The Demand for Industrial Photography in Eastern Georgia

Charles C. Irby

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THE DEMAND FOR INDUSTRIAL PHOTOGRAPHY IN EASTERN GEORGIA

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THE DEMAND FOR INDUSTRIAL PHOTOGRAPHY
IN EASTERN GEORGIA

by

Charles C Irby

A thesis submitted to the Faculty of Georgia Southern College in partial fulfillment of the requirements for the Degree of Master of Technology in the Division of Industrial Technology

Statesboro, Georgia

July 16, 1975

Approved by

Committee:

[Signatures]

[Signatures]

[Signatures]
PREFACE

I wish to offer my sincere appreciation to the individuals without whose assistance this undertaking would not have reached completion. First, thank you to my wife Jo Van who was both editor and patient typist. Second, to a truly professional educator who provided guidance and was patient with long delays, a heart-felt word of admiration and appreciation is extended to Dr. Keith Hickman, Professor of Industrial Technology, Georgia Southern College.
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CHAPTER I

INTRODUCTION

Background and Reasons for the Study

The camera has become one of society's most versatile devices by freezing moments of time for leisurely or studious contemplation at some later date. The author has had opportunities to utilize the camera for both avocational and vocational purposes. In a vain attempt to further his technical knowledge in order to maximize the use of photography for both leisure and research, the author discovered that any training beyond the basics did not seem to be available. Several colleges attended by the author offered introductory art, journalism and printing courses that served well to teach the basic elements of the photographic processes; however, none in the author's experience provided the technical knowledge that would prepare a student to synthesize information for problem solving as related to such specialized fields as photogrammetry, photomicrography, photomacrography, or medical and forensic photography. The author became curious as to how industry and government located technically proficient photographers because of his inability to further his own formal photographic education. This curiosity expanded into a proposal for this study.

Preliminary investigation through personal and telephonic interviews established the following generalizations:

1. Several major industries within the Augusta metropolitan
area made extensive use of photography as part of their production procedures

2. Most advertising photography and lay-out was exported to the Atlanta area. Some desire to obtain these services in the local area was indicated

3. No college or training institution within several hundred miles provided more than a basic course in photography

4. The United States Army Criminal Investigation Division Photographic Laboratories, Fort Gordon, Georgia, provided a two-year course of instruction that qualified graduates as experts for the court in forensic photography.

The generalizations that resulted from the preliminary informal investigation encouraged the author to formalize the study as a problem subject to more detailed analysis. The study was directed towards determining to what extent there existed a requirement for specially educated industrial/technical photographers in Eastern Georgia.

The Problems of the Study

The problems pertinent to this study were threefold. The first problem was to analyze available training in greater depth than had been done during the preliminary investigation. This aspect of the investigation was accomplished by personal visits to three colleges determined to have significant photography programs. The three colleges visited were:

1. University of Georgia
   Department of Fine Arts
   Department of Education
   Athens, Georgia
Analyses of college catalogs and research data compiled by other investigators, as described in Chapter II of this study, was also made. A detailed analysis of these findings is found in Chapter II. The data, as stated in Chapter II, substantiated the preliminary research findings that only basic photography courses were available to area students. The area student was able to obtain an industrial/technical photographic education only by travelling to major metropolitan areas in New York, California and Illinois.

The second problem related to the study was to determine the degree of interest area students had in industrial/technical photography as a career. As detailed in Chapter II, research indicates only marginal interest by area high school students (Shaw 1975).

The third problem was to investigate the actual and potential demand for skilled industrial/technical photographers in Eastern Georgia. This aspect of the study was particularly significant since published data regarding such demand was not available.

A comparative analysis of the data related to the three problems detailed above served as a significant information base for determining the need for expanding or establishing academic programs in industrial/technical photography in Eastern Georgia. This study was initiated to investigate these three problem areas and their interaction and to provide a recommendation as to the feasibility of establishing a
program for industrial/technical photography in Eastern Georgia.

The Hypothesis

The following hypothesis was used for this study:

There is a need for an educational program in Eastern Georgia that leads to an undergraduate degree in industrial/technical photography.

Basic Assumptions

The basic assumptions for this study were:

1. Industry will cooperate in answering survey questions accurately

2. Photographic educational programs offered under humanities or fine arts departments are not suited for preparing a student for a career as an industrial or technical photographer.

The latter assumption was supported by the United States Department of Labor. In reference to training and qualifications, the statement was made that

...Art schools offer useful training in design, although they usually do not provide the technical training needed for camera work. (U.S. Department of Labor 1974: 603)

The in-depth analysis of academic offerings about photography in the southern United States was accomplished in Chapter II of this study.

Limitations and Controls

The national demand for trained industrial/technical photographers has been established (U.S. Department of Labor 1974: 603); therefore, this study was related to a local geographical region and no
attempt was made to generalize beyond Eastern Georgia. The area included the following counties:

1. Columbia
2. McDuffie
3. Richmond
4. Burke
5. Jenkins
6. Screven
7. Bulloch
8. Effingham
9. Chatam
10. Liberty
11. Bryan

Particular attention was focused on the Augusta and Savannah metropolitan areas. Therefore, the following counties in South Carolina were also included:

1. McCormick
2. Edgefield
3. Aiken
4. Barnwell
5. Allendale
6. Beaufort
7. Hampton
8. Jasper

Industries queried employed more than 199 persons. Additionally, medical facilities in the following Georgia counties were also surveyed:

1. Burke
The study was limited to determining any need for persons having photographic skills not required of commercial photographers.

**Definition of Terms**

The terms used in this study that required definition are arranged in alphabetical order.

**Accident investigation** - the use of photography to document accidents

**Aerial** - photography from the air

**Blueprinting** - photographic prints made by the ferroprussiate process normally associated with the reproduction of building plans

**Commercial photography** - the branch of photography concerned with supplying the need of sales, portraits, weddings, advertising, display side of industry, and the art departments of press and
specialized publications

Criminal investigation - application of photography to the law and police proceedings

Eastern Georgia - area defined by Columbia, McDuffie, Richmond, Burke, Jenkins, Screven, Bulloch, Effingham, Chatam, Liberty counties.
The South Carolina counties included in this definition were McCormick, Edgefield, Aiken, Barnwell, Allendale, Beaufort, Hampton and Jasper

Engineering - application of photography to engineering

Forensic photography - application of photography to the law, criminal investigation, and police court proceedings

Halftone - line or dot patterns used to convert the continuous tones of varying density into a discontinuous pattern of constant density but varying area

Industrial photography - any application of photography or photographic processes used in an industrial operation such as research, production analysis, engineering and platemaking

Industry - privately owned manufacturing, selling and distribution units of the economy

Mapping - photogrammetry as applied to the production of maps

Medical photography - factual recording of salient, visible features of cases in all medical fields

Medical recording - the use of photography as a medical training aid and/or historical documentation of medical procedures

Microfilming - a specialized recording procedure for reducing and storing information photographically

Personnel identification - the use of photography for producing identification photographs
Plate making - application of photography to the production of printing plates

Product/production analysis - specialized recording application of photography to continuous monitoring of production processes

Recording operation - the use of photography to document historical production data for use in production line analysis

Research - application of photography as a research tool

Sales illustration - any application of photography to advertising of products

Security - the use of photography as a surveillance tool

Southern states - Alabama, Mississippi, Tennessee, North Carolina, South Carolina, Georgia and Florida

Surveying - the use of photography for topographical recording

Technical photography - the use of photography as a recording medium for manufacturing processes, scientific endeavors and research and development

Training - the use of photography to provide instruction

Overview of the Investigation

Steps followed in this study were as follows:

1. Background and reason for the study

2. Identification of pertinent problems related to the study

3. Development of an hypothesis as related to the problems of the study

4. Determination of basic assumptions

5. Establishment of limitations and controls

6. Review of related literature
7. Determination of data sources
8. Determination of means to gather needed data
9. Design of a data gathering tool
10. Collection of the data
11. An analysis of the data
12. Determination of conclusions
13. A statement of observations and recommendations.

Summary

This investigation was designed to test the hypothesis that a training program for industrial/technical photographers was needed in Eastern Georgia. This hypothesis was tested by comparing data related to the three problem areas of existing training programs, student interest and job demand. An analysis of existing programs was accomplished by surveying related literature and visits to the colleges previously listed. Determination of student interest was also accomplished by a review of related literature (Shaw 1975). Job demand was determined by a photographic service questionnaire sent to medical facilities and industries with more than 199 employees.
CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

Testing the hypothesis that an educational program in industrial/technical photography was needed in Eastern Georgia required an in-depth review of the literature related to two of the three problem areas detailed in Chapter I. In regard to survey and questionnaire techniques, a less rigorous analysis was required. Finally, a determination of prime sources for the survey was necessary. The required review of the related literature was conducted in the following areas:

1. Review of similar studies
2. Review of literature related to existing curriculums and student interest
3. Techniques suited for the study
4. Definitions as applied to industrial/technical photography
5. Sources for prime data.

Similar Studies

A thorough examination of indexes to published research material revealed no detailed body of information related to the need of photographic training in Eastern Georgia, nor were materials available from which such a need could be deduced. The United States Department of Labor publishes numerous documents related to job trends and training requirements; however, none available to the author provided relevant
information about the Eastern Georgia area. The Georgia Employment Bureau could not supply any pertinent information regarding either training needs or the employment of industrial/technical photographers. However, two studies germane to the problem areas of existing curriculums in photography and student interest were located.

Horrell (1971) provides a resume of instruction in American and Canadian colleges, universities, technical institutes and schools of photography. This survey of motion picture, still photography and graphic arts instruction showed that enrollment in photographic courses between 1963 and 1970 increased more than 560 per cent (Horrell 1971: 3). In 1963 a survey revealed that only 14,000 students were enrolled nation-wide in photography courses (Horrell 1964: 13-36). A new survey conducted in 1967 placed the enrollment figure at 26,000 (Horrell 1968: 3) and the latest study (Horrell 1971: 3) showed an enrollment of 79,000 students. The number of educational institutions offering one or more courses in motion picture, still photography, and graphic arts increased 42 per cent from 1968 to 1971. The 627 educational institutions represented by 1008 departments provided 387 programs leading to degrees in the above courses of instruction in 1971. Prior to 1967 journalism departments were the most prevalent teachers of photography; however, by 1971 art departments had taken over the dominant position (Horrell 1971: 4). Together, art and journalism departments represented the preponderance of offerings in photographic instruction. These two departments accounted for 47.6 per cent of school offerings and 37.4 per cent of total departmental curriculums in photography. The 10.2 per cent difference resulted because many schools have more than one department teaching the same subject. Only 202 schools offered a
degree program with a major in motion picture, still photography or
graphic arts.

In terms of semester hours of instruction taught nationally, the subject areas in Table 1 are indicative of the available training in industrial and technical photography (Horrell 1971: 6).

**TABLE 1**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial photography</td>
<td>0.01</td>
</tr>
<tr>
<td>Photographic Laboratory production</td>
<td>.01</td>
</tr>
<tr>
<td>and quality control</td>
<td></td>
</tr>
<tr>
<td>Photographic engineering</td>
<td>.0035</td>
</tr>
<tr>
<td>Photographic instrumentation</td>
<td>.0033</td>
</tr>
<tr>
<td>Medical - biological</td>
<td>.0033</td>
</tr>
<tr>
<td>Radiography</td>
<td>.001</td>
</tr>
<tr>
<td>Photogrammetry</td>
<td>.0005</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.0316</td>
</tr>
</tbody>
</table>

The southern United States, as shown in Appendix A, contained 60 schools offering photographic instruction; however, only 16 of those schools offered degree programs. The University of Alabama, Bob Jones University and Florida Technological University were the only schools of the 16 southern schools that offered instruction that lead to a Bachelor of Arts or a Bachelor of Science degree in photography.
Nation-wide only 30 educational institutions offered industrial/technical photography as part of their curricula. Within the southern United States, Appalachian State University was the only school that offered credit hours in industrial photography.

The state of Georgia had eight schools that gave credit for photography courses. Table 2 provides information about the programs offered in each of the Georgia schools (Horrell 1971: 13-55).

Table 3 shows the degrees attainable in Georgia related to motion picture, still photography and graphic arts (Horrell 1971: 13-55).

The evaluation of the data clearly identified the void in industrial/technical photographic training that existed not only nationally but specifically in Georgia. The courses of instruction in Georgia were within the analysis provided in the 1975 Occupational Outlook Handbook in that art schools offer little technical training needed for industrial photographic work (U.S. Department of Labor 1974: 603).

Shaw's (1975: 56) study to determine student interests in the occupational field of industrial photography concluded that "only marginal support to the hypothesis that student interests in industrial photography" was sufficient to justify new training programs. However, Shaw (1975) pointed out that a reevaluation of current non-technical photographic courses was in order to provide a more equitable ratio of technical to non-technical photographic training.

Related Literature

Goldsmith (1974) supported the Horrell study. The article reported that "applications for admission to basic photography courses
### TABLE 2

**MOTION PICTURE, STILL PHOTOGRAPHY AND GRAPHIC ARTS COURSES IN GEORGIA IN 1971**

<table>
<thead>
<tr>
<th>Course</th>
<th>Atlanta School of Art</th>
<th>Berry College</th>
<th>Brenau College</th>
<th>Clark College</th>
<th>Georgia Southern College</th>
<th>Georgia Southwestern College</th>
<th>Georgia State University</th>
<th>University of Georgia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Photography</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Advanced Photography</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Graphic Arts Technology</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Motion Picture Production</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual Study in Motion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photograph Laboratory and Quality Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Still History</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
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<td></td>
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<td>Still Theory</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Color</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Problems in Still</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Motion Picture History</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Motion Picture Theory</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Photographic Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Photo Journalism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>


### TABLE 3

DEGREES OFFERED IN GEORGIA IN MOTION PICTURE, STILL PHOTOGRAPHY AND GRAPHIC ARTS

<table>
<thead>
<tr>
<th>Degree</th>
<th>Atlanta School of Art</th>
<th>Georgia State University</th>
<th>University of Georgia College</th>
<th>Clark Georgia Southern College</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA/BS Graphic Arts</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MA Graphic Arts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BFA Photography</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BFA Graphic Arts</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>MFA Photography</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MFA Graphic Arts</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PhD Photography</td>
<td>X&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>1</sup> The PhD program in photography at the University of Georgia is from the Education Department and is related to the use of photography in education.

...on some campuses run as high as 1,000, while only 100 to 125 can be accepted" (Goldsmith 1974: 122). However, the contention of the Occupational Outlook Handbook was also given support by Goldsmith who said that the creation of visual images seemed to be the most important goal of the students. The students wanted to "do their own thing".

The Eastman Kodak publication The Industrial Photographic Department provided a check list for evaluation of photographic department services. Extracts from this list were used by the author in preparing the usage survey which is detailed in Chapter III. The Kodak article also reports the difficulty in locating trained personnel (Kodak 1968: 27) for a technical photographic department. Many
industries have had so much difficulty in locating qualified technical photographers that they are hiring employees on the basis of interest and aptitude and then, at the companies' expense, sending the photographers to school.

The United States Department of Labor lent support to the Kodak report that trained technical/industrial photographers are in demand. The *Occupational Outlook Handbook* (1974: 603) stated that about half of the 77,000 photographers in the United States are employed by business, industry and government. It was in the industrial, technical and scientific areas that job opportunities were expected to increase (U.S. Department of Labor 1974: 603). Wage scales were anticipated to be higher for the industrial/technical photographers. The industrial/technical photographer was able to expect beginning salaries between $9,000. and $10,000. per year, whereas photojournalists and commercial photographers average approximately $3,000. less.

Oppenheim (1966) provided guidance for the preparation and administration of the descriptive survey used in this research for gathering primary data. The subject matter dealt with the many aspects of questionnaire design, wording and quantification of data. Good (1966) contained a check list of requirements, stages, and administrative aspects useful in planning the smaller questionnaire study.

Shao (1972) contained basic information related to statistical analysis. Shao offered the most comprehensive guide for presentation of statistical data (Shao 1972: 35-67). Van Dalen (1973) served as a guide line for evaluation of the primary data.

The *Focal Encyclopedia* (1969) was the primary source for definition of terms related to photography and photographic applications.
The definitions of photographic terms used for this study are modifications and combinations of those used in the above reference.

Preparation of the list of sources surveyed was completed by using three different sources. The Chamber of Commerce of Greater Augusta (1973) listed manufacturing firms by number of employees. This list served as the source for firms that were considered as part of this study. A similar list for the Savannah metropolitan area was compiled by the Savannah Port Authority (1974). A comprehensive list of hospitals was located in a Georgia Department of Public Health publication (1972).

Summary

Two of the three required tests of the hypothesis that an educational program in industrial/technical photography is needed in Eastern Georgia were located in existing literature. The analysis of existing training programs and the anticipated degree of student interest were reviewed in a detailed analysis. Current training programs in industrial/technical photography were nonexistent in the study area, however, anticipated student response to such programs was reported to be marginal. There was no evidence to indicate that any similar study or research existed regarding the need for trained industrial/technical photographers in Eastern Georgia, although general statements regarding such need were located. These optimistic employment statements lent credence to the above hypothesis and suggested the need for more definitive study prior to implementation of such training programs.

The review of related literature provided procedural and definitional information. This study utilized the descriptive survey method suggested by several authors as previously detailed.
CHAPTER III

THE INVESTIGATION

Introduction

The purpose of this investigation was to test the hypothesis that a program is needed in Eastern Georgia to train industrial/technical photographers. The hypothesis was tested by analyzing current academic programs, student interests, and potential demand for industrial/technical photographers. No body of data existed relative to current usage or potential demand for industrial/technical photographers in Eastern Georgia; therefore, it was necessary to ascertain that portion of the required data by querying prime data sources. The needed employment and potential demand information was obtained by survey of selected employers. The closed-form questionnaire as described by Oppenheim (1966: 40-44) was used in the research. This choice was made because of the inherent advantages of the closed-form questionnaire when used in descriptive research. The major advantages were:

1. Easy for the respondent to answer
2. Quantification is straightforward
3. Respondents can be guided into answer categories
4. Misinterpretation by respondent is minimized

The questionnaire was administered to a test population determined through preliminary unstructured research to be representative for the Eastern Georgia area. The data obtained were quantified and the
quantifications were compared with the findings of the Shaw (1975) and Horrell (1971) studies. Any prejudice perpetrated as a result of the author's biases were negated by the use of standard photographic terms, the Eastman Kodak check list for industrial photographic departments, and a review by faculty members and technical experts neutral to the findings of the investigation.

Design of the Experiment

The questionnaire was designed to obtain the following information:

1. Whether or not the respondent organization utilizes photography

2. The type of photographic services used by the respondent organization

3. How the photographic services were obtained

4. The size and wage scale of the respondent organization's photographic staff

5. Whether or not the respondent organization obtained needed photographic service in the local area

6. Turn-over rate of the respondent organization's photographic staff

7. The relative need for college-trained industrial/technical photographers.

No attempt was made to identify current job availability.

The Questionnaire

The closed-form questionnaire was chosen over other data-gathering methods for reasons previously listed. The ease of completion
for the respondent was of paramount importance; therefore, the question-
naire was designed to be completed in ten minutes or less by repre-
sentatives of personnel departments. The questionnaire consisted of a
set of eight questions. All questions, except questions two A, six,
and seven, were designed to be directly contributory to the evaluation
of the hypothesis; however, failure of the respondent to answer
questions five and eight did not detract from the validity of any given
questionnaire. A positive response to question one and a lack of
response to question three, as shown in Appendix C, rendered the
questionnaire unquantifiable.

The questionnaire was divided into three sets of related
questions and two independent questions. There was no need for separate
administrative instructions or disposition instructions since these
items were made self evident by the basic simplicity of the questionnaire.
A negative answer to questions one and two B precluded the necessity
for the respondent to continue the questionnaire. The questionnaire was
printed on two pages in vertical format with triple spacing between
questions and double spacing between parts of the same question except
for question three. Question three was single spaced between parts
since the basic format for that question was tabular. The spacious
format was chosen for legibility even though handling would have been
easier if a single page had been utilized.

Each response, except as previously noted, was designed to
provide data for use in the descriptive statistical analyses for testing
the hypothesis. The purpose of question one was to establish whether
or not the respondent firm utilized photography. Question two was a
two-part question. The first part depended upon a positive answer to
question one. All respondents giving a positive response to question
one were asked to select one of three ways they obtained photographic
services. Part two of question two was answered only if the respondent
had a negative response to question one. The second section of question
two asked the respondent to forecast on a yes/no basis the expectation
of future need for photographic service. Negative responses to questions
one and two B precluded any need for the respondent to continue.
Question three was a tabular format inventory question designed to
describe the nature of photographic usage for all previous positive
responses. The respondent was given a list of eighteen types of photo-
graphic applications. The question, as presented on the survey gave
no indication as to any distinction between commercial and industrial
photographic applications. The respondent was asked to indicate both
the type photography utilized and the relative importance any particular
application of photography had over any other. This was accomplished
by having the respondent check any one of the eighteen possible choices
of photographic application as either primary, secondary, or tertiary.
Table 4 is a reproduction of question three of the Photographic Service
Questionnaire. The list of types of photography was based upon the
Eastman Kodak check list (1968: 30,31) for industrial photographic
departments. Kodak differentiated between plate making and halftone
as shown in Appendix E. Question four was a two-part question of purely
descriptive nature. Questions five and six were also designed to obtain
descriptive information about wage scales and costs of contracted
services. Question seven called for the respondent to indicate whether
or not the needed photographic services were obtained locally. Question
eight required the respondent to express an opinion as to the need of
college programs for training photographic skills. The choices of "great", "some", "little", or "none" were provided.

TABLE 4

QUESTION NUMBER THREE

The uses of photography in your company/agency are:

Primary   Secondary   Tertiary

Sales illustration
Recording operation
Training
Security
Medical recording
Accident investigation
Criminal investigation
Plate making
Halftone
Research
Engineering
Product/production analysis
Personnel identification
Microfilming
Blueprinting
Mapping
Aerial
Surveying

Validation of the Questionnaire

The Photographic Service Questionnaire was submitted to the author's senior faculty panel member of Georgia Southern College, Statesboro, Georgia to ascertain the validity of the questionnaire as a data-gathering tool. The questionnaire was also reviewed by selected individuals having knowledge in data-gathering techniques and survey design. Changes in the initial questionnaire were made, in accordance with the recommendations made by these individuals, prior to submission.
to the senior advisor. Approval of the questionnaire was given prior to submission to the test population.

**The Test Population**

The test population consisted of all firms located in Eastern Georgia and associated metropolitan areas having more than 199 employees. Hospitals in the Eastern Georgia area were also queried.

The sources of the lists for the test population were:

1. **Savannah Area Manufacturers Directory** (1974)
2. **Manufacturers Directory of Metropolitan Augusta and the Central Savannah River Area** (1973)
3. **A Statistical Profile of Health Facilities in Georgia** (1970)

A total of 119 firms and hospitals were queried. The non-medical test population represented a total employment of more than 50,000 individuals. The minimum employment figure for private firms was established on the basis of preliminary research that indicated little likelihood of photographic departments existing in companies employing fewer than two hundred persons.

The test population area was selected for three reasons:

1. The area is a prime feeder to Georgia Southern College
2. The ability to test a total population of wide diversity within a given geographical area
3. Travel and monetary considerations on the part of the researcher.

No consideration was given to the type of business enterprise queried. Anonymity was absolute since all questionnaires were unmarked.

The survey was conducted during June, 1975. No significance was attributed to this time period over any other.
Administration of the Questionnaire

The questionnaire was distributed by direct first class mail to the selected recipients. Preaddressed, stamped envelopes were included. The cover letter, as shown in Appendix B, was included to explain the purpose of the questionnaire. The questionnaire, as shown in Appendix C, had completion and explanatory instructions included in the body.

Analysis Method

The closed-form questionnaire provided for direct quantification of data. Each response, except for questions three and eight, was recorded as unity and/or face value and listed as totals. This method of presentation permitted direct comparisons of data without need for more sophisticated forms of analysis. Question one allowed for an absolute percentage since it required a yes/no response. Question two A provided two types of data:

1. Descriptive as to how photographic services were obtained
2. The relative percentage of in-house to contractual services.

Item two B provided a straight percentage of yes/no based on a negative response to question one. This question allowed non-users of photographic services to indicate possible future needs. Item three, as shown in Table 8 was evaluated on a percentage basis. The types of photographic applications were divided in the following manner:

1. Commercial applications consisted of sales illustration, recording operations, training, security, accident investigation, personnel identification, microfilming, blueprinting, aerial, and surveying
2. Industrial applications consisted of medical recording,
criminal investigation, plate making, halftone, research, engineering, product/production analysis, and mapping.

A comparison of total responses of each application according to primary, secondary, or tertiary usage was made. Questions four, five, six, and seven provided descriptive information and were tabulated as percentages based upon the number of responses. The four available choices to question eight were considered as percentages based on a positive/negative analysis. Responses of "great" and "some" were treated as positive support to the hypothesis of this study. "Little" and "none" responses were considered negative for purposes of the investigation.

The test of the hypothesis was based upon a straight percentage analysis. The hypothesis of this study was supported if industrial/technical photographic usage proved to be higher than 50 per cent. Therefore, the following tests were applied:

1. Fifty-one per cent positive responses to question one
2. Fifty-one per cent positive responses to question two
3. Fifty-one per cent of the responses on question three in the primary and/or secondary zone were classified industrial
4. Fifty-one per cent of total responses for primary, secondary, or tertiary were classified industrial/technical
5. Fifty-one per cent of the respondents have a staff of more than four employees
6. Fifty-one per cent of the firms have a turn-over of greater than six per cent
7. Sixty per cent of the companies have a wage scale exceeding $7600. per year
8. Fifty-one per cent of the respondents showing a positive response to question eight.

Summary

The closed-form questionnaire utilized in this investigation was to establish a descriptive statistical data base regarding the need for college educated industrial/technical photographers. The data so gathered was used as the third in-put for the comparative analysis used to test the hypothesis that a course of industrial/technical photography is needed in Eastern Georgia. The questionnaire was submitted to a test population of 119 representing over 50,000 employees. The analysis of the data was established as a simple percentage comparison.
CHAPTER IV

ANALYSIS OF THE DATA

Introduction

The hypothesis of this investigation was that a college level training program of industrial/technical photography is needed in Eastern Georgia.

This hypothesis was tested by analyzing current academic programs and comparing them with student interests in industrial/technical photography and the demand for trained industrial/technical photographers in Eastern Georgia. The analysis of current academic programs and the degree of student interest were accomplished by a review of the Horrell (1971) and the Shaw (1975) studies. No data were located in regard to the demand for industrial/technical photographers in Eastern Georgia; therefore, it was necessary to obtain and analyze data from prime sources. The needed data were obtained through the use of a closed-form descriptive questionnaire that was mailed directly to a test population of 119 companies and agencies. All of the responses were considered in the analysis of the data. A response rate of 58 per cent was experienced. According to Oppenheim (1966: 3-4) a return of 40 per cent was to be expected for directly mailed questionnaires to disinterested test populations. The high return rate was interpreted as lending credibility to the descriptive data.

Evaluation of the data from the Photographic Service
**Questionnaire** indicated limited use of industrial/technical photographic applications in Eastern Georgia. The data, however, indicated that the majority of photographic use (61.5 per cent) was commercial in nature.

**Analysis of the Photographic Service Questionnaire Data**

The results of the questionnaire were as shown in tables 5 through 16.

**TABLE 5**

**QUESTION NUMBER ONE: DOES YOUR COMPANY/AGENCY USE PHOTOGRAPHY?**

<table>
<thead>
<tr>
<th>Response</th>
<th>Number</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>40</td>
<td>57.9</td>
</tr>
<tr>
<td>No</td>
<td>29</td>
<td>42.1</td>
</tr>
<tr>
<td>Total</td>
<td>69</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The 57.9 per cent positive response showed a positive response of 6.9 per cent above the criteria established in Chapter III, page 25 for positive responses.
TABLE 6

QUESTION NUMBER TWO A: IF YES, HOW ARE THE PHOTOGRAPHIC SERVICES OBTAINED?

<table>
<thead>
<tr>
<th>Response</th>
<th>Number</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-house photographic section</td>
<td>11</td>
<td>27.5</td>
</tr>
<tr>
<td>In-house and contract photographic services</td>
<td>23</td>
<td>57.5</td>
</tr>
<tr>
<td>Contract photographic services</td>
<td>6</td>
<td>15.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The results of this question were descriptive and indicated the majority of photographic services were supplied either in-house or by a combination of in-house and contract.

TABLE 7

QUESTION NUMBER TWO B: IF NO, DOES YOUR COMPANY/AGENCY FORSEE A NEED FOR PHOTOGRAPHIC SERVICES?

<table>
<thead>
<tr>
<th>Response</th>
<th>Number</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>3</td>
<td>8.6</td>
</tr>
<tr>
<td>No</td>
<td>32</td>
<td>91.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The high negative response failed to support the hypothesis since minimum expansion in photographic requirements was indicated.
### Table 8

**Question Number Three: The Uses of Photography in Your Company/Agency Are: (Commercial)**

<table>
<thead>
<tr>
<th>Response (Commercial)</th>
<th>Primary</th>
<th></th>
<th></th>
<th>Secondary</th>
<th></th>
<th></th>
<th>Tertiary</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number Commercial Total</td>
<td>Percentage Number Commercial Total</td>
<td></td>
<td>Number Commercial Total</td>
<td>Percentage Number Commercial Total</td>
<td></td>
<td>Number Commercial Total</td>
<td>Percentage Number Commercial Total</td>
<td></td>
</tr>
<tr>
<td>Sales illustration</td>
<td>13</td>
<td>23.64</td>
<td>17.80</td>
<td>3</td>
<td>8.83</td>
<td>5.77</td>
<td>4</td>
<td>9.30</td>
<td>4.76</td>
</tr>
<tr>
<td>Recording operation</td>
<td>5</td>
<td>9.1</td>
<td>6.84</td>
<td>3</td>
<td>8.83</td>
<td>5.77</td>
<td>6</td>
<td>13.95</td>
<td>7.5</td>
</tr>
<tr>
<td>Training</td>
<td>12</td>
<td>21.82</td>
<td>16.43</td>
<td>9</td>
<td>26.47</td>
<td>17.31</td>
<td>6</td>
<td>13.95</td>
<td>7.5</td>
</tr>
<tr>
<td>Security</td>
<td>2</td>
<td>3.63</td>
<td>2.74</td>
<td>4</td>
<td>11.76</td>
<td>7.69</td>
<td>3</td>
<td>6.98</td>
<td>3.57</td>
</tr>
<tr>
<td>Accident investigation</td>
<td>6</td>
<td>10.91</td>
<td>8.21</td>
<td>5</td>
<td>14.70</td>
<td>9.61</td>
<td>8</td>
<td>18.61</td>
<td>9.52</td>
</tr>
<tr>
<td>Personnel identification</td>
<td>9</td>
<td>16.36</td>
<td>12.32</td>
<td>6</td>
<td>17.65</td>
<td>11.53</td>
<td>4</td>
<td>9.30</td>
<td>4.76</td>
</tr>
<tr>
<td>Microfilming</td>
<td>6</td>
<td>10.91</td>
<td>8.21</td>
<td>2</td>
<td>5.88</td>
<td>3.85</td>
<td>4</td>
<td>9.30</td>
<td>4.76</td>
</tr>
<tr>
<td>Blueprinting</td>
<td>2</td>
<td>3.63</td>
<td>2.74</td>
<td>0</td>
<td>-----</td>
<td>-----</td>
<td>3</td>
<td>6.98</td>
<td>3.57</td>
</tr>
<tr>
<td>Aerial</td>
<td>0</td>
<td>-----</td>
<td>-----</td>
<td>2</td>
<td>5.88</td>
<td>3.85</td>
<td>5</td>
<td>11.63</td>
<td>5.95</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>55</td>
<td>100.00</td>
<td>75.29</td>
<td>34</td>
<td>100.00</td>
<td>65.38</td>
<td>43</td>
<td>100.00</td>
<td>51.19</td>
</tr>
</tbody>
</table>
TABLE 9

QUESTION NUMBER THREE: THE USES OF PHOTOGRAPHY IN YOUR COMPANY/AGENCY ARE: (INDUSTRIAL)

<table>
<thead>
<tr>
<th>Response (Industrial)</th>
<th>Primary</th>
<th></th>
<th>Secondary</th>
<th></th>
<th>Tertiary</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Industrial</td>
<td></td>
<td>Total</td>
<td></td>
<td>Industrial</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Medical recording</td>
<td>2</td>
<td>11.11</td>
<td>2.74</td>
<td>2</td>
<td>11.11</td>
<td>3.85</td>
</tr>
<tr>
<td>Criminal investigation</td>
<td>0</td>
<td>-----</td>
<td>-----</td>
<td>3</td>
<td>16.67</td>
<td>5.77</td>
</tr>
<tr>
<td>Plate making</td>
<td></td>
<td>16.67</td>
<td>4.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Halftone</td>
<td>1</td>
<td>5.55</td>
<td>1.40</td>
<td>0</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Research</td>
<td>4</td>
<td>22.23</td>
<td>5.48</td>
<td>2</td>
<td>11.11</td>
<td>3.85</td>
</tr>
<tr>
<td>Engineering</td>
<td>5</td>
<td>27.78</td>
<td>6.84</td>
<td>7</td>
<td>38.88</td>
<td>13.46</td>
</tr>
<tr>
<td>Product/production analysis</td>
<td>2</td>
<td>11.11</td>
<td>2.74</td>
<td>4</td>
<td>22.23</td>
<td>7.69</td>
</tr>
<tr>
<td>Mapping</td>
<td>0</td>
<td>-----</td>
<td>-----</td>
<td>0</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Surveying</td>
<td>1</td>
<td>5.55</td>
<td>1.40</td>
<td>0</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>100.00</td>
<td>24.71</td>
<td>18</td>
<td>100.00</td>
<td>34.62</td>
</tr>
</tbody>
</table>

|                                 |         |          |         |          |         |          |
|                                 | Number  | Percentage | Number  | Percentage | Number  | Percentage |
|                                 |         | Industrial |         | Total    |         | Industrial |
|                                 |         |            |         |          |         | Total    |
| Total                           | 41      | 100.00    | 48.80   | 41       | 100.00  | 48.80    |
TABLE 10

INDUSTRIAL/TECHNICAL AND COMMERCIAL PHOTOGRAPHIC USAGE
IN EASTERN GEORGIA

<table>
<thead>
<tr>
<th>Response</th>
<th>Primary</th>
<th>Secondary</th>
<th>Tertiary</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per Number</td>
<td>Per Number</td>
<td>Per Number</td>
<td>Per Number</td>
</tr>
<tr>
<td></td>
<td>Cent</td>
<td>Cent</td>
<td>Cent</td>
<td>Cent</td>
</tr>
<tr>
<td>Industrial</td>
<td>18 24.7</td>
<td>18 34.6</td>
<td>41 48.8</td>
<td>77 36.8</td>
</tr>
<tr>
<td>Commercial</td>
<td>55 75.3</td>
<td>34 65.4</td>
<td>43 51.2</td>
<td>132 63.2</td>
</tr>
<tr>
<td>Total</td>
<td>73 100.0</td>
<td>52 100.0</td>
<td>84 100.0</td>
<td>209 100.0</td>
</tr>
</tbody>
</table>

A review of Tables 8, 9, and 10 showed that commercial applications of photography were more prevalent than industrial applications in all categories. Commercial applications as a primary category comprised over 75 per cent of the usage. The tertiary category represented the highest percentage of industrial usage with 48.8 per cent of the total. However, the nearly even split in the tertiary category is minimized since a tertiary category by inference is of less importance than the two higher categories. None of the tests described in Chapter III, page 25 when applied to the results of question three, showed support for the hypothesis of this study.
TABLE 11

QUESTION NUMBER FOUR A: YOUR PHOTOGRAPHIC STAFF IS:

<table>
<thead>
<tr>
<th>Response</th>
<th>Number</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 employees</td>
<td>25</td>
<td>86.206</td>
</tr>
<tr>
<td>2-4 employees</td>
<td>2</td>
<td>6.897</td>
</tr>
<tr>
<td>4-6 employees</td>
<td>2</td>
<td>6.897</td>
</tr>
<tr>
<td>7 or more employees</td>
<td>0</td>
<td>-------</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>100.000</td>
</tr>
</tbody>
</table>

The preponderance of the respondents indicated a photographic staff of less than two. Several questionnaires had comments that stated that any photography needed was performed as extra duty. In three cases the persons assigned the extra duty as photographers were on the plant's engineering staff. Data from the second part of question four, as shown in Table 12, showed that over 96 per cent of the employers had a less than 5 per cent turn-over rate for photographic employees. When the test criteria were applied to the results of the quantification of the data, neither of the results supported the hypothesis of the study.
### TABLE 12

**QUESTION NUMBER FOUR B: PHOTOGRAPHIC PERSONNEL TURN-OVER RATE PER YEAR IS:**

<table>
<thead>
<tr>
<th>Response</th>
<th>Number</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5%</td>
<td>27</td>
<td>96.43</td>
</tr>
<tr>
<td>6 - 10%</td>
<td>1</td>
<td>3.57</td>
</tr>
<tr>
<td>Greater than 10%</td>
<td>0</td>
<td>------</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>28</td>
<td>100.00</td>
</tr>
</tbody>
</table>

### TABLE 13

**QUESTION NUMBER FIVE: WAGE SCALE RANGE PER YEAR IS:**

<table>
<thead>
<tr>
<th>Response</th>
<th>Number</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>$5500. - $6500.</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>6600. - 7500.</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>7600. - 8500.</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>8600. - 10,000.</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>10,000. - 12,000.</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>More than 12,000.</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>25</td>
<td>100</td>
</tr>
</tbody>
</table>
The results of question 5 (Table 13) supported the hypothesis. A wage scale of about $7600. per year was indicated by 72 per cent. The test from Chapter III, page 25 when applied showed support for the hypothesis.

**TABLE 14**

**QUESTION NUMBER SIX: TOTAL COST PER YEAR OF CONTRACTED PHOTOGRAPHIC SERVICES IS:**

<table>
<thead>
<tr>
<th>Response</th>
<th>Number</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $9,999.</td>
<td>21</td>
<td>87.5</td>
</tr>
<tr>
<td>$10,000. - $14,999.</td>
<td>2</td>
<td>8.4</td>
</tr>
<tr>
<td>15,000. - 19,999.</td>
<td>1</td>
<td>4.1</td>
</tr>
<tr>
<td>20,000. - 29,999.</td>
<td>0</td>
<td>----</td>
</tr>
<tr>
<td>30,000. - 39,999.</td>
<td>0</td>
<td>----</td>
</tr>
<tr>
<td>40,000. - 59,999.</td>
<td>0</td>
<td>----</td>
</tr>
<tr>
<td>60,000. - 99,999.</td>
<td>0</td>
<td>----</td>
</tr>
<tr>
<td>Greater than 100,000.</td>
<td>0</td>
<td>----</td>
</tr>
</tbody>
</table>

Total 24 100.0

No test was applied to the above results since question number six was solely descriptive in nature. However, the inference was made that little requirement existed for industrial/technical photographers external to plant photographic departments since 87.5 per cent of the respondents showed a requirement for less than $10,000. per year for contracted photographic services.
TABLE 15

QUESTION NUMBER SEVEN: DOES YOUR COMPANY/AGENCY OBTAIN NEEDED PHOTOGRAPHIC SERVICES WITHIN THE LOCAL AREA:

<table>
<thead>
<tr>
<th>Response</th>
<th>Number</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>14</td>
<td>48.3</td>
</tr>
<tr>
<td>Most</td>
<td>10</td>
<td>34.5</td>
</tr>
<tr>
<td>Few</td>
<td>4</td>
<td>13.8</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>3.4</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Analysis of the data contained in Table 15 showed that 82.8 per cent of the respondents obtained most of the needed photographic services within the local area. These results were similar to those of the question six analysis. The low dollar value of contracted services that was shown in question six, when compared with the evidence that most photographic services were obtained locally, lent credence to the interpretation that there was little additional need for industrial/technical services in the Eastern Georgia area.

In Table 16 the responses of "some" and "great" were classified as positive and the responses "little" and "none" were considered negative for purposes of testing the hypothesis. The response was negative with a resultant of 74.4 per cent negative and 25.6 per cent positive. These results were within one percentage point of the results found for the total primary category in Table 10, page 32.
TABLE 16

QUESTION NUMBER EIGHT: IS THERE A NEED FOR PERSONS IN YOUR AREA WITH COLLEGE-TRAINED PHOTOGRAPHIC SKILLS?

<table>
<thead>
<tr>
<th>Response</th>
<th>Number</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great</td>
<td>3</td>
<td>7.7</td>
</tr>
<tr>
<td>Some</td>
<td>7</td>
<td>17.9</td>
</tr>
<tr>
<td>Little</td>
<td>15</td>
<td>38.5</td>
</tr>
<tr>
<td>None</td>
<td>14</td>
<td>35.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>39</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Comparative Analysis of Related Data

The analysis of the data gathered by the Photographic Service Questionnaire showed no need for additional industrial/technical photographers in Eastern Georgia. Commercial photographic applications make up 75 per cent of the primary photographic service and 63.2 per cent of total photographic service. Over 82 per cent of needed services were provided within the local area. When all negative responses regarding the use of photography were combined with those responses indicating no need for specialized training, the resultant 84 per cent negative response showed minimal need for industrial/technical photographers in Eastern Georgia.

The Horrell study (1971) as detailed in Chapter II showed five Georgia colleges that offered eleven different degrees in photography and graphic arts. The analysis of those degree programs and several
non-degree producing programs in three other Georgia colleges showed wide academic opportunities in commercial photography programs. The eight colleges, as detailed in Table 2, offered seventeen photographic study areas.

The Shaw (1975) study described in Chapter II showed only marginal student interest in a career in industrial/technical photography. The Shaw study was based on an analysis of responses from 4,505 Georgia high school students. Only 4.3 per cent (Shaw 1975: 24) of the students expressed an interest in photography as a career. An interest in technical photography was expressed by only 1.4 per cent (Shaw 1975: 34) of the survey population with only 0.2 per cent indicating they would apply for admission to an industrial/technical course of instruction (Shaw 1975: 35).

It was further predicted by Shaw (1975: 50) that 4.2 per cent of the students could be expected to express interest in photography. Using Shaw's basic data and prediction method (Shaw 1975: 50) a prediction of 1.4 per cent of the students interested in industrial/technical photography was indicated.

The data from the Photographic Service Questionnaire and the data from the Shaw (1975) study reflected no need for an industrial/technical photographic training program in Eastern Georgia. The Horrell (1971) study showed adequate academic programs existed to satisfy the need for commercial photographic training indicated by the Photographic Service Questionnaire data. Therefore, the comparative analysis of the test data related to the hypothesis of this study showed negative support for the hypothesis. Thus, the hypothesis that there is a need for an educational program in Eastern Georgia that
leads to an undergraduate degree in industrial/technical photography was not proven.

**Summary**

The hypothesis of this research was tested by analyzing current academic programs, student interests in a career in industrial/technical photography, and the potential demand for industrial/technical photographers. Data pertaining to academic programs and student interest were located in related studies; however, the data on potential demand was available only from primary sources.

A closed-form questionnaire, therefore, was sent to a test population in the Eastern Georgia area. The resulting data from that survey was compared with the data on academic programs and student interest. The comparative analysis showed no support for the hypothesis that a program in industrial/technical photography is needed in Eastern Georgia.
CHAPTER V

SUMMARY AND CONCLUSIONS

Introduction

This study was conducted to test the hypothesis that an undergraduate program in industrial/technical photography is needed in Eastern Georgia. The testing of the hypothesis consisted of a comparative analysis of data related to the following problem areas:

1. Availability of industrial/technical photography training programs in Georgia and other Southern states

2. Anticipated student interest in careers in industrial/technical photography

3. Potential demand for college educated industrial/technical photographers in Eastern Georgia.

A resume of photographic instruction in American and Canadian colleges, universities, technical institutes and schools of photography provided the needed data about existing academic photographic programs (Horrell, 1971). The data about anticipated student interest in photography careers were provided by the graduate thesis A Study to Determine Student Interests in the Occupational Field of Industrial Photography (Shaw, 1975). Since no data about potential demand for industrial/technical photographers were found, a survey of prime sources was conducted. The survey utilized a closed-form descriptive questionnaire and was directly mailed to a test population of 119.
The 58 per cent return rate was high for directly mailed questionnaires sent to disinterested recipients.

**Major Findings**

The major findings as related to the comparative analysis were as follows:

1. Existing academic programs were designed to train art and commercial photographers

2. Eight Georgia schools taught seventeen different photography and graphic arts courses

3. Five of the eight Georgia colleges offering courses in photography and graphic arts granted eleven different degrees related to photography and graphic arts; however, all of the degrees offered were either in photography in education, graphic arts, fine arts, or commercial photography

4. Student interest in photography was projected to be less than 5 per cent in photography in general, and less than 2 per cent in industrial/technical photography

5. Industrial/technical photography applications accounted for only 25 per cent of all primary photographic service in respondent plants indicating a use of photography

6. Prime source data showed 82 per cent of needed photographic services were available within the local area

7. Eighty-four per cent of the respondents to the Photographic Service Questionnaire indicated no need for college trained industrial/technical photographers.
Conclusions

The conclusions of this investigation, based on comparative analysis of the three data areas were:

1. The hypothesis that there is a need for an educational program in Eastern Georgia that leads to an undergraduate degree in industrial/technical photography was not supported by the available data.

2. Existing educational programs probably were sufficient to provide adequately trained commercial photographers.

3. Most students were interested in photography avocationally rather than vocationally.

Observations

Observations that were made during the conduct of this investigation were:

1. Although industrial/technical photographic usage was minimal in Eastern Georgia, several specific indications of need were made by survey respondents.

2. Courses of photographic instruction throughout Georgia seemed to be on a basic level. Few of the colleges taught color photography. The intent of most courses reflected the students avocational desires.

   Some observations noted by questionnaire respondents were:

   1. "I don't know what college adds."

   2. "Most work is with photomicrographs showing microstructure of castings before and after heat treating."

   3. "Our in-plant 'photographer' is an employee who has time
to make Polaroid snapshots for the company newspaper."

4. "Our company uses audio-visual equipment, primarily for training purposes. We do not use photography alone."

5. "A man with photographic capabilities is needed, very much. No one in this area, to my knowledge, has any."

Recommendations for Further Study

The following recommendations for further study resulted from the analysis of data related to this study:

1. Additional inquiry into the adequacy of existing academic programs might be useful. The study should be directed toward determining the need for expanding programs related to commercial photography.

2. A definitive market survey for commercial photography would be a useful aid in assisting students to prepare career plans. This investigation found that most respondents were users of commercial photography.

Summary

This investigation invalidated the hypothesis that there is a need for an educational program in Eastern Georgia that leads to an undergraduate degree in industrial/technical photography. Data related to student interests in photographic careers and the potential demand for industrial/technical photographers failed to show any significant positive support for the above hypothesis. Student interest and potential demand were directed toward commercial photography. Current academic programs were found to provide a wide selection of courses and degree programs that applied to commercial photography. Some evidence
was offered that investigation into the possible expansion of existing programs might show a need for adding a few advanced industrial/technical courses to those programs.
APPENDIX A

Schools Evaluated for the Study
SCHOOLS EVALUATED FOR THE STUDY

The colleges, universities and vocational-technical schools evaluated for their photographic course content are as follows:

ALABAMA

Jacksonville State University
Jacksonville  36265

Judson College
Marion  36756

Spring Hill College
Mobile  36608

University of Alabama in Birmingham
1919 Seventh Avenue South
Birmingham  35233

University of Alabama
University  35486

FLORIDA

Brevard Community College
Clear Lake Road
Cocoa  32922

Broward Community College
3501 S.W. Davie Road
Fort Lauderdale  33314

Daytona Beach Junior College
P.O. Box 1111
Daytona Beach  32015

Florida A. and M. University
Tallahassee  32307

Florida Atlantic University
Boca Raton  33432

Florida Presbyterian College
P.O. Box 12560
St. Petersburg  33733

Florida Southern College
Lakeland  33802
FLORIDA (Continued)

Florida State University
Tallahassee 32306

Florida Technological University
Box 25000
Orlando 32816

Miami-Dade Junior College
11380 S.W. 104th Street
Miami 33156

North Florida Junior College
Madison 32340

Palm Beach Junior College
4200 S. Congress Avenue
Lake Worth 33460

Pensacola Junior College
1000 College Boulevard
Pensacola 32504

University of Florida
Gainesville 32601

GEORGIA

Atlanta School of Art
1280 Peachtree St., N.E.
Atlanta 30309

Berry College
P.O. Box 443
Mt. Berry 30149

Brenau College
Gainesville 30501

Clark College
Atlanta 30314

Georgia Southern College
Statesboro 30458

Georgia Southwestern College
Americus 31709

Georgia State University
33 Gilmer S.E.
Atlanta 30303
GEORGIA (Continued)

University of Georgia
Athens 30601

MISSISSIPPI

East Mississippi Junior College
Scooba 39358

Mississippi State College for Women
Box 940
Columbus 39701

Mississippi State University
State College 39762

University of Mississippi
University 38677

William Carey College
Hattisburg 39401

NORTH CAROLINA

Appalachian State University
Boone 28607

Beaufort County Technical Institute
Box 1069
Washington 27889

Duke University
6605 College Station
Durham 27708

East Carolina University
Greenville 27834

Elon College
Elon College 27244

Guilford Technical Institute
P.O. Box 309
Jamestown 27282

Lenoir Community College
Box 188
Kinston 28501
NORTH CAROLINA (Continued)

Meredith College
Raleigh 27611

North Carolina Agricultural and Technical State University
321 N. Dudley Street
Greensboro 27411

North Carolina Central University
Durham 27707

North Carolina State University
Raleigh 27607

Randolph Technical Institute
P.O. Drawer 1009
Asheboro 27203

University of North Carolina at Greensboro
Greensboro 27412

Western Carolina University
Cullowhee 28723

SOUTH CAROLINA

Bob Jones University
Greenville 29614

Clemson University
Clemson 29631

Coker College
Hartsville 29550

University of South Carolina
Columbia 29208

Wofford College
Spartanburg 29301

TENNESSEE

Austin Peay State University
Clarksville 37040

East Tennessee State University
Johnson City 37601
TENNESSEE (Continued)

Memphis Academy of Arts
Overton Park
Memphis 38112

Middle Tennessee State University
Murfreesboro 37130

Southern Missionary College
Collegedale 37315

Southwestern at Memphis
2000 N. Parkway
Memphis 38112

Tennessee State University
3500 Centennial Boulevard
Nashville 37203

University of Tennessee at Chattanooga
Chattanooga 37403

University of Tennessee at Knoxville
Knoxville 37916
APPENDIX B

Letter to Photographic Service Question
Dear Sir:

The purpose of this letter is to request your assistance in completing a research project pertaining to the implementation of commercial and industrial photographic training at Georgia Southern College.

The research effort is being conducted in conjunction with my graduate studies in Industrial Technology at Georgia Southern College. Your assistance is requested to complete the enclosed questionnaire. The questionnaire is not identifiable by company or agency; therefore, anonymity is maintained.

The data collected will be used to determine the feasibility of instituting a comprehensive four-year photographic training program. Other research is currently being conducted to determine projected student input to such a program.

I wish to thank you in advance for your cooperation and assistance in completing this phase of research.

Sincerely,

Charles C Irby

This investigation is being conducted as an approved portion of graduate study. Your cooperation will be appreciated.

Dr. Keith F. Hickman
Associate Professor & Advisor
Div. of Ind. Tech.
Georgia Southern College
APPENDIX C

Photographic Service Questionnaire
Photographic Service Questionnaire

1. Does your company/agency use photography?  ___Yes  ___No

2A. If yes, how are the photographic services obtained?

___ In-house photographic section
___ In-house and contract photographic services
___ Contract photographic services

2B. If no, does your company/agency foresee a need for photographic services?

___ Yes  ___ No

(If you answered "No" to 1 and 2B, there is no need to continue this survey.)

3. The uses of photography in your company/agency are:

<table>
<thead>
<tr>
<th>Primary</th>
<th>Secondary</th>
<th>Tertiary</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sales illustration</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Recording operation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Training</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Security</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Medical recording</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Accident investigation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Criminal investigation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Plate making</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Halftone</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Research</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Engineering</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Product/production analysis</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Personnel identification</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Microfilming</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Blueprinting</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mapping</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aerial</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Surveying</td>
</tr>
</tbody>
</table>

Items 4 and 5 relate to in-house photographic services.

4A. Your photographic staff is:

___ 1-2 employees  ___ 4-6 employees
___ 2-4 employees  ___ 7 or more employees
4B. Photographic personnel turn-over rate per year is:

___ Less than 5%  ___ 6-10%  ___ Greater than 10%

5. Wage scale range per year is:

___ $5500. - $6500.  ___ $8600. - $10,000.
___ $6600. - $7500.  ___ $10,000. - $12,000.
___ $7600. - $8500.  ___ More than $12,000.

Questions 6 and 7 apply to contract photographic services obtained external to the company/agency.

6. Total cost per year of contracted photographic services is:

___ Less than $9,999.  ___ $30,000. - $39,999.
___ $10,000. - $14,999.  ___ $40,000. - $59,999.
___ $15,000. - $19,999.  ___ $60,000. - $99,999.
___ $20,000. - $29,999.  ___ Greater than $100,000.

7. Does your company/agency obtain needed photographic services within the local area?

___ All  ___ Most  ___ Few  ___ None

8. Is there a need for persons in your area with college-trained photographic skills?

___ Great  ___ Some  ___ Little  ___ None
APPENDIX D

Test Population
TEST POPULATION

The following list contains all companies or agencies queried by direct mail questionnaire.

RICHMOND COUNTY, GEORGIA

Babcock & Wilcox Company
Blanche Cotton Mills
Columbia Nitrogen Corporation
Continental Can Company, Inc.
Dymo Products Company
E-Z Go Car Corporation
Eugene Talmadge Memorial Hospital
Fine Products Company, Inc.
Graniteville Company - Enterprise Division
Graniteville Company - Sibley Division
Homestead Mfg. Company
The Kendall Company
The John P. King Mfg. Company
Lily-Tulip
Mernardi-Southern
Merry Companies, Inc.
Murray Biscuit Co., Inc.
Procter & Gamble Mfg. Company
Riverside Mills
Southeastern Newspapers Corporation
St. Joseph's Hospital
University Hospital

AIKEN COUNTY, SOUTH CAROLINA

E.I. de Nemours DuPont & Co., Inc.
Owens-Corning Fiberglas Corp.
Bath Mill
Kimberly-Clark Corporation
Clearwater Finishing Plant
Seminole Mills
Graniteville Company - Graniteville
Hamburg Industries, Inc.
Salley Manufacturing Company
Graniteville Company - Vaucluse
Wagener Manufacturing Company
Graniteville Company (Warren Mill)

BURKE COUNTY, GEORGIA

Keller Aluminum Chairs of Georgia
Perfection Products Company
BURKE COUNTY, GEORGIA (Continued)

    Samson Manufacturing Corp.
    Burke County Hospital

COLUMBIA COUNTY, GEORGIA

    Georgia Iron Works Co.

EMANUEL COUNTY, GEORGIA

    Argo Mills
    Keller Stamping, Inc.
    Swainsboro Printing & Finishing Co.
    Twin City Manufacturing Company
    Emanuel County Hospital

JEFFERSON COUNTY, GEORGIA

    J. P. Stevens & Co., Inc.
    Thermo-King Corporation
    Stapleton Garment Co., Inc.
    Georgia-Tennessee Mining & Chem. Co.
    Jefferson Hospital, Inc.

JENKINS COUNTY, GEORGIA

    Jockey Menswear
    Look Products
    The Thomson Company
    Mulkey Hospital

MCDOUGIE COUNTY, GEORGIA

    National Homes Corporation
    The Thomson Company
    UniRoyal, Inc.
    McDuffie County Hospital

SCREVEN COUNTY, GEORGIA

    King Finishing Company
    Sylvania Spinning Corporation
    White Stag Mfg. Company
    Screven County Hospital
WARREN COUNTY, GEORGIA

Garland Knitting Mills of Georgia, Inc.
Jebco, Inc.

WILKES COUNTY, GEORGIA

Almar Manufacturing Corp.
Royal Manufacturing Co., Inc.
Wills Memorial Hospital

ALLENDALE COUNTY, SOUTH CAROLINA

Collins & Aikman Corp.
Davan Mfg. Co., Inc.
Westport Industries, Inc.

BARNWELL COUNTY, SOUTH CAROLINA

Barnwell Mills
E. T. Barwick Industries, Inc.
Shuron/Continental
Blackville Mfg. Corporation
Ducane Heating Corporation
Revco, Inc.

EDGEFIELD COUNTY, SOUTH CAROLINA

Federal Pacific Electric Company
Kendall Company - Addison Plant
Star Fibers, Inc.
Deering Milliken, Inc.
Lynn Manufacturing Co.
Riegel Textile Corporation

McCORMICK COUNTY, SOUTH CAROLINA

McCormick Mill
Riegel Textile Corporation

CHATHAM COUNTY, GEORGIA

Certain-teed Products Corp.
Continental Can Company, Inc.
Derst Baking Company
Ductile Iron Co. of America
GAF Corporation
CHATHAM COUNTY, GEORGIA (Continued)

Gary Concrete Products, Inc.
Great Dane Trailers, Inc.
Grumman American Aviation Corporation
Kaiser Agricultural Chemicals
National Gypsum Co.
Pierpont - Corbett Box Co.
Savannah Foods & Industries, Inc.
Savannah Machine & Shipyard Co.
Savannah News-Press
Southern States Phosphate & Fertilizer Company
Union Camp Corporation
Memorial Medical Center
Georgia Infirmary
St. Joseph's Hospital
Candler General Hospital

BULLOCH COUNTY, GEORGIA

Blackstone-Georgia Foundry, Inc.
Emerson Electric Co.
J. P. Stevens & Co.
Bulloch County Hospital

EFFINGHAM COUNTY, GEORGIA

Effingham County Hospital
White Dress Mfg. Co.

LIBERTY COUNTY, GEORGIA

A C S Industries Georgia, Inc.
Interstate Paper Company
Liberty Memorial Hospital

BEAUFORT COUNTY, SOUTH CAROLINA

Blue Channel Corp.

HAMPTON COUNTY, SOUTH CAROLINA

Westinghouse Electric Corp.

JASPER COUNTY, SOUTH CAROLINA

Holiday Wear, Inc.
CANDLER COUNTY, GEORGIA

Candler County Hospital

EVANS COUNTY, GEORGIA

Evans Memorial Hospital

WASHINGTON COUNTY, GEORGIA

Memorial Hospital of Washington County
APPENDIX E

: List for Evaluation of Photographic Department Service
CHECK LIST FOR EVALUATION OF PHOTOGRAPHIC DEPARTMENT SERVICES

The check list below is taken from Eastman Kodak pamphlet number P-17, The Industrial Photographic Department, 1968, pages 30 and 31. The types of photographic applications selected for question three of the Photographic Service Questionnaire were selected from this list.

STILL PHOTOGRAPHY

Studio

Catalogue illustrations*
Sales - Album illustrations*  **
Advertising and promotional illustrations*
Parts-list and instruction-manual illustrations (ghost assembly, exploded views, photoline, etc.)
Unconventional lighting setups (exaggerated texture, silhouette)
Personnel identification portraiture**
Color photography

In-Plant Photography

Recording operations and methods for personnel training**
Photographing specialized equipment or setups
Recording temporary or permanent installations
Report and record illustration
"Punch-press" photography of experimental results, production records, comparisons, etc.
Damage-claims photographs
Personnel identification photographs (Passes, identity cards, personnel records)**
Recording wear and tear on machine parts
Product-test records**
Materials handling
Inventory
Maintenance (building and equipment changes)
Construction progress
Safety**
Estimating, Purchasing, Expediting
Product control**
Setting up machine tools
Toolroom reference and inventory
Stock-room use
Inspection
Packing

*To be undertaken only with professional-type equipment and by well-qualified, experienced, commercial photographers.

**Selected for inclusion on Photographic Service Questionnaire.
In-Plant Photography (Continued)

Salesmen's information
Instructions for service organizations
Contract-termination evidence
Surplus-parts sale
Company history and museum
Sequence photographs for procedure standardization
House-organ illustration

Field Photography

Product performance in service
Inspection visits
Field tests
Site evaluations**
Conventions and exhibits

MOTION-PICTURE PHOTOGRAPHY

Full-Length Motion Pictures

Product advertising*
Public relations*
Industrial relations*
Training**
Safety

Records

Methods analysis and improvement
Methods standardization between plants, shifts, operators
Training operations
Informing engineers and management
Factory visits
Transient phenomena
Complex instrumentation

High-Speed Motion Pictures

Data recording
Engineering research and development**
Interpretations of rapid functions
Detection of rapid-action malfunctions

*To be undertaken only with professional-type equipment and by well-qualified, experienced, commercial photographers.

**Selected for inclusion on Photographic Service Questionnaire.
VISUAL AIDS

Planning and Preparing Visual Aids

Slides (color, black-and-white)
Motion pictures (see above)
Charts
Prints
Illustrated manuals of procedures

PHOTOREPRODUCTION

Plan and drawing reproduction (Kodagraph, blueprint, direct process)
Document photocopy (Photostat, Verifax, microfilm, reflex)
Halftone screen negatives**
Platemaking (photolithography, photoengraving)**
Continuous-tone copying (photographs, art work)
Microfilming and printing from microfilm**

SPECIALIZED TECHNICAL APPLICATIONS

Photomicrography (with a microscope)
Photomacrography (size, shape, texture of small items)
Metallurgy (corrosion, wear, pitting, welding defects)
Metallugraphy (with metallographic microscope)
Infrared photography
Ultraviolet and fluorescence photography
Stereography
Aerial photography**
Instrument recording
High-speed stills (spark shadowgraph, electronic discharge light)
Photoelastic stress analysis photography
Radiography
X-ray diffraction
Spectroscopy
Electron microscopy

MISCELLANEOUS SERVICES

Color processing
Color printing
Consultation on problems with possible photographic solutions

*To be undertaken only with professional-type equipment and by well-qualified, experienced, commercial photographers.

**Selected for inclusion on Photographic Service Questionnaire.
MISCELLANEOUS SERVICES (Continued)

- Construction or procurement of specialized photographic apparatus and training in its proper operation
- Processing and stocking service to laboratories using specialized photographic techniques (spectrum analysis, x-ray diffraction, radiography, nuclear track, photomicrography, electron microscopy, etc.)
- Storing and maintaining photographic equipment and materials for general use (cameras, projectors, screens, films, bulbs, etc.)
- Supply trained operators for slide and motion-picture projectors
- Maintain central negative file
- Maintain central print file
- Maintain library of technical photographic literature
- Art work (retouching, opaquing, airbrushing, lettering)
- Murals (offices, reception rooms, exhibits)
- Preparing silk-screen masters for production use

*To be undertaken only with professional-type equipment and by well-qualified, experienced, commercial photographers.

**Selected for inclusion on Photographic Service Questionnaire.
SELECTED REFERENCES


SOURCES CONSULTED


