manner.

a. Do not touch the subject, but tell him how to pose so that every part of his body is properly positioned, even those parts that will not show up in the photograph. It is particularly important to relax the part of the subject that is not in the portrait because any strain will show in the subject's face.

b. The subject should be erect but relaxed. That is, he should stand or sit straight and tall but not stiffly. Positioning the subject's head and shoulders slightly high in the frame helps to convey a sense of strength.

c. His feet should be slightly apart, and his trunk should be straight, not twisted.

d. The subject's hands should be relaxed and farther from the lights than his face. When the hand is relaxed, the fingers curve slightly toward the palm. A clenched fist or a tight grip on an object is a strain, and when the subject puts his hands in his pockets it pulls his shoulders out of position.

e. Less light should strike the subject's hands than his face. You can accomplish this by feathering or turning the light so only the edges of the beam reach the hands and by using screens, barndoors, or shields.

f. Your subject's shoulders should be level with the ground. They should be parallel with the film for a fullface identification portrait and perpendicular to the film for a profile identification portrait. For other portraits, the subject's shoulders should be at a 45-degree angle with the film.

## 6. Positioning the Subject's Head.

For an identification portrait the subject's head should be level. He should face straight ahead in the same direction as his trunk. For a formal or informal portrait which calls for a head and shoulders shot, the subject may tilt his head. Such a portrait should not be a fullface view looking straight at the camera, but between a fullface and a profile which is at a

45-degree angle. The subject's head should be turned to more of a profile for a flat nose and more of a fullface for a long nose. If a subject's nose curves to the left or right you can make it appear straight by shooting from the side toward which the nose turns. Mainlight the near side of the head for a long face and the far side for a round face.

a. Use shields or barndoors on studio lamps to reduce illumination on bald heads. This also permits some flexibility in where you place the light.

b. It's not necessary, but the subject's eyes may look straight ahead in the direction that his nose is pointing. His line of gaze should be level with the ground. In many portraits today, the subject is looking directly into the lens. This tends to make him look lively and warm, but you must make sure that he looks relaxed. Often, by having him look slightly above the camera lens, it will help the person to appear as if he is looking at the viewer rather than just staring into space.

c. People who ordinarily wear glasses should wear them for their portraits. Even though the subject wears glasses we still want to see his eyes, so you will have to position his head and your lights so you do not get reflection off the glass. If it is not possible to completely eliminate the reflection, then keep it in the upper corner of the glasses so that it can be easily retouched.

#### 7. Posing a Standing Subject.

The statements above on posing the subject are general and are applicable to both a seated and standing subject.

A standing subject is harder to relax, so if permissible, have him sit down. If the subject has to stand, be sure that his legs are straight but not stiff, and that his arms are at his side (except when he is holding something) but not pinned rigidly to his side. It is also permissible to have one hand partly in a jacket pocket.

#### 8. Posing a Seated Subject.

A seated subject appears more relaxed and natural in a photograph than a subject who is standing. Thus, for a head and shoulders portrait have the subject sit on a stool or a chair with a low back.

The subject may cross his legs if this makes him feel more at ease; however, if his legs show in the photograph the near leg

should cross over the far leg. This is because perspective causes objects near the camera to appear very large, and a large knee sticking out of the photograph will distract from the rest of the picture and spoil the portrait.

The subject should keep his arms and hands relaxed and close to the body. Hands are difficult to pose and photograph properly. Try having the subject fold his hands together in his lap or on his leg or simply rest them on the arms of a chair. Do not let the subject grip his knee or the chair arm. Perhaps you may have to try to hide the hands by letting the hand farthest from the camera hang so that it is hidden by the body. Even if the hands do not show, they should not be in an awkward position because the strain or discomfort may show in the subject's face.

9. Corrective Portraiture Techniques.

Refer to figure 2-1 for corrective portraiture techniques which will help you to minimize unflattering aspects of a subject's appearance, i.e., a double chin.

<b>Problem</b>	<b>Treatment</b>
<b>Fat round face</b>	Shoot three-quarter view, light side of face away from camera Use three-quarter or side lighting
<b>Thin face</b>	Shoot front full face Use low three-quarter or front lighting
<b>Wide forehead</b>	Use low camera viewpoint Tilt chin upward
<b>Narrow forehead</b>	Use high camera viewpoint
<b>Baldness</b>	Use low camera viewpoint Little or no hair light Blend head with background
<b>Eyes close together</b>	Shoot three-quarter pose
<b>Eyes far apart</b>	Shoot three-quarter pose
<b>Small eyes</b>	Shoot three-quarter pose Use three-quarter lighting so the eyes are in a shadow

Figure 2-1. Corrective portraiture techniques

<b>Problem</b>	<b>Treatment</b>
<b>Large or protruding eyes</b>	Use high three-quarter lighting Lower eyes slightly
<b>Deep set eyes</b>	Low camera viewpoint Use front lighting to keep eyes out of shadow
<b>Uneven eyes</b>	Turn head toward one side so natural perspective eliminates uneven appearance
<b>Bags under eyes</b>	Use makeup. Use front lighting.
<b>Cross eyed or defective eye</b>	Turn head so bad eye is away from camera. Light side of face toward camera to place other eye in shadow
<b>Glasses</b>	Use high front, three-quarter, or side lighting to eliminate reflections Tilt head downward Shoot full face pose to prevent lenses from splitting cheek line Use indirect diffused lighting
<b>High cheeks</b>	Use low front or side lighting
<b>Wide cheeks</b>	Shoot three-quarter pose
<b>Small ears</b>	Turn head so camera sees only one ear Place exposed ear in shadow
<b>Large ears</b>	Turn head so camera sees only one ear Place exposed ear in shadow
<b>Protruding ears</b>	Turn head so camera sees only one ear Place exposed ear in shadow Shield light from exposed ear Blend ear into background
<b>Long nose</b>	Use low camera viewpoint Use three-quarter or side lighting Apply dark makeup to tip of nose
<b>Short nose</b>	Use a high camera viewpoint Use front lighting
<b>Hooked nose</b>	Shoot from a low camera viewpoint Shoot front full face
<b>Crooked nose</b>	Shoot from the side to which it curves Turn head until highlight along ridge of nose appears straight
<b>Broad nose</b>	Pose head away from a front view

Figure 2-1. Corrective portraiture techniques (continued)

Problem	Treatment
Narrow mouth	Use lip color to extend lip line Turn head to one side so makeup is not apparent Position modeling light high to cast shadows at ends of lips
Wide mouth	Pose head in three-quarter view
Protruding lips	Use low modeling light to eliminate shadow under lips
Thin lips	Fill out with lip color
Uneven mouth	Pose head in three-quarter view
Bad teeth	Don't have subject smile
Buck teeth	Subject may smile slightly Use full front pose
Long chin	Use high camera viewpoint
Double chin	Keep chin in shadow Have subject lean forward and look at camera
Small chin	Use full front pose Use low camera viewpoint
Square face	Use high camera viewpoint
Oval face with a weak chin	Use low camera viewpoint
Short neck	Use low camera viewpoint
Long neck	Use high camera viewpoint Keep neck in shadow
Facial blemishes	Keep in shadow Turn bad side of face from camera Apply makeup to a pimple or sore spot

Figure 2-1. Corrective portraiture techniques (continued)

## PART B - SELECTING AND PROCESSING FILMS AND PAPERS FOR PORTRAITURE

### 10. Film Selection.

For black and white portraits, black and white panchromatic film is generally used. With a pan film, the appearance of any red spots, veins, or redness in the subject's skin are minimized in the final print as a result of the film's sensitivity to red. Conversely, an orthochromatic film can be used if the texture of a man's skin, especially an older man, is to be emphasized.

When you select a color film for portrait photography, there are two important considerations: What type of product is to be produced, and what is the color of the light source?

Another factor to consider in selecting a film for portraiture is the ISO of the film in relation to the intensity of the light source. A slow film can be used successfully with a relatively high intensity light source such as an electronic flash unit. If the same slow film is used with a relatively low intensity light source, an excessively long time could result. A fast film can also be used with a high intensity light source. However, a smaller aperture is often required to control the exposure with a resulting increase in depth of field which is not desirable for portraiture.

### 11. Selection of a Film Developer.

There are several types of developers, and each differs in activity and provides different qualities for development. In selecting a developer, consider the type of film, the conditions under which it was exposed, and the results desired. For example, you should select a slow working developer for portrait negatives since they require a low or medium degree of development. Conversely, aerial photographs are normally produced under poor light conditions and therefore require a vigorous developer to bring out as much of the image as possible.

The old saying "expose for the shadow, develop for the highlights" may have been around for ages but it is sound advice. To obtain maximum print quality, the negative must be properly exposed and processed. Alterations in development can sometimes compensate for a degree of exposure error. However, if the detail is not on the negative, all the fancy development tricks in the world will not magically put it there; enhance a weakness, yes, but create something where nothing exists, no. Many fine books exist on the zone system of photography and it would be well worth your time to read the information that they provide on fine-tuning and customizing film speeds and development times.

## 12. Print Evaluation.

The type of portrait you make for an official assignment and its intended use will dictate whether or not a color or B/W print is needed (your film type should have already been selected accordingly, of course).

When evaluating print quality, you should understand the main factors that influence the acceptability of a print. These are as follows:

a. Evenness and Size of Print Borders. A 1/4-inch border (except where noted) should be maintained on all four sides of the image.

b. Framing (or Composition). This consists of making the proper decision in regards to printing the entire negative or cropping it to a larger image size, printing the image squared, or tilting it to one side or the other for effect.

c. Exposure. Prints should contain a full range of tones ranging from good blacks to white. Pure whites should be present only in specular highlights such as reflections of the main light (catchlights) in the eyes of the subject.

d. Contrast. Regardless of negative contrast, print contrast should be normal indicating the proper choice of contrast printing filter or paper.

e. Dodging and Burning-In. Objectionable highlights should be subdued by darkening. A background that is too white should be darkened around the edges at least to the point where the borders of the print are distinguishable. Also, darkening in the corners of a print helps to draw the viewer's attention to the subject. Objectionably dark shadows should be lightened.

f. Mechanical or Chemical Defects. There should be none.

NOTE: The name tag DOES NOT need to be legible.

## 13. Summary.

This completes lesson 2 and this subcourse. Before proceeding to the examination, complete the following practice exercise. Check your answers with the practice exercise answer key and feedback sheet. If any of your answers are incorrect, review the area indicated until you understand the material.

## LESSON 2

### PRACTICE EXERCISE

The following items will test your grasp of the material covered in this lesson. There is only one correct answer for each item. When you complete the exercise, check your answer with the answer key that follows. If you answer any item incorrectly, study again that part of the lesson which contains the portion involved.

1. If a person wears glasses, which of following corrective techniques can you use to eliminate glare?
  - A. Tilt head upwards
  - B. Tilt head downward
  - C. Tilt glasses upwards
  - D. Light from below eye level
  
2. In which of the following situations can a subject wear a hat?
  - A. Formal indoor
  - B. Identification
  - C. Informal indoor
  - D. Informal outdoor
  
3. Which size borders should portrait prints have?
  - A. Borderless
  - B. 1/8 inch
  - C. 1/4 inch
  - D. 1/2 inch
  
4. When you produce prints of portraits, what should be the contrast level?
  - A. Low
  - B. High
  - C. Normal
  - D. Depends on final use of portrait product

## LESSON 2

### PRACTICE EXERCISE

#### ANSWER KEY AND FEEDBACK

<u>Item</u>	<u>Correct Answer and Feedback</u>
1.	<p>B. Tilt head downward</p> <p>Often when shooting portraits of persons with glasses, a fill light produces glare. Tilting the head downward helps to eliminate these reflections by changing the angle at which the light hits the glasses (page 5, para 6c).</p>
2.	<p>D. Informal outdoor</p> <p>Hats are not to be worn for indoor situations (page 3, para 3).</p>
3.	<p>C. 1/4 inch</p> <p>1/4" borders are considered standard unless otherwise specified (page 10, para 12a).</p>
4.	<p>C. Normal</p> <p>Portrait prints should have normal contrast regardless of their intended use. Normal contrast is appropriate for viewing and reproduction (page 10, para 12d).</p>

APPENDIX A - LIST OF ACRONYMS

ACCP	Army Correspondence Course Program
B/W	Black and White
FLD	Fill Light Distance
ID	Identification
mm	Millimeter

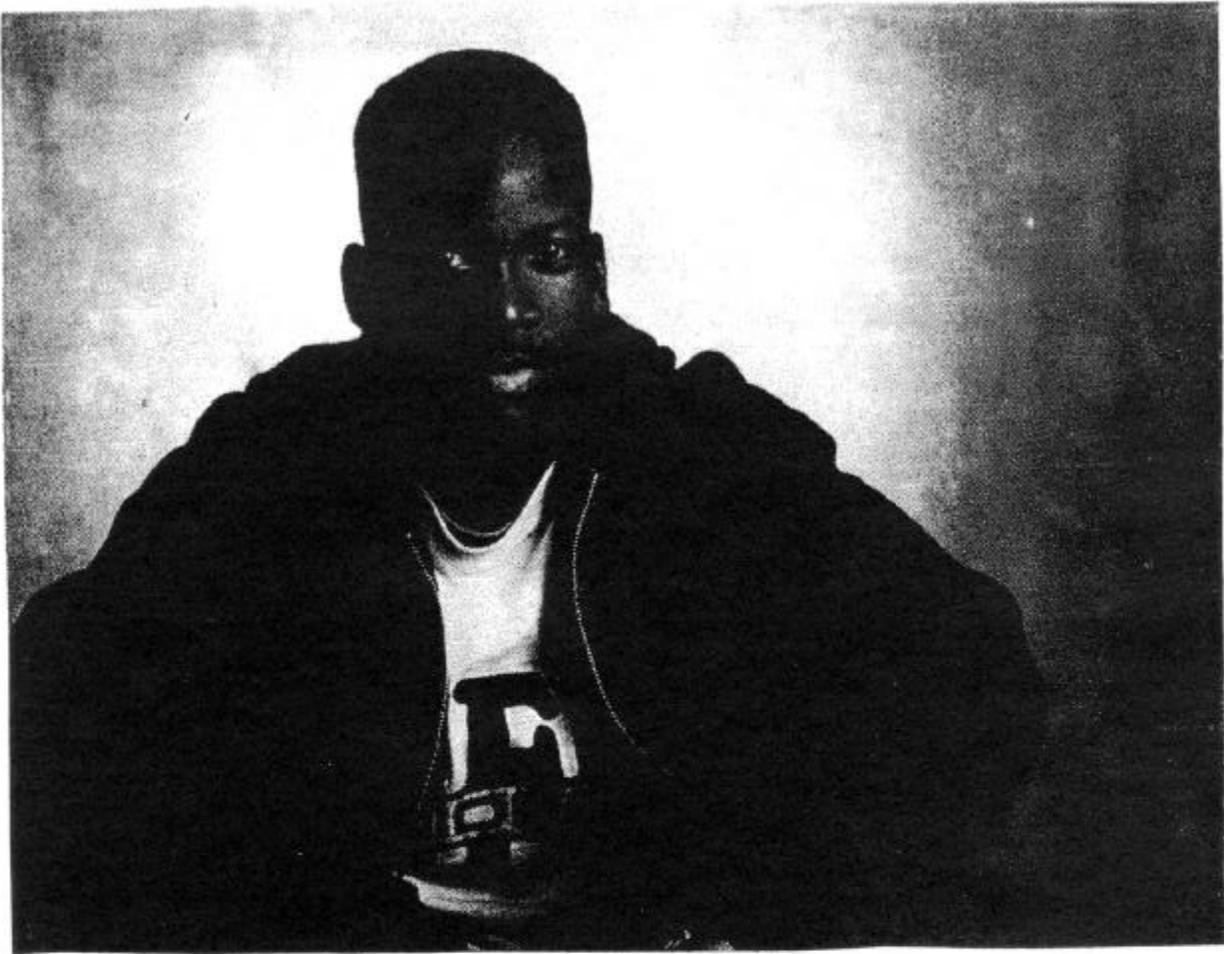
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APPENDIX B - SAMPLE PHOTOGRAPHS

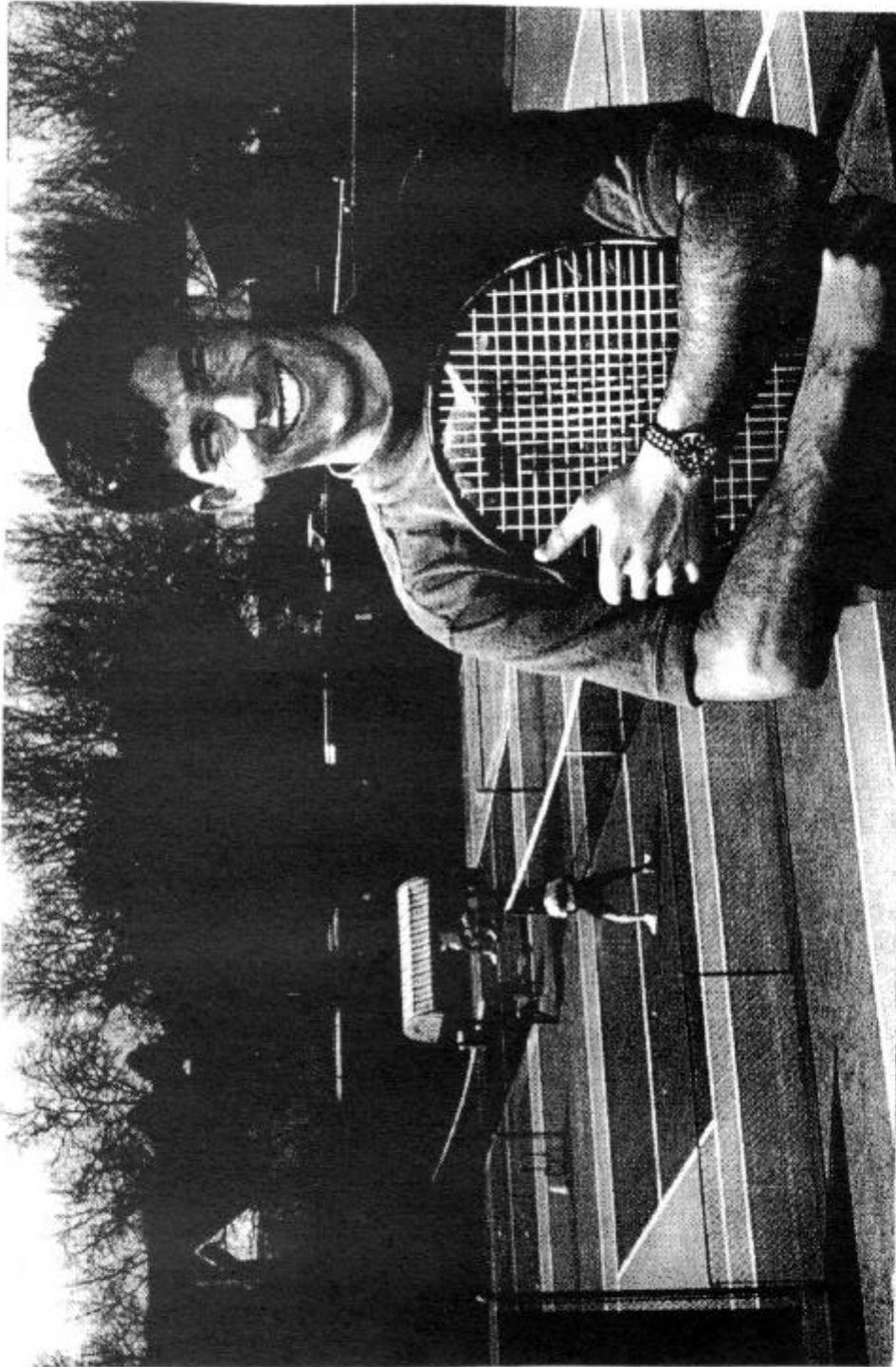
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In the formal portrait, objects in the background are normally subdued or out of focus. The eyes are placed above the center of the print. Notice the medals are in sharp focus in the same plane as the eyes. (See page 1-5).



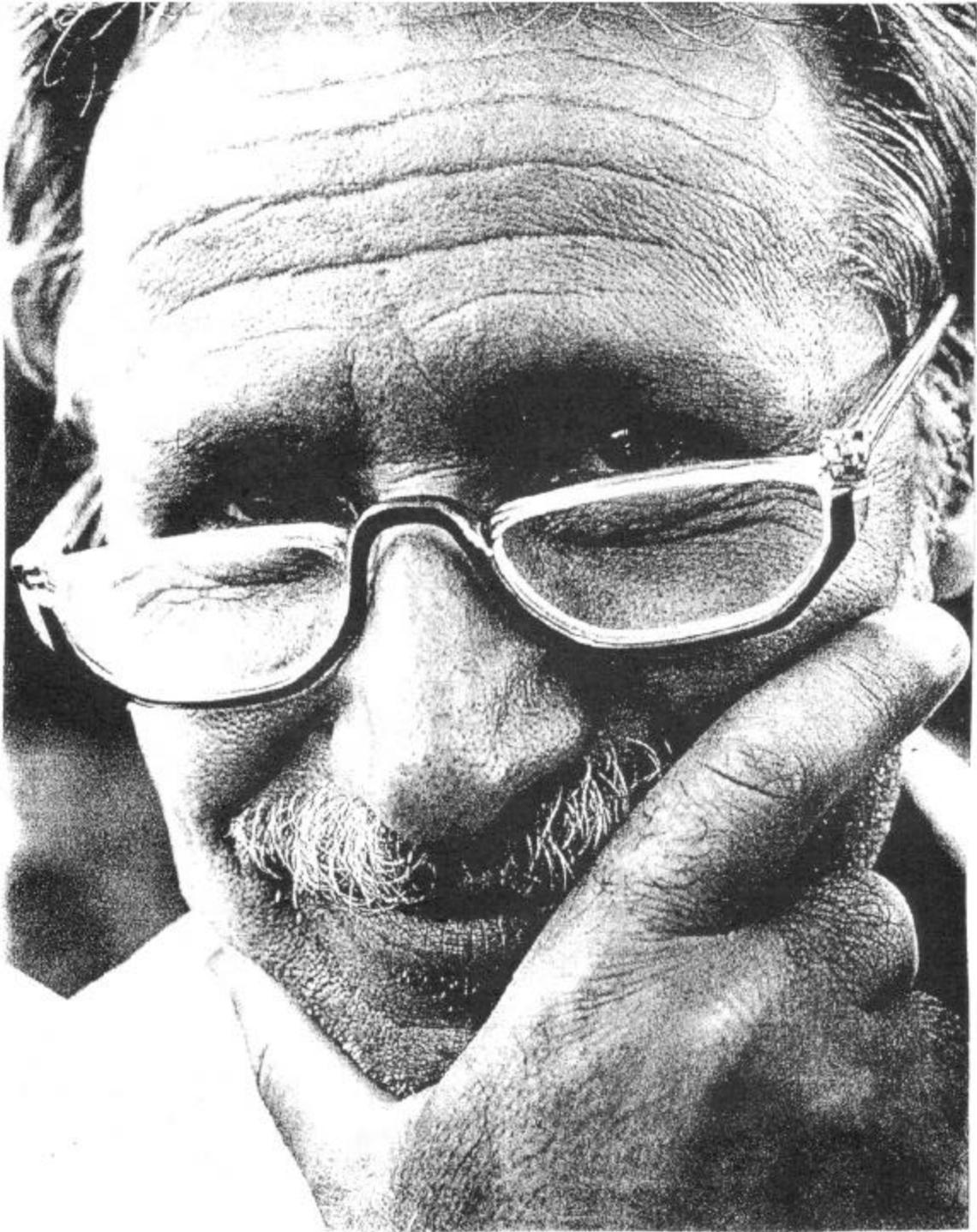
Informal portraits can be made in a studio setting. Here the subject is relaxed and in casual clothes. The same lighting techniques are used as for a formal portrait. Notice how the background light creates separation from the background and the subject. (See page 1-5.)



The environmental photo says something about the subject, how they work or play. Although not a studio setting, techniques of good lighting were used to make the subject attractive. A reflector fill was used here to soften the shadows. (See page 1-5.)



A dark background can work well with a light-haired person, especially when emphasized with a low hair light or rim light. The intensity of this light is equal to the main light. Front lighting created a glamorizing affect for this subject. (See page 1-6.)



Informal portraits made under daylight or bright light conditions can be most interesting. Here a tight cropping emphasized the eyes of this subject. Without a doubt, sharp focus is a must in this type of portrait. (See page 1-10.)



This window light portrait is interesting because the same formal lighting techniques which are characteristic of a studio is used in an informal setting. Notice the "catch lights" in the eyes reflect the size and shape of the window. The shadow cast by this main light is similar to short lighting that is seen in a studio. (See page 1-13.)



Two conditions make this portrait striking. One is the overcast daylight conditions under which it was taken. Notice how the light appears to come from the top without shadows. The other is a reflector fill added to help soften the shadows. (See page 1-19.)



Which type of light is used here? If you guess "broad lighting," you are correct. Broad light makes a thin face appear wider. When hands are in the picture, they should add to the feeling or the mood of the subject. We see someone relaxed and at ease in this photo. (See page 1-20).