A STUDY OF THE NEEDS FOR A CLASSIFICATION PROGRAM FOR DESIGNERS AND DRAFTSMEN

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CHAPTER I

THE PROBLEM

Introduction

Formal recognition of individuals practicing in various occupations is becoming more and more a reality and an important factor in today's society. Although many professions have been recognized for many years, the various fields in the area of engineering technology have not been recognized to any great extent until the last decade. The first such program for giving recognition to engineering technicians was established in 1961 by The Institute for the Certification of Engineering Technicians (ICET). This program was based on established criteria for the different grades of technicians for the purpose of providing incentives for self-improvement through recognition by this nationally recognized professional body (1).

With technology becoming increasingly specialized, it is believed by some that this type of recognition needs to be even further divided into more specialized areas of technology. Briegel (1), indicated in his report that it is extremely important to engineering technicians today that recognition of the type that ICET has developed be continued because of the increasing number of technical institute programs and the increasing number of engineering technicians.

In 1964, the American Institute for Design and Drafting (AIDD), directed by C. C. Hill, U. S. Gypsum company, Chicago, established

classifications for designers and draftsmen which were published in a manual entitled, "Standardizing Drafting Job Descriptions" (2). The manual's set objectives were to establish various standardized job classifications in the field of drafting and design and to develop criteria within these classifications for the purpose of correlating existing and new job descriptions.

Since the release of the above publication, AIDD received numerous inquiries about programs which would certify or classify designers and draftsmen. Due to these inquiries, the AIDD Executive Committee began to explore and examine patterns for, and possible implications and ramifications of, classifying designers and draftsmen. The term "classification" was decided upon rather than "certification" because the proposed program was to be based on the classifications described in "Standardizing Drafting Job Descriptions". Also, it would in no way conflict, or be confused, with the term "Certification of Engineering Technicians" as used by the Institute for the Certification of Engineering Technicians (ICET).

As a result of this study, the AIDD Executive Committee made a five-part proposal to the AIDD Board of Directors recommending that the following actions be taken:

1. That the president of AIDD appoint a chairman to head a Designer and Draftsman Classification committee. This committee's responsibilities will include reviewing and revising the program as needed.

2. Issue to AIDD members, who are eligible, certificates free of charge denoting the classification for which they qualify. A classification certificate will be included with membership card for all paid

new and renewed members. Persons in supervisory positions are excluded. All classifications must be attested to by Member's supervisor.

3. Announce the classfication program in Design and Drafting News and other national trade magazines.

4. Prepare a brochure explaining the Classification of Designers and Draftsmen and include an application form to be sent by national headquarters to those making inquiry.

5. An annual report be sent to each person classified, giving yearly highlights appearing in Design and Drafting News and any announcement relative to AIDD conferences or news relating to the classification program.

Statement of the Problem

The AIDD Executive Committee proposal described above was approved by the AIDD Board of Directors. The classification program was to be designed to serve all designers and draftsmen, including members and non-members of AIDD. It was recognized that for this program to be successful it must meet a felt need for those whom it is intended to serve. An attempt to determine the general desire for such a classification system revealed, however, that little, if any, data is available to indicate the attitudes and concerns of supervisors and chief draftsmen toward the proposed classification program. This lack of information was the problem with which this study was concerned.

Purpose of Study

The purpose of this study was to investigate the opinions and concerns of supervisors and chief draftsmen (both members and non-

members of AIDD) toward AIDD's Classification Program for Designers and Draftsmen, and to make recommendations to AIDD based on these feelings and attitudes.

Need for the Study

As with any new program which involves social factors, specific feelings and attitudes toward that program must be explored in order to design it appropriately. Also, in order to secure a basic and sound stepping ground for organization, a new program must obtain recommendations from the population it will serve. Before initiating the proposed classification program for designers and draftsmen, there must be some evidence that it will be accepted and supported by those whom it is to serve. The need for the study is based on the lack of information in this regard.

In brief, it was expected that this study would provide information which would be beneficial in the design (or redesign) and implementation of AIDD's Classification Program for Designers and Draftsmen.

Research Questions

With the awareness of the described need for further recognition of engineering technicians, AIDD is proposing to establish a classification program for designers and draftsmen. In order to further investigate the needs for such a program this study was formulated. Basically, to determine these needs, this investigation set out to explore several areas of concern, such as:

1. Managerial desire for and expected recognition of the classification program.

2. Supervisors and chief draftsmen's desire and expected recognition of the class program.

3. The extent to which classification procedures are being used in drafting and design departments.

4. The overall attitudes about AIDD's proposed classification program as obtained from the responding supervisors and chief draftsmen.

It was felt that the following research questions would supply information dealing with the purposes of this study.

RQ_1. How many of the respondents' companies had means of classifying their drafting and design personnel into different job classes or grades?

RQ_2. Of the respondents indicating the use of classification procedures in their drafting and design departments, was there an overall pattern of unity between the individual job classes or grades stated?

RQ_3. What were the respondents' feelings about AIDD's Classification Program for Designers and Draftsmen in aiding them in classifying or rating designers and draftsmen reporting to them?

RQ_4. Of the respondents indicating that AIDD's classification program would aid them in classifying or rating designers and draftsmen reporting to them, what were their individual reasons in believing so?

RQ_5. Would the supervisors and chief draftsmen feel that the AIDD's classification program would aid them as administrators?

RQ_6. Of the respondents indicating that they felt AIDD's classification program would aid them as administrators, what were

their reasons in believing so?

RQ_7. Would the respondents encourage designers and draftsmen reporting to them to apply for AIDD classification?

RQ_8. What were the respondents' feelings toward the possibility of their companies paying the classification fee for their individual applicants to AIDD's classification program?

RQ_{10}. How many of the responding supervisors and chief draftsmen would be willing to attest to the educational background, experience, and ability of an employee applying for classification?

Assumptions of the Study

The design of the study was based upon two assumptions:

1. That the respondents in the survey would be a representative sample of the population of supervisors and chief draftsmen in the drafting and design field.

2. That the respondents would complete the questionnaires to the best of their ability with no bias attitudes.

Limitations of the Study

The sample investigated in this study consisted of both members and non-members of AIDD who were either supervisors or chief draftsmen in the drafting and/or design field. The members were selected using a random sample technique, but the non-members were not. The non-members were selected from a list of non-members obtained from AIDD's main office. Therefore, a limitation of the study arised due to the fact that the non-members were not selected randomly. However, it was believed by

the author and AIDD that this sample of non-members would be a representative sample of all non-members and would serve the purposes of this study.

Definition of Terms

Job Evaluation - For the purposes of this study the most complete and accurate definition found was in "Industrial Job Evaluation Systems" (3). This definition was as stated below:

> Job evaluation is the complete operation of determining the value of an individual job in an organization in relation to the other jobs in the organization. It begins with the job analysis to obtain job descriptions and includes relating the descriptions by some system designed to determine the relative value of the jobs or groups of jobs. It also involves the pricing of these values by establishing minimum and maximum salaries for each group of jobs based on their relative value. The operation ends with the final checking of the resulting salary system.

It should be pointed out that for the purposes of this study the system designed to determine the relative value of the jobs or groups of jobs, as mentioned in the above definition, will be that system involving the classification of jobs.

Job Classification - For the purposes of this study job classification is best described as:

> The process of finding out, by obtaining the facts and analyzing them, what different kinds or "classes" of positions, calling for different treatment in personnel processes, there are in the service; it further includes making a systematic record of the classes found and of the particular positions found to be of each class. The duties and responsibilities of the positions are the basis upon which classes are determined and the individual positions assigned or "allocated" to the appropriate classes. (4)

Job Analysis - The process of studying the operations, duties, and organizational relationships of jobs to obtain data and facts for writing

job descriptions and job specifications. It may, and frequently does, include some forms of methods study. (5)

Designer - For purposes of this study a designer refers to any person engaged in work which deals with engineering design and meets the following qualifications.

(a) Minimum education and experience required. (Optional below)
   1. 4-year college degree in Engineering Technology and at least 1 year on-the-job experience in design.
   2. 2-year college associate degree in design and at least 4 years on-the-job experience in design.
   3. 2-year vocational institute certificate in design and at least 6 years on-the-job experience in design.
   4. High school diploma (including 3 years drafting training) and at least 10 years on-the job experience in design.

(b) Level of duties and responsibilities:
   1. Handles complex design assignments and multiple assignments with the assistance of several draftsmen in lower classifications.
   2. Has above average initiative and ability to make right decisions regarding the best way to carry out assignments.
   3. Is exceptionally creative with far-reaching design capabilities.
   4. Has thorough knowledge of accepted design or method concepts.
   5. Has good basic understanding of engineering, design or other principles related to a specific area of work.
   6. Receives assignments directly from persons requesting work and through supervisor.
   7. Assigns and schedules work to those assisting.
   8. Checks and/or approves all work on projects delegated to him including basic layouts, arrangements and design, accuracy of computations, selection of material and equipment, compliance with company standards and safety rules.
   9. Prepares studies and reports for estimates, progress, evaluations.
   10. Substitutes for supervisor during his absence occasionally.
   11. Has wide latitude for the exercise of inventiveness and independent judgement. (1)

Design Draftsman - For purposes of the study a design draftsman

refers to any person engaged in drafting and meets the following qualifications.

(a) Minimum education and experience required. (Optional below)
   1. 4-year college degree in Engineering Technology - no experience required.
   2. 2-year college associate degree in drafting and at least 1 year on-the-job experience in drafting.
   3. 2-year vocational institute certificate in drafting and at least 2 years on-the-job experience in drafting.
   4. High school diploma (including 3 years drafting training) and at least 6 years experience in drafting.

(b) Level of duties and responsibilities:
   1. Handles design-drafting assignments, sometimes multiple assignments with assistance from other draftsmen.
   2. Exercises considerable judgement in design and layout under minimum supervision.
   3. Schedules work on assigned projects and reports on progress as required.
   4. Guides, instructs and directs assisting draftsmen, checks their work.
   5. Makes or reviews calculations involved in his projects as required.
   6. Does limited design analysis using engineering computations.
   7. Prepares or assists in making material and time estimates, equipment cost comparisons.
   8. Ascertains that designs and drawings conform to engineering and drafting standards and practices adopted by company. (1)

Draftsman - For purposes of this study a draftsman refers to any person engaged in drafting and meets the following qualifications.

(a) Minimum education and experience required. (Optional below)
   1. 2-year college associate degree in drafting - no experience required.
   2. 2-year vocational institute certificate in drafting and at least 1 year experience.
   3. High School diploma (including 3 years drafting training) and at least 3 years experience in drafting.

(b) Level of duties and responsibilities:
   1. Handles normal drafting assignments under regular supervision.
   2. Is completely familiar with drafting standards,

symbols, nomenclature, engineering terms, proper use of materials, reference books and catalogs in a specific area of work.

3. Discusses job requirements directly with persons for whom work is being done.
4. Gathers information and data for jobs.
5. Makes routine calculations using standard engineering formulae.
6. Is assisted at times by other draftsmen in this and lower classifications - instructs, guides and checks their work.
7. Takes field or shop measurements as required. (1)

CHAPTER II

REVIEW OF LITERATURE

Introduction

In addition to reporting on the review of literature pertaining to job classification, this chapter includes an overall background of the factors which underlie the process of job evaluation which job classification is an integral part. The letter is included in an effort to enable the reader to develop a thorough understanding of the purposes and needs of job evaluation and how job classification is a pertinent and meangful process of job evaluation. This chapter is divided therefore into two sections: (1) job evaluation, and (2) job classification.

Job Evaluation

Identification of Job Evaluation

The definition of job evaluation (p. 7) indicates that it involves several major phases such as securing and analyzing facts about jobs, writing up these analyzed facts into descriptions of the jobs, studying these descriptions and evaluating the jobs according to some rating method, and then pricing the jobs in relation to the evaluation. Rork (5), illustrated in his report, a job evaluation formula which was below becuase it was felt that it revealed the general outline of the job evaluation process.

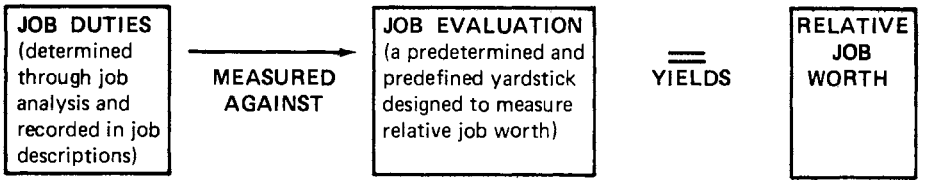

Figure 1. The Job Evaluation Formula

Source: (5)

Generally speaking, job evaluation is an effort to apply sound principles of measurement to determine what each job in an organization is really worth.

The first step, that of job analysis to determine job descriptions, is one of great importance and should be conducted in a manner which is adequate for job evaluation. Lytle (7), indicated in his book that job analysis used to be looked upon as the study of the quantitative part of the employee's contribution or that part which reveals the job elements. He went on to say that this type of job analysis is not adequate for job evaluation and that it should consist of a study of the qualitative part of the employee's contributions to an organization; that is, the part which involves skill, effort, responsibility, and working conditions, not to mention the many possible subordinate considerations that are covered by the above four major considerations. Job analysis, if conducted properly, may be used extensively in personnel administration. Lanham (8) included in his study, a list of

purposes of job analysis which are listed below to illustrate the extensive usefulness of it.

1. To provide facts for determining the relative work of jobs --- job evaluation

2. To determine job requirements against which employee performance may be measured --- merit rating

3. To determine requirements necessary to fill jobs --- selection and placement

4. To provide detailed information about what the worker is to do in performing his job --- training

5. To provide occupational facts necessary to the advising of workers --- vocational counseling

6. To point out dangerous and hazardous working conditions in order that remedial steps may be taken --- safety

7. To provide facts about job duties and responsibilities in each area of operation --- better management-employee relationships and organizational structure

8. To provide information on operation and procedures --- operating and procedures manual

9. To clarify line of responsibility and authority --- elimination of overlapping duties

10. To classify jobs into an executive, administrative, professional, or nonsupervisory category for the purpose of determining exemptions from minumum-wage and overtime-pay regulations --- compliance with law such as Fair Labor Standards Act.

After the job analysis is completed and the facts about the job have been secured and analyzed, these facts are then recorded in job descriptions. Typically, a job description includes three major divisions as indicated by Lanham (8). These are: (1) the identifying facts about the job, (2) the main body of the description, which includes a brief summary statement about the job and a full account of the operations, responsibilities, and duties performed on the job, and (3) the specifications or qualifications required for satisfactory performance as well as the conditions under which the job is performed. Lanham went on to

say that sometimes a fourth section is included in job descriptions which designates by title the jobs preceding the one described and the jobs which follow it. The main purpose of this fourth element in job descriptions is to establish job relationships and to indicate lines of promotion from one job to another.

In the publication, "Standardizing Drafting Job Descriptions" (1), it was indicated that while classifications (discussed later in this chapter) are intended to be a measure and guide for maintaining uniform competency levels, they may also serve as a foundation when writing job descriptions. In this publication it went on to say that job descriptions are divided into three segments. Although these are not identical to the three divisions indicated by Lanham, they do consist of all the elements brought out by him and also go on to subdivide these elements into their various parts. A summary of these three segments of job descriptions as described in "Standardizing Drafting Job Descriptions" (1) is listed below.

The Job Title: Paramount in selecting a title for a specific job is a choice of words that make the title exclusive from all others. The job title should, (1) indicate the area of work, (2) identify with classification standards if classifications are being used in a job evaluation process, and (3) be exclusive from all other job titles.

Qualifications: A person has to meet minimum requirements to be able to perform a particular job. These are usually best described in terms of capabiliites, namely knowledge and skill, and are normally measured by amount of education and experience.

Responsibilities: This segment of job descriptions describes all aspects of the work included in the job. These aspects of work include

such areas as human relations, material items, and functions. These areas are described below.

HUMAN RELATIONS

Supervision - number of people

Work Direction - number of people

Contacts - purpose (selling, servicing, advertising, negotiating, interviewing, corresponding, conferring), frequency inside and outside of company, positional level of people contacted. The kind and frequency of contacts are the measure of communications required in a job to which an employee is to be matched.

MATERIAL ITEMS

Acquisition - procuring, specifying, expediting.

Operating - manufacturing and using

Maintenance - constructing, repairing, servicing

Storage - receiving, transferring, storing, guarding

Disposal - salvaging, reclaiming, saving, disposing

Testing - inspecting and testing

FUNCTIONS

Supervision - general scope of subordinates work

1. Selection - employment, placement, transfer, promotion, separation.
2. Performance - work assignment, quality control, conduct, company regulations, work instruction, job training, discipline.
3. Compensation
4. Safety - training, practices, hazard determination.
5. Morale - grievances, surroundings, indoctrination, benefits, time off.

Information - records - money

1. Preparation - designing, originating, securing, calculating, transcribing records and information, estimating costs.
2. Use - analyzing, interpreting, verifying and safeguarding records and information, spending money.
3. Approval - checking and signing.
4. Handling - distributing, filing, reproduction, transporting

Procedures

1. Recommendations - originating ideas, developing ideas, selection of methods, improvement of methods.
2. Advice - feasibility of opinions. (1)

The above discussion on generalized form and contents of job descriptions are not always used in whole. Some organizations prefer to divide the job descriptions into completely separate forms, but, as indicated by Lanham (8), this could cause complications in evaluation and therefore he recommended that the job description process be conducted in its entirety; that is, using all three of the separate divisions (p. 14).

In summary of the discussion of job descriptions, it was found that they have dual purposes as indicated by Rork (5). These are: (1) to serve as a means of defining and recording the facts relating to the functions and responsibility of the job itself, and (2) to serve as a means of defining and recording those requirements relating to the factors used in the evaluation of the job. Rork (5), also indicated that:

> Most authorities in the field of job evaluation stress the fact that too much emphasis cannot be placed upon the importance of accurate, complete, and intelligible job descriptions. They are important, first, in order that accurate ratings result from the installation; second, in order that subsequent changes in jobs can be recognized and reflected in changed rating; third, in selling the plan to employees, for they will have much greater confidence in the accuracy and impartiality of the rating if they see, in the job descriptions, true and complete pictures of the work they do.

The second step in the job evaluation formula is the measuring of the job facts against a job evaluation plan. There are four generally accepted plans in present use. These are the ranking method, the classification or grading methods, the point method, and the factor - comparison method (9). All four plans are predetermined and predifined before the job evaluation process is conducted. These plans of job evaluation are used as a scale in which to measure the relative worth of a particular job. Although each plan is of great importance to the job evaluation

process, only the grade or classification plan will be presented since it is of primary importance to the subject content of this study. However, for a brief comparison of the four different systems Figure 3 has been supplied. The classification plan will be discussed in the second section of this chapter.

The Objectives of Job Evaluation

So far the discussion in this chapter has been about ways to evaluate a job in order to obtain the relative worth of it as compared to other jobs in the organization or department. It was felt that at this point the purposes or objectives of such an evaluation should be brought out. Also, before discussing the objectives of job evaluation it should be noted that no effort was made to establish the individual ways to obtain the objectives because it was believed that this would extend beyond the purpose of the review of literature. Therefore, it was believed that the exposure of the objectives only, would be sufficient in the understanding of the basic principles of job evaluation.

Although the main purpose of job evaluation is to work toward a solution to the many wage and salary administrative problems which confront those responsible for this aspect of business and industrial activity, there are many other by-products of job evaluation. Otis and Luekart (9), indicate in their book that "the decision to measure or rate jobs should only be made with the intent to reach certain objectives which are important to both management and the worker". They go on to indicate what they believe to be the most important objectives of the job evaluation program. These objectives were as listed below:

1. The establishment of sound wage differentials between jobs.

ITEMS FOR COMPARISON	RANKING SYSTEM	GRADE OR CLASSIFICATION SYSTEM	POINT SYSTEM	FACTOR–COMPARISON SYSTEM
1. Type of Organization	Should be used in small or medium sized organizations		Designed for use in large organizations but may be used in small companies.	
2. Type of Job	Jobs narrow in range with relatively simple duties and responsibilities.		Jobs broad in range with variations in complexity and homogenity.	
3. Installation Time and Cost	Less costly because methods are simple and easy to understand and use.		More costly because methods are more time consuming and more difficult to explain to raters and employees. However, systems more accurate.	
4. Job Analysis	A narrative description of job with duties, responsibilities, degree of difficulty, and required qualifications clearly brought out.		A narrative statement of duties and qualifications. Also, job broken down into important compensable factors (required experience and training, mental effort, and physical effort). Amount to which each factor present in job is indicated by short narrative statement.	
5. Type of Approach	Nonquantitative –– jobs treated as a whole.		Quantitative –– jobs broken down into component parts and each part analyzed and given value in points or money.	
6. Method of Measuring Job	Jobs compared to each other and ranked from lowest to highest on basis of whole job to whole job.	Jobs compared to predetermined grade or classification yardstick written as general job description to measure level of requirements in a range of jobs with wide variety of duties.	Jobs compared to predetermined point scale established by selecting common factors (5 to 10), assigning degrees to factors, weighting factors, and giving point values to degrees of each factor.	Key jobs compared to each other, job element by job element, with rate of pay distributed among 5 factors to establish value of jobs in points.

Figure 2. Comparison of the Four Basic Job Evaluation Systems

Source: (5)

2. The discovery and elimination of wage inequities.
3. The establishment of a sound wage foundation for incentive and bonus programs.
4. The maintenance of a consistent wage policy.
5. The creation of a method of job classification so that management and union officials may deal with major and fundamental wage issues during negotiations and grievance meetings.
6. The installation of an effective means of wage control.
7. The collection of job facts to aid in the following:
    a. Selection of employees
    b. Promotion and transfer of employees
    c. Training of new workers
    d. Assignment of tasks to jobs
    e. Accident prevention
    f. Improving working conditions
    g. Administrative organization
    h. Work simplification (9)

Lytle (7), indicated in his book what he believes the purposes of job evaluation are. He divided these purposes into two parts: (1) primary purposes and (2) secondary purposes. These purposes stated by Lytle (7) were as listed below:

Primary Purposes of Job Evaluation

1. To establish a general wage level for a plant which will have parity, or an otherwise desired relativity, with those of neighbor plants, hence with the average level of the locality.
2. To establish correct differentials for all jobs within the given plant.
3. To bring new jobs into their proper relativity with jobs previously established.
4. To accomplish the foregoing by means of facts and principles which can be readily explained to, and accepted by, all concerned.

Secondary Purposes of Job Evaluation:

1. To determine qualities necessary for a job when hiring new employees.
2. To determine qualities necessary for a job when making promotions.
3. To determine if the system of advancement in a particular plant is from the job of lowest order toward the job of highest order.
4. To determine qualities necessary when bringing back men who have been laid off or have been on leave for war service. During the interval there may have been changes in job content.

5. To support explanations to employees as to why a particular man would not be suitable for a given opening. Many seniority clauses give preference to length of service only after the requirements of the job in the way of experience, etc., are satisfied. If the job rating has been made up by an independent agency and the entire plant has been rated there is likely to be less stress on mere seniority.
6. To determine if men now occupying various jobs have qualifications required by the specifications.
7. To determine if all men are placed to best advantage in respective jobs available, also to guide the revamping of jobs for skill conservation.
8. To analyze hourly rates and to determine if they are in line with rating given.
9. To compare periodically wage rates with those for similar occupations at other local plants.
10. To point out where greatest opportunities lie for development of automatic equipment and improvement of working conditions, removal of hazards, etc.
11. To train new supervisors. Specifications outlining duties of each man are useful in starting a new foreman on the job. Even an old foreman may have a wrong conception of job content and worth.

From these objectives stated it can be seen that job evaluation, if the method is chosen and implemented properly, can be most valuable to both the employer and employee, in both small and large organizations or departments.

Job Classification

It has been indicated that there are four basic types of job evaluation plans which are: (1) ranking method, (2) the classification or grading methods, (3) the point method, and (4) the factor - comparison method. This section of the chapter is concerned with the classification or grading methods of job evaluation. The remaining three types of evaluation systems are beyond the scope of this study.

In job evaluation it is necessary to have a predetermined and predefined yardstick with which to measure existing and new jobs. One type of scale used in industry is that of the classification system. This scale consists of a series of grades or classes which have been defined in terms of the range of jobs to be rated.

Construction of the Job Classification Scale

For a job evaluation plan to accomplish its objectives it muat be constructed and evaluated properly. Rork (5), gave in his report some general comments on how the job classification scale should be constructed. These comments were as stated below:

> To apply a job classification system to any particular organization, it is first necessary to set up certain job levels or grades and define these job levels in terms of the elements of the jobs in the organization. The duties and responsibilities should be clearly defined for each level. Such a system must be based on the principles of variation in difficulty, as represented by the number and kind of rules which regulate the work done, and the degree of responsibility, as indicated by whether or not the operations are subject to check. Of necessity, a job "measuring stick" of this sort must be based on a thorough knowledge of the jobs in the organization so that their difficulty and responsibility will be clearly distinguished.

Otis and Leukart (9), reported that most grade descriptions contain six general areas. These six areas were as listed below:

1. Type of work and complexity of duties
2. Education necessary for performing the job
3. Experience necessary for performing the job
4. Supervision given and received
5. Responsibilities
6. Effort demanded

The responsibility of designing the classification scale can be given either to an individual or a committee as indicated by Lanham (9).

He went on to say that a committee is to be recommended, and in any event a scale constructed by one person should be reviewed by a representative group such as the advisory committee. For the success of the scale it is essential that it be acceptable to both management and employees because it is the measuring device which will be used to determine the relative position of the jobs. Lack of acceptance of the scale will probably result in lack of acceptance of the ensuing job array (8).

There are two basic approaches to the actual writing of the grade definitions in the classification system, as indicated by Lanham (8). In both approaches it was assumed that the job analysis and the writing of job descriptions had been conducted.

The first method consists of grouping the jobs in the range to be rated into levels of classification according to their respective duties, responsibilities, and requirements. This step is actually, a rough ranking of the jobs by comparing them to each other. When a committee is used in the process of grading the individual jobs according to the above approach, uniform instructions should be issued to all members of the committee as indicated by Gray (11). After the rough grouping of the jobs has been conducted, general characteristics represented in the jobs in each group should be identified and listed.

The second approach of writing grade definitions, as indicated by Lanham (8), does not include the preliminary grouping of jobs as in the first approach. In this approach the grades are predetermined before any ranking or grouping of jobs is conducted. After the scale has been constructed the individual jobs are assigned to these grades.

It was indicated by Rork (5) that the language of the grade descriptions should be terse, concise, simple, and to the point. Also,

unnecessary words and phrases should be omitted and sentences begun with the present tense of the functional verb. Otis and Leukart (9), indicated in their discussion of grade descriptions that "if they are too general, the assignment of jobs to the grades will be unreliable".

Classifying the Job

After the grade definitions of the classification scale have been developed the jobs may then be classified into the proper grade. Rork (5), indicated this process as stated below:

> The job descriptions are read and analyzed and on the basis of the duties and responsibilities outlined in each and a comparison with the grade description or "measuring stick" each job is assigned to its proper class in the classification structure.

To properly compare the job descriptions to the grade descriptions Otis and Leukart (9) indicated that:

> Since the descriptions of the grades are in some detail and are specific with respect to certain duties, responsibilities, and qualifications, the job information [or job descriptions] must be similiar with respect to detail and specificity.

Advantages and Disadvantages of the Classification System of Job Evaluation

Through a review of the pertinent literature, various advantages and disadvantages of the classification system of job evaluation were found. Therefore, the following lists of advantages and disadvantages of the classification system are a conglomerate listing taken from this literature.

Advantages:

1. It is easy to understand and use. (5)

2. It can eliminate personalities and thereby be superior to old-fashioned rate setting. (7)

3. Some unions prefer it because it leaves more room for bargaining. (7)

4. If checked with outside standard job descriptions, it can give a practical but rough job classification. If that is the main objective, this is the quickest way to establish it. (7)

5. Most firms and workers have some rough conception of the general classification structure into which various jobs fall. Therefore, with these general conceptions, it is relatively easy to arrive at a job classification structure which fits the immediate needs of the organization or department. (9)

6. If the job descriptions are written properly and adequately fitted into their respective grades in the scale, the worker can be shown the duties, training requirements, responsibilities, and the qualifications necessary to perform his job satisfactorily. (9 1)

7. When the job classification system is not used, there are as many job levels as there are jobs and each level has its own rate. Therefore, if the number of jobs is fairly large, establishing and administering such a multiplicity of rates is extremely hard to do, costly in time and effort, and often difficult to defend because of the very small differential between the rates on the various jobs. (8)

8. By dividing jobs into grades or levels, the management or department can more easily hire people which meet the set qualifications and the people hired can know what they are expected to do -- their scope of work along with clearly stated responsibility, authority, accountability and limitations. (1)

Disadvantages:

1. The use of a scale or "yardstick" in judging the whole job may result in wrong classifications. (5)

2. Jobs may overlap into two classes. (5)

3. The ranking is likely to be influenced by the magnitude of existing rates. (7)

4. Very liberal range limits must be provided to correct bad guesses in ranking the jobs. (7)

5. An important disadvantage of the job classification method of job evaluation is the extreme care required in writing the grade descriptions. It is difficult to write a single general statement which describes such factors as complexity of duties, nonsupervisory and supervisory responsibilities, and necessary qualifications. (9)

6. Class limits are partly determined in an arbitrary manner and therefore, at times, job placement in the classes may be difficult to defend. (9)

Summary

AIDD's Classification Program for Designers and Draftsmen is based upon the classification standards as given in "Standardizing Drafting Job Descriptions" (1). The original purpose of this manual was to identify the various complexity levels of drafting and design so supervisors and drafting and design department managers could communicate work requirements among themselves and among those under their employment. It was indicated in this manual that jobs must be defined for the following two reasons:

1. So people can be hired with the right qualifications.

2. So the people hired can know what they are expected to do -- their scope of work along with clearly stated responsibilities, authority, accountability and limitations.

Over the years, "Standardizing Drafting Job Descriptions", has been proven to be a qualified and relatively well used scale in which to measure individual drafting and design jobs. Through AIDD's proposed classification program for both members and non-members, it was hoped that these classification standards would be even more widely used by design and drafting supervisors and managers and also open up a new dimension in the drafting and design field. This new dimension would be the opportunity for designers and draftsmen to become recognized and to encourage in them a sense of professional pride by establishing a program in which they could become certified or classified as either draftsmen, design-draftsmen, or designers.

CHAPTER III

PROCEDURES AND ANALYSIS OF DATA

Introduction

This study was conducted for the purpose of supplying to AIDD, recommendations and data about several areas pertaining to an investigation of the need for a classification program for designers and draftsmen.

This chapter is the description of the research procedure used to arrive at these conclusions and recommendations.

Population

The subjects of this study included both members and non-members of AIDD. All participants were either supervisors of chief draftsmen, or related areas of these, in the field of drafting and design at the time the study was conducted.

Members

A random sample of 118 members of AIDD in supervisory or chief draftsman positions was obtained from the total population of 750 AIDD members. This sample is 15.7 percent of the total population of those AIDD members who were in supervisory or chief draftsman positions at the time the study was conducted. After the random sample was taken there was a total of 110 members from 28 states in the United States, and 8

members from Canada included in the member sample. Of the 118 members in supervisory or chief draftsman positions who were sent questionnaires, there were 44 responses for a 37.3 percent return, which represented 5.8 percent of the total population.

Non-Members

There was a total of 23 non-members of AIDD chosen to participate in the study, representing 13 states in the United States. These non-members were selected from a list of non-members which was obtained from AIDD's national headquarters in Bartlesville, Oklahoma. As mentioned before in Chapter I, this was a limitation to the study due to the fact that these non-members were not randomly chosen, but it was believed by the author and AIDD that this non-member group would be sufficient as a representative sample of the non-member population, and would serve the purposes of this study. Of the 23 non-members in supervisory or chief draftsman positions who were sent questionnaires, there were 7 responses for a 30.4 percent return. It is recognized that this extremely low number of non-members contacted and the low number responding, make this portion of data statistically weak. It was felt, however, that the data might give some indication of the trend of thinking among this group.

Looking at the overall study, there was a total of 141 (118 members and 23 non-members) supervisors and chief draftsmen surveyed, representing a total of 33 states in the United States, and Canada. A geographic distribution of the samples is shown in Figure 3. Of the 141 members and non-members who were sent questionnaires, there were 55 responses (four being unidentifiable) for a 39.0 percent return.

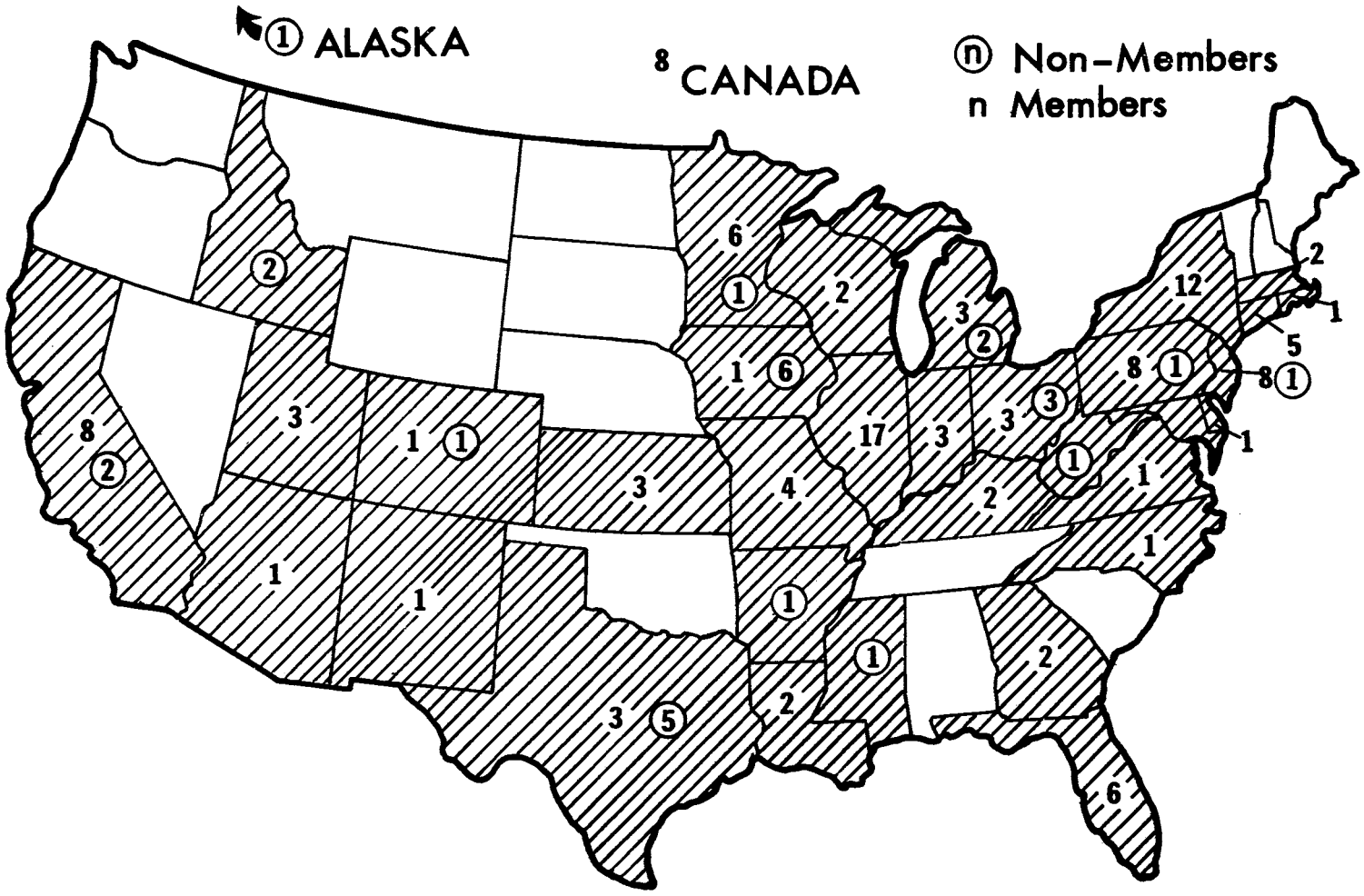

Figure 3. Geographic Distribution of Members and Non-Members Surveyed

Instrument

The geographic areas respresented by the samples was so large, a mailed questionnaire was deemed to be the most practical instrument for obtaining the relevant data.

After thoroughly considering the purposes and needs of the study, a preliminary questionnaire was constructed being of a closed form. When the preliminary questionnaire was completed, it was sent along with a copy of proposed research questions to N. N. Freling, Executive Vice President of AIDD, for his review and suggestions. After this review of the preliminary questionnaire, a final draft of the questionnaire to be used in the study was completed. A copy of the questionnaire is included in Appendix A.

A letter of transmittal (Appendix B) was formulated, and was sent along with the questionnaire, a copy of AIDD standards of classification for designers and draftsmen (Appendix C), and an application form for classification (Appendix D) to the 141 supervisors and chief draftsmen, both members and non-members of AIDD. It was believed that by sending the AIDD standards for classification and the application form, it would give the respondents a thorough background on the requirements upon which the classification program is based. Also, it would give the respondents the opportunity to comment and/or make suggestions on the standards and the application form.

Data Treatment

When all, or a majority of the questionnaires were returned, the data was tabulated and presented on a basis of percentage or average only. Also, where it was deemed necessary the responses were compared for similarities and differences among the different groups; for example, member versus non-member, comparison of groups of supervisors or chief draftsmen with varied numbers of years experience, and comparison among groups with varied number of designers and/or draftsmen whom they supervise. Since the non-member response was so low, a statistical comparison between non-member and member responses was not feasible. Therefore, on the following pages where member and non-member responses are recorded, they are listed only for additional information and not as a statistical comparison. In the case where an item was left blank by the respondent, the computation of percentages for that particular item was caluclated using only those questionnaires which included a response for that one item.

On the following pages, tables and figures have been used to graphically represent the relevant data along with an explanation of each.

CHAPTER IV

RESULTS

The purpose of this study was to investigate the opinions and concerns of supervisors and chief draftsmen toward AIDD's Classification Program for Designers and Draftsmen. The results of data obtained in this study are presented in this chapter and are divided into two parts: (1) general data pertaining to the respondents of the study, and (2) data pertaining to the identification of the needs for AIDD's Classification Program for Designers and Draftsmen.

General Data Pertaining to the Respondents of the Study

To obtain an overall feeling of the scope of titles of the persons responding to the questionnaire, Table I has been supplied. From this table it can be seen that the respondents of the study covered a wide variety of individual areas in the design and drafting field.

Table II illustrates the respondents' numbers of years of experience at their individual jobs at the time the study was conducted. It can be seen in Table II that the majority of the respondents had a substantial number of years of experience at their jobs.

In the survey, the respondents were asked to indicate the number of designers and/or draftsmen who reported to them. This question was asked so a comparison of various ranges of supervision could be carried

TABLE I

SCOPE OF TITLES OF PERSONS RESPONDING TO THE QUESTIONNAIRE

Number of Respondents	Job Title
15	Chief Draftsman
7	Drafting Manager
5	Design Engineer
2	Standards Engineering Manager
2	Development Drafting Manager
2	Engineering Services Supervisor
2	Engineering Graphics Manager
2	Technical Services Manager
1	Director
1	Documentation Director
1	Design Documentation Manager
1	Manager Design, Standards
1	Chief Design Engineer
1	Chief Manufacturing Engineer
1	Vice-President (Customer Services)
1	Project Engineer
1	Department Head for Design and Standards
1	Product Engineering Director
1	Production Engineering Supervisor
1	Manager
1	Lead Designer
1	Drafting and Publication Manager
1	Architect (Owner)
1	Associate Professor Engineering Drafting

TABLE II

NUMBER OF YEARS EXPERIENCE AT THE RESPONDENTS' PRESENT JOB

Years at Present Job	Number of Respondents	Percent
1-5	21	38.2
6-10	22	40.0
11-15	7	12.7
20 and Over	5	9.1
	n=55	

out on several other questions pertaining to the classification program. Also, this would give an indication of the overall supervisory status of all respondents. Table III illustrates the various numbers of designers and/or draftsmen who reported to the respondents of the survey.

To illustrate the various sizes of the drafting and/or design departments of the companies where the respondents worked, Table IV has been supplied. In several of the questions found later in this chapter pertaining to the classification program, the various ranges in Table IV will be used for comparison purposes. From Table IV it can be seen that the respondents represented a almost evenly distributed range of drafting and/or design department sizes.

TABLE III

NUMBER OF DESIGNERS AND/OR DRAFTSMEN REPORTING TO THE INDIVIDUAL RESPONDENTS

Number of Designers and/or Draftsmen Reporting to the Individual Respondents	Number of Respondents	Percent
1-10	28	53.8
11-25	12	23.1
26-50	7	13.5
51-100	2	3.8
Over 100	3	5.8
	n-52	

TABLE IV

DRAFTING AND/OR DESIGN DEPARTMENT SIZES REPRESENTED BY THE RESPONDENTS

Number of Draftsmen and/or Designers in Respondents' Companies	Number of Respondents	Percent
1-10	16	30.2
11-25	15	28.3
26-50	4	7.5
51-100	8	15.1
Over 100	10	18.9
	n=53	

Data Pertaining to the Identification of the Needs for AIDD's Classification Program for Designers and Draftsmen

To reveal the extent to which job classification or grading was being used by the respondents and/or their companies, Table V has been supplied. It can be seen in Table V that the majority of the respondents' drafting and/or design departments were making use of some form of job classification or grading system. However, in the 1-10 employee range there is a substantial percent (37.5%) of individual companies not doing so.

The respondents who indicated that their design and/or drafting departments were using some form of system to grade or rate their designers and draftsmen were asked to list the various job classes or grades within that system. The job classes or grades which were listed by the respondents varied both in number and in type at all levels except for the lowest level, and in most cases showed no close relationships. To obtain an overall view of the number and types of different grades recorded by the respondents, Table VI and Table VII have been supplied. Table VI reveals the lowest and highest levels of grades or job classes which were stated, along with the number and percent of respondents indicating the use of those individual grades. Table VII illustrates the various numbers of job classes or grades within the classification systems stated by the respondents.

The data illustrated in Table VIII represents the respondents feelings toward whether AIDD's classification program would or would not aid them in classifying or grading the designers and/or draftsmen in their company or department. The table is divided into several variables in

TABLE V

THE EXTENT OF USE OF A JOB CLASSIFICATION OR GRADING SYSTEM AMONG VARIOUS SIZES OF DRAFTING AND/OR DESIGN DEPARTMENTS

Drafting and/or Design Department Size	Number of Respondents	Percent
1-10 Employees		
Yes	10	62.5
No	6	37.5
11-25 Employees		
Yes	15	100.0
No	0	0.0
26-50 Employees		
Yes	4	100.0
No	0	0.0
51-100 Employees		
Yes	7	87.5
No	1	12.5
Over 100 Employees		
Yes	10	100.0
No	0	0.0
Department Size Unknown		
Yes	2	100.0
No	0	0.0

TABLE VI

TYPES OF JOB CLASSES OR GRADES BEING USED BY RESPONDENTS' COMPANIES IN RESPECT TO THE LOWEST AND HIGHEST LEVELS ONLY

Job Classes or Grades Being Used by Respondents' Companies in Respect to Lowest and Highest Levels Only	Number of Respondents	Percent
(Lowest Grade)		
Apprentice Draftsman	6	13.0
Trainee Draftsman	8	17.4
Student Draftsman	1	2.2
Trainee, Technical	1	2.2
Drafting Assistant	1	2.2
Draftsman	7	15.2
Draftsman I	2	4.3
Draftsman 'A' (3 grades)	1	2.2
Draftsman 'B'	2	4.3
Draftsman 'C'	1	2.2
Junior Draftsman	11	23.9
Detail Drafting Technician	1	2.2
Draftsman, Detailer	4	8.7
(Highest Grade)		
Draftsman	1	2.2
Draftsman 'A'	1	2.2
Lead Draftsman	1	2.2
Chief Draftsman	3	6.5
Senior Draftsman	3	6.5
Master Draftsman	1	2.2
Draftsman 'C' (3 grades)	1	2.2
Designer	10	21.7
Designer III	1	2.2
Designer 'A'	1	2.2
Design Drafting Technician	2	4.3
Senior Design Draftsman	2	4.3
Senior Designer	2	4.3
Engineering Design Draftsman	1	2.2
Senior Design Engineer	1	2.2
Design Engineer	5	10.8
Lead Designer	2	4.3
Chief Engineer	1	2.2
Development Specialist	1	2.2
Senior Checker	1	2.2
Technican II	1	2.2
Associate	1	2.2
Journeyman	1	2.2
Drafting Room Supervisor	2	4.3

TABLE VII

NUMBER OF JOB CLASSES OR GRADES IN CLASSIFICATION SYSTEMS BEING USED BY RESPONDENTS' COMPANIES

Number of Job Classes or Grades in Classification System	Number of Respondents	Percent
2	3	6.5
3	6	13.0
4	7	15.2
5	10	21.7
6	13	28.3
7	1	2.2
8	3	6.5
10	2	4.4
14	1	2.2
	n=46	

order to obtain information on a comparison basis. It can be seen from Table VIII that the respondents who supervise 1-10 designers and/or draftsmen have shown the largest positive response to the question (75.0%), with the "Over 100" range of supervision giving the lowest positive response (33.3%). In relation to the number of years of experience the respondents had in either supervisory or managerial positions, the "1-5" years of experience range indicated the largest positive response (81.0%), and the lowest positive response was given by the "20 and Over" years of experience range (40.0%). Looking at the total response it can be seen that 34 or 63.0 percent of the respondents indicated a positive response, and 20 or 37.0 percent of the respondents indicated a negative response.

TABLE VIII

RESPONDENTS' ATTITUDES TOWARD WHETHER AIDD'S CLASSIFICATION PROGRAM WOULD OR WOULD NOT AID THEM IN CLASSIFYING DESIGNERS AND/OR DRAFTSMEN IN THEIR COMPANY

Variables	Number of Respondents	Percent
Number of Designers and/or draftsmen Respondents Supervised		
1-10		
Yes	21	75.0
No	7	25.0
11-25		
Yes	5	41.7
No	7	58.3
26-50		
Yes	4	57.1
No	3	42.9
51-100		
Yes	1	50.0
No	1	50.0
Over 100		
Yes	1	33.3
No	2	66.7
Number of Years of Experience in Supervisory or Managerial Positions		
1-5		
Yes	17	81.0
No	4	19.0
6-10		
Yes	11	52.4
No	10	47.6

TABLE VIII (Continued)

Variables	Number of Respondents	Percent
11-15		
Yes	4	57.1
No	3	42.9
20 and Over		
Yes	2	40.0
No	3	60.0
Member Versus Non-Member		
Member Response		
Yes	27	62.8
No	16	37.2
Non-Member Response		
Yes	4	57.1
No	3	42.9
Total Response		
Yes	34	63.0
No	20	37.0

Those respondents who answered yes to the question, "Do you feel that AIDD's Classification Program for Designers and Draftsmen would help you classify or rate designers and draftsmen reporting to you", were asked to explain why they believed it would do so. The responses to this question generally fell into four categories which are listed below along with the number and percent of respondents whose answers fell within each of the categories.

AIDD's Classification Program for Designers and Draftsmen would help classify or rate designers and draftsmen reporting to the responding supervisors and chief draftsmen because of the following reasons:

1. It would help because it would establish a national standard classification system. Also, it would help verify or update the respondents' classification systems. (11 or 36.7 percent of the 30 respondents indicating reasons, indicated reasons which fell into this category)
2. It would help because it would establish a means in which to verify the employee's (both new and old) qualifications, abilities, and potential. Generally, it would provide an added confidence level in respect to the employee's qualifications. (9 or 30.0 percent of the 30 respondents indicating reasons, indicated reasons which fell into this category)
3. It would help because it would establish a means for job advancements and job allocations. (7 or 23.3 percent of the 30 respondents indicated reasons which fell into this category)
4. It would help because AIDD's classification program closely coordinates with the respondents' present job classification systems. (3 or 10.0 percent of the 30 respondents indicating

reasons, indicated reasons which fell into this category)

The data in Table IX reveals the respondents' feelings toward whether AIDD's classification program would or would not help them as administrators. Again the table is divided into several variables in order to obtain information on a comparison basis. It can be seen from Table IX that there was an overall good percentage of positive responses in all cases except for those respondents who supervised over one-hundred designers and/or draftsmen. Only 1 or 33.3 percent of the respondents indicated positive responses in this category.

Figure 4 is related to Table IX in that it represents the overall individual reasons why the 38 or 71.7 percent of the respondents indicated that AIDD's classification program would aid them as administrators. It can be seen from Figure 4 that the largest composite percent was 92.9 percent and was recorded under reason number '2', "It will instill in them (designers and/or draftsmen) a sense of professional pride". However, the largest percent of first choice responses was delegated to reason number '1', "AIDD's classification program will help deserving designers and draftsmen receive recognition in their field", which was responded to by 11 or 34.4 percent of the respondents indicating a number '1' choice.

To determine if the respondents would encourage designers and/or draftsmen to apply for AIDD classification, Table X has been supplied. It can be seen from Table X that 34 or 66.7 percent of the respondents answering this question indicated that they would encourage designers and/or draftsmen to apply for AIDD classification, and 17 or 33.3 percent of the respondents indicated a negative response.

As mentioned previously, a classification program serves both the

TABLE IX

RESPONDENTS' FEELINGS TOWARD WHETHER AIDD'S CLASSIFICATION PROGRAM WOULD OR WOULD NOT HELP THEM AS ADMINISTRATORS

Variables	Number of Respondents	Percent
Number of Designers and/or Draftsmen Supervised		
1-10		
Yes	23	82.1
No	5	17.9
11-25		
Yes	6	54.5
No	5	45.5
26-50		
Yes	4	57.1
No	3	42.9
51-100		
Yes	2	100.0
No	0	0.0
Over 100		
Yes	1	33.3
No	2	66.7
Number of Years of Experience in Supervisory or Managerial Positions		
1-5		
Yes	16	80.0
No	4	20.0
6-10		
Yes	14	66.7
No	7	33.3
11-15		
Yes	5	71.4
No	2	28.6

TABLE IX (Continued)

Variables	Number of Respondents	Percent
20 and Over		
Yes	3	60.0
No	2	40.0
Member Versus Non-Member		
Member Response		
Yes	30	69.8
No	13	30.2
Non-Member Response		
Yes	5	83.3
No	1	16.7
Total Response		
Yes	38	71.7
No	15	28.3

TABLE X

RESPONDENTS' ATTITUDES TOWARD ENCOURAGING DESIGNERS AND/OR DRAFTSMEN TO APPLY FOR AIDD CLASSIFICATION

Would Encourage Designers and Draftsmen to Apply for AIDD Classification	Number of Respondents	Percent
Yes	34	66.7
No	17	33.3

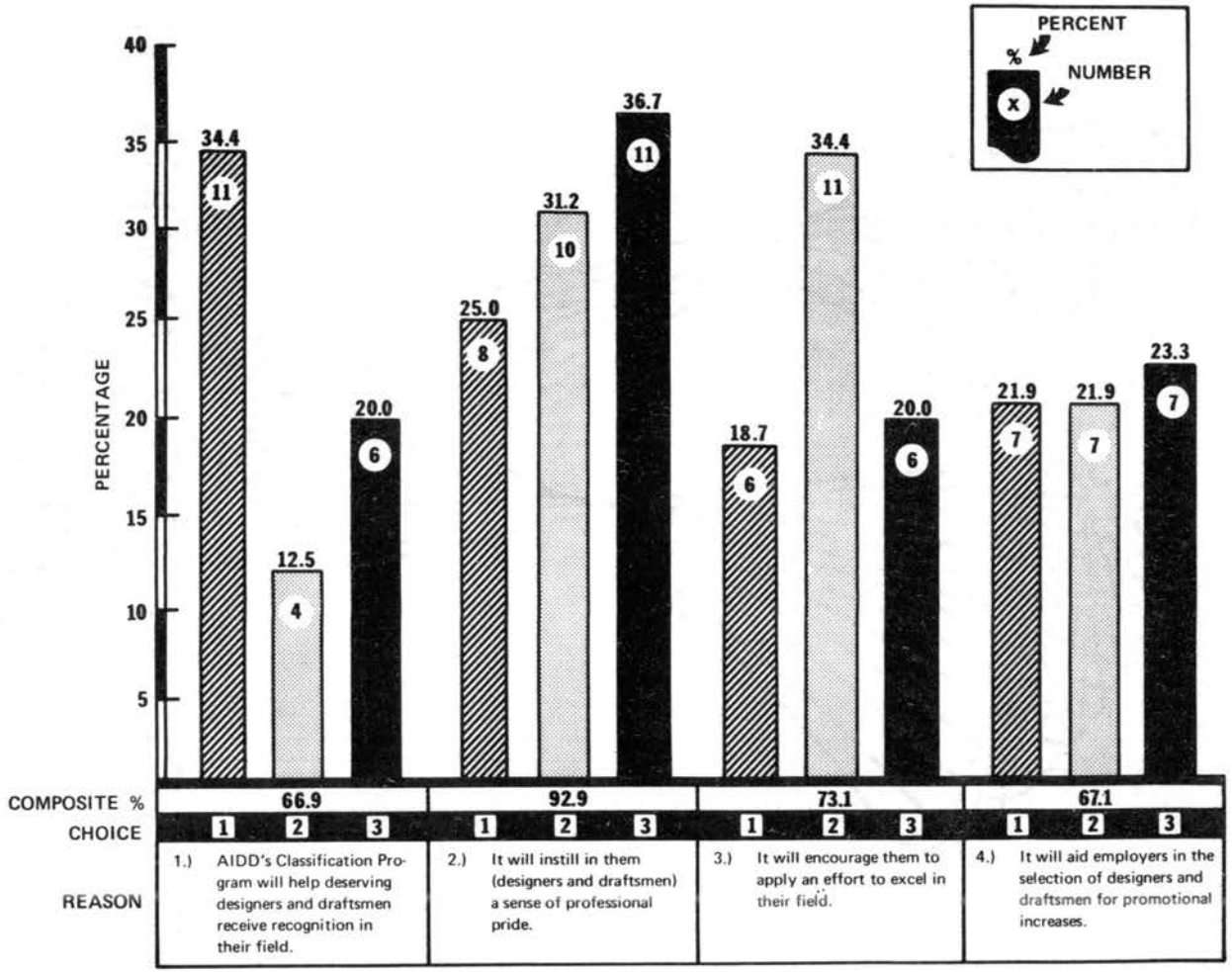

Figure 4. Reasons Why AIDD's Classification Program Would Help Respondents as Administrators

individual and management, and before it can be of a definite aid to the individual, management must first give recognition to such a classification program. Table XI has been supplied in order to determine if the respondents felt that their companies or management would recognize AIDD's classification program. From Table XI it can be seen that 22 or 51.2 percent of the 43 responding supervisors or chief draftsmen indicated that their companies would recognize AIDD's classification program, and 21 or 48.8 percent of the respondents indicated that their companies would most likely not recognize AIDD's classification program

TABLE XI

RECOGNITION OF AIDD'S CLASSIFICATION PROGRAM BY RESPONDENTS' COMPANIES

Would Company Recognize AIDD's Classification Program	Number of Respondents	Percent
Yes	22	51.2
No	21	48.8

Table XII illustrates the response to whether the classification fee would be paid by the respondents' companies or would have to be paid by the individual applying for a particular classification. From Table XII it can be seen that 42 or 89.4 percent of the 47 responses to this

question indicated that the individual would be required to pay the classification fee, and 5 or 10.6 percent of the respondents indicated that their company would be willing to pay for the individual classification fees.

TABLE XII

RESPONSE TO WHETHER THE CLASSIFICATION FEE WOULD BE PAID BY RESPONDENTS' COMPANIES OR BY THE INDIVIDUAL

Paid By	Number of Respondents	Percent
Individual	42	89.4
Company	5	10.6

To determine if an individual meets the predetermined qualifications of a particular classification, AIDD's classification program requires the attestment of the individual's educational background, experience and ability by one or more of the individual's supervisors. To find out the attitudes about this attestment requirement the respondents were asked if they would be willing to attest to an individual's qualifications if and when one of their employees was to apply for a classification. The response to this question is illustrated in Table XIII. It can be seen from this table that 52 or 98.1 percent of the 53 respondents indicated that they would be willing to attest to an employee's

educational background, experience and ability who was applying for AIDD's classification, and 1 or 1.9 percent of the respondents indicated that they would not be willing to do so.

TABLE XIII

RESPONSE TO THE QUESTION DEALING WITH THE RESPONDENTS' WILLINGNESS TO ATTEST TO AN EMPLOYEE'S EDUCATIONAL BACKGROUND, EXPERIENCE AND ABILITY WHO IS APPLYING FOR A CLASSIFICATION

Willing to Attest to Employee's Educational Background, Experience and Ability	Number of Respondents	Percent
Yes	52	98.1
No	1	1.9

Figure 5 presents an overall review of all responses to the yes or no type questions which were on the questionnaire used in this study (see Appendix A). It was hoped that this table would reveal additional information and also help in the comparison of the individual variables contained within it.

Variables / Question Number		Unidentified as either member or non-member (N = 4)		Member (N = 44)		Non-member (N = 7)		Number of Draftsmen and/or Designers Respondent Supervised										Number of Years of Experience Respondent had at Supervisory or Managerial Position								Number of Designers and/or Draftsmen in Respondents Company										Total Response	
								(N = 28) 1 – 10		(N = 12) 11 – 25		(N = 7) 26 – 50		(N = 2) 51 – 100		(N = 3) over 100		(N = 21) 1 – 5		(N = 22) 6 – 10		(N = 7) 11 – 15		(N = 5) 20 & over		(N = 16) 1 – 10		(N = 15) 11 – 25		(N = 4) 26 – 50		(N = 8) 51 – 100		(N = 10) over 100			
		num.	%	num.	%	num.	%	num.	%	num.	%	num.	%	num.	%	num.	%	num.	%	num.	%	num.	%	num.	%	num.	%	num.	%	num.	%	num.	%	num.	%	num.	%
1.)*	YES	(4)	100.0	(39)	88.6	(5)	71.4	(22)	78.6	(12)	100.0	(7)	100.0	(2)	100.0	(3)	100.0	(17)	81.0	(21)	95.5	(7)	100.0	(3)	60.0	(10)	62.5	(15)	100.0	(4)	100.0	(7)	87.5	(10)	100.0	(48)	87.3
	NO	(0)	0.0	(5)	11.4	(2)	28.6	(6)	21.4	(0)	0.0	(0)	0.0	(0)	0.0	(0)	0.0	(4)	19.0	(1)	4.5	(0)	0.0	(2)	40.0	(6)	37.5	(0)	0.0	(0)	0.0	(1)	12.5	(0)	0.0	(7)	12.7
	N/A	(0)		(0)		(0)		(0)		(0)		(0)		(0)		(0)		(0)		(0)		(0)		(0)		(0)		(0)		(0)		(0)		(0)		(0)	
5.)	YES	(3)	75.0	(27)	62.8	(4)	57.1	(21)	75.0	(5)	41.7	(4)	57.1	(1)	50.0	(1)	33.3	(17)	81.0	(11)	52.4	(4)	57.1	(2)	40.0	(13)	81.3	(8)	53.3	(2)	50.0	(7)	87.5	(3)	30.0	(34)	63.0
	NO	(1)	25.0	(16)	37.2	(3)	42.9	(7)	25.0	(7)	58.3	(3)	42.9	(1)	50.0	(2)	66.7	(4)	19.0	(10)	47.6	(3)	42.9	(3)	60.0	(3)	18.7	(7)	46.7	(2)	50.0	(1)	12.5	(7)	70.0	(20)	37.0
	N/A	(0)		(1)		(0)		(0)		(0)		(0)		(0)		(0)		(0)		(1)		(0)		(0)		(0)		(0)		(0)		(0)		(0)		(1)	
7.)	YES	(2)	50.0	(27)	67.5	(5)	71.4	(22)	81.5	(8)	72.7	(2)	28.6	(1)	100.0	(1)	33.3	(16)	76.2	(10)	50.0	(4)	30.0	(4)	80.0	(15)	93.8	(9)	64.3	(2)	50.0	(3)	50.0	(5)	50.0	(34)	66.7
	NO	(2)	50.0	(13)	32.5	(2)	28.6	(5)	18.5	(3)	27.3	(5)	71.4	(0)	0.0	(2)	66.7	(5)	23.8	(10)	50.0	(1)	20.0	(1)	20.0	(1)	6.2	(5)	35.7	(2)	50.0	(3)	50.0	(5)	50.0	(17)	33.3
	N/A	(0)		(4)		(0)		(1)		(1)		(0)		(1)		(0)		(0)		(2)		(2)		(0)		(0)		(1)		(0)		(2)		(0)		(4)	
8.)	YES	(1)	33.3	(19)	54.3	(2)	40.0	(14)	70.0	(4)	40.0	(1)	16.7	(1)	50.0	(1)	33.3	(9)	56.3	(10)	47.6	(1)	50.0	(2)	50.0	(10)	83.3	(6)	50.0	(1)	33.3	(3)	50.0	(2)	22.2	(22)	51.2
	NO	(2)	66.7	(16)	45.7	(3)	60.0	(6)	30.0	(6)	60.0	(5)	83.3	(1)	50.0	(2)	66.7	(7)	43.7	(11)	52.4	(1)	50.0	(2)	50.0	(2)	16.7	(6)	50.0	(2)	66.7	(3)	50.0	(7)	77.8	(21)	48.8
	N/A	(1)		(9)		(2)		(8)		(2)		(1)		(0)		(0)		(5)		(1)		(5)		(1)		(4)		(3)		(1)		(2)		(1)		(12)	
9.)	IND.	(2)	100.0	(33)	86.8	(7)	100.0	(22)	91.7	(10)	90.9	(4)	66.7	(2)	100.0	(2)	100.0	(14)	77.8	(18)	94.7	(6)	100.0	(4)	100.0	(12)	85.7	(14)	100.0	(0)	0.0	(6)	85.7	(9)	100.0	(42)	89.4
	CO.	(0)	0.0	(5)	13.2	(0)	0.0	(2)	8.3	(1)	9.1	(2)	33.3	(0)	0.0	(0)	0.0	(4)	22.2	(1)	5.3	(0)	0.0	(0)	0.0	(2)	14.3	(0)	0.0	(2)	100.0	(1)	14.3	(0)	0.0	(5)	10.6
	N/A	(2)		(6)		(0)		(4)		(1)		(1)		(0)		(1)		(3)		(3)		(1)		(1)		(2)		(1)		(2)		(1)		(1)		(8)	
10.)	YES	(3)	75.0	(42)	100.0	(7)	100.0	(28)	100.0	(11)	100.0	(7)	100.0	(2)	100.0	(2)	66.7	(20)	100.0	(20)	95.2	(7)	100.0	(5)	100.0	(16)	100.0	(14)	100.0	(4)	100.0	(8)	100.0	(9)	90.0	(52)	98.1
	NO	(1)	25.0	(0)	0.0	(0)	0.0	(0)	0.0	(0)	0.0	(0)	0.0	(0)	0.0	(1)	33.3	(0)	0.0	(1)	4.8	(0)	0.0	(0)	0.0	(0)	0.0	(0)	0.0	(0)	0.0	(0)	0.0	(1)	10.0	(1)	1.9
	N/A	(0)		(2)		(0)		(0)		(1)		(0)		(0)		(0)		(1)		(1)		(0)		(0)		(0)		(1)		(0)		(0)		(0)		(2)	
11.)	YES	(3)	75.0	(30)	69.8	(5)	83.3	(23)	82.1	(6)	54.5	(4)	57.1	(2)	100.0	(1)	33.3	(16)	80.0	(14)	66.7	(5)	71.4	(3)	60.0	(13)	81.3	(10)	71.4	(3)	66.7	(6)	75.0	(5)	50.0	(38)	71.7
	NO	(1)	25.0	(13)	30.2	(1)	16.7	(5)	17.9	(5)	45.5	(3)	42.9	(0)	0.0	(2)	66.7	(4)	20.0	(7)	33.3	(2)	28.6	(2)	40.0	(3)	18.7	(4)	28.6	(1)	33.3	(2)	25.0	(5)	50.0	(15)	28.3
	N/A	(0)		(1)		(1)		(0)		(1)		(0)		(0)		(0)		(1)		(1)		(0)		(0)		(0)		(1)		(0)		(0)				(2)	

*(For Questions See Appendix A)

Figure 5. Overall Review of Respondents' Answers to the Yes or No Type Questions on the Questionnaire used in the Study

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The primary purpose of this study was to investigate the opinions and concerns of supervisors and chief draftsmen, or others in related areas of these, (both members and non-members of AIDD) toward AIDD's Classification Program for Designers and Draftsmen, and to make recommendations to AIDD based on these feelings and attitudes. In this chapter the summary, conclusions, and recommendations of this study can be found.

Summary

The study was developed and conducted in the following manner:

1. After establishing a need for such a study, a preliminary questionnaire was developed and then reviewed and revised where necessary by Mr. N. N. Freling, Executive Vice President of AIDD. After Mr. Freling's review of the preliminary questionnaire, a final draft of the questionnaire to be used in the study was developed based upon his recommendations (see Appendix A).

2. After the letter of transmittal (see Appendix B) was formulated, it was sent along with the questionnaire, a copy of AIDD standards of classification for designers and draftsmen (see Appendix C), and an application form for classification (see Appendix D) to 141 supervisors and chief draftsmen, both members and non-members of AIDD.

3. The 141 supervisors and chief draftsmen surveyed consisted of a random sample of 118 members of AIDD representing 28 states in the United states and Canada, and 23 non-members of AIDD representing 13 states in the United States. (for geographical distribution of samples see Figure 3)

The information presented in this study includes the useable data from 44 member respondents or 37.3 percent of the 118 member sample, 7 non-member respondents or 30.4 percent of the 23 non-member sample, and 4 unidentifiable responses.

The data was tabulated and presented on the basis of percentage or average only. Also, any statements or recommendations given by the respondents were recorded, and may be found in Appendix E. Where it was deemed necessary, the responses were compared for similarities and differences among different groups; i.e.,,the comparison of groups of supervisors or chief draftsmen with a varied number of years experience, the comparison among groups with a varied number of designers and/or draftsmen whom they supervise, and the comparison among different sizes of drafting and/or design departments.

Conclusions

The conclusions drawn from the data presented in Chapter IV will be presented in this section in regard to the research questions to be answered.

RQ_1. How many of the respondents' companies had means of classifying their drafting and design personnel into different job classes or grades?

It was found that 48 or 87.3 percent of the respondents' companies

had means of classifying their drafting and design personnel into different job classes or grades, and that 7 or 12.7 percent did not. In Table V it was illustrated that most all respondents whose drafting and/or design departments employed more than ten designers and/or draftsmen, indicated that their companies were using some form of classification system. However, it was found that of those respondents whose companies employed only one to ten designers and/or draftsmen, only 10 or 62.5 percent of those respondents indicated that their companies were using some form of classfication system, and that a substantial amount (6 or 37.5 percent of those respondents) were not. Therefore, from this data it can be concluded that a substantial percentage of companies with small drafting and/or design departments (from 1-10 designers and/or draftsmen) are not making use of a classification system.

RQ_2. Of the respondents indicating the use of classification procedures in their drafting and design departments, was there an overall pattern of unity between the individual job classes or grades stated?

In most cases, the first level of the various job classes or grades stated being used by the respondents' drafting and design departments (see Table VI) showed a relatively close relationship in type. However, at all other levels the various job classes or grades stated being used varied both in type and in number of various levels, and showed no close relationships. Table VII illustrated that the number of various levels of job classes or grades ranged from two to fourteen different levels. Therefore, from this data it can be concluded that most individual job classification systems being used in various types and sizes of drafting and design departments tend to vary both in the number of different

levels of job classes or grades and in various types of job classes or grades at equivalent levels, except for the lowest level of the classification system.

RQ_3. What were the respondents' feelings about AIDD's Classfication Program for Designers and Draftsmen in aiding them in classifying or rating designers and draftsmen reporting to them?

From Table VIII it can be found that a total of 34 or 63.0 percent of the respondents indicated that AIDD's Classification Program for Designers and Draftsmen would aid them in classifying or rating designers and draftsmen reporting to them, and that 20 or 37.0 percent indicated that it would not. Also, it was found that the largest need for the classification program was indicated by the respondents who supervised from 1-10 designers and draftsmen and was substantiated by the fact that 21 or 75.0 percent of those respondents indicated that they believed AIDD's Classification Program for Designers and Draftsmen would aid them in classifying their designers and draftsmen (see Table VIII). Therefore, due to the fact that a majority of the respondents (63.0%) indicated that AIDD's classification program would aid them in classifying their designers and draftsmen, it can be concluded that AIDD's Classification Program for Designers and Draftsmen would help supervisors of design and drafting departments to classify or rate designers and draftsmen reporting to them.

RQ_4. Of the respondents indicating that AIDD's classification program would aid them in classifying or rating designers and draftsmen reporting to them, what were their individual reasons in believing so?

The respondents who indicated that they believed AIDD's Classification Program for Designers and Draftsmen would aid them in classifying or rating the draftsmen and designers reporting to them, indicated reasons why they believed so which fell into four general categories. These categories are listed below:

1. It would help because it would establish a national standard classification system. Also, it would help verify or update the respondents' classification systems. (11 or 36.7 percent of the 30 respondents indicating reasons, indicated reasons which fell into this category)

2. It would help because it would establish a means in which to verify the employee's (both new and old) qualifications, abilities, and potential. Generally it would provide an added confidence level in respect to the employee's qualifications. (9 or 30.0 percent of the 30 respondents indicating reasons, indicated reasons which fell into this category)

3. It would help because it would establish a means for job advancements and job allocations. (7 or 23.3 percent of the 30 respondents indicating reasons, indicated reasons which fell into this category)

4. It would help because AIDD's classification program closely coordinates with the respondents' present job classification system. (3 or 10.0 percent of the 30 respondents indicating reasons, indicated reasons which fell into this category)

RQ_5. Would the supervisors and chief draftsmen feel that AIDD's classification program would aid them as administrators?

It was found that 38 or 71.7 percent of 53 respondents felt that

AIDD's classification program would aid them as administrators, and that 15 or 28.3 percent felt that it would not (see Table IX). Again it was found that the highest percentage of positive responses were given by the respondents who supervised from one to ten designers and draftsmen. Of these respondents 23 or 82.1 percent felt that AIDD's classification program would aid them as administrators and 5 or 17.9 percent felt that it would not. From the above data it can be concluded that a majority, or 71.7 percent of the respondents felt that AIDD's Classification Program for Designers and Draftsmen would aid them as administrators and that the largest percentage of positive responses came from those respondents who supervise from one to ten designers and/or draftsmen.

RQ_6. Of the respondents indicating that they felt AIDD's classification program would aid them as administrators, what were their reasons in believing so?

The respondents who indicated that AIDD's Classification Program for Designers and Draftsmen would aid them as administrators were to choose three reasons why they believed so from a list of four predetermined reasons, and to indicate the order of importance by numbering these reasons 1, 2 or 3. It can be seen in Figure 4 that the majority of the respondents chose for their reason why they believed AIDD's classification program would aid them as administrators, reason number '2', and can be substantiated by the fact that a composite of 92.9 percent of the respondents chose reason '2', "It will instill in them (designers and draftsmen) a sense of professional pride". However, the largest percent of first choice responses was delegated to reason number '1', "AIDD's classification program will help deserving designers and draftsmen receive recognition in their field", and was chosen by 11 or 34.4

percent of the respondents indicating a number '1' choice.

RQ_7. Would the respondents encourage designers and draftsmen reporting to them to apply for AIDD classification?

It was found, and can be seen in Table X, that 34 or 66.7 percent of 51 respondents indicated that they would encourage designers and draftsmen reporting to them to apply for AIDD classification, and that 17 or 33.3 percent indicated that they would not. It was also indicated by several respondents that they would not recognize or encourage designers and/or draftsmen to apply for AIDD classfication until the program becomes recognized nationally. Therefore, from this data it can be concluded that a majority of supervisors and chief draftsmen would encourage designers and draftsmen to apply for AIDD classification, and that as the program becomes recognized, an even greater percentage of supervisors and chief draftsmen would do so.

RQ_8. What were the respondents' feelings toward the possibility of their management recognizing AIDD's classification program?

It was found that 22 or 51.2 percent of 43 respondents indicated that their companies or management would recognize AIDD's Classification Program for Designers and Draftsmen, and that 21 or 48.8 percent indicated that their companies would not (see Table XI). Again, as indicated under RQ_7, several respondents indicated that before they or their companies would recognize AIDD's classification program, the program itself would first have to become recognized nationally. Therefore, from this data it can be concluded that only about half of the supervisors' and chief draftsmens' companies or managements would recognize AIDD's Classification Program for Designers and Draftsmen initially, but it could become even more recognized as the classification program itself becomes

nationally recognized.

RQ_9. What were the respondents' feelings toward the possibility of their companies paying the classification fee for their individual applicants to AIDD's classification program?

It was found that 42 or 89.4 percent of 47 respondents indicated that the individual would be required to pay for his own classification fee, and that only 5 or 10.6 percent of the respondents indicated that their companies would pay for the classification fee (see Table XII). From this data it can be concluded that initially, the individual would be required to pay his own classification fee instead of his company.

RQ_{10}. How many of the responding supervisors and chief draftsmen would be willing to attest to the educational background, experience, and ability of an employee applying for classification?

It was found that 52 or 98.1 percent of 53 respondents indicated that they would be willing to attest to the educational background, experience, and ability of an employee applying for classification, and only 1 or 1.9 percent indicated that they would not be willing to do so (see Table XIII). From this data it can be concluded that most all supervisors or chief draftsmen would be willing to attest to the educational background, experience, and ability of an employee applying for classification.

Recommendations

1. It was indicated both directly and indirectly by several respondents that generalized job classes or grades would not be applicable in their drafting and design departments, due to the many various job

responsibilities and duties to which their designers and draftsmen were assigned. However, in order for a classification program to be used nationally and in order to establish a standard classification system, the individual classifications must be general enough to meet the needs of a wide variety of different types and sizes of design and drafting departments. Therefore, it is recommended that the individual classification standards (see Appendix C) be used initially, to meet this proposed need for generality of individual job classifications. As the program advances a survey should be taken to reveal the extent to which the job classifications are being used and how they are meeting the needs of the various design and drafting departments throughout the nation. Then, based on this survey, revise, if necessary, the individual job classifications within the classification system. It is also recommended that continuous updating of the individual classifications be conducted so as to meet the needs of both the management and the employees of design and drafting departments.

2. It is recommended that in any publications concerning AIDD's Classification Program for Designers and Draftsmen, emphasis should be placed toward the creating of a national standard classification system to help verify or update the various design and drafting departments' classification systems, but not toward the altering of the total classification schemes within the individual companies.

3. It is recommended that the verification of an applicants' qualifications and abilities be based upon at least two to three of the applicants' supervisors or other qualified person's attestment of these areas. As the program advances and as it is found to be recognized by individual managements, an examination to determine these qualifications

and abilities might then be considered as a possible means for verification. It is believed by the author that if an examination is used initially, the classification program would never get implemented.

4. It is recommended that a study be conducted after the classification program becomes implemented concerning how it is being useful to the designers and/or draftsmen who have become classified; i.e., has it helped in obtaining a job, has it helped to maintain a professional pride, has it helped them in becoming recognized as qualified to do a particular area of work, etc.

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APPENDIX A

THE QUESTIONNAIRE

AMERICAN INSTITUTE FOR DESIGN & DRAFTING
3119 Price Road - Bartlesville, Ok 74003

QUESTIONNAIRE

To: Design and Drafting Supervisors/Chief Draftsmen

1. Does the company for whom you work classify their designers and draftsmen into different job classes or grades? ☐ Yes ☐ No
2. If your answer is Yes, please list jobs in ascending order, starting with the lowest grade, ie: apprentice draftsman, junior draftsman, associate draftsman, etc.

   1._____, 2._____, 3._____,

   4._____, 5._____, 6._____.
3. How many designers and draftsmen report to you? ☐ 1-10 ☐ 11-25 ☐ 26-50 ☐ 51-100 ☐ Over 100
4. Approximately how many other designers and draftsmen are employed by your company?_____
5. Do you feel that AIDD's Classification Program for Designers and Draftsmen would help you classify or rate designers and draftsmen reporting to you? ☐ Yes ☐ No
6. If your answer is Yes, explain how it would help.

   _____

   _____
7. Would you encourage designers and draftsmen reporting to you to apply for AIDD Classification? ☐ Yes ☐ No
8. Would AIDD's Classification Program be recognized by your management? ☐ Yes ☐ No
9. Would your company likely pay the Classification fee, or would the individual be required to pay his own? ☐ Company ☐ Individual
10. Would you be willing to attest to an employee's educational background, experience, and ability who is applying for classification? ☐ Yes ☐ No
11. Would AIDD's Classification Program help you as an administrator? ☐ Yes ☐ No

    If your answer is Yes, please indicate which of the following best support your answer. *(Indicate no more than three by numbering in order of importance 1-2-3)*

    ☐ AIDD's Classification Program will help deserving designers and draftsmen receive recognition in their field.

    ☐ It will instill in them a sense of professional pride.

    ☐ It will encourage them to apply an effort to excel in their field.

    ☐ It will aid employers in the selection of designers and draftsmen for promotional increases.
12. What is your present job title?_____
13. How long have you had your present job title? _____ Years
14. Would you be interested in receiving the tabulated results of all questionnaires received?

    ☐ Yes ☐ No
15. Recommendations or Statement. *(Use reverse side of this sheet)*

_____ *(It is not necessary to sign your name to this questionnaire)*
Signed

APPENDIX B

LETTER OF TRANSMITTAL

January 29, 1973

Dear

I am a graduate student at Oklahoma State University presently working on my thesis. Recently I have talked at length with Mr. N. N. Freling, Executive Vice President, American Institute for Design & Drafting, about the possibility of a study dealing with the AIDD's Classification Program for Designers, Design Draftsmen and Draftsmen. From our discussions we have concluded that there is a need for further study dealing with the factors involved in the Classification Program for non-members of AIDD.

Attached is a copy of the AIDD Standards of Classification for Designers and Draftsmen now being used by AIDD. Also, I have attached a Questionnaire which is to be used in my study and for the purpose of supplying the AIDD with the information they are interested in. Your thorough critique of these items will aid in this study.

Your cooperation and time spent in answering the questions will, I am sure, be most beneficial to this study and sincerely appreciated. When you have completed the Questionnaire, please send it back in the self-addressed envelope furnished.

Sincerely,

James A. Rutelonis
for the
American Institute for
Design & Drafting

N. N. Freling
AIDD Executive
Vice President

Enclosures:
- Questionnaire
- Standards of AIDD Classification
- Self-addressed envelope
- Application for Classification

(ADDITIONAL COPIES MAY BE OBTAINED BY WRITING NATIONAL HEADQUARTERS)

APPENDIX C

AIDD STANDARDS OF CLASSIFICATION

FOR DESIGNERS AND DRAFTSMEN

AIDD STANDARDS OF CLASSIFICATION FOR DESIGNERS AND DRAFTSMEN

PURPOSE: The Classifications set forth herein will serve as a basis for giving recognition to qualified designers and draftsmen and attest to their education, experience, and proficiency.

1. DESIGNER

To qualify for Classification the individual must be:

(a) Presently engaged in engineering design.

(b) Minimum education and experience required. (Optional below)
1. 4-year college degree in Engineering Technology and at least 1 year on-the-job experience in design.
2. 2-year college associate degree in design and at least 4 years on-the-job experience in design.
3. 2-year vocational institute certificate in design and at least 6 years on-the-job experience in design.
4. High school diploma (including 3 years drafting training) and at least 10 years on-the-job experience in design.

(c) Level of duties and responsibilities:
1. Handles complex design assignments and multiple assignments with the assistance of several draftsmen in lower classifications.
2. Has above average initiative and ability to make right decisions regarding the best way to carry out assignments.
3. Is exceptionally creative with far-reaching design capabilities.
4. Has thorough knowledge of accepted design or method concepts.
5. Has good basic understanding of engineering, design or other principles related to a specific area of work.
6. Receives assignments directly from persons requesting work and through supervisor.
7. Assigns and schedules work to those assisting.
8. Checks and/or approves all work on projects delegated to him including basic layouts, arrangements and design, accuracy of computations, selection of material and equipment, compliance with company standards and safety rules.
9. Prepares studies and reports for estimates, progress, evaluations.
10. Substitutes for supervisor during his absence occasionally.
11. Has wide latitude for the exercise of inventiveness and independent judgement.

(d) Be endorsed by his supervisor and one AIDD Member.

(e) Payment of $7.50 Fee.

2. DESIGN DRAFTSMAN

To qualify for Classification the individual must be:

(a) Presently engaged in drafting.

(b) Minimum education and experience required. (Optional below)
1. 4-year college degree in Engineering Technology - no experience required.
2. 2-year college associate degree in drafting and at least 1 year on-the-job experience in drafting.
3. 2-year vocational institute certificate in drafting and at least 2 years on-the-job experience in drafting.
4. High school diploma (including 3 years drafting training) and at least 6 years experience in drafting.

(c) Level of duties and responsibilities:
1. Handles design-drafting assignments,sometimes multiple assignments with assistance from other draftsmen.
2. Exercises considerable judgement in design and layout under minimum supervision.
3. Schedules work on assigned projects and reports on progress as required.
4. Guides, instructs and directs assisting draftsmen, checks their work.
5. Makes or reviews calculations involved in his projects as required.
6. Does limited design analysis using engineering computations.
7. Prepares or assists in making material and time estimates, equipment cost comparisons.
8. Ascertains that designs and drawings conform to engineering and drafting standards and practices adopted by company.

(d) Be endorsed by his supervisor and one AIDD Member.

(e) Payment of $6.00 Fee.

3. **DRAFTSMAN**

To qualify for Classification the individual must be:

(a) Presently engaged in drafting.

(b) Minimum education and experience required. (Optional below)
1. 2-year college associate degree in drafting - no experience required.
2. 2-year vocational institute certificate in drafting and at least 1 year experience.
3. High School diploma (including 3 years drafting training) and at least 3 years experience in drafting.

(c) Level of duties and responsibilities:
1. Handles normal drafting assignments under regular supervision.
2. Is completely familiar with drafting standards, symbols, nomenclature,engineering terms, proper use of materials, reference books and catalogs in a specific area of work.
3. Discusses job requirements directly with persons for whom work is being done.
4. Gathers information and data for jobs.
5. Makes routine calculations using standard engineering formulae.
6. Is assisted at times by other draftsmen in this and lower classifications - instructs, guides and checks their work.
7. Takes field or shop measurements as required.

(d) Be endorsed by supervisor, instructor or AIDD Member.

(e) Payment of $5.00 Fee.

The individual, upon being accepted for Classification, will be issued a certificate attesting to his Classification for a period of one year. At the end of one year his Classification is subject to review and renewal or upgraded upon evidence of eligibility. *Renewal fee is $3.00 annually.*

Each person classified will receive a DESIGN & DRAFTING NEWS ANNUAL.

The Classification "certificate" shall be issued by AIDD in the name of the Board of Directors.

AMERICAN INSTITUTE FOR DESIGN & DRAFTING
3119 PRICE ROAD, BARTLESVILLE, OK 74003

APPENDIX D

APPLICATION FORM FOR CLASSIFICATION

(PLEASE TYPE OR PRINT)

Application For Classification

AMERICAN INSTITUTE FOR DESIGN AND DRAFTING
3119 PRICE ROAD BARTLESVILLE, OKLAHOMA 74003

DATE OF APPLICATION _____

NAME IN FULL _____ DATE OF BIRTH _____
LAST FIRST MIDDLE MO. DAY YEAR

RESIDENCE ADDRESS _____
CITY STATE ZIP

EMPLOYMENT

PRESENTLY EMPLOYED BY _____

BUSINESS ADDRESS _____
(CITY) (STATE) (ZIP)

JOB TITLE OR DESCRIPTION _____

NO. YEARS EMPLOYED IN THIS POSITION _____

FORMER EMPLOYERS, IF ANY FOR THE PAST 10 YEARS

1. EMPLOYER _____ YEAR(S) _____ TO _____

JOB TITLE OR DESCRIPTION _____

2. EMPLOYER _____ YEAR(S) _____ TO _____

JOB TITLE OR DESCRIPTION _____

3. EMPLOYER _____ YEAR(S) _____ TO _____

JOB TITLE OR DESCRIPTION _____

(USE OTHER SIDE FOR ADDITIONAL EMPLOYERS OR TO DESCRIBE DUTIES)

EDUCATION — NAME OF SCHOOL AND LOCATION	COURSE OR PROGRAM	GRADUATE	YRS. COMPLETED	DEGREES
HIGH SCHOOL _____		☐		
2 YR VOC TECH _____		☐		
2 YR COLLEGE _____		☐		
4 YR COLLEGE OR UNIV. _____		☐		
OTHER (EXPLAIN) _____		☐		

ENDORSEMENT

THIS IS TO CONFIRM THAT THE DATA SUBMITTED HEREWITH BY APPLICANT IS, TO THE BEST OF MY KNOWLEDGE, TRUE AND CORRECT AND THAT APPLICANT IS SATISFACTORILY PERFORMING THE DUTIES LISTED IN HIS PRESENT JOB AND IS WORTHY OF CLASSIFICATION APPLIED FOR

_____ _____
SIGNED BY APPLICANT'S SUPERVISOR TITLE

TO: AIDD BOARD OF DIRECTORS

I HEREBY APPLY FOR CLASSIFICATION IN THE GRADE OF

☐ DESIGNER ☐ DESIGN-DRAFTSMAN ☐ DRAFTSMAN

I CERTIFY THAT THE STATEMENTS HEREIN AND ANY ATTACHMENTS HERETO ARE CORRECT.
MY CHECK IN THE AMOUNT OF $_____ PAYABLE TO AMERICAN INSTITUTE FOR DESIGN AND DRAFTING IS ENCLOSED.

_____ _____
DATE SIGNATURE OF APPLICANT

For AIDD Use Only

Check No. _____ (PERS.)(CO) *Date of Check* _____ *Am't* _____

Grade of Classification: ☐ DESIGNER ☐ DESIGN-DRAFTSMAN ☐ DRAFTSMAN *Billing Date* _____

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APPENDIX E

STATEMENTS AND RECOMMENDATIONS FROM RESPONDENTS CONCERNING AIDD'S CLASSIFICATION PROGRAM FOR DESIGNERS AND DRAFTSMEN

The following are statements and recommendations made by the respondents of the study concerning AIDD's Classification Program for Designers and Draftsmen.

> This area of classification is indeed an aid to the man without formal education. He can show a certificate to a potential employer or use it in his resumé. Keep up the good work.

> Glad to see somebody thinking about this.

> I would encourage draftsmen and designers reporting to me to apply for AIDD classification because it would most likely be useful when they are changing jobs.

> I think the classification program is very worthwhile. Believe, however, it should be issued free to members as long as dues are paid on time without lapse of time.

> I am very impressed by this program. I think that if it is handled right it could be a real great thing. In my opinion more than one supervisor would be necessary to attest to a man's capabilities to do a particular job within a classification. If a man is ranked by only one man, I find that there could be a wide difference of opinion. If he is ranked by three men, there is an averaging out of the rating. The net results of their collective opinion is usually a very real rating.

> We used the AIDD Classification Standards and adapted them to our particular situation. Qualification and experience were broadened to more fully cover the duties of our people.

> I would like to see a wallet classification card given. This would be handy where seeking employment.

> I am sure my company would feel our classifications are adequate and that we should stick with them.

> I would not encourage draftsmen and designers until the classification program becomes recognized.

> Classification program would not be recognized by my management initially.

> We have one extreme difficulty in attempting to apply such a program or system. With our newer management style emphasizing job enrichment and talent maximum we have only a small portion left of our designers and draftsmen who are performing these functions [those

indicated in AIDD's individual classification qualifications]. They are also performing technician, testor, and some engineering work and each individual job is expanded to fit an individual's skills and the job to be done. Thus each job is unique to the man and generalized definitions are not applicable.

Being Canadian [the company] it is very hard to implement an international system acceptable to the company. It is even a problem trying to get Canadian societies classification accepted as a means for hiring and promotion.

AIDD's classification of designers and draftsmen would be meaningless for the following:

1. Graduation from a technical school is generally an acceptable certification of competence.
2. Experience as related to his job.
3. Area surveys as related to classifications seem to be more meaningful.

I feel that such a program needs some provision for quality assurance. If the strength of the program depends upon local (i.e. company supervision) administration, then there will be a wide spectrum of interpretation and discretionary action. My opinion is that classification should be based upon some form of examination process administered by AIDD. This process may be similar to the Institute for Certifying Engineering Technicians or the Society for professional Engineering Registration. Otherwise, I am afraid classification would be meaningless--lacking validity and repeatability.

VITA

James Anthony Rutelonis

Candidate for the Degree of

Master of Science

Thesis: A STUDY OF THE NEEDS FOR A CLASSIFICATION PROGRAM FOR DESIGNERS AND DRAFTSMEN

Major Field: Technical Education

Biographical:

Personal Data: Born in Brooklyn, New York, October 14, 1950, the son of Joseph J. and Viola Rutelonis.

Education: Graduated from Will Rogers High School, Tulsa, Oklahoma, in May, 1968; recieved an Associate degree from Northeastern Oklahoma A & M College with a major in Drafting and Design Technology, in May, 1970; received Bachelor of Science degree from Oklahoma State University with a major in Technical Education, in May, 1972; completed requirements for Master of Science degree in Technical Education at Oklahoma State University, in July, 1973.

Professional Organizations: American Institute for Design and Drafting, Kappa Delta Pi (an honorary society in education), Phi Delta Kappa (an honorary fraternity in education).

Professional Experience: Map and Graphic Arts Draftsman for Sun Oil Company - DX Division, Tulsa, Oklahoma, 1969; Free Lance Designer and Draftsman, 1968-1973; Photographer and Laboratory Technician for Oklahoma State University Photo Service, 1970-1973.