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An analysis of commercial photography

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THESIS

AN ANALYSIS OF COMMERCIAL PHOTOGRAPHY

by

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PREFACE

In commencing this thesis, may I state for what purpose I intend to write, and within what limitations.

My work is to be that of a general analysis of the profession of commercial photography. In discussing this subject I do not intend to treat with photography from the point of view of the technician. Such work has been done adequately in other places, and is too long and involved to be given more than a superficial treatment in a writing of this nature.

I am rather to treat of those more general phases of the subject of commercial photography such as its growth, economic place, functions, and future. Such a task has, I believe, never been attempted before. It has the possibility of real worth.

I feel that of especial importance will be a definition of the subject which conforms to existing conditions, and a division of the various overlapping forms of work which commercial photography takes.

It is not to be expected that all detail will be included; that would be manifestly impossible. If a clear picture of the field of commercial photography is presented, the purpose of the author will be fulfilled.

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PART I

INTRODUCTION AND DEFINITION

INTRODUCTION AND DEFINITION

One who is interested in observing what he sees around him will notice that photography plays an odd role in modern life. Although the average person is attracted to and interested in many pictures in the course of a day, he is but vaguely conscious that there might be anything more than pressing a button to the process of photography. Yet there is truly romance in the story of photography and generations to come will perhaps look upon those who helped found photography as we look upon those who developed the arts of painting and sculpture.

Surely photography is destined to do great things, if no more than to record the outstanding events in modern history. Yet the other day, while looking through a book which claimed to be an outline of Man's knowledge, I was more than mildly surprised to find that there was not the slightest mention of photography. One must almost think that the abundance of photographs which greets us daily has caused us to overlook them. Yet this art (or

science if you please) has done much, in its short existence, to enrich the world. Let us see how this may be.

In the arts, photography has found a niche which is pleasing to many. Of course there are those, such as a professor of art I once had, who are very much opposed to the idea of giving photography any place as an art form. These people feel that it is an impossibility for a photographer to put his own individuality into a picture. There may be something in what they say, but certain facts are present. Photographic exhibits are gaining in popularity; there is an obvious merit in many of the pictures exhibited; and those who should know, credit them with being a very advanced form of artistic expression.(1)

One of the most pleasing paintings I have ever seen was a sombre twilight scene which so closely resembled a photograph that it was only on close inspection that I could distinguish the difference. And I do think that I appreciate painting. One of the finest photographs which I have seen was so like a painting that I was doubtful of the statement that it had not even been retouched.

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(1) Drummond Young, The Art of the Photographer, p. 19

A second main division of photography is what we might call Recreational Photography. That the taking of personal pictures of one's family or of an outing is a pleasurable experience, will be denied only by those who have never tried their hand at it. That the chance picture often makes a most precious souvenir is likewise a familiar experience. Yet how few of us who click the shutter wonder at the means whereby the exact appearance of our new car is made to repose on a piece of paper.

The third branch into which I take the liberty of dividing the very complex field of photography may be termed Professional Photography. This field may be thought of as that practice of photography which is not done with the intention of exhibiting or preserving the picture for its artistic merit, nor that which is done for the recreation which it affords; but rather photography which is pursued for a livelihood.

This branch of photography may be divided into two others. One is portraiture, or the premeditated photography of people of whom it is desirable to have a picture. The other division is that of commercial photography, in which we are interested.

This last is the photographic activity which brings about more actual taking of pictures than does any other (except, perhaps, amateur photography). This is largely due to the fact that so many different kinds of picture taking and finishing may be included in its ranks. The distinction between commercial photography and other forms is more a matter of practice than of premeditation. Not all photography which is conducted for profit may be included, for that would force us to include portrait photography and the finishing of amateur films. Nor may we say that commercial photography is only that photography which deals with business or commerce, for that would limit us to discussing photography as used in selling and advertising. Nor would it be fair to include only that photography to do with business in the larger sense of the word (that connected with manufacturing and selling), for we would have to eliminate photography for the law, medicine, and science. And the connection between commercial photography and science might seem a strange one.

The choice, then, is a rather difficult one. To best determine what to include we must consult

the best writing on the subject, and view the practice as it is considered by those most concerned with it. There are no books written on the subject which completely solve the problem. There is one periodical, <u>The Commercial Photographer</u>,(1) which is in good repute. The opinion of the trade is reasonably easy to determine.

We find that commercial photography includes all forms of photography (other than portrait and amateur photography) which are performed essentially because of the financial return to be derived.(2)

In case that this seems to be a hasty definition, and in case it seems that the finishing of work taken by amateurs should be included, or that portrait photography should not be excluded, let me restate the situation.

Although commercial photographers do other work than the actual taking of pictures (such as developing and printing), it is not the feeling of the profession that any work which has not been

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(1) Published by the Abel Company, Cleveland, Ohio.
(2) Artistic photography is eliminated by not being performed essentially for financial return.

originally photographed by a professional photographer may be called "commercial". Thus the business of finishing amateur prints, although performed by commercial photographers as another kind of work, is not strictly termed "commercial photography".

On the other hand, although the commercial photographer often tries for artistic effect in his work, he invariably considers the artistic beauty of the print as a means to an end, and not as an end in itself. For instance, in photographing a ball bearing, light and shade may be arranged so that a beautiful effect is produced. But the purpose of the photographer is to take a picture which will catch attention, show the perfection of the bearing, and, as well, prove attractive to the observer. The artistic photographer, on the other hand, desires only that the photograph correspond with his or some other person's idea of the beautiful. Thus we eliminate the portrait since it is, in a manner of speaking, its own end of beauty.

We can conclude, then, that our definition, although possibly meeting with disagreement from some sources, is generally satisfactory since it represents the viewpoint of the profession itself.

The following is our outline of the division of the general field of photography.

- I. In the arts
    - a. As a distinguishable art form
- II. Recreationally
    - a. Amateur photography
- III. Professionally
    - a. Portraiture
    - b. Commercial photography

Now that we have, to the best of our ability, shown the general importance of photography, and have differentiated between the various kinds, let us see what we really mean by the word "photography".

Literally translated, photography means "to trace with light".(1) This would hardly do for a definition. We might say that photography is the science and art of producing pictures by the action of light on sensitized films (or other substance).(2)

To those who understand the general nature of photography this might be adequate, but for those who might not, let me expand this definition.

Photography may produce pictures directly

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(1) From the Greek
(2) My own definition

onto the sensitized material, but usually does not. Nor is it only "visible" light(1) which may reproduce images on sensitized material, for forms of light which our eye does not recognize may perform the function. Nor is a film or a plate the only substance which can be used in a camera to receive the impression given by the light. Nor is the actual producing of the picture on sensitive substance the only concern of modern, or any, photography. There are many additional processes to assist the main function of picture taking.

There are several important steps in the making of a photograph. The first is the preparation of the sensitive material, usually on celluloid or glass. This is done by a manufacturing company, not by the photographer. The second is the exposure of the sensitized material in the camera. The chief assisting device is the lens. The third is the development, fixation, washing and drying of the film or plate. The result of this is the negative from which any number of prints (positives) may be made. The fourth step is the preparation of a sensitive positive

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(1) I am told that light cannot be seen.

material, almost always on paper. This process is rarely performed by the photographer. The fifth operation is that of printing, so called. The negative and the paper are placed together and exposed to light (almost always artificial); the result being that the negative impression leaves a positive one. The sixth step is to develop, fix, wash, and dry the print. In the process of drying, the print may, if it has been made on a specially coated paper, be glossed by being spread on a highly polished metal surface. Both the print and the negative are capable of alteration in methods which will be discussed later.

Commercial photography we have already defined as being that part of photography which is devoted to the taking of pictures largely for the profit to be derived. We eliminated from this the functions of portrait photography and the finishing of amateur prints, for we found that usage did not allow the inclusion of these two functions.

The Purpose of the Thesis

Now that we have defined the nature of photography in general, and the relation of commercial

photography to other forms, let us determine what shall be the purpose of this thesis.

For some time there has been a need for a collection and analysis of those important facts about commercial photography which are known to a few but which have never been placed where many might reach them. There has been need for a concise history, and for a reasonable amalgamation, classification, and explanation of the various forms and functions of commercial photography. This work has never been accomplished.

In addition, it has always seemed that commercial photography should be carefully distinguished from the other forms of photography. This introduction and definition has tried to do that.

To completely analyze the profession, I feel that it is necessary to have a treatment of the qualifications and opportunities in commercial photography, a section on the set-up of the commercial photographic establishment, and a section on possible future trends.

These points, I feel, will cover all that is important in a general analysis of the subject.

As previously indicated, this thesis is to be in the nature of an analysis of the general economic and functional characteristics of commercial photography, and not in the nature of a technical observation or discussion. The latter work is too great to be included, and has been treated adequately in other writings, many of which take the form of encyclopaedias and dictionaries.

This thesis, then, is not designed for the technician who wishes to determine the chemical nature of various developers. It is rather designed for one who premeditates entering the profession, for the commercial photographer who wishes a more general view of his work, and for anyone who wishes to discover the general nature and status of commercial photography.

PART II

THE HISTORY OF PHOTOGRAPHY

THE HISTORY OF PHOTOGRAPHY

Although we are considering the story of commercial photography, it must be made clear that there is an inseparable connection, as far as history is concerned, between all forms of photography. It should be remembered that commercial photography is merely the application of the usual methods of photography to a particular end.

Despite the fact that photography, in the modern sense of the word, is a recent invention, it is impossible to attribute its discovery to any one man or group of men. Rather, many have contributed their share; some without realizing what the end might be.

There are, as may readily be seen, two lines of discovery which have ultimately converged to bring about the modern photograph. One of these concerns the camera, which catches the image, together with its attachments, such as the lens, bellows, and diaphragm. The other concerns the sensitive film, glass, paper, or similar material, which retains the image.(1)

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(1) The Encyclopaedia Americana, Volume 22, p. 1

These two divisions of photography are assisted and supplemented by other devices and processes, such as means of controlling light or of developing the exposed films; but they are the vital elements of photography. Strangely enough, these two necessary parts of photography were not discovered at the same time. The camera was in use and was made and sold with most of the present attachments a great many years before a means of retaining the image was found.

The camera was originally a room (from the word "kamera"),and the first camera was undoubtedly a slightly darkened room in which the light from a small hole in the wall caused inverted images to be projected onto the opposite wall. Leonardo da Vinci was the first to describe the camera obscura, and one is mentioned in an unpublished manuscript of his. D. Barbaro, 1568, suggested the use of the lens and the diaphragm to sharpen the image. E. Danti, 1573, used a mirror to correct the image, a method now used on reflex cameras. F. Risner (d. 1580) described reducing and enlarging, and was the first to devise a

small box to take the place of the devices previously used.(1)

Early cameras were usually portable, and were large enough for the artist to sit within them. Their usual function was to serve as a means of copying landscape. The copyist entered the contraption (which was made in the form of an umbrella tent), set up his easel and canvas, adjusted the focus, and was ready to work. The scene was presented upside down, and in natural colors.

It never seemed to occur to these early artists that there might be a way of preserving the image other than by painting over the scene which was presented. However, an early writer came very near to predicting the future in what was considered to be a fairy tale. He told the story of a piece of canvas which was exposed to a scene and then taken into the dark and covered with varnish so that the scene would not disappear. If the writer had spoken of the camera he would have given a very fair explanation of the early method of photographing scenery.

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(1) The Encyclopaedia Britannica, 11th Edition, Volume 17, p. 800

In 1665 J. Zahn described a portable camera with two lenses, side shields for the cutting off of light, and a reversing mirror to make the image appear naturally. By the beginning of the eighteenth century the portable camera obscura had become equipped with bellows for focusing and was a regular article of commerce, being used, of course, to obtain sketches from nature.(1)

With the discovery of a method of using sensitive materials in the camera, the function of the camera changed. The small portable camera as devised by Risner and Zahn was then used for photographic purposes.

Niépce, Talbot, and Daguerre used box cameras although there were cameras with bellows. A stereoscopic camera in use for the making of those popular pictures had parallel bellows. In general, the only major improvements which the art of photography brought about in the appearance of the camera was the addition of the shutter for regulating the length of exposure and the finder for convenience

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(1) The Encyclopaedia Britannica, 11th Edition, Volume 17, p. 800.

in pointing. The camera had already been equipped with lenses, bellows, and ground glass for the use of the landscape copyist.

Because of the inconvenience of the wet plate the camera remained for some time in much the same form; but with the invention of the dry plate it became desirable to carry the camera about, and the original box type evolved into many different forms.

Of all of them, the modern studio (or portrait) camera keeps nearest to the original, being a rectangular box with bellows, shutter, diaphragm, lens, and ground glass.(1) Despite this faithfulness there are many additions to facilitate the taking of pictures easily and well. There are shields, levels, rising and falling fronts, backs which can be twisted in all directions, and stands which can be moved and tilted to many angles. There are, in addition to regular studio cameras, many designed for special usage ranging all the way from celestial photography to microphotography.

A second kind of modern camera, and by far the most sidely used, is the field camera. This very

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(1) The New International Encyclopaedia, Volume 18, p. 557

general classification is possible of several smaller ones. On the whole the cameras are distinguished from studio cameras because they are portable; however, many of them require stands on which to operate. The cameras vary in nature because of the portability necessary, because of the nature of the work to be done, and as to the quality of picture desired.

Amateur photographers commonly use the box or fixed focus cameras because of their inexpensive and simple operation. Of recent years a more common collapsible camera has come into vogue, although they were in evidence in 1890.(1) Both of these cameras use a roll film for exposure. The Eastman Company is, more than any other agency, responsible for the wide use of these kinds of cameras.(2)

It might be well to mention at this point a camera which has become popular in this country only within the last year (1934). This is the small roll camera which has been consistently used on the continent. The price range is a wide one; all the way from thirty-nine cents to several hundreds of

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(1) The Annual Cyclopaedia, 1891, Volume XVI, p. 720.
(2) Lloyd Snodgrass, Photography for the Amateurs, p. 21

dollars. Cameras of this nature are popular with both amateurs and professionals. The better ones have excellent lenses and when modern fine-grain films are used the negatives are capable of being made into splendid enlargements. Some of the negatives are no larger than a postage stamp and have fifty or more exposures to the roll.(1)

It would take more pages than I can devote to tell of the possibilities of these "babies". With the use of fine-grain films the modern developments in portable lighting, the meters available for determining length of exposure, and the quality of the lenses, there seems to be no limit to the uses to which these cameras may be put. With them amateurs may do "professional" work; professionals may do better work. Banks are able to photograph every check and piece of property owned, at little expense. Libraries can photograph books too valuable to be handled. Within the field of newspaper reporting the portability and quick action of these cameras make

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(1) "Camera Action", Business Week, January 5, 1935, p. 29.

for much better work. Very practically, the stimulation which these small cameras are giving to the photographic industry is a welcome one.

The panoramic camera is a distinct personality in the world of cameras. Starting at any one point it swings on its base and by means of a clock-like mechanism exposes the film as it proceeds. By this means it may take in a complete circle.(1) The camera is especially useful for photographing groups and for scenic views. The early panoramic cameras were of the box type and were stationary in regard to the subject. The lens pivoted to expose a wide range to a curved plate. Martens, it is believed, made the first panoramic picture with the aid of a curved daguerreotype plate covering an angle of 150 degrees.(2) Probably C. Danoizeau's clockwork panoramic camera (1891) was the first to use the pivoting camera and the coordinated film as is now common.

The reflex camera is another type of camera which has a specialized function.(3) By means of

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(1) Lloyd Snodgrass, Photography for the Amateur, p. 29

(2) The Encyclopaedia Britannica, 11th Edition, Volume 21, p. 505

(3) Robert H. Goodsall, A Beginner's Guide to Photography, p. 3

a mirror, or two, located within the camera, one is able to see exactly what lies within the range of the lens. On pressing a trigger the mirror falls and a rapidly descending curtain, in which there is a slit, exposes the film. Because this curtain slide is the most efficient kind of shutter and because a spring causes it to descend very rapidly, the camera is able to take rapid action pictures. An exposure of one-thousandth of a second is possible and by this means any ordinary rapid action such as an auto race may be photographed.

The studio cameras, in lighter form, are often used for field work. The usual type folds so that it may be carried more easily. Some of them have rather large exposure surfaces of twenty inches by twelve; the ordinary studio camera usually taking a film no larger than eight by ten inches.

All other cameras of the field type are modifications of those already mentioned. The usual variations are in the kind of sensitive material (plate, cut film, film pack, or roll) used.

There are several cameras of very special usage which I shall mention later. They are such as

are used for celestial photography, microphotography, aerial photography, radiography, and the like. These, I feel, are too complicated to explain in this place and are better discussed as to their economic functions.

The Recording Element

Progress in the method of recording the image of the camera obscura has been attended with more complications and uncertainties than historians have been able to record. It is nearly impossible to determine who made the first photograph, for the photograph may take many forms, and its evolution was so gradual that many deserve the credit which is usually given to one or two.

The camera obscura casts a perfect inverted image on any flat object which is within the focus. The image is in natural colors and depends for its size on the type of lens used. In modern photography the image is recorded on film or other material whose essential sensitive composition is silver nitrate. It is interesting to note that man was aware that silver was sensitive to light, and had the camera to record the picture, some time before he thought of the idea underlying photography.

As early as 1550 it was observed that silver ore when brought from the mine frequently changed color.(1) In 1556 it was noticed by Fabricus that light turned chloride of silver to purple. Nitrate of silver was found to be similarly affected. Since then some form of silver has been used as the basic recording agent in photography.(2) At first this change was thought to be due to the contact with air, but later it was found that the action of light was the real reason. It was in 1558 that Giovanni Battista della Porta exhibited the camera obscura. At that time man had all the essentials necessary for the making of a photograph, although one was not actually composed for two hundred and fifty years. In 1727 Johann Heinrich Schultze observed the effect of light upon silver nitrate and chalk in liquid form. He found that light was the affecting factor and not heat, as previously thought. In 1737 Hellot used a solution of silver nitrate in his search for a secret ink. In 1774 (some authorities say 1777) K. W. Scheele

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(1) The Encyclopaedia Americana, Volume 22, p. 2
(2) Alfred T. Story, The Story of Photography, p. 1

conducted some very valuable experiments with silver salts.(1)

In the meantime some very interesting work had been done in recording the shape of various objects on sensitive paper. The result was a plain black and white "photograph" or silhouette with no shading. Much the same method is employed in modern advertising.

In 1791, Thomas Wedgewood, the son of the famous potter, made such opaque prints but could not fix them. In 1795 Lord Brougham suggested the idea of fixing the image of the camera obscura. Strangely enough, to us, his idea was either slighted or discouraged, for it was not immediately tried. The idea of printing from a negative was anticipated by Wedgewood in 1802 when with Sir Humphry Davy he secured reproductions of drawings on glass. He was unable to "fix" them; that is, to prevent them from becoming entirely black when exposed to the light.(2)

Wedgewood also noted in 1802 that the images formed by the camera obscura were too weak to be

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(1) The Encyclopaedia Britannica, 14th Edition, Volume 17, p. 800
(2) Ibid, p. 800

recorded. Sometime after this Nicephore de Niépce obtained photographs by means of the camera on very specially treated plates.(1)

At this point the history of photography becomes so complicated that we are forced to adopt a method of attack. It should be the purpose of a history in a paper such as this, I feel, rather to concern itself with the logical development of the means employed, rather than with a detailed account of the private lives of the men who did the work. Names and dates are, of course, of interest and value.

We have now traced the story of the photograph from the realization that silver nitrate is darkened by light to the first reasonably successful attempt at the use of the camera obscura. The obstacles to be overcome before photography could become a useful recording instrument were very formidable. First of all the sensitive recording agent was far from being as sensitive as it should have been. An exposure of seven to eight hours was sometimes necessary. Secondly, there was considerable weakness in the camera,

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(1) The Encyclopaedia Americana, Volume 22, p. 2

particularly in the power of the lens. Thirdly, there was no satisfactory way in which the photograph could be fixed after it was taken: i.e., no solution could be found which would completely wash away the unexposed silver salts. Thus one physical and two chemical problems faced those who desired to make better photographs.

The physical problem of the camera was more easily overcome than the two chemical ones. Improved methods in grinding accompanied by experimentation improved the lens and by 1850 the lens had reached a rather high state of perfection. This was not such an easy process as the previous statement might imply, for even now each year finds better lenses or lenses adapted to special processes. However, it was not quite right to say that the long exposure necessary to take a picture was due to the fact that the camera was not strong enough. Much of the "blame" was due to the recording material which was too weak.

Niépce, who we might say was the first to produce a distinguishable photograph, was joined by Louis Jacques Mandé Daguerre, a painter. Between them they developed the process of photography chiefly by

the use of iodine to make silver iodide. For their sensitive material they used silver plated copper which was treated with oil and iodine. In 1829 Niépce gave Daguerre his secret and in 1833 died. From that time on the process was known as the daguerreotype.(1) Many people believe that Niépce was never given his share of the credit.

The many improvements which now took place are of interest only to the scientist. Briefly, they consisted of betterments in the sensitivity of the plate by means of bromine vapor.

The next great step was by Fox Talbot who in 1839 described a process of photography by which he could obtain a picture in full sunlight in half a second. For his sensitive surface he used a silver nitrate and salt solution on paper. His method was, as far as the silver nitrate was concerned, essentially the same as that used by Wedgewood (and by J. B. Reade much earlier than either). In 1841 Talbot protected his "invention" by a patent. The picture developed itself in the dark and was fixed by washing with clear

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(1) The Encyclopaedia, 14th Edition, Volume 17, p. 800

water. The method was called Calotype, or "beautiful picture".

Talbot is often given credit for having been the first to produce a negative. However, in this he was preceded by Niépce de St. Victor, a nephew of the previously mentioned Niépce, and by G. LeGray. The latter was responsible for the popular method of reproducing the picture by means of a waxed paper negative. The former, however, had a more important contribution to make. He used albumen on glass, which was obviously more transparent than paper. This was a very sensible and important invention. The albumen substances used were either white of egg or starch.(1)

In 1839 Sir John Herschel, a man whose name should have a more important connection with photographic discovery than it has, proposed hyposulphite of soda for fixing prints instead of the common salt in use until then.

In 1850, collodion, which had been suggested by LeGray, was used by F. Scott Archer to coat glass and hold the nitrate solution. The collodion itself

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(1) The Annual Cyclopaedia, Volume VI, 1881, p. 746

was not affected by the nitrate, as had been the albumen, and was much easier to prepare. At first the collodion worked more satisfactorily when the plates were wet. This proved a handicap to easy handling of the plates, and to work outside of the studio.(1)

In 1854 Marc Gaudin described his research on dry plates in which he washed the sensitized plates and recoated them. He found that the plate was then quite as satisfactory dry as it had been wet. This discovery may not have been the greatest made in the chemistry of sensitizing the photographic plate, but it certainly was an important one as far as commercial photography was concerned. All forms previous to the wet plate were either too weak or too expensive to warrant commercial use. The wet plates were good at recording and reasonably inexpensive to make, but were clumsy to handle and required heavy apparatus for field work. With the coming of a dry plate which was a capable recording agent, was fairly inexpensive, and was easy to transport, the way was opened for practicable photography and especially for commercial

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(1) The Encyclopaedia Britannica, 14th Edition, Volume 17, p. 801

photography. By 1881 a dry plate could take a picture in 1/150th of a second.(1)

Discoveries in the matter of sensitivity after the perfection of the dry plate were important but not outstanding. In 1864 Bolton and Sayce perfected a gelatin emulsion process in which the nitrate was mixed with the emulsion before it was transferred to the glass plate.

The end of progress toward sensitivity is apparently not yet reached, for each year brings more sensitive films. At present some are capable of recording the impression in less than 1,000,000th of a second. Panchromatic film was introduced in 1928 and has since come into general use.(2)

The Medium

The material on which photographs were recorded has a little history of its own. Silver plated copper was used by Niépce and Daguerre for the daguerreotype. Glass was first used by the nephew of Niépce in 1848. Until recently glass was the most common medium. Before 1870 celluloid was introduced to serve

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(1) The Annual Cyclopaedia, Volume VI, 1881, p. 747
(2) New International Yearbook, 1929, p. 670

as a supporting base for the emulsion. The celluloid film had the advantages of being unbreakable, lighter in weight and easier to handle. C. Silvy in 1870 is thought to be the first to use a roll of film to make several pictures without changing the film.

The roll film was not only convenient, but could be loaded and unloaded by amateurs and conveniently developed by professional photographers.

George Eastman revolutionized the business of photography when he popularized the taking of pictures with his use of the roll film in a box camera. Roll films are used extensively in the new small camera and the number of pictures that can be taken on one roll is constantly increasing. At present there are special cameras which take several hundred pictures without changing the roll.

Color Photography

Color photography has long been the aim of experimenters in photography. In 1839 Sir John Herschel described slight color effects which he produced. In 1848 Becquerel succeeded quite well in reproducing the colors of a drawing onto a Daguerreotype.(1) Since

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(1) Encyclopaedia Britannica, Photographs in Natural Colors, 11th Edition, Volume 21, p. 494

then many have tried to catch color, but only a few have met with success.

In 1861 Clerk-Maxwell discovered that all colors could be obtained by a mixture of red, green, and blue-violet. Experimenters have followed this principle in most of their work. Professors Joly of Dublin and MacDonough of America produced the first really successful color photographs.(1)

Reproduction of natural colors was easier on the negative than on the positive and in the "olden days" many colored glass negatives were made to be hung in windows where the light should show through them.

It is of no value here to tell of the means by which color photographs have been improved upon, nor of the process by which colored photographs are made, since the process was, and still is, a long one. Within the last few years, colored photographs have been used with increasing frequency and the method of making them has improved rapidly. Many of the leading magazines of the country have employed color

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(1) Frank R. Nevins, The Technique of Color Photography, p. 2

photography for several years with considerable success. Very recently a camera was invented which could take instant color photographs under artificial light. An amateur camera, however, which can take satisfactory color photographs is yet to be invented or perfected.

Improvements in both the camera and the film are taking place at such a rate that it is difficult to keep track of them. Many of the best books are being written and many of the best experiments are being made on the continent. The French have invented a film which is particularly sensitive to the x-ray.(1) A method of making half-tones by means of a screen in the camera itself is only an example of the work being done.(2)

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(1) New International Yearbook, 1928, p. 601
(2) Ibid, 1929, p. 670

PART III

THE ECONOMIC PLACE AND FUNCTION OF COMMERCIAL PHOTOGRAPHY

THE ECONOMIC PLACE AND FUNCTION OF COMMERCIAL PHOTOGRAPHY

Let us first of all examine the underlying reason for the important place which we have given the photograph. In reality there are many reasons and we shall see more of them later: but there is one basic or fundamental virtue which is by far the most important. This is the universal "appeal" (for want of a better word) which the photograph holds or creates. This appeal is more powerful than one might be led to believe offhand. It is bound up with the apparent truth which the photograph seems to portray.

But we must say "seems to portray", for there are more than one means of altering the truth of the photograph. No one should be led to believe that pictures cannot lie, for they can, and much of the change possible to the negative is so done that it quite escapes detection. Retouching (adding to the negative, etching (subtracting from it), and the use of chemicals to change its texture are only some of the methods used. Of course, some of the alter-

ation is designed to be noticeable, but that is a different matter.

However, we are to consider the economic use and function of the photograph, despite the fact that it may be altered.

In attempting to show the contribution of commercial photography to our civilization, let us consider some of the fields of human endeavor in which it has played an important part.

Astronomy

To the science of astronomy, photography has been of great assistance. The first celestial photograph was made by Draper in 1840.(1) Since then the camera's eye has been playing a role of ever increasing importance. The chief advantage of the camera over the usual methods of celestial observation is that the photograph can be carefully studied and preserved. More, the eye can take in but a very small part of the celestial hemisphere, while the eye of the camera is much larger. At present there is work being done to map the whole sky, but the end of that work is not yet in sight.

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(1) The Encyclopaedia Americana, Volume 22, p. 6

A second great contribution which the photograph makes to astronomical observation is that it records many things which either cannot be seen or which escape attention. Frequently, a phenomena of the heavens which is not noticed by the human eye will be found on the photographic plate.

Color photography is being used to study the solar system and has led to the discovery of magnetic fields in the sun spots.(1)

Such contributions as these make photography of great use to the astronomer. And although the average commercial photographer is seldom called on to do the more delicate recording, he does some work with the sun and moon, especially at the time of an eclipse.

Medicine

Photography has proven a valuable contribution to study in the field of medicine,(2) although not to the extent which is achieved in astronomy. This has been the case largely because the camera

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(1) The Encyclopaedia Britannica, 14th Edition, Volume 17, p. 834
(2) Edwin C. Buxbaum, "Photography in Medicine", The Commercial Photographer, October, 1934, p. 20

does not record objects exactly as does the human eye (which tends to center its attention on small areas). Especially has this been true in the case of medical record photography, i.e., the photographing of patients, specimens, apparatus, etc.(1)

In other fields of medicine photography has proven of greater value. Microphotography appears to be a possibly great field, although at present it seems to be limited to dermatology (and then too often merely for the use of the advertisers).

Radiography is used more often and probably to more good than any of the other photographic forms. At present it is largely confined to study of bone conditions,(2) but constant experiments with different forms of light are rapidly bringing about the possibility of the use of the X-ray with substance not so opaque in nature.

An article in the Boston Post for December 17, 1934, states that the American Association for the Advancement of Science has exhibited a method of studying blood and germ cells in natural colors; which

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(1) The Encyclopaedia Britannica, Volume 17, p. 834
(2) The Book of Popular Science, Group 8, Chapter 33, p. 4921

is claimed to make it possible to differentiate between apparently similar organisms and so aid in the study of disease.

Microphotography

There is one form of photography which is rather difficult to classify, but which has wide possibilities and seems applicable to nearly every form of photography either general or commercial. This is microscope photography, often called microphotography, or photomicrography. Medicine uses it to study cells and small organisms, the scientist uses it to make a record of small structures, the manufacturer uses it to detect flaws in materials, the salesman uses it to back his talk, and the advertiser uses it to substantiate his claims or to present new illustrations. The accuracy and appeal of such pictures is remarkable. It need hardly be stated that the work must usually be done with special equipment. It is said to be a coming business practice in industries dealing with metal to ship a microscopic picture of the structure of the metal along with the order.(1)

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(1) Chas. W. Shipman, "The Microscopic Eye", The Commercial Photographer, October, 1925, p. 22

The photography of snowflakes is perhaps best classified as a form of microphotography. This interesting work, originated by Mr. W. A. Bentley, has revealed many designs for the crafts.(1)

Spark Photography

We have given evidence that photography is superior to our eyes in that it records permanently, can see further (celestial photography), can see more minutely (microphotography), and can see into things (radiography). Now we find that there is a kind of photography that can see things which happen too rapidly for our comprehension. This is the new Spark Photography recently developed at the Massachusetts Institute of Technology and given much attention in the press.

The extent to which these spark photography pictures are interesting and useful can only be realized by seeing them. The method used is essentially the same as that in making motion pictures. In the "movies", however, the film must be stopped for a small fraction of a second to allow for each exposure.

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(1) W. A. Bentley, "Photographing Snowflakes", The Commercial Photographer, September, 1926, p. 428

In the spark pictures the film runs smoothly, the exposure being made by spark which flashes about four thousand times a second. The length of exposure is reduced to as little as 1/100,000th to 1/500,000th of a second. The film travels at the speed of about 200 miles per hour. Since the spark is stronger than sunlight and the film extremely sensitive, the resulting pictures are very clear and without the slightest trace of motion.(1)

In June, 1931, the Science and Invention magazine published an article telling of a similar machine in which the film ran at 2,160 miles per hour. The pictures shown appear to be very much retouched. The article was no doubt erroneous, especially as to the speed of the film.

Aerial Photography

Aerial photography is an interesting and useful branch of photography which is constantly finding new applications. At present either an airplane or a dirigible is used, although when flight is not practicable a small balloon controlled from the ground

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(1) Popular Science Monthly, January, 1933, p. 41

is used.(1) The chief uses of this form of photography are to map the ground, to explore unknown territory, to obtain special view of various subjects, and to study phenomena such as the curvature of the earth.

Captain Stevens in doing work for the United States Air Service and for the National Geographic Society has obtained the best results to the present time. He has taken accurate pictures from as high as 40,000 feet and to as great a distance as 320 miles. The latter distance is much greater than the human eye can see under similar conditions. There is said to be much value to these pictures in the study of the curvature of the earth.

On the third of April, 1933, an airplane flew over Mt. Everest in the Himalayas and took pictures of that mountain and the neighboring regions.(2) Captain Stevens has photographed Greater New York from the height of 26,000 feet; the photograph takes in an area of 3,000 square miles, and is remarkable for its clearness.(3) Captain Stevens now has a plane in which

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(1) New International Yearbook, 1930, p. 624
(2) National Geographic Magazine, No. 64, October, 1933, p. 127
(3) Ibid, November, 1933, Photographic Supplement

he can take aerial photos, develop and print them, piece them, and drop them to the ground before landing.

Very few commercial photographers have the equipment to take aerial pictures from any great height, but some work is done with graflex cameras from low elevations.(1)

One of the most interesting uses of aerial photography has been in the discovery of land formations which were not visible from the ground. In the air the concentrated field of the camera shows things previously unnoticed. Ancient cities, the huge drawings of ancient peoples, running tracks long since forgotten, and lost streets in the heart of New York City, are some of the interesting things observed. In England, ancient boundary lines have been discovered.(2) The work is one of increasing importance.(3)

Photography and the Law

Photography is constantly proving itself of value in jurisprudence. In criminal actions photographs are being used more and more.(4) The cataloguing

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(1) Wilfred Whitehead, "Aerial Photography", The Commercial Photographer, November, 1925, p. 47
(2) "High Flying Cameras", Popular Science Monthly, October, 1933, p. 22
(3) Same as (1)
(4) Many photographs were used as evidence in the famous Lindbergh kidnapping trial, January, 1935

of convicts by this means is common. Of recent years the photographing of fingerprints has taken on great importance, since a central clearing house for finger prints is now the chief weapon of the law administrators at Washington. Many other uses of the photograph, such as shots of the scene of the crime, the position of various bodies and objects, the condition of accessory tools, are all of value as exhibits.(1)

In civil actions, photography plays quite as important a part. Pictures of the property or thing about which the suit revolves are frequently entered as evidence in the courts. Many insurance companies maintain contracts with photographers to take pictures of the spot and things involved in accidents. Auto collisions are perhaps the most frequently taken for this purpose.(2) It very often happens that the same photographer takes pictures for both sides. Sometimes the photographer is called into court to certify as to the validity of the pictures.

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(1) Aubrey J. Drummond, "Mysteries My Camera Has Solved", American Magazine, April, 1933, p. 64

(2) New International Yearbook, 1932, p. 666

It is undoubtedly true that lawyers do not often realize the value of the photograph as a means of evidence; on the other hand, it is true that the photographers who take such pictures do not often recognize certain requirements which are necessary to make a picture both acceptable and valuable. Briefly, these are the rules which should be followed: nothing of importance in the scene may be changed; the angle of view of the lens must be that of the eye; the camera must be level (this is not always possible); the camera back must be at a right angle to the lens; the camera should be at about the height of the eye; the time of photographing should be carefully noted; color sensitive plates should be used; the taking and finishing should be done by the same person; the exact location of the camera should be known (a map is handy); there must be no alteration or retouching on the negative; and the photographer must be able to swear in court as to the validity of the picture.(1) With the critical analysis of details which is made by the modern lawyer, such points are valuable ones to remember.

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(1) Ryder LaVerne, "Photographs as Evidence", *The Commercial Photographer*, April, 1926, p. 222

Photography and Research

Photography as used by the research scientist has so many varied forms that it is hardly possible to more than mention the subject in a few paragraps. There is really no definite form of photography which the scientist uses; in fact, it is quite common for experimenters to invent new methods. Winslow and Boyd have made simultaneous flame and pressure studies of various mixtures within an automobile engine.(1) The resulting photographs appear in the form of charts and from them physical measurements may be made and graphs drawn. Very often usual methods of photography must be adapted to the situation, as is the case when the inside of a furnace is the thing to be taken.

Any or all of the methods of photography which I have mentioned previously may be used. Aerial photography has been used to locate the remains of ancient dwelling sites and of old boundary lines. Microphotography is the tool of the scientist in nearly every field. Spark photography appears to have limit-

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(1) Industrial and Engineering Chemistry 23, May, 1931, p. 539

less possibilities, especially in such work as recording the damage done to articles on impact, the flight of bullets,(1) and the movement of objects whose swiftness escapes even the eye of the slow motion camera. To what countless fields of physical and chemical research, from aviation to zoology, the process of spark photography will prove of value, only time will tell. The possibilities seem to be <u>very</u> great.

Photography in Business

We have briefly covered the fields of photography which, as we have shown, although possessed of great economic and commercial importance and possibilities,are not usually linked with the words "commerce" or "business" in their strict sense; and which, at any rate, are more specialized in their methods than is the work of the average commercial photographer.

We now approach those functions in which it is more common for our "average" commercial photographer to engage.

The contribution of photography to the field of business may be divided into three main sections.

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(1) The Encyclopaedia Britannica, Volume 21, p. 169

The first is concerned with photography as it is used in recording various things, persons, or activities. The second is concerned with the use of photographs as samples for salesmen. The third considers the use and function of photography in advertising.

Recording

Photography is, by its very nature, an extremely complicated subject. Commercial photography is, of all forms of photography, the most complicated. Although this analysis has resolved commercial photography into a more orderly arrangement than has any previous work, there still remains one division, that of Record Photography, which will be forever complicated and capable of more careful subdivision; this because of the increasing discoveries in photographic methods, and because of the enlarging field of activity which is presented.

It must be kept in mind that commercial photography is not concerned only with those pictures which business uses, although such work, of course, is the more common. The commercial photographer takes any sort of pictures which are suited to his equipment, his ability, and his pocketbook. In other words, when

we have eliminated unrelated forms of photography (see the Introduction), we find that the photographer is the one who decides whether or not a piece of work is commercial or not.

Record photography has a great deal of work to do in the industrial field. Most of this, as we shall see, is potential rather than actual. Very often in industrial and engineering work a series of photographs serve to form a continuous record of the thing being built or the work being done. Such photography might better be called "progressive". One of the most common uses of such record photography is in connection with building, when it is desired that a record be made of the work done at various stages. Every other form of engineering is as capable of this systematic recording of progress. Streets, excavations, tunnels, monuments; all of these and more should be material for the camera. Yet buildings are the only constructions commonly photographed in various stages. Commercial photographers frequently find themselves called upon to do such work, although the small camera with its high state of physical perfection has changed the picture somewhat. Modern contractors

often take their own progressive pictures with their own cameras.

Industrial concerns often keep photographic records of their buildings as new ones are added, or old ones improved upon. More than that, all additions in the form of plant, fixtures, accessory equipment, or transportation facilities, are capable of being recorded photographically. In fact, there is hardly a thing connected with an industrial establishment which does not lend itself to photography. Exterior views, interior views, pictures of work done, time and motion studies, groups of employees, officers of the company, the books of the company, decorations, everything including the summer picnic is possible of photographic recording. Very often the picnic is the only thing which does get taken. In actual practice the number of photographs made in industrial concerns is rather few, for it is seldom that a company sees the long term value (if any there be) of such pictures. Installations and finished goods are perhaps the most commonly photographed. The scientific uses of photography in industry have been mentioned, but it might be well to add that many of these eventually take the form of records.

An interesting method of photography which serves as an illustration, an engineering aid, and an excellent witness in court, is that in which the measurements of the article or scene are superimposed on a partially darkened print. The position of things absent may be indicated. The work is done on the negative and does not take a great deal of skill. The result is both striking and useful.(1)

To the retail establishment, photography has slightly different contributions. Here there is less variety in the recording to be done. Displays in the window and in the store are the most likely material. There is much demand for this sort of picture, and in the "average" town the "average" photographer spends much of his time at such work. The reason for a large number of the calls for such work is that it is the custom of many industrial concerns selling to retail stores to hold contests, and award prizes to the store having the best display. The only way in which the usual contest can be judged is by the photos sent in; hence the call for the commercial

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(1) Kenneth D. Newell, "A New Formula", The Commercial Photographer, January, 1933, p. 94

photographer. Strangely enough, the lighting conditions necessary to produce a good photograph are such that displays inside a story can best be taken in the daylight, and those in the windows at night. The latter type of display is the more frequently photographed.

When other than displays are involved, retail stores are potential rather than actual prospects for the commercial photographer. The small retail store does not have the money to indulge in "institutional" photographs. The larger the store, the more possibilities of selling the idea of photography, although the probabilities do not follow proportionately. The occasional event and its attendant crowd are sometimes desirable to the proprietor of the store.

Any type of business establishment which occurs between the manufacturer and the retailer has but little to offer the photographer, or he to them. The goods which the middleman handles are usually photographed at the place of manufacture, if at all. His place of business is usually not too beautiful to behold. And although interesting studies have been

made of such places it is hard to visualize at the present time to what use he might put his pictures. Of course, there are the usual contract jobs such as the Cudahy Company might offer to the local photographer when it is erecting a new plant or buying a new fleet of trucks for local distribution. Yet such "odd jobs" are quite as incapable of prediction as is the weather; or less.

Newspaper photography work is, strictly speaking, a part of commercial photography. Most of the actual picture taking is done by the staff of the paper. Sometimes, however, the equipment of the paper is not adequate to take care of the job. In such a case (as the taking of a large group or with an indoor scene requiring special lighting), the commercial photographer is called in. Many newspapers, of the smaller variety, maintain contracts with local photographers to take "head and shoulder" pictures of individuals to grace the top of articles. Again, many studios, although not taking the actual pictures for the paper, do all the developing and printing. These three types of work, then, constitute the usual connection of the photographer with the newspaper.

If one desires to become a photographer with a newspaper he may be classed as a commercial photographer. His work, although varied enough in itself, is not of the complex nature of the usual commercial man.(1) He will find that each year is bringing out new equipment of such increasing perfection that almost everything is possible of being taken. The advent of the small, easily portable camera, fast films, and strong hand lamps make the time of day, the state of the weather, and the speed at which the subject is moving no great obstacles to his purpose. And the result of his efforts need not be perfect, for the skill at which a picture can be filled in is often evidenced on the front page of our more notorious tabloids.

This must be said of photography in the newspaper. It has done more, I am sure, to retain and enliven the interest of the general public in photography, and to make the average person susceptible to photographic illustration in advertising, than has any other one agency.

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(1) Robert H. Goodsall, A Beginner's Guide to Photography, p. 76

Somewhat akin to newspaper photography is that in the magazine (not in advertising). As a general rule, the work is of a decidedly better quality. This is because the magazine is a more expensive publication, because it is expected to last longer, and because it has a printing surface which is far superior to the pulp surface of the newspaper in the matter of recording halftone reproductions.

General Recording Functions

There are a great many kinds of work that the commercial photographer essays which may not strictly be classed under any of the following headings. These types of recording we may call "general". Most of these are connected with business only as far as the photographer is concerned.

Studio Recording

One phase, which defies subdivision, is that general run of things which flow into the posing room of the commercial photographer. Everything from bird houses to loving cups may come in tobe recorded. People, either individually or in groups, may be taken. It is often doubtful whether to class them as portrait sittings or commercial photographs. It has always

seemed that one or two persons are best classed as "portrait" and that a group is best called "commercial".

Recording within the studio presents only regular difficulties due to the varied nature of the things to be photographed. Lighting, usually, is standardized, and the camera angles are more or less set. The question of the type of light to be used in the studio work is a common one. In the last analysis, it must be recognized that artificial light is, by means of high-lights and shadows, capable of changing the appearance of the subject more than natural light. Therefore, the answer lies in the extent of fidelity to natural appearance that is required. On the other hand, it must not be thought that artificial light, properly arranged, cannot give as natural a reproduction as daylight, for it can.

Outside Recording

When the thing to be recorded is not able to be brought in, or where the people are not able to come, the commercial photographer must pack up and go out. This outside work is more varied than the inside work. Almost anything may be presented for the camera

to record. Meetings, outings, excursions, and the like have his attention in the summer; banquets, assemblies, exhibitions, and such take his time in the winter.

Commercial photography outside the studio presents more difficulties and complications than one could hope to anticipate. And the difficulties are not all photographical, but may be psychological, or have to do with natural conditions. An actual case will explain much.

On a cold Sunday in November a conference at a Polish church calls to have a group picture taken. The church having been found with some difficulty, it is then necessary to pick a location for the picture. The inside of the church is poorly lighted and too small; a well-lighted spot oustide the church is chosen. Help must be obtained to carry out the seats. The people must be coaxed out into the cold air, and humored while the camera is focused. Much herding is necessary to better the arrangement of the group. Lighting is apt to be uneven because of swiftly moving clouds. One or two boisterous people delay the proceedings. A high wind moves the large, light

camera, and a car must be brought around for a windbreak. The film must be taken to the studio and a print made in time to get orders before the assembly is broken up. Thus the commercial photographer must be not only able to handle the camera, but people, automobiles, benches, and whatever else is needed.

Recording for Institutions

These are not the only recording activities of the commercial photographer. In recent years banks have acquired much property and the photographing of such buildings and land for the records of the bank is often given to a commercial photographer (although the small camera has again crept in to do much of this work). It is no small order for the average commercial photographer, when he is called upon, to photograph and keep accurate account of a thousand or two houses. Insurance companies have much the same sort of work to offer. The duty of the commercial photographer in such work is to obtain a clear, sharp picture from the best position, and to keep an absolutely accurate catalogue of the location of every dwelling or object.

Documents of banks and legal concerns are frequently photographed for record purposes. Some banks have a picture taken of every check that is handled. A photostat machine is used where the work requires duplication to the exact size, and faithfulness to detail. In such a camera the print is in opposite colors of black and white. Where a great many checks or documents are to be taken the small camera is coming to be the most usual means of photography, and a member of the staff of the bank is usually the operator.(1)

Libraries frequently have valuable books photographed page by page, rather than run the danger of damage through allowing them to be handled by the public. The cost of photographing a whole book by the use of the small camera is much less than one might think.

By the use of infra-red rays it has become possible to photograph the writing on burned or faded pages or manuscript; but our commercial photographer is not often called on for such a task.

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(1) The British Journal of Photography, January 15, 1932, p. 79

Large Scale Production

The work done by the commercial photographer so far has given the impression that most of his work is concerned with the "small" work of taking a pitcure and finishing off one or two prints. Such is not always the case. Very frequently orders for several hundred prints are placed. Such is the case when post cards are being made, or salesman's samples for a large concern have been ordered. The production of Christmas cards is a similar type of work. Not only is the picture printed on a heavy paper, but the greeting is printed photographically as well.

Also, the impression may have been given that all the work of the commercial photographer is concerned with the actual photographing of things or the finishing of things photographed. But this is not quite true. There are very many kinds of photographic work which are done in the workroom of the photographer.

Supplementary Work

Such processes, I feel, do not warrant a place in this paper corresponding to their importance; this not only because they will not, to the mind of

the average reader, be associated with commercial photography, but because a brief treatment will be of as much importance to our analysis as a more lengthy one.

The most important of these processes are: enlarging the size of the picture; reducing the size of the picture; copying a picture for which there is no negative; printing from a supplied negative; framing, mounting, or backing prints; coloring the print by hand or by baths; altering the nature of the negative by retouching, etching, vignetting, or composition; and altering the nature of the print, principally by airbrush work.(1)

Initiative Work

In untangling the complex function of commercial photography we have been, in the main, concerned with the work which the commercial photographer is requested to do. However, a wide field presents itself to the photographer who is willing to do what I may term "initiative" work; that is, work which he is not requested to do, but which has some chance of

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(1) See Photography Without Failures, George Routledge & Sons, Ltd., London, 1933

being sold. Such work is, of course, quite without bounds. It may be of anything or anybody of local interest. Football teams, parades, sporting events, races, visiting or local celebrities, unusual events, fires, catastrophes, unusual views; all have an interest value which may cause people to purchase a print. In the small community, chance photographs of beautiful orchards, crops, livestock, houses, etc., properly exhibited, may cause the owner to want to have some or give others the desire to have similar photographs made of their property. Needless to say, this work must be tactfully done and must not resolve into that low-brow, high-pressure business conducted by the street photographer.

Thus it may be seen what complex and distantly related sorts of work come under the heading of record photography alone. It is not pretended that every kind of record photography has been named or indicated. In fact, if the reader is but impressed with the nearly boundless uses of commercial photography, one purpose of the author will have been achieved.

Salesmen's Samples

Photographs are, to a considerable extent, taking the place of salesmen's samples. There are, as I see it, two very good reasons for this practice. First of all, there is the elimination of the necessity of carrying large goods when making a call. Secondly, there is the fact that pictures often have more sales value than the articles themselves.(1)

Some articles are obviously impossible to exhibit on ordinary calls. The vacuum cleaner seems to be the largest article capable of common transportation. The next thing to bringing a refrigerator to Mrs. Jones is to bring a picture of one, in use.

It is not too strange to think that a photograph of an article may give a better portrayal than the article itself. For one thing, a photograph does not always, as we have seen, tell exactly the truth. It may be perfectly reliable; it may make a pleasant thing look unpleasant; or it may make an uninteresting thing look interesting. More than that, the product or thing can be portrayed in actual use.

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(1) Encyclopaedia Britannica, 14th Edition, Volume 17, p. 805

To take an exaggerated case: a steam shovel can neither be brought into the office of the contracting company, nor can it be shown in its natural setting. A photograph fills the bill.

One concern has gone even further than that and has eliminated their salesmen in favor of the photograph. The Sportcraft Co., Ltd. found that as far as their product was concerned, photographic illustrations were as effective and a good deal less expensive. They found that even with training the average salesman was poorly informed, often untidy, and generally a poor representative of the firm. Pictures, they say, show the product as it is in real life, avoid tedious descriptions, and make for a wider range of sales to the retail store.

The use of photographs in catalogues is well known. Not all articles appear well in a photograph, and not all catalogues have the right kind of paper for photographic reproduction. But where practicable the photographically illustrated catalogue has many advantages.(1)

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(1) R. W. Clarke , "Pictures That Get Mail Orders from Retailers", Printer's Ink Monthly, February, 1932, p. 25

It is not expected that such a condition will become common, nor that the Sportcraft Co. was right in its decision, but a possibility is suggested. We shall further consider the use of such a practice in the next section.

Photography in Advertising

I feel that a discussion of the place of photography in advertising is worthy of considerable space in this thesis. It is not only that advertising photography offers one of the most attractive fields in all commercial photography, but that photography is making an important contribution to modern advertising.

To the uninitiated, advertising photography appears to be a very narrow field of endeavor. One commonly thinks of the elaborate illustrations in the Saturday Evening Post and similar publications when advertising is referred to. The conclusion formed is that there is a limited amount of such work available. As a matter of fact, more photographs are made for advertisements than one thinks. And the magazines of national circulation are far from being the chief users of photographs. In fact, it appears that many

of the more prominent magazines still use other forms of art more than the photograph.

But there are thousands of magazines, both national and sectional, trade journals, school publications, newspapers, posters, letters, hand bills and other media which the human mind has conceived, the press created, and the photograph illustrated.

What exactly are the reasons for the use of illustrations? Why use a photograph? What things are best illustrated photographically? What are the problems connected with advertising photography? Let us see if some of these questions can be answered.

Allow me to list those objectives at which the illustration aims. An illustration may try:

1. To visualize the product that it may be its own display counter, its own display shelf.

2. To picturize the story of the services performed.

3. To whet a desire for the product.

4. To provide essential atmosphere.

5. To implant an idea of superiority over other products.

6. To humanize the inanimate.

7. To demonstrate visually where words are inadequate.

8. To cause the prospect to read the copy.

9. To individualize one campaign from another.

10. To familiarize people with the packages, containers, <u>etc.</u> of the product.

11. To bring home the traditional functions of the company. Institutional advertising.

12. To make a more complete tie-up with the product.

13. To play on the emotions and put one in a pleasant frame of mind.

14. To supply continuity in a series of advertisements.

15. To dramatize the undramatic.

16. To influence the dealer.

17. To make mechanical problems easier to understand.

18. To catch the eyes of those not likely to read the text. (1)

In the main, these eighteen points, although important in that they give a rather detailed account of the chief reasons for illustrations, are capable of being condensed into three of a more general nature. We may say that the primary functions of the illustration are:

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(1) William Livingston Larned, <u>Illustration in Advertising</u>, p. 2

1. To catch attention.
2. To make the advertisement easier to comprehend.
3. To make the advertisement pleasant to look at.(1)

The attitude of some is that "Words have been overdone; pictures are the relief".(2)

Those, then, are the reasons why illustrations are a valuable asset to an advertisement. But there are many forms of art (real or potential) which can be used. Does the photograph have any advantages? Should it be used all the time?

As to the first question. Photographs are somehow accepted, because of their nature, as being inherently true. This is perhaps natural enough, for to the mind of those who see them, photographs record actual scenes, and "pictures cannot lie". In the public mind there has always been a close correlation between photographs and the truth. Even though photographs do not always record an actual scene, and are quite easily changed, that fact does not lessen

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(1) Perry Mahaffey, "Helping Advertising by Photography", <u>The Commercial Photographer</u>, June, 1930, p. 462

(2) Temple Scott, "The Use of Photographs in Advertising", <u>The Commercial Photographer</u>, January, 1926, p. 128

the value of the advertisement as an advertising force.

Then there is the danger that the drawn, painted or etched illustration will appear arty, or will be so elaborate as to draw attention away from the other parts of the advertisement. True, the photograph has similar possibilities, but not to the same extent.

The photograph not only embelishes and makes more believable, but it can tell its story quickly and so compete with the other forms of advertising which crowd the magazines and newspapers.

Photographs do not have to refer directly to the article but may be used in analogy. Thus the use of the photograph as a means of illustration is practically unlimited.

But this does not mean that the photograph is the only satisfactory means of illustrating advertising. The contrary is very often true. It would, moreover, probably be to the disadvantage of the photograph were every advertisement so illustrated; the individuality of the photograph would be, to a large degree, lost. It is never expected that the photo-

graph will supplant other forms of art; except, perhaps, in a few special industrial fields.

There has been much controversy as to the part that "art" should play in the commercial photography and as to whether the photograph should be all detail or all suggestions.(1) But it seems that a balanced photograph may be artistic as well as truthful.(2)

The choice between photographs and drawings is no longer a question of choosing between a naturalistic or purely decorative art. Usually, however, photographs are considered to lean towards the naturalistic as they are not capable of being so vigorous as are drawings.(3)

A very practical argument in favor of the photograph is that it is relatively inexpensive as compared with other art forms. A specially prepared photograph may cost several hundred dollars, but a specially painted photograph may cost several thousand. However, very satisfactory photographs may be

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(1) John Everard, "Advertising to Women by Photography", The Commercial Photographer, October, 1934, p. 9
(2) William Ellis, "The Advertising Photograph", The Commercial Photographer, November, 1929, p. 6
(3) George B. Hotchkiss, An Outline of Advertising, p. 306

secured from such a concern as Underwood and Underwood for ten dollars. A second practical advantage is that a photograph may be made in a few hours or less, while a painted picture would require at least several days.

The use of photography in advertising covers two fields; general advertising to the consumer, and advertising in the technical field.

The General Field

In the general field it appears that magazines and newspapers occupy the front ranks. There are so many things which enter into the consideration that it is difficult to say which of them is the more important.

The magazine makes an effective medium for photographic illustrations not only because the usual susceptibility of people holds true while reading the magazine, but because the nature of the paper in a magazine is usually suitable for good photographic reproductions. The National Geographic is an example of such a magazine. Even the critical observer must admit that the general run of such pictures are very well taken, and that some few, especially the better

ones using color photography, are really excellent from any point of view.

A survey by the Percival White Company shows that photos rank high in pulling power for both men and women. The women were found to prefer to have people illustrated photographically, while the men were more impressed by the photographs of objects. The magazines used in the survey were Liberty, Collier's, and the Saturday Evening Post.(1)

Women, who comprise some 90% of the purchasing power of the country, seem to appreciate photographs more than do men.(2) There is no doubt that as far as fashion is concerned, photographs do have a value which is not equalled by any other form of art.(3) At least this seems to be the opinion of most of the leading fashion magazines.

Newspapers, in recent years, have increased their use of photography in advertising. The pulp paper is not so well suited to half-tone reproductions as is the smoother magazine paper; hence, the

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(1) Carrol Rheinstron, "What Stops Readers Today", Advertising and Selling, October 13, 1932, p. 23

(2) John Everard, "Advertising to Women by Photography", The Commercial Photographer, October,1934, p. 9

(3) "A New Approach to Fashion Photography", Advertising Arts, March, 1932, p. 14

screen used must be coarser. Despite this, newspapers do a rather good job at reproducing pictures. The amount of photography used in newspaper advertising is far less than it might be. The conclusion, then, is that there is a feeling, probably not conscious, among advertisers that a photograph does not pull so well as a drawing. With local advertising, which much in a newspaper is, a hinderance to the use of the photograph is the cost of the cut. Often this price, although very little to a large manufacturer, is more than the small merchant can afford.

An exception to the inability of the newspaper surface to produce an exceptional picture, is found in the case of rotogravure. The paper used has a smoother surface, and the machines are superior. The printing is done in a soft brown color, and the photographs are usually rich and clear. There is a constant attempt to increase the advertising in the rotogravure section, and the movement seems to be meeting with considerable success.

The Technical Field

Advertising in the technical field offers a better opportunity for the use of the photograph than

does the general field. Whether one is advertising a machine worth several thousand dollars, or a tap worth but a few cents, the buyer demands pictorial evidence of the appearance of that for which he is paying his money. Nowhere more than in the technical field is it a necessity that the product be pictured in as accurate and attractive a manner as possible. A photograph makes a good technical illustration because its accuracy is its outstanding characteristic in a business where accuracy is the greatest single requirement.

A second important point is that the photograph costs relatively less than is the case in the general field of advertising.(1)

The technical advertising illustration serves any or all of the following purposes:

1. To show the product.
2. To illustrate its use.
3. To show the benefit or results of using it.
4. To create atmosphere.
5. To serve to arrest attention.
6. To beautify the layout.(2)

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(1) C. Sloan and J. Mooney, Advertising the Technical Product, p. 222

(2) R. Bigelow Lockwood, Industrial Advertising Copy, p. 37.

While once the picture of a technical product was a plain unadorned thing, the modern photographer has made the roller bearing or the bit of stock a thing of beauty as well as an accurate portrayal of the appearance of the article. By the use of lighting and shadows, by unusual angles, and by striking or unique arrangement of the objects, results are obtained which seem to be far removed from the word "technical".

The interesting part of this work is that there seems to be nothing which is not potentially a work of art. The interest lies in trying to bring out the hidden quality. If there remains any doubt in the mind of the reader that the photograph illustrating any piece of merchandise or any scene may not be classed as a work of art which is, if no more, very pleasing to the eye, it remains only for him to look into such a publication as Advertising Arts, and have all doubts dispelled. The pictures show an excellent use of perspective and an appreciation of of the use of color values as well as of lighting.

Miscellaneous Illustrations

There still remain other kinds of advertising which uses photography. These are the miscellaneous forms of advertising media such as billboard posters, street car cards, window displays, enclosures in letters, and similar agencies. Of the virtue of photographic illustration in these fields, as much can be said as has been said in connection with the magazine; the value of the photograph as a means of illustration is apparent, yet it is obviously not used as much as it should be.

Billboard posters, particularly the large ones, seem to still favor the drawn illustration nearly to the exclusion of the photo. It is apparent that advertisers do not feel that a photograph can be enlarged to the right size and still retain the texture of the picture. But enlargements can be made to a very considerable size without destroying detail. Smaller posters seem to make a more frequent use of photography. Street car cards use photographs most frequently to pictorially represent the countenance of the one who certifies as to the excellence of something. This use of photographs, (often

autographed) of people who are declaring their faith in some product, is common in all forms of advertising, especially in magazines.

The value of the photograph to the sales letter is considerable. There has been, of late, so much advertising through the mails that it is only the letter which has some distinction which is given more than a cursory glance. A photograph gets attention easily, and is often very effective in holding that attention. Needless to say, the photograph must be of the right kind.

Modern Technique

The modern technique in preparing commercial advertising photographs is very interesting. The photographer does not merely take the object which is given him and make as attractive a picture as possible. Very often the photographer must completely subordinate his ideas on the subject to those of the one who is in charge of the advertising. At least the photographer follows the layout and sketch of the advertiser, and frequently discusses it with him.(1)

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(1) William Livingston Larned, Illustration in Advertising, p. 313

In many kinds of work, technical knowledge is necessary. This is the case in the taking of fashion pictures.(1) Such pictures are nearly always made in connection with the draper. At least common sense is necessary to the production of the picture, or rather, to the arrangement of the subjects. While everything may appear to be in proper order, those who pass on the value of the picture, and those who see it in print, will be very critical of an inconsistency, even in the background. Everything, even the way in which the telephone is held, must be carefully checked. Thus a wide range of practical knowledge is practically indispensable to the photographer.

The modern photographer does not merely reproduce the outward form of objects, but in addition endeavors to tell the story of their attributes and uses. The modern photographer, no less than the artist, considers the traditional portrayal merely the beginning in making the picture. He goes deeper to achieve the more complete interpretation of the article or incident. He makes new uses of the properties with which he works and is constantly proving

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(1) Lajaren A'Hiller, "Changing Styles in Fashion Photography", <u>The Commercial Photographer</u>, January, 1926, p. 119

that objects often look more alluring and give greater expression when viewed from an unfamiliar angle.

In recent years there has been created, especially in Europe, several new types of photography which have been used largely for advertising illustration.(1) Most of them have not yet become common to the advertising of this country.

The Realty Photo, so-called, is about the only one to be used in American advertising. Not really a new method, but an adaption of an old one, it was created by newspaper photographers because, we might say, they didn't have time not to create it. Ths most important characteristic of the Realty Photo is that it gets the picture, the whole picture, and not much more than the picture. It is the result of the "candid camera". It is the spirit of economy. Often made in a poor light, in crowded places and with a wide open diaphragm, there is remarkable concentration on the subject. This form of photography has the unusual perspective, the worm's eye view, violent angles, and such as its tools. The use of

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(1) P. R. Smith, "Five Camera Methods for the Advertiser", The Commercial Photographer, January, 1932, p. 145

the negative print is also probably included in this classification, although it is such a rarity as an advertising form that it hardly rates mention.

The Photomontage is an unusual photographic trick that has found but little place in modern American advertising. It consists of grafting the important or pertinent parts of several negatives together to make one. The trick is in making the resulting picture look smooth and meaningful, not unnatural and disjointed. The usual trouble with the Photomontage is that it is likely to present too much material, and the readers eye, becoming confused, passes on. The attempt of this type of photography, it has often seemed to me, is more to present the thought of the compositor than to show an actual scene.

Photo Painting is a rather poor name for the process of photographing a painting in natural colors. The photography of sculpture, clay models, and such should, it would seem, fall into this same class. A recent adaption of the Photo Painting has become quite popular. It consists of photographing, in natural colors, a picture built of colored felts, cloths, paper, tin, and anything else which the mind

of the compositor can utilize. The results are striking because of the colors, because of the texture of the materials, and because of the slightly three-dimensional effect produced by the different thickness of the materials laid one on the other.

The Phototype is a picture which makes use of type in it so that part of the text is in the illustration. At first this was simply words printed on the picture. Now many kinds of letter structure are used. The more common are wooden letters cut out and stood up to form words, and metal letters, such as lead type, put into readable order. The methods of arranging, the angle of photographing, and the lighting effects allow the great variety in this type of illustration.

The Photogram is made without the use of the camera but by laying objects on sensitive paper and exposing it to the light. The result is not a true picture but only the outline or mass of the object. The X-ray might be considered as being in this class. Despite the fact that it is seldom used for advertising illustration, I feel that it has real possibilities.

These five forms of photography are (with the exception of the first) but seldom seen in this country; yet we are not, therefore, less progressive or less artistic than others. Though our really artistic forms of photography may not be on a par with the best which is produced on the Continent, it is usually felt that our advertising illustrations, at their best, compare very favorably with those of other countries.

Color

Many of our most striking effects are produced by color photography, which, as we have seen, is not a new process but only recently perfected.(1) The color photograph makes a decided contribution to advertising. It is more attractive; it keeps the advertisement on the table longer; it is useful when the object itself is distinctive because of its coloring; it competes more easily with other forms of illustration and with other photographs; it has a natural appeal; and it brings a better class of replies. It is often preserved or framed because of its beauty

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(1) New International Yearbook, 1928, p. 601

and thus becomes a lasting advertisement of the product or the concern. For sheer beauty of illustration the colored photograph leads the field; therefore, it is necessary to discriminate in its use since it might draw so much attention as to leave the text unread or be used with such frequency that it lost some of its distinctive appeal.

Light

A second valuable tool of the advertising (or any other) photographer is light. The varieties, textures, intensities, angles, and methods of concentration of light are quite too complex to be adequately described here. Sunlight, in its various moods, has enough complications. Artificial lights have added many more. A photograph is more often good or poor because of the method in which the light was handled. More criticisms, favorable and unfavorable, are issued on this point than any other. Light very seldom affects the photographic plate as it does the human eye (it is doubtful that such a plate could be made), and it is usually only by much experience that the tricks of lighting properly are discovered.

The use of wide angle lenses which take in much of the scene, and the use of dropping and rising fronts, all add to the variety possible in the modern photograph.

Variety of Methods

Many of the methods mentioned in other connections are adaptable to the advertising photograph. Microphotographs are used for such purposes as showing small bubbles in shaving soap; the soluble nature of a certain brand of cocoa; the condition of paints before and after exposure; the traffic film on auto paint; the structure of fabric in sheets; the nature of certain wax after application; and similar things.(1) An able photographer can make spools look like dynamos.(2)

I have been noticing in my morning newspaper that a local coal company is running a series of advertisements illustrated by aerial photographs of various places around Boston. The photographs are of good quality and appear to be received with interest; probably too much, for I fail to remember the name of the coal company.

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(1) Henry W. Banks, "New Ways of Finding Selling Points for Products", The Commercial Photographer, October, 1931, p. 17

(2) Otto Kleppner, Advertising Procedure, p. 198

Although I have not seen much evidence of it, it seems that spark photography should be of value as advertising illustration.

In making the advertising photograph, there are some fundamental considerations which the photographer does well to keep in mind. Does the illustration secure attention by appealing to fundamental instincts and human interests, by presenting that which is new and appealing to the curiosity, or by tying the picture up with things prominent in the mind of the people to be reached? Does it illustrate the product, its use, or something connected with it, in such a manner that the meaning is easy to grasp, there is nothing which is irrelevant, there is nothing which is unnecessary? Is its composition good pictorially from the artistic point of view, and from the standpoint of the meaning to be conveyed?

If these requirements are fulfilled, it is more than likely that the photographer has made a picture which will prove of use to the advertising with which it is connected.

PART IV

THE SET-UP OF THE COMMERCIAL PHOTOGRAPHIC ESTABLISHMENT

THE SET-UP OF THE COMMERCIAL PHOTOGRAPHIC ESTABLISHMENT

It is the intention of this section to give attention to the factors which affect the physical layout of the commercial photographic establishment. It is then necessary to discuss those things which would be taken into consideration by the average commercial photographer.

But of course there really is no "average" or "typical" commerdal photographer. Each one varies from the next for some good and sufficient reason. Many photographers are not concerned only with commercial work but have other interests. Some do portraiture; some finish amateur films. Towns under 50,000 population cannot often support a strictly commercial photographer. So the local photographer does whatever other work is demanded.

Other photographers vary from being "average" because their work is particularly limited in nature. The work of the newspaper photographer, who is, strictly, a commercial photographer, is limited in this manner. The microscope photographer, or the

celestial photographer, are likewise not "average". Some photographers have but one particular endeavor because they are independent enough to do only that work which pleases them.

To more clearly analyze the establishment of a commercial studio, let us assume that there is a more or less average commercial photographer. Not to be concerned by other photographic needs, we must assume also that he is concerned only with commercial photography. This will mean that he does not concern himself with astronomical photography, nor with medicine except in the development of some of the negatives, nor with microscopic observation, nor probably with aerial photography, nor with the usual work in newspaper photography. All of these processes, as has been pointed out, are truly a part of commercial photography, but are too specialized for any but those with special purposes, special equipment, or special training. But all of the more common functions of the commercial photographer come within the scope of our imaginary, average commercial photographer.

The photographer so pictured must be one of average means. His capital, perhaps, will not

permit him to purchase the very best equipment. But he still would be able to have the equipment necessary to do good work.

What, then, are the things about which the "average" commercial photographer is concerned? First of all, what shall be the location and the nature of the studio?

The studio must, or should, be located in the place which is most convenient to his clients and to himself. Most often this will be in the center of the community, town, or city in which the photographer is working. Sometimes, however, a great quantity of outside work, or work done in more than one communicy, will cause him to pick a location more in the suburbs. If it is in the city, the studio will usually be in a general office building, for the small commercial photographer in a moderately large city would find the maintenance of a separate building too great a task. Too, except in small towns, it is usually impracticable for the commercial photographer to maintain a location on the street floor of the building. We should probably find our photographer located on the second or third floor of an office building near the center of a moderately large city.

The nature, layout, and appearance of the studio is of great importance to the business. If many customers visit the studio, as it is more than likely that they will, their opinion of the business will be largely formed from the appearance of the place. The studio, then, should be as pleasantly furnished as possible.

It is, furthermore, vital that there be enough space in which to keep those innumerable pieces of equipment which the average studio has to have on hand.

Lighting is of paramount consideration, especially in the posing room where the pictures are taken.(1) It is preferable that the light for this room should be from the north, as that light is the most steady. High ceilings, and rooms which may be lighted and aired easily, are almost imperative. This is more true of the rooms which are used for developing and printing, and which must be kept in semi-darkness most of the time. It is well to have specially constructed floors of cement or other waterproof

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(1) Drummond Young, The Art of the Photographer, p. 104

material in the rooms where the developing operations are performed.

It is always advisable, though not always possible, to have separate rooms for the separate functions of the business. It becomes confusing, for instance, to have the printing, developing, and washing of prints take place in the same room. Neatness, though not imperative to the production of satisfactory pictures, is, nevertheless, of great virtue, and helps to eliminate the possibility of losing things.

As a general rule, it seems to be better to own the studio outright or to have a long lease rather than to rent it by the month. This is so since the need of certain lighting conditions, the heaviness of equipment, the need of making permanent installations (such as cement floors), and the large amount of small material, makes moving a difficult and expensive process.

The equipment of the studio is, of course, important to the functions of the business. As we are considering an average commercial photographer (who probably does not exist), it would be impossible to state exactly what equipment is necessary. However,

certain essentials are common to all reasonably well-equipped studios.

Several varieties of cameras are necessary. In the studio, a regular studio portrait camera which will hold a 5 x 7 or an 8 x 10 plate is sufficient. For field work many kinds are needed. An 8 x 10 field camera is the most useful and is easily portable. A 12 x 20 is needed for large groups. A circuit camera which by means of swinging on its base takes panoramic pictures, is useful for very large groups or for outings where there are not enough stands to make a "square" picture. However, the cost of a circuit camera is often prohibitive. A graflex camera which may expose in one one-thousandth of a second is needed for action pictures.

There are some things to be considered in choosing lenses with which to work. The focal length is important in that sometimes a longer than normal focal length gives a pleasing perspective. The depth of focus is rather important, for on many subjects, a lens with but little depth of focus will make some of the important parts of the subject out of focus. The angle of view of the lens is important when one

is taking scenic or architectural views. The speed of the lens is important where there is a moving subject.

For indoor lighting carbon arc lights are often considered the best, although electric light bulbs of great power may be used. For auxiliary lights and for high-lighting, small spot lights are the best. It is but rarely that any outdoor lighting is done, but when it is, flares assisted by flood bulbs are most commonly used. For banquets and similar indoor pictures where a portable light is necessary, there are many to choose from. Carbon arc lights may be used, but are not so consistent in their operation as they might be. A new lamp which uses two strong photo-flood bulbs and which illuminates with a powerful, even light is now considered the best. By means of a switch, three intensities of light may be obtained. Flash lights are still used where a particularly refined picture is not desired. Flashlight powder is quite common even now, but because it is hard to handle, is annoying to watch, leaves a very disagreeable smoke to fill the room, and may even be dangerous,

it is rapidly being discarded. Flash bulbs are used for smaller pictures, such as might be taken by a press photographer.

Plates and films may be chosen at the wish of the photographer. The kinds are so many, and the improvements have been so rapid, that it is not fair to say which are superior. It is generally conceded, however, that the panchromatic film, which was introduced in 1928, is, because of its sensitivity, very useful to the commercial photographer.

Enlarging and copying machines are made in many varieties. The studio camera can be made into a copying camera by the addition of another section of bellows. An automatic enlarging machine for small prints is available.

Printing machines come in all shapes, kinds, and sizes. One or more pedal printing machines are needed. A hand-operated machine serves for prints larger than 5 x 7. Since negatives seldom are made larger than 12 x 20, this is usually the largest printing machine which is needed. Panoramic printing boxes can be bought or made. They are not unlike caskets in shape.

In developing negatives, an adequate assortment of trays and pans is necessary. For developing panoramic negatives or others which are hard to handle, tanks as deep as the negative are necessary. Four such tanks would be necessary to handle the progression of developing, checking, fixing, and washing.

In developing prints, shallow pans are always used. This is because the print develops many times faster than the negative, and must be carefully watched. Prints, being made on paper, take much longer to wash than do negatives and usually require a washing machine (usually a cage which spins in a tank or water).

The drying of films is usually done by allowing them to hang overnight in a dry room. If speed is necessary, they may be dried by heat, by fans, or by means of bathing in alcohol. Devices for drying films are quite as easily made as bought. A simple kind consists of a cabinet with a hot air fan in it. It is as efficient as any which can be purchased.

The drying of prints, on the other hand, is a much more elaborate process. Some are to remain with a dull surface, while some are to be glossed over

by being dried on a shiny surface. To use "tins" for this is bothersome, long, and tedious. There are machines available which dry and gloss prints with practically no effort and in a very short space of time. Moreover, the room in which this machine operates need not be kept more than normally warm. The machines are quite expensive, but most valuable.

This constitutes most of the major equipment. There are other pieces which a very large studio might use, such as automatic developing machines, but they are the exception rather than the rule. Minor equipment such as rollers, presses, cutters and the like are used to supplement the major equipment.

Business Set-Up

Methods of doing business are quite as important to a studio as are the methods of taking pictures. The professional photographer is almost traditionally a poor business man. This is more often than not due to the fact that he is essentially a photographer and more interested in producing a good photograph than a full pocketbook. He is not usually helped by the fact that many people feel that the making of a picture is a relatively inexpensive process. Let us see what is necessary to the business set-up of the studio.

The business of running a commercial photographic studio may be divided into two parts; that to do with selling, and that to do with record keeping.

Records

Record keeping in a commercial studio is no easy task. There is an imposing complication of appointments, unfinished work, orders, random purchases, and odd sales. The small photographer cannot afford to hire a permanent bookkeeper, and has no time to keep elaborate records. A complicated system would be disrupting. The essential characteristics of the system should be accuracy, simplicity, and ease of manipulation.

As far as the cost of purchases, amount of purchases, and the kind and place of stock are concerned, a card file system has much virtue. All the entries for any one shipment can be made on one card which is then filed chronologically, or, sometimes better, by the location of the material. When the stock is exhausted or discarded, the card should be transferred to another file. Such a system is worked in conjunction with the invoice file and journal. These latter

records are not changed from their chronological order. Such a system has simplicity, although it may not possess all the advantages of a more formal bookkeeping system.

For a record of work done, a permanent book with room for necessary detail is most satisfactory. Often it is advisable to use several books, each for a different class or grade of work.

A permanent book in the form of a diary is best for appointments. This is really one of the most important books with which the photographer has contact. If several different people take appointments, which condition should not exist, it is advisable to have whoever takes the message initial the book.

The check book stubs and returned checks serve as a record of large expenditures. A cash register and book can be used for petty cash, or cash sales within the studio. Cash in and out should be checked in the book at the end of every business day.

Those, it seems, are the very basis requirements for record keeping.(1) They do not pretend

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(1) For a more detailed system of accounts, see William A. Barnhill's article "A Stock Record and Perpetual Inventory System for Commercial Studios", <u>The Commercial Photographer</u>, March, 1926, p. 193

to be perfect in all respects, but they are indicative of the kind which are best fitted to the ordinary commercial studio.

Almost more important than the records which keep track of the purchases, receipts and expenditures of the business, are the means of keeping files or boxes of negatives and prints which are to be retained permanently. The studio usually keeps the negative of whatever it photographs, and, in time, the method of storing is likely to become a problem. It is important to keep these negatives and prints since they are likely to be the sources of orders at a later date. Strong envelopes carefully numbered are necessary. A book which lists each envelope, its place and its contents, is required.

Negatives and such which are being worked upon and which have been left by some person should be given special care. The studio is liable for negligence when such things are lost or destroyed.

The costs of doing business are always a bothersome problem to the commercial photographer. A fairly balanced distribution on which to plan is: sales, 15%; depreciation and overhead, 20%; stock, 25%;

direct labor, 25%; profit and loss, 15%. Care should be taken to see that such items as the cost of transportation are included in the price of the pictures.

All problems of business, such as the length of time to be taken in finishing work, and the price to be charged, should, whenever possible, be carefully worked out. More than that, when once they are decided upon there should be as little deviation as possible.

Most important, it seems, is that the commercial photographer who wishes to become financially a success should strive to become more of a business man and not entirely a producer of good pictures. This applies to the small photographer more especially, since he has less of his time, as a rule, to devote to selling, and to record keeping.

Selling

It is but seldom that the average commercial photographer concerns himself with the selling side of business. It is usual for him to wait for business to come. Even when it does, it is not likely to be the sort of work which is most interesting or profitable. Yet the commercial photographer has at his disposal some excellent means of advertising his product.

Every picture which is unmounted may be stamped upon the back with the name of the studio and the date of photographing. Not only does this identify the studio, but more often than not proves of value to the buyer. Pictures when reproduced in a newspaper or magazine should receive credit. Calling cards, and advertisements run by the studio, should be photographically illustrated. Talks can be given before clubs on the interesting phases of photography.

Advertising in local newspapers is reasonably profitable, while magazine advertising, because of the wide circulation of the magazine, is not often valuable. Advertising in the trade journal of the industry with which the commercial photographer would like to work is more suitable. It is important that the classified ad section of the local telephone directory be used, for it is to that section that the person unacquainted with the city or town would refer. The bulletin of the chamber of commerce is likewise an advantageous place to advertise.

After all, the reputation of the photographer is perhaps his most valuable advertisement. It is by consistently good work that such a condition is brought

about where anyone desiring commercial work will go to a certain photographer. Until such a condition is present, it is advisable for the commercial photographer to advertise as completely as possible through the regular channels.

PART V

QUALIFICATIONS AND OPPORTUNITIES IN COMMERCIAL PHOTOGRAPHY

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The qualifications necessary to becoming a successful commercial photographer are more complex than one might at first realize. To be an able photographer, one is hindered by the swiftly changing nature and usage of photographic materials and devices, and by the physical limitations which prevent the "art" of photography from being practiced in the rather leisurely manner in which many arts are pursued.

But it is first of all the duty of the commercial photographer to take pictures which will sell. Thus the photographer must shed his artistic role and don the cloak of commerciality. Many large commercial photographic establishments are organized so that one person does not have to assume both functions; but in the smaller studios, one man must be both the creator and the seller of the picture. It is on this dual role that the success of most commercial photographers depends, (and we must perforce measure success in terms of monetary income).

Let us, for the purpose of a more careful analysis of the qualifications necessary to perform the functions of commercial photography in a satisfactory manner, assume that there are two divisions of these requirements. One consists of the technical requirements, the other the general ones.

Technical Requirements

The primary technical requirement is a knowledge of all steps in photography from the moment the picture is contemplated to the moment that it is ready to be sold. A great many detailed functions are included in such a survey, not all of which need be mentioned. However, those duties which have to do with the actual taking of the picture will be worth noting.

The commercial photographer must know where the subject is to be placed; or, if it is not moveable, where he must place the camera in relation to it. He must be able to determine what attitude or position the subject or subjects must take in order to appear as planned on the finished print. He must see that the supporting materials, (such as chairs), and the background, (such as a drape), are of the right sort and are properly arranged.

He must know at what height, in relation to the subject, he must place his camera, and at what tilt the camera must be placed; be that level, looking up, or looking down.

He must know what colors will affect his plate, and in what a manner. He must appreciate, or be able to measure, the amount of light which is present, and determine what additional illumination is necessary. He must determine what effect the direction and placement of the ultimate illumination will have on the sensitive film.

In judging this he must take into consideration the ability and type of the lens, the action of the shutter, and the degree of sensitivity of the film. He must be able to regulate any of these and compensate for the conditions present.

In taking an object which is in motion he must understand the speed at which the camera will record the subject without movement being noticeable on the film, and at what angle he must take an object moving so fast that a straight side view would be blurred.

The commercial photographer must be able to regulate the size of the diaphragm in relation

to the amount of light, the comparative brilliance of the scene, and the sensitivity of the film. He must understand the use of auxiliary devices on the camera such as the falling and rising fronts, swinging backs, and raising and lowering devices.

The commercial photographer who does much outdoor work must understand the usual methods of camera standing, and must be able to use whatever objects are handy to aid in this. It is surprising how often it is necessary to use chairs, etc. to keep the camera stand from slipping.

To achieve the desired results, the commercial photographer must understand the nature of all common physical objects so as to be able to determine their future appearance on the print. He must be able to group things pleasingly. He must be able to understand to some extent the psychological and physiological reactions of living things; and must be able to persuade, direct, interest, or catch the attention of about everything.

The efficient commercial photographer must furthermore have knowledge of the process of developing, which includes an understanding of developing solutions and equipment; and a knowledge of

printing, which includes an understanding of printing papers, machines and equipment.

In addition to this there are special methods of drying to be employed as well as and supplementary treatment such as mounting, framing, and backing (to stiffen the print).

Any alteration in the negative calls for the ability to retouch, vignette, etch, or block out. Any of these is a specialized art in itself and in a large establishment would take the attention of a person concentrating on such work. Alteration of the print itself is usually done by spotting (the blacking in of small white specks often caused by imperfections or foreign material on the negative), or air-brushing (shading by means of a spray).

Of all work mentioned, that in connection with the actual taking of the picture is the most important. Assistants are usually capable of performing the operations which follow.

Even though these more or less technical requirements of commercial photography may seem to be somewhat complex, the general requirements are perhaps more so.

General Requirements

One of the greatest assets to the commercial photographer, or to any other kind, is an artistic or creative ability. We have shown how this ability is necessary even in the photographing of the usually prosaic products of industry. Naturally, discretion must be used. Many commercial photographs seek a faithful reproduction of the scene, and that is all.

By an artistic ability it is not meant that one must wear one's hair long and don a smock. On the contrary, a neat and efficient manner is very valuable. But the need of grouping subjects in interesting positions; of causing subjects to register a natural expression; of arranging background; of directing light; and of judging exposure; makes it imperative that the photographer have more than a purely logical mind.

Closely allied to this is the need of a pleasant personality, which will allow him to have the patience to repeat attempts until successful; and the aggressiveness to make whatever changes are necessary to better the picture. In working with

living models, speed and enthusiasm are valuable; for the models must be mentally "right" to portray the part desired.

The attitude of the general public toward photography is such that a kind, persuasive personality is almost indispensible. The layman may not dare to insist that the work of a reputable painter is not art; but nearly everyone, when asked to judge a picture, tends to scan it with a critical eye. The job of the photographer is not only to take a good picture, but to convince other people that it is.

Conditions of Work

It is well to mention summarily some of the physical conditions of the work of commercial photography. Although physical requirements are not so important as the mental ones, they do play an important part in the successful performance of the work.

The work of commercial photography is largely performed indoors. Some, who work at one special task, may spend most of the day outdoors; but this is not usually the case. The outdoor work,

when it does occur, is in general limited to clear weather, but coldness is not hinderance to the taking of a successful picture, no matter how uncomfortable it may be for the photographer.

The inside work is done between rooms which have a high humidity (because of the liquid used in developing and washing) and those which have a low humidity (because of the drying done in them). Such changes, coupled with the uncertain outdoor conditions, make it necessary that the commercial photographer have at least a normally healthy body.

With the exception of the developing and printing rooms, good and sufficient lighting is necessary for the production of satisfactory pictures. In the "dark rooms", a small amount of light is allowed, providing it is of a color which will not affect sensitized paper and films. The darkness, however, is not generally the cause of eye strain, as there is not a great deal of detailed work to be done in these rooms.

The working hours of the commercial photographer are not so steady as might be desired, for very frequently it is necessary to work in the

evening. Very often this is done to secure a steady flow of work. Films take a considerable time to dry and it is the practice to develop them at night so that they may dry by morning. Then, many photographs, such as those of banquets, or of store windows, are of necessity taken in the evening. Such night work seldom exceeds two or three hours in length.

The physical effort called for in commercial photography is not usually a cause for fatigue and physical strength is not often needed. On the whole there is nothing detrimental in the posture assumed in the work.

The finishing of pictures should be performed in an unhurried manner, for such is best for both the photographer and the photograph. But frequently haste is demanded. Such is the case when the printing time of a publication must be met.

There is no unusual speed, of physical or mental reaction, necessary. A dexterity in the handling of print and negatives is gained with practice. The physical manipulations are varied to such a degree that they defy description.

Accuracy is essential in any photographic reproduction, and especially in commercial photography.

Most of the work done on the negative, such as retouching, or etching, must assume the characteristics of a part of the negative, even if it is not.

Some of the work has great variety within itself, such as the actual taking of the pictures; while some, such as sorting pictures, has great monotony.

There are usually no hazards which present a constant menace, but there are some which can become quite dangerous. The handling of large bottles of acid is perhaps the most treacherous of all the operations likely to be performed. Should any of the acid splash into the eye, which has been known to happen, there is a distinct chance of blindness. Floors in developing rooms have the tendency to be wet and slippery and occasionally cause falls.

Constant immersion in developing solutions gives the hands a dark color. The wearing of rubber gloves prevents this, although it is then more difficult to handle the prints.

On the whole, then, the occupation of commercial photography is not one which is taxing physically.

Business Ability

As has been pointed out, it is quite as necessary for the commercial photographer to be a good business man as it is for him to be a good photographer. In fact, we might say that it is more necessary. But it seems that most commercial photographers are first of all photographers, and secondly business men. The reason for this is easily seen. More technical training is needed to pass as an able photographer than as a dealer in pictures; although this is perhaps not as it should be.

It may be that business ability is a thing which is inherent, or not; but the fact remains that there are several important business-like procedures in which the average commercial photographer should engage and in which he usually does not. A photographic studio is usually notoriously unsystematic. The usual commercial photographer lacks method (perhaps neatness), and judgment to a large degree. The records of activity (which will be discussed later) are usually in poor condition. In short, the trouble with most commercial photographers is that they are not commercial. The trouble with their business is that it is not business-like.

If there is any one ability which the commercial photographer needs, it is that of salesmanship. Photographs are surely some of the most difficult things to sell. Most photographers attempt but very little actual selling, but rely on orders for their work.

The ability to see possibilities and probable changes before they happen is, of course, desirable in any occupation. In commercial photography such an ability takes the form of sponsoring the new idea and perhaps creating it, rather than anticipating it. For instance, a commercial photographer may believe that a local concern could use prints on which measurements are marked. The idea is accepted and an order is received. The ability of the photographer to anticipate the acceptance of the method, even though the method was not an original conception with him, was responsible.

OPPORTUNITIES IN COMMERCIAL PHOTOGRAPHY

According to the 1930 census, there are more than 39,500 people in the United States who are engaged in the business of photography. This was five thousand more than in 1920 and eight thousand

more than in 1910. Of the 1930 number, more than 31,000 were males and more than 8,000 females. In the present year, 1935, it is not likely that there are many more.

Not all of these people are concerned with commercial photography. Even an estimate of those would be difficult since there are so many professional photographers who do some commercial work. But two things are evidenced by the census figures; many more men are engaged in the work than women (and most of the women listed work as assistants), and the number of pure commercial photographers is small.

This latter conclusion may be reasoned from the fact that although commercial photography as a distinct profession has come into being within the last twenty years, and although this work has added much to the amount of photographic work done; and although other forms of photography have advanced; the number of people added to the number already engaged was relatively small (20%). Much of the work of commercial photography, then, was assumed by those who were already professional portrait photographers.

The census makes no record of the age of these photographers, and that is no real lack, for the age factor is of small importance compared with the mental requirements.

The usual means of preparing for the professional photography is by a modified apprenticeship procedure. Experience is most often gained by working in a studio. There are, besides this, summer schools which are sponsored by such organizations as the Master Photo Finishers. There are some more "typical" winter schools, but of these the Clarence White School is the only one which has been successful.

There is, of course, considerable literature on the subject of photography which one might study, but it is not of much practical use without the materials on which to practice. Some correspondence courses are offered, but they do not seem to be of much greater value.

Thus photography seems to be one of the few fields of endeavor which our modern educational systems have not cared for. The reasons are, no doubt, the small size of the field, its recent origin, and the rather rapidly changing nature of the work.

The methods of entering the field of commercial photography are quite limited. The usual way for one who is not experienced is for him to become connected with a commercial photographic establishment and eventually work with a large studio or for himself.

Whether one who is beginning the profession of commercial photography should start in business for himself, should join a large studio, or should work for some large company, is not only a matter of individual choice, but one which concerns the future nature of the profession. Will the "general practitioner" in commercial photography be eliminated and the specialist given his work? Only the future can tell.

PART VI

THE FUTURE OF COMMERCIAL PHOTOGRAPHY

THE FUTURE OF COMMERCIAL PHOTOGRAPHY

In an analysis such as this, our best conclusions are concerning the future. But what can we say of the future? What will happen to any business or profession when and if we emerge from that period called the depression, is highly problematical. Perhaps the business of photography will, with all other business, come under state control.

But even if our fundamental nature of government should change; even if we do lose capitalism; we shall still need photography and photographers. We have seen the importance of photography in our modern life. We have traced what photography has done. Can anything more than the generality that photography seems to have the right to continue, be said? Perhaps not; but let us see.

If the last few years have meant anything, we are going to see a steady improvement in photographic method and material. There is no reason to expect that anything but a camera will be used in taking pictures, but new kinds of cameras are bound to come. The small camera which is just over from

the Continent, is witness that we may know no more of the kind of camera that will be popular in 1950 than did Leonardo da Vinci.

But the small camera itself is due for much improvement. At present there are too many combinations to work, and the price is too high for the average man to purchase one of the better grade. This last difficulty is accounted for by the price of good lenses, which is quite high. It seems that new methods of making lenses must be devised in order to lower the price.

Reasonably inexpensive color photography cameras for amateurs will probably appear when the depression is done. Their coming will have a pronounced effect on the business of finishing amateur prints, for most of the present equipment will have to be changed.

But all changes will not be made in the camera alone. The sensitivity of film is continually being improved upon, and there is no reason to think that the improvement will not continue. It may be fantastical to think that a film and camera will be constructed that are as sensitive as the eye; but

it is not an impossible achievement. With such an outfit, pictures could be taken in semi-darkness with an instant exposure.

Improvements in color plates are in order. At present, to do very good work, the plates must be exposed for a considerable length of time. Some day there will be devised a color plate which will receive a faithful imprint in a second or two. There are color cameras which do rather good work with an instantaneous exposure, but the room for improvement is still great.

It is an imposing task to imagine what will be the future use of photography in any of the different phases of work which we have considered. But it will not harm us to view what may be the tendency.

The use of photography in medicine will undoubtedly be more extensive than is now the case. While most of the modern photography in medicine takes the form of X-ray method, in the future there appears to be much use for microphotography and for the use of color photography.(1)

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(1) See pages 39-40

The functions of the X-ray are also due for change. At present, the instrument records only opaque, or partially opaque substance. It seems that some method of focus will be devised so that translucent tissue may be more carefully studied.

Microphotography seems to have reached a rather high state of development at the present time. In the future, technical improvement will be in the direction of greater magnifying abilities, or enlargement of the field of vision of the lens. Aside from improvement in the technical methods of microphotography, it seems inevitable that the number of uses to which the technique can be put will be increased.

Spark photography is in about the same position as microphotography as far as improvement is concerned. More concentration seems to be needed in widening the field of use than in perfecting the instrument itself. At present the spark camera can catch the bullet of a rifle as it leaves the muzzle. Since the bullet travels as fast as any reasonably common object which man controls, it seems that emphasis must be more on the making of a more clear

picture, and of realizing the possible uses of the device.

Aerial photography has also reached a point of near perfection, as far as the height of the picture from the earth is concerned. The chief problem at present is to find a clear day on which to take the picture. There is still possibility of improvement in the ability of the aerial camera to pierce fog and haze. But the real advancement in aerial photography will be through its application to the various lines of endeavor to which we found it suited.

Photography, as we have seen, has played an important part in law proceedings, and it seems destined to play an increasingly important one. The use of photography in criminal law work has become a regular thing. Not only are fingerprints, scenes involved, and various articles, taken for record; but there appears to be an increasing tendency to use photography in court. In a recent murder trial of international fame, photographs were frequently referred to without question as to the validity of their testimony. In civil cases, photo-

graphs are sure to be extensively used. Their future value will depend not so much on the ability of the picture to present its case more clearly, as it will on the recognition of the value of photographic evidence by lawyers in general.

In the work of recording, which we have discussed at some length, it appears that photography will assume no less importance than has already been the case. It seems that more permanent methods of recording industrial plants, their equipment, and their products will take place.

But perhaps the small camera with its ability to take accurate, inexpensive, and easily enlarged pictures, with no great knowledge of photography on the part of the operator, will change the existing order. We have noted that in the construction industry the small camera appeared to be taking the place of the commercial photographer. Perhaps some similar action will be taken by industry.
The things which could be photographed by the industrial plant are usually easy to arrange and light, and the results would be quite as useful for record purposes as would the more expensive picture taken by the commercial photographer.

On the whole it would be a good thing if the small camera did take over this work. The plant would profit from having an inexpensive method of recording its activities, installations, productions, and the like; and the commercial photographer who, as we have shown, does very little industrial recording, would gain through the probable call to enlarge and finish those small prints which from time to time became more valuable to the company.

But this is not the only probable use for the small camera. An almost certain field is in newspaper work. Although the graflex camera will be hard to displace where the small paper is concerned, it will not take the larger journals long to see the advantage of having most of the outside staff equipped with small cameras. The reasons are nearly obvious. The small camera is easily portable; it is quite easy to operate; and it is not so expensive to purchase or "feed" as is a large graflex camera. Moreover, with more persons equipped to take pictures, many of the important but unpremeditated occurrences which are otherwise missed by the regular photographers on the paper will be taken.

Other fields for the small camera have been mentioned. They include the recording of checks and documents in banks and legal concerns, photographing of rare books by libraries, and kindred activities.

But, one might ask, does not the small camera mean a loss of business for the commercial photographer? On the contrary, it probably means more business. Most of the activities which the small camera records, are ones which the commercial photographer, because of the necessarily high cost of his work, is rarely called on to take. The developing and finishing of the films of the small camera combined with enlarging and special finishing work should prove a great stimulus to the business of the commercial photographer. For we must remember that not all of the work of the commercial photographer is the actual taking of the pictures.

Thus it appears that the small camera which is coming into use in the United States is perhaps destined to add to the work of the commercial photographer. But it must be seen that such a change will not be a sudden one, but will probably

take place gradually when business feels that it has recovered from the depression.

An interesting revival of an old-fashioned type of photography has taken place within the last year or two. The stereoptic pictures have come back in modern garb. The Keystone View Company,(1) probably stimulated by the possibilities in photography at the Century of Progress Exposition in Chicago, has placed on the market a compact and efficient apparatus for viewing pictures of subjects. The Fair, scenery, famous people, foreign life, animals, plants, industries, and other subjects are presented. The photography is well done, and the three-dimensional effect produced by the stereoptic camera is as striking as one might wish. The dual image is no easier on the eye that it was a generation ago, but there is the possibility that with an easier method of viewing the pictures there may be a return of the interest which people once had in the "pictures which stand out". There has even been some indication that magazines contemplate using stereoptic pictures with advertising.

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(1) The Keystone Company, Meadville, Pennsylvania

We now have for consideration the future of photography as an aid to selling, a subject to which we have devoted some space. We found that pictures had a distinct value in catching and holding people's attention. We noted the inherent idea of truth which is conveyed by means of the photograph. But we also found that despite the advantages of photography , it was neither probable nor desireable that the camera supplant the brush and the pen. And although the proportion of photographs used for advertising illustration in the more important magazines has increased steadily, it seems that in years to come there will not be a great increase in the amount of photography included in our present magazines.

But we found that the field of photography in advertising was much larger than that confined to publications of national circulation. And even if we were only concerned with publications, these of wide distribution are but a very few in relation to the large number with sectional or local circulation.

In all the other ways of selling and advertising, photography has more possibilities than will

be recognized for some time to come. In fact, one of the interesting things which we found about the work of advertising photography was that it was replete with possibilities of novel applications. Exactly what these new applications of photography to advertising will be it is hard to say; but an indication of the possibilities of the work may perhaps be seen in a recent Sportsman's show in Boston, where a photographer was hired by a boat company to make free pictures of people in a nautical scene. The amount of word of mouth advertising which was brought about by the finished picture is not measurable, but was undoubtedly very powerful.

Thus it appears that commercial photography is likely to become an increasingly important factor in our economic life.

PART VII

CONCLUSION

CONCLUSION

Now that something of the general future trends of commercial photography have been suggested, let me conclude this thesis by summarizing the work which has been attempted.

In the beginning it was stated that this thesis was to be rather a treatment of origin, function, and place of commercial photography, than a detailed discussion of the technical methods of photographic procedure. With that in mind, this analysis has tried to present as complete and adequate a picture as possible.

In the introduction, the place of commercial photography in relation to other kinds of photography was shown. Photography was defined and explained. A history of photography was presented which attempted to deal with that phase of the subject in a new and worthwhile manner. The purpose of the treatment was to present a concise yet logical account of the development of the fundamental means of photography.

The largest section of the analysis was concerned with a discussion of the economic place and function of commercial photography. Pains were taken to see that the many complexities should be ironed out to the best of the author's ability, and that each treatment should be adequate, without burdening the thesis with detail. The section also served to indicate the complicated nature of commercial photographic work, and to suggest some of the possibilities of originality in the profession.

The section dealing with the set-up of the commercial photographer attempted to cover the main points which would attract the attention of one intending to establish a photographic studio. Much detail was, of course, omitted, and the possibilities of changes to suit differences in needs was noted. Some attention was given to the business set-up which would be fundamental to the operation of the studio.

The fifth section concerned the qualifications which one who was engaged in the profession might do well to possess, and the nature of the opportunities which presented themselves.

The sixth section was concerned with the future of commercial photography and attempted to show what might be expected to be the future importance of the various functions of the commercial photographer.

Throughout the whole thesis it has been the attempt of the author not only to give as clear a picture as possible of the profession, but to define terms in a simple and as accurate manner.

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