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THE UNIVERSITY OF ALBERTA

OCCUPATIONAL SKILLS ANALYSIS

by

ROBERT MATTHEW SPENCER



A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
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ABSTRACT

The main purpose of this study was to identify and validate the skills required for an occupational health and safety officer (inspector) to perform his/her job.

A second purpose of this study was to determine at what point in career development the identified inspector skills were acquired.

The study consisted of two stages. The first stage involved the development of an Occupational Skills Profile "OSP" for an inspector. The "OSP" was developed during a three day workshop involving a group of practicing occupational health and safety officers (inspectors). The task of the workshop was to identify the general area of competence categories as well as the specific skills required to perform the job of an inspector.

A total of twelve general areas of competence categories were identified, with each having a varying number of specific skill statements. A total of one hundred and forty-six skill statements were identified. These comprised the completed skill profile.

The second stage of the study involved the validation of the Occupational Skills Profile "OSP" by all the occupational health and safety officers (inspectors)

working in Alberta. The intent of the validation stage was to determine the extent of agreement that the population of occupational health and safety inspectors in Alberta had with the original profile. In addition, Stage II of the study was to determine at what point in career development the skills were acquired.

The extent to which the population of inspectors agreed that a skill statement was relevant varied from one general area to another and from one skill to another on the "OSP". A total of eighty-four of the one hundred and forty-six skill statements were reported as 100% relevant by all respondents. The lowest reported level of agreement that a skill is relevant on the entire profile was 79%. The average extent of agreement for the total profile was 97.7%.

Further information was obtained during Stage II regarding the acquisition of the identified skill statements on the "OSP". Respondents who reported use of a skill were asked when they acquired it during their career development. From the respondents who indicated they use the skills an average of 67% reported they acquired the skills on the "OSP" while employed as an inspector. This included an average of 58% of respondents who reported that they acquired the skills informally on the job and an

average of 9% reported the acquisition of the skills in a formal course, seminar, or workshop while inspector employed. An average of 32% of respondents who indicated they use the skills reported they acquired the skills prior to being employed as an inspector.

The study resulted in the development of a validated Occupational Skills Profile "OSP" for the occupational health and safety officer (inspector). As a result of the findings of the study, recommendations were made concerning the use and follow up for the validated profile.

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CHAPTER I

INTRODUCTION

The Gale Commission Report (1975) on Alberta Industrial Health and Safety comments that government must take a much more comprehensive and consolidated approach to overall occupational health and safety and make major improvements to strengthen the existing interdepartmental linkages. The report states that the following emphasis should be made:

Emphasis should be placed by government authorities on the prevention of accidents and diseases at work. Where it is necessary to impose penalties for a breach of the regulations, however, they should be applied quickly, uniformly, and in such a manner as to act as a deterrent (p.17).

In response to the Gale Commission Report (1975) the Alberta Government established the Occupational Health and Safety Division in the Department of Labour and appointed an assistant deputy minister as head. The new Division initially incorporated the Division of Industrial Health Services of the Department of Health and Social Development, the Accident Prevention Department of the Workers' Compensation Board and later the Mines Inspection

staff of the Energy Resources Conservation Board. The Occupational Health and Safety Division eventually developed the four major organizational units that basically exist today. They are: Work Site Services, Occupational Health Services, Research and Education Services and Administrative Services. The Work Site Service organization unit contains the inspectorate portion of the Division, although there is also a health inspectional component involved with the Occupational Health Service Branches.

The purpose of the Work Site Services component as stated in the Occupational Health and Safety Division Ministers' Briefing Book (1983) states:

The purpose of Work Site Services is to provide a work site focus in the prevention of work related accidents and ill health. The service is the major safety orientated group within the division. Work Site Services officers are the main interface between the division and the public. Programs of inspection, incident investigation, site consultation and sanctions provided by generalist, specialist and engineering specialists are the major areas of interface with industry (p.WSSI).

The staff complement of this work site service organizational unit totals one hundred and five persons allocated as follows: one executive director, four directors, three deputy directors, two managers, seven

engineers, nine specialists, eleven senior occupational health and safety officers (inspectors), forty-one occupational health and safety officers (inspectors), four staff consultant positions and twenty two support staff positions.

Since no formal training programs exist in Alberta for the inspectors, the acquisition of skills is attained through various ad hoc courses, seminars and work experience.

In most organizations, when new personnel are hired they are selected for their proven expertise in the field and for their ability to perform effectively in that role. The job is usually defined by a job description and the person is selected to fit it. Thus all that is required is a period of time for adaptation and orientation before they are expected to function well in the position.

When occupational health and safety inspectors are hired for the division, training and expertise as an inspector are not mandatory but certainly desirable if such a person is available. Appropriate technical or industrial training and a variety of experience are the main qualifications sought. Thus the new inspectional staff must, in most cases, adapt a completely new role, that of an inspector, and develop expertise in a completely new field, that of inspecting, consulting and

advising.

The Occupational Health and Safety Division has always recognized its responsibilities for the development of the necessary inspectional and operational skills for the new inspectors. A series of identified training courses are provided to the Work Site Services personnel. The following courses were offered as outlined in the Work Site Services Annual Report 1982/1983:

A variety of courses were developed and delivered to W.S.S. personnel during 1982/1983. Following are highlights of some of the major presentations:

- Basic Training Course: A 210 hour course was presented to ten new field staff over a six week period.
- Daily Activity Report Course: With the introduction of a new information base for the collection of activities carried out by field staff, a training course was developed and presented to W.S.S. personnel.
- Use of field Kits for Monitoring Industrial Hygiene: Two day presentations were made to 57 W.S.S. and other Division personnel, providing instruction in the use of monitoring equipment.
- Respiratory Protection Course: Three day sessions providing training to 24 W.S.S. and other Division personnel.
- Introduction to Tar Sands Technology: The course was prepared and presented with the assistance of the Chemical Engineering Consultant to selected Inspection Branch and Research and Education Branch personnel (p. 7).

These types of programs are similar in nature to the ones offered for staff training and development in

previous years. The means of identifying the need and content for such courses has not been analyzed systematically. In addition, the on-going approach to skill acquisition and staff development has not been identified or developed.

Statement of the Problem

The problem is that no systematic analysis of the skills and knowledges required for an occupational health and safety officer (inspector) has been undertaken.

Purpose of the Study

Although considerable effort is put into the provision of training opportunities for inspectional staff in the Occupational Health and Safety Division, at present there is no comprehensive staff development plan. The difficulty in establishing such a plan is that the job performance requirements for inspectors are not well defined. A job description which outlines general areas of work has been prepared, however, no well defined and expected skill statements are available from which an overall staff training plan can be developed. This problem has occurred due to the lack of a clear description of the skills required by a "competent" occupational health and safety inspector.

The following questions establish the parameters of the study.

1. What skills are used on the job or perceived as relevant to the job of an occupational health and safety officer (inspector) by a representative group of practicing inspectors?
2. To what extent do all the occupational health and safety officers (inspectors) in Alberta agree with the skills identified by the representative group?
3. At what point in career development the identified skills were acquired?

Significance of the Study

Considerable resources are utilized each year for the training and developing of skills of inspectional staff in the Province of Alberta. The allocation of these resources in the most effective and efficient manner is of economic importance. In addition to this, it is imperative that the necessary skills be developed in order to have an effective inspectional program throughout the Province.

It is expected that the results of this study will be utilized in the revision of the existing basic training program offered by the Occupational Health and Safety

Division. Consequently, the identification of skills which require on-going staff development and resources, can be utilized in an over-all plan due to clear identified inspector skills.

The Workers' Compensation Board of British Columbia (1980) comments on inspector training and states:

"Completion of the inspectors' initial training prepares them merely to commence their own development towards becoming effective inspectors (p.12)".

This study is significant in that it has already increased the Occupational Health and Safety Division's awareness of the role expectations of an occupational health and safety officer. Identification and validation of an inspector's skills should facilitate further clarification of other staff roles within the Occupational Health and Safety Division.

Limitations of the Study

The following factors may limit the generalizability of this study to situations beyond its parameters:

1. The study was limited by the degree of comprehension and accuracy of responses made by participants to the questions on the research instrument.

2. The study was limited to inspectors working in Occupational Health and Safety Inspection for the Government in the Province of Alberta.
3. The data supplied by the participants was restricted to the specific responses on the research instrument and this constitutes a limitation in this study.
4. The study was limited due to the selection of one specific methodology of skill identification.

Definition of Terms

The following are definitions that are used throughout the study.

Occupational Health and Safety Officer (Inspector): This term is used to describe the job of an inspector within the Inspection Branches of the Occupational Health and Safety Division. The Occupational Health and Safety Officer is responsible for the inspection of places of work in industry and to enforce compliance with the regulations made under the Occupational Health and Safety Act and in so doing requires a highly developed ability to inspect, investigate, and provide concise factual reports. (Occupational Health and Safety Division, 1981).

DACUM: This is an acronym for "Developing a Curriculum".

It is considered to be both a process and a product. As a product it is one or two sheets of paper showing a skill profile for a job or subject area which can serve as a curriculum outline or plan. As a process it is a dynamic group analysis of a particular job or subject area. It is this process, under the leadership of a competent co-ordinator, which produces the range of skills found on the profile." (Adams, 1972 p. 24).

Competence: "The ability to do well in something worthwhile; the knowledge, skills, values and attitudes needed to carry out properly an activity important to success in one's personal or professional life; the ability to meet or surpass prevailing standards of adequacy for a particular activity" (Butler, 1978, p.7).

CAP: This is an acronym for "Competency Analysis Profile". This term is used to describe a document which states general areas of competence and specific competency statements, that in total represent the knowledge, skills and attitudes required to function effectively in a specific occupation (Manuel and Dean, 1976).

Validation: A term used to outline the second phase of

their process in developing an occupational profile. This phase involves submitting a draft profile developed by a representative group to a larger segment of the practitioners to determine the extent of agreement with the original draft profile (Manuel and Dean, 1976).

Job Analysis: Any process of collecting, ordering, and evaluating worker related information. (Wilson, 1974).

Task: A relatively simple activity or small portion of an activity which is performed within one organizational unit and which has both a beginning and an end (Barish, 1951).

Skill Statement: In this study a skill statement is something exercised in performing a job. It should stand on its own, have a beginning and an end and be prefaced by "the individual must be able to".

General Area of Competence: In this study a General Area of Competence is a logical division or category of work performed and comprised of several skill statements.

OSP: In this study an acronym for "Occupational Skills Profile" is used. This term describes a document which graphically contains behavior skill statements that represent what a person does in a specific job.

CHAPTER II

REVIEW OF RELATED LITERATURE

The purpose of this study is to identify the skills of an occupational health and safety inspector. The first part of this literature review will be centered upon descriptions which relate to curriculum development and occupational, skill or task analysis. Secondly, a summary of uses for job analysis will be given. The third part of this review will deal with the information and research which identify methods for conducting occupational skill or task analysis.

Descriptions Relating To Occupational Skills Analyses

O'Hanlon (1974) organizes the various models and methods of curriculum development into the following three categories: open access, management and systematic. Sinnett (1974) reviews this summary and describes the open access model in the following way:

The open access model is based upon the humanist tradition in philosophy. Decisions are made with respect to their congruence to the original humanist rationale. Discourse, openness and discussion methods are used (....) The process is one of continuous experiment (....) Its chief characteristics are its humanist approach and its openness to interpretation based on considered human values (p.3).

A second commonly used model of curriculum development is the management model. This approach to curriculum development has been used in many technical institutions and colleges in Alberta. Sinnett (1974) states the following regarding this model:

The management model is perhaps the most familiar. The process itself follows the management hierarchy within the institution. The ultimate decisions are made at the top. Proposals are fed to the teacher, supervisor and curriculum committee levels and are screened by various levels of management (p.1)

This model has been used and modified to suit the particular institution and program. Sinnett (1974) also points out that the chief characteristic of this model is that, it is the instructor and administrator who primarily originate the nature of the curriculum content.

The systematic model of curriculum development as outlined by O'Hallon (1974) and Sinnett (1974) is goal orientated. Here the purpose or aim of the curriculum is established first and decisions regarding its development are guided only by the purpose. Sinnett (1974) outlines that the chief characteristics of the systematic model are its "goal or purpose orientated character" and the need for involvement from the institutions as well as many areas of the community to achieve the stated goals (p. 2). Deane and Manuel (1976) state the following regarding the

systems approach:

The application of systems theory in business and industry have resulted in effective and efficient operations at a high level of sophistication. It is time that training, planning, and curriculum development be subjected to the same rigorous analysis to reap the same benefits (p. 1).

Hindes (1976) suggests that one basis for developing all levels of vocational training and education is to analyse the competent worker's performance. He outlines that "occupational analysis is a process that examines an occupation and lists the various performance skills and knowledge, which in total make up the occupation" (p.7). The use of the competent worker or practitioner performance is an important consideration when developing a training program, regardless of the type of curriculum development model being used. Individuals who are performing a job in the community to expected standards are important sources of information when determining training needs and designing a specific curriculum required for the occupation. Brooks (1977) outlines that too often educational programs are developed without adequate input from community practitioners and cautions against program planning without occupational analysis.

Regardless of the model used task analysis is an important process which can be employed in the development of curriculum.

Freda and Loolioan (1975) define task analysis as:

The process of identifying (1) each task and sub-task to complete a specific part of a complete job, and (2) the skills and knowledges needed to enable the employee to perform each task and sub-task (p.22).

The same authors also point out that task-analysis may not have applicability for training development in every subject area, and that limitations could arise from users' lack of expertise.

In addition, Pipe (1975) states the following about task analysis:

Task analysis is a way of getting specific about what goes on in any useful work, task analysis begins breaking down somebody's job into tasks (...) a task occupies a significant part of a worker's time and is performed for some purpose, by some method(s), according to some standard of speed, accuracy or quality (p. 11).

Similarly, Hindes (1976) reviews occupational analysis and defines it as:

Occupational analysis is a process that examines an occupation and lists the various performance skills and knowledge, which in total make up the occupation (p.7).

The above author also emphasizes that when analysing an occupation it is the competent worker's performance that should be analysed.

The National Centre for Research in Vocational Education at Ohio State University outlines the purpose of

an occupational analysis:

An occupational analysis defines a worker's role, that is, what the worker does on the job (p. 6).

Many of the descriptions used to define the occupational, job, or task analysis are similar in nature. The intent of the analysis is to identify what a competent individual does or is expected to be able to do on the job.

Uses for Occupational Skills Analysis

This part of the literature review will examine the uses for occupational skills analysis.

The National Centre for Research in Vocational Education at Ohio State University outlines that the results of an occupational analysis are used for the following four purposes:

First, this type of information is often given to a prospective worker to explain what he/she is or will be expected to do on the job (....) Second, an analysis can serve as a basis for organizing the job (....) Third, educational programs can be developed using the analysis (....) The fourth purpose for which analyses are often used is evaluation (p.6).

Davis and Alexander (1977) outline that industrial psychologists and industrial engineers often refer to "job analysis" as well as "task analysis" and use this process "in breaking jobs down into concrete tasks" (p.2). The

above authors state that job analysis may be used to:

(1) help make decisions about the recruitment and selection of workers; (2) classify jobs for a variety of purposes such as compensation of workers; (3) aid in the redesign of jobs; (4) evaluate worker performance; and (5) design better training programs (p.2).

Annett et al., (1971) review the usefulness of job analysis and state that:

Sound training is built on careful analysis of the work which is to be done and the capacities and potential of the people available to do it. Jobs may be analyzed for many purposes - to improve working methods and patterns of organization, to determine wages and salaries, for vocational guidance and selection as well as for training (p.13).

Freda and Loolioan (1975) point out that for those areas where it is applicable, task analysis can be used to justify or disprove the training need and must serve as the key element in the "train" or "do not train" decision.

Martin and Brodt (1973) outline that a task-based curriculum which is developed by a task analysis process demonstrates the relevance of the training to the job to be performed. They caution that as the number of discrete tasks to be performed increases in complexity it is necessary to reduce this massive amount of task data into a manageable form. According to Martin and Brodt (1973) task analysis assists in reducing the amount of data.

Wilson (1967) identifies several areas where job

analysis can be applied directly and utilized effectively. The following is a summary of the areas outlined by Wilson.

1. Job Restructuring: Data obtained from analysis of job content can identify situations where workers with a given level ~~of~~ expertise are functioning over or under their level of competence or where they are performing duties unrelated to the main intent of their jobs.

2. Training Program Development: A job analysis can identify specific skill and knowledge requirements which are needed by industry. Using task analysis will assist training agencies or institutions in designing up-to-date curriculum and avoid designing curriculum on misconceptions and with outdated methods that can lead to inadequate or inappropriate training programs.

3. Qualification Standards Development: Administrators can use analysed task data when preparing entry level and promotional requirements. This can provide decision makers with better ideas precisely as to what kinds of work experience and educational requirements are needed for the job.

4. Test Development: Analysed task data can reflect accurately the work being performed, and as a result, based upon the data, better tests or other methods of evaluation can be developed.

5. Performance Evaluation: Job analysis can reflect the accurate expectations of the job. Accurate and up-to-date job descriptions can easily be developed based on the analysis data. Therefore, job analysis can be used to identify the superior or inferior worker in relation to the identified job skills.

6. Employee Counselling: Personnel agencies will have accurate job descriptions and as a result they can counsel their clients more effectively regarding entry level, upgrading requirements or career alternatives.

7. Identification of Safety Hazards: Job analysis can be a useful tool for the identification of existing or potential hazards in job situations or tasks.

8. Other Uses: Wilson identifies other possible uses for job analysis such as wage and salary administration, job development and manpower planning.

Newman (1979) and Van Sell et al., (1981) point out that classification and compensation management are based on job analysis and job evaluation. They also indicate that human resource planning, career planning, counselling, organizational development and job design all require job analysis. In addition, studies pertaining to role ambiguity, role conflict and job stress have organizational factors that would benefit from data obtained in job analysis.

In summary, an overview of the related literature strongly indicates that the utilization of an occupational skills analysis is both useful and beneficial to all occupations.

Methods Used in Conducting Occupational Skills Analysis

This section will review select methodologies which have been developed for conducting occupational analysis.

The United States Department of Labour developed and used job analysis methodology quite extensively. The methods and emphases of their technique were expanded and modified to meet the changes of the employment situation from the depression period in the nineteen thirties during a period of "surplus workers" to the "shortage of workers" period during the war years. The more recent methodology used by the United States Labour Department in analysing jobs is outlined in the Department Publication Handbook for Analysing Jobs (1972). This publication outlines that there are various categories of information that must be obtained in order to meet the requirements of the job. These include worker functions, worker fields, worker traits, worker-aides, equipment and tools.

Fine and Wiley (1971) outline the Functional Job

Analysis Systems approach. The approach begins by examining the goals of the organization in which the job occurs. When the goals are identified the analyst determines what must be done to achieve them. First, this includes setting specific objectives by taking into account the restraints of time, money, manpower, geography and consumer response. Second, the procedures or technologies required to implement the objectives are grouped. Third the specific tasks which are required to be completed to achieve the objectives for each grouping are identified. The Functional Job Analysis approach focuses on both the way in which work is being performed and the tasks which serve to advance an organization's objectives. The approach also provides for the use of worker function scales in terms of level and orientation of involvement with "data, people and things".

The International Labour Office, Vocational Training and Guidance Branch (1977) outlines the action, resources and principles to be addressed in a vocational training system. The first action to which they refer is "job analysis" and that it is needed to improve the "effectiveness of learning material content". The first resource they describe as being required to carry out the action is "job analysts" who are capable of identifying

the tasks and task elements of any job as a basis for curriculum development. The first principle to which they refer is, "the process of determining, either through direct observation or by any other method which can be validated, the tasks and task elements of any given job, to such a degree of certainty that it can be used as the basis for the identification of modular units" (p.3).

In an attempt to assist in resolving the difficulty of curriculum development in the field of industrial arts Yoko (1969) identifies what he calls the "orchestrated system". In this system broad objectives for a course are structured into "snap maps" which are flow charts for objectives. The objectives from the first level map explode into a more precisely defined chart at the second level. The process continues through many levels, up to a maximum of five at which time specific objectives are identified. However, by the time the fifth level has been identified, the volume of objectives may have increased to cumbersome proportions.

The National Centre for Research in Vocational Education at Ohio State University (1981) outlines the following steps in conducting an occupational analysis:

1. Define the scope or breadth of the analysis. That is, determine whether it is for one specific occupation or for an occupational cluster.

2. Prepare an initial listing of analysis components (duties and tasks). That is, develop a list of statements describing worker duties and tasks in each occupation involved.
3. Verify initial listing of analysis components. That is, confirm that the statements actually describe the work performed in the occupation(s) considered.
4. Compile a final listing of the analysis components. That is, gather together statements which have been confirmed as describing the occupation (p.7).

The "DACUM" (Developing a Curriculum) model, reported by (Adams, 1975) seems to fit into the systematic model, although modified forms of its dynamic group brainstorming techniques may be used within the framework of any one of the models (Sinnett, 1974). The use of the "DACUM system" provides an organization that proposes to develop a program with a means of identifying the intended outcomes or tasks. The actual job components are established by a committee of several persons who perform the actual job, not management or supervisory level personnel. The "DACUM" system consists of several steps as outlined on the prepared "DACUM" co-ordinator's cassette tape kit. (Adams, 1974). These tapes indicate that an appropriate person is appointed to co-ordinate the curriculum development session which is held over three days. This co-ordinator should have a broad academic and interpersonal background. Committee members are appointed from a wide section of the

industry or occupation. Sinnett (1974) points out that only persons who perform the actual job should be appointed to the committee. Instructors and supervisors should not be appointed to the committee, unless their jobs are being analysed, due to the fact that they have vested interests which could interfere with the purpose of the session which is to analyze the actual job. The actual "DACUM" analysis session consists of several stages as outlined on the cassette tapes by Adams (1974). The steps are to:

1. Provide a general introduction and orientation to the committee.
2. Review a description of the specific occupation to be analyzed.
3. Identify the General Areas of Competence. The committee identifies duties or broad areas of ability which occupy a large part of employee time on the job and are the general areas of competence or general categories.
4. Identify the first band of skills. One of the general areas of competence is selected and the skills that make up this general area of competence are identified. These horizontal distribution of behavioral skill statements are referred to

as "bands". Each skill that makes up the general area of competence must be identified before proceeding to the development of the next area of general competence.

5. Complete the remaining bands. The remaining general areas of competence are completed in the same manner as the first.
6. Review and refine. The co-ordinator reviews with the committee each skill statement in all the general areas of competence bands.
7. Sequence the skills. Each band is sequenced in relation to the other based on the following question: Which tasks would a new employee do first on the job if he was just hired and had no previous training?
8. Complete final structuring and conclude. A review takes place with only minor changes. No major adjustments are made at this point.

After the completion of a "DACUM" occupational profile chart based upon the above process the program development model is then utilized. This model would take each of the identified skills and prepare individual learning batteries which would include:

1. Selecting printed learning materials.

2. Developing printed learning materials.
3. Selecting audio visual learning materials.
4. Developing audio visual learning materials.

These would be individually prepared or selected to fit each of the identified competencies.

The Competency Analysis Profile System developed by Manuel and Deane (1976) also has similarities to the systematic model of curriculum development, in that it is goal orientated. The purpose or aim of the curriculum is established first and decisions regarding its development are governed only by the purpose. This type of "system" requires involvement of many individuals such as a broad selection of practitioners and educational experts. The Competency Analysis Profile System for program planning and development by Manuel (1976) provides specific information on this system. The process as outlined in this module has five stages. They are:

1. Development of the profile.
2. Validation of the profile.
3. Specification of competencies.
4. Preparation of learning resources.
5. Establishment of management delivery systems.

Both the "DACUM" and the "CAP" systems differ from the management system in the following manner. These two systems identify what skills or competencies a person

should have in order to function adequately at a specific occupation. The management system however, does not identify the general and specific skill areas. In the "DACUM" and "CAP" systems the learning environment and learning activities are established to fit the specified curriculum not in the reverse order as in the management model. The evaluation schemes in the "DACUM" and "CAP" systems are designed to evaluate each skill area. The management model uses random, subjective testing procedures.

The "DACUM" and "CAP" systems have major differences. The "DACUM" system does not validate the general areas of competence and the skills that make up each of these areas. The "DACUM" system employs a seven point evaluation scale, in a manner similar to most industrial on the job evaluations, to each skill or competency. The evaluation scheme is based on the premise that a supervisor on the job can evaluate performance of a skill or task based upon his/her experience. The "CAP" system has a team develop and establish the criteria for each competency by specifying this in the objectives written for each competency. These levels of competency are then recorded in one of the three domains of learning, cognitive, psychomotor or affective, depending upon the objectives

written for the individual competency statement. The criteria for each competency or skill is identified in advance by the "CAP" system. □

In summary, a review of related literature was conducted in this chapter. The review centered upon descriptions, uses and methodologies which pertain to occupational, skill or task analysis.

CHAPTER III

RESEARCH DESIGN

This chapter will describe the methodology used in the development of this study. The models adapted for this study were developed by Adams, (1974) and by Deane and Manuel (1976). Both of these models are systematic in relation to the identification of competencies or skills required in an occupation and can be used in developing programs and curricula. The adapted model used in this study will be named the Occupational Skills Profile (OSP) system. This model includes the development of an inventory of skill statements that persons perform, or may be required to perform, in their particular occupation. Although the total system is intended to consist of four stages, only two stages will be used in this study. The remaining two stages are directed at utilizing the skills profile identified in Stage I and II as a basis for the development of modularized training and for determining the level of employee skill achievement in the identified skills on the Occupational Skills Profile. In addition, this chapter will provide an outline of the data collection and a description of the sample used in Stage I and II of this study. It will also provide an explanation of the profile, outline the related pilot study and state

the procedure for data analysis.

Data Collection and Sample

Stage I

The first stage of this study was designed to provide data which would answer the following question related to the problem. What skills or competencies are used on the job or perceived as relevant to the job of an occupational health and safety inspector by a representative group of inspectors? This stage involved the listing of general areas of competence and specific skills statements for each general area on a chart-like document. This type of document is referred to by Adams (1975) as a Developing a Curriculum Chart "DACUM" and by Deane and Manuel (1977) as a Competency Analysis Profile "CAP". In this study the adapted document will be referred to as the Occupational Skills Profile "OSP".

The skills profile was developed during a three day workshop involving a group of practicing occupational health and safety inspectors selected to represent all occupational health and safety inspectors in Alberta.

The researcher met with the Occupational Health and Safety Division, Work Site Services management personnel

to select a representative group of inspectors who best depict the total population of inspectors in Alberta. The following criteria were used in the selection process in order to give the best possible cross section of all potential workplaces and personnel in this work group. The criteria used in the selection of workplaces included the following:

1. Size of the workplace. The Occupational Health and Safety Division operates offices which vary in size from two to sixteen person offices. It was necessary to involve inspectors from small, medium and large offices because inspectors working in a small office may require different skills than a person working for a medium and large inspectional office.

2. Geographical location of the workplace. Various industries are located in different regions of the Province and as a result different types of skills are required in doing inspections in various industries in different regions. In addition, more isolated locations may require different inspectional skills because of accessibility to specialized personnel to assist and consult with inspectors.

In order to have an effective working group ten members were selected. This size of group has been

determined to be the most appropriate to allow a wide enough representation to cover the occupation. The guidelines used in the selection of individual group members included the following:

1. Competent in the occupation. Individuals who have exhibited a high degree of skill and who are aware of current developments in the inspectional field.
2. Capable of verbalizing the needs of skills of his/her occupation. Individuals who are not only skilled but have demonstrated an ability to describe skills and needs of their job orally.
3. Capable of functioning as a member of a group. Individuals who are able to contribute as a member of a group and react well to criticism or having his/her contributions analyzed and re-organized.
4. Variable years of experience. Random was given to perspective members with differing years of experience in their present and/or other inspectional position.

Using the guidelines outlined above the researcher worked with the Work Site Service management personnel who selected a ten member committee to participate in Stage I. A three day workshop was scheduled involving the ten selected committee members. The researcher acted as a facilitator and directed the activities of the three day

work session. The purpose of the three days was to develop a chart-like document which depicted a profile of the general areas of competence and specific skill statements required by an occupational health and safety inspector. The process involved facilitating group interaction and individual responses in generating behavioral skill statements for logical categories that covered all the skills pertaining to the occupation.

Once the individual team members were selected, dates for the three day workshop were set and facilities booked. Letters with very brief details of the proposed session were sent and branch directors discussed the workshop with selected individuals. All ten selected participants attended the workshop.

The location for the workshop was selected away from the normal place of work to ensure total concentration and limited distraction. The room selected was environmentally suitable for concentrated group work. Comfortable chairs were placed at long tables, angled at each end so that all participants had a very visible and unobstructed view of the wall on which the skills inventory was developed.

The following equipment was required for the session:

1. Long wall surface on which file cards could be fastened to create an occupational skills profile.

2. 8" x 10" file cards of various colors used to list in a vertical row the general areas of competence on the profile.
3. 4" x 6" sets of various colored file cards used to list horizontally the specific skill statements included in each general area of competence.
4. Felt-tipped pens used to letter each file card.
5. Two sided tape used to fasten the file cards to the work surface.
6. A free standing flip chart and overhead projector to assist the facilitator in orienting the group to the three day activities.

Recording assistance was obtained for the three days to write the identified skill statements on the file cards for the profile. This allowed the facilitator to maintain the uninterrupted activity of the group's endeavor without having to stop to record skill statements on file cards.

Claims for travel and subsistence expenses were processed in the usual manner for government employees. On the morning of the first day the facilitator welcomed and introduced the group of ten participants and the recorder. A brief outline of plans for the three days and an orientation to the project was given.

The facilitator then provided an orientation to the

Occupational Skills Profile system and showed participants a sample of an Occupational Skills Profile developed for an occupational health and safety education officer. In addition to this the facilitator showed several examples of other charts developed by the Competency Analysis Profile "CAP" system and by the Developing a Curriculum "DACUM" system. Time was provided for the group to question procedures and to seek further clarification.

By the end of the first morning the group had agreed on the general areas or logical categories of work which were listed on the wall vertically on the right side of the profile. Each general area of competence was labelled by a designated letter such as "A", "B", "C", "D" for reference purposes.

Individual skills that are performed for each of the general areas of competence were then identified. The following guidelines were given to participants to use as information in generating clear skill statements:

1. The skill statement should be representative of something you perform in your job.
2. The skill should stand on its own.
3. The skill should have a beginning and an end.
4. All skill statements will be prefaced by "the individual must be able to".

The above guidelines were written on a flip chart sheet and placed on a wall visible to the participants during the entire workshop.

As the participants became familiar with the process of identifying and stating behavioral skill statements, there was a free exchange of ideas and refining of specific wording during the development. The inclusion of a specific skill statement by an individual team member was allowed without agreement of the other participants. By the end of the first day, three of the general areas of competence categories were completed with specific skill statements relating to what an individual does in each of the general areas. The specific skill statements relating to the same general area of competence were put on the same color card for easy reference and were spread out along the wall horizontally to the left of the general area statement.

No attempt was made to order any of the general areas of competence or the specific skill statements during the initial identification and development of the profile.

The second day of the workshop saw most of the general areas of competence completed with specific skill statements stated for each.

The first half of the third day involved a review and

refinement of each skill statement in order to reflect the actual skill performed on the job. The second half of the third day involved sequencing and structuring the skills. One completed general area of competence and its related specific skills was taken at a time and sequenced from left to right. The skill statement placed farthest to the left of the general area of competence was the skill which could be performed first by a new inexperienced employee on the job. The group reviewed the band of skills for each general area of competence and determined the skill which a new inexperienced employee could perform on the job most productively. This skill was placed at the extreme left of the band. They proceeded to select the next skill from that band in the same manner until all the skills were sequenced for that particular general area of competence. Each band of specific skills for each general area of competence category was then sequenced in the same way until all the general areas and their specific skills were sequenced.

The group then proceeded to structure one general area of competence band in relation to another. That is, one general area of competence band was selected as a base band for structuring another to it. The group proceeded to structure all skills in the bands in relation to the base

band. The same criteria were used. What can a new inexperienced employee perform first to be most productive, and with the least amount of training time? When the final structuring was completed the sequence of skills vertically and from left to right across the entire profile represented what skills a new employee should perform and learn to do first in order to be most productive for an organization.

The general areas of competence and specific skill statements generated and sequenced during this Stage I portion of the study were produced in a graphic chart-like document by a computer plotting system which was originally developed by T.C. Montgomerie, (1976) but was modified to allow for sequencing, structuring and layout based upon the Occupational Skills Profile (OSP) system. Each skill statement was written in a box-like format in a modified format as used by Dawson (1979) to facilitate validation of the profile by respondents in Stage II.

Stage II

This stage of the study was designed to provide data which would answer the following two questions related to the problem. First of all, to what extent do all occupational health and safety inspectors agree with the

skills identified by the representative group? Secondly, at what point in career development were the skills acquired? This phase of the study was designed to determine the agreement that the occupational health and safety inspectors have about the skills or competencies identified on the occupational skills profile which was developed in Stage I of the study. The representative group who developed the skills profile in Stage I was felt to be representative of the total population of inspectors. However, in order to maintain a high level of confidence in the data developed by the representative group, a validation with a large number of practitioners representing a true cross section of the occupation was conducted. In this study the total population of inspectors in the Province of Alberta was included in the study.

Explanation of the Occupational Skills Profile (OSP)

The general areas of competence categories were listed vertically in a box format on the right side of the profile and assigned an identification letter as shown in Figure 1. The specific skill statements relating to each general area of competence were listed horizontally in a box format with each statement assigned an identifying number as shown in Figure 2.

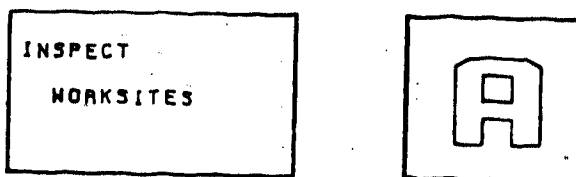


Figure 1.

Box format designed to indicate general areas of competence.

REVIEW APPROPRIATE DATA AND INFORMATION FOR INSPECTIONS				A 1
Y	P	J	C	
N	NA	NT	NA	

SELECT AND LOCATE APPROPRIATE WORKSITES				A 2
Y	P	J	C	
N	NA	NT	NA	

RECOGNIZE HAZARDS DURING INSPECTIONS				A 3
Y	P	J	C	
N	NA	NT	NA	

Figure 2.

Box format designed to indicate specific skill statements.

DETERMINE CONTRAVENTIONS TO LEGISLATION (ACT AND REGS)				A 4
Y	P	J	C	
N	NA	NT	NA	

PRIORITIZE INSPECTION ACTIVITIES FROM DATA				A 5
Y	P	J	C	
N	NA	NT	NA	

INITIATE INSPECTION CONTACT				A 6
Y	P	J	C	
N	NA	NT	NA	

Figure 3.

Box format designed to facilitate the validation process.

Below each specific skill statement are eight small boxes for validation responses as shown in Figure 3. Respondents were asked to indicate if they use the skill as stated in the box. If they circled "yes" (Y), they were asked to circle the response which best described at what point in career development the skills were acquired: prior to employment as an inspector (P), on the job during employment as an inspector (J), or in some form of formal course, seminar or workshop while employed as an inspector (C).

If respondents did not use the skill as stated in the box they were asked to circle "no" (N). Next they were asked to circle the response which best described why they did not perform the skill: not relevant or required for the occupation (NR), or required but not trained to perform this skill (NT), or required but not assigned to perform this skill (NA).

This modified format for obtaining the required information was programmed on a computer plotting system. The general areas of competence and specific skill statements identified during Stage I were plotted by the computer to produce the profile to be used as the test instrument for the validation stage.

Pilot Study

The methodology and procedures used in Stage I and Stage II were pilot tested by the researcher prior to this study. The researcher developed and validated a skills profile for an occupational health and safety education officer. (Appendix A) This pilot skills profile was developed and validated in a similar workshop setting using the same instructions and questions. The results of the pilot study led to changes in the wording of the directions for more precise clarification. As a result of the pilot study, the researcher decided to conduct an orientation meeting with Stage II participants in this study in order to explain the process and the procedures more fully before completing the validation stage. The researcher met with inspectors from the northern half of the Province in Edmonton and all inspectors in the southern half of the Province in Calgary. At these meetings the Occupational Skills Profile system was explained. In addition to this, the validation stage was outlined in detail to the participants and time was provided for questions and discussion. Copies of the Stage I Occupational Health and Safety Inspector Profile (Appendix B), instructions for completing the validation stage (Appendix C) and a demographic data sheet for Stage I and

II participants (Appendix D) was handed out at these meetings. All forty-one occupational health and safety inspectors in the Province attended the meetings. Each of the regional and area inspectorate officers ensured that deadlines would be met for returning validated profiles and demographic information sheets.

Procedure for Data Analysis

The data supplied by Stage II participants was analyzed using the Statistical Analysis System (SAS). Cross tabulations of percentage frequencies were produced in order to determine the following statistics.

1. The extent of agreement and relevance of each skill to the occupation. The data analysis will show:
 - a) Which skills are reported as used or performed on the job (Y)
 - b) Which skills are reported as not used or performed on the job (N) but considered as required due to:
 - i) being reported as not being trained to perform the skill (NT)
 - ii) being reported as not being assigned to perform the skill (NA).
2. The extent of non agreement and non relevance of each skill to the occupation. The data analysis will show:

a) Which skills are reported as not used or performed on the job (N) because-

i) they are reported as not required (NR).

3. The extent to where each skill in the occupation was most significantly acquired. The data analysis will show:

a) Which skill was reported as most significantly acquired prior to employment as an inspector(P).

b) Whether a skill was reported as being most significantly acquired on the job during informal training by a colleague, supervisor or other informal means while employed as an inspector (J).

c) Whether a skill was reported as being most significantly acquired in a formal course, seminar or workshop while employed as an inspector (C).

In summary the research design used in this study consisted of two main stages. Stage I involved the identification of the general areas of competence and specific skill statements required by an occupational health and safety inspector. Stage II involved the validation of the completed Stage I skills profile. The test instrument took the form of a large chart-like document referred to as the Occupational Skills Profile (OSP). The data were tabulated by computer and the findings and conclusions are reported in Chapter IV.

CHAPTER IV

ANALYSIS OF DATA AND SUMMARY OF FINDINGS

This chapter is divided into four parts. The first part will review the demographic information concerning the ten occupational health and safety inspectors who participated in Stage I of the study as compared to the forty-one respondents involved in Stage II of the study.

Part two contains the Occupational Skills Profile (OSP) as developed by the Stage I participants. The (OSP) lists the skills that are used on the job or perceived as relevant to the job of an inspector. A separate list of the general areas of competence categories and all their related skills from the (OSP) is also provided.

The third part presents the analyzed statistics provided by the Stage II respondents. The statistics show the extent to which all the occupational health and safety inspectors in Alberta agree that the skills identified by the Stage I participants are relevant.

The fourth part reports the analyzed statistics that relate to where the Stage I identified skills were acquired, as perceived by the Stage II respondents.

Demographic Information

This part of the chapter will discuss demographic data

regarding Stage I and Stage II participants involved in the study.

The participants involved in Stage I of the study were selected to represent all the occupational health and safety inspectors working in the Province of Alberta. The criteria used for the selection of this representative group is outlined in Chapter III. All of the ten inspectors selected for Stage I of the study participated. All of the forty-one respondents in Stage II completed and returned the validated Occupational Skills Profile (OSP) giving a response rate of 100%. Tables 1 to 5 provide demographic information on Stage I and II participants.

Table 1 reports the geographic workplace locations at which the inspectors from Stage I and II are located throughout Alberta.

Table 2 reports the length of time that the inspectors have worked in their present position. The largest number of participants have been in the job from 1 to 5 years. Only one respondent has been in the present position less than one year.

Table 3 reports the length of time that the inspectors have worked in the occupational health and safety field. The largest number of inspectors have been working in the

occupational health and safety field from 1 to 5 years. Only one respondent has worked in this area of work for one year or less.

TABLE 1

Geographic Location of Inspector Workplaces

<u>City</u>	<u>Number of Participants From Stage I</u>	<u>Number of Respondents From Stage II</u>
Medicine Hat	0	2
Lethbridge	1	2
Calgary	3	16
Red Deer	1	2
Grande Prairie	1	1
Fort McMurray	0	1
Peace River	0	1
Edmonton	<u>4</u>	<u>16</u>
Total	10	41

TABLE 2

Length of Time in Present Position

<u>Years</u>	<u>Number of Participants From Stage I</u>	<u>Number of Respondents From Stage II</u>
0- 1	0	1
1- 5	5	25
5-10	2	12
10 +	<u>3</u>	<u>3</u>
Total	10	41

TABLE 3

Length of Time in Occupational Health and Safety Work

<u>Years</u>	<u>Number of Participants</u>	<u>Number of Respondents</u>
	<u>From Stage I</u>	<u>From Stage II</u>
0- 1	0	1
1- 5	4	22
5-10	4	12
10 +	<u>2</u>	<u>6</u>
Total	10	41

Table 4 reports the grade level completed by each of the participants. The largest number of inspectors had completed a grade twelve grade level or equivalent. The lowest grade level was reported by one respondent at a grade eight level.

TABLE 4

Highest Grade Level Completed in School

<u>Grade Level</u>	<u>Number of Participants</u>	<u>Number of Respondents</u>
	<u>From Stage I</u>	<u>From Stage II</u>
8	0	1
9	1	1
10	1	3
11	1	5
12 or equivalent	<u>7</u>	<u>31</u>
Total	10	41

Table reports the various types of trade/technician training or certification completed by the inspectors of this study. Twelve of the inspectors have not completed trade or technician training or certification. It should be noted that several inspectors hold more than one trade or technician training or certification.

TABLE 5

Types of Trade/Technician or Certification Held

<u>Trade/Technician or Certification Held by Inspectors</u>	<u>Number of Participants From Stage I</u>	<u>Number of Respondents From Stage II</u>
Carpenter	1	8
Machinist	0	2
Welder	0	1
Roofer	0	2
Toolmaker	0	1
Iron Worker	0	2
Steam Engineer	0	1
Refrigeration Engineer	1	1
Millwright	0	2
Painter	0	1
Aircraft Maintenance Engineer	1	1
Auto Body Mechanic	0	1
Sheet Metal	0	2
Instrument Technician	0	1
Plumber/Pipefitter	0	1
Rigger	0	1
Design Engineer	1	1
Heavy Equipment Operator	1	1
Architectural Draftsman	1	0
Compressor Operator	0	1
Total	6	31

Only one respondent reported holding an undergraduate university degree. Two inspectors reported completing certificate programs at the university level in the safety field. In addition, several inspectors reported completing various courses in business studies, management, and occupational health and safety.

Stage I - Occupational Skills Profile (OSP) Development

Question #1

What skills are used on the job or perceived as relevant to the job of an occupational health and safety inspector by a representative group of practicing inspectors?

This question was addressed by having a representative group of inspectors develop an Occupational Skills Profile (OSP) listing the general areas of competence and identifying the specific skill statements required for an occupational health and safety inspector as outlined in Chapter III. A photo reduced copy of the Occupational Skills Profile (OSP) which lists the skills that are used or perceived as relevant to the job of an inspector as developed by Stage I participants is presented in Appendix B.

The following are the general areas of competence

categories and their related specific skill statements identified by the participants in Stage I and extracted from the (OSP).

General Area A - Inspect Worksites

- A 1 - Review Appropriate Data and Information for Inspections.
- A 2 - Select and Locate Appropriate Worksites.
- A 3 - Recognize Hazards During Inspections.
- A 4 - Determine Contraventions to Legislation.
- A 5 - Priorize Inspection Activities from Data.
- A 6 - Initiate Inspection Contact.
- A 7 - Issue Appropriate Orders at Conclusion of Inspections.
- A 8 - Apply Appropriate Degree of Authority (Constraint).
- A 9 - Obtain the Cooperation of Employer/Employee in Inspection.
- A 10 - Request Inspection Assistance from Internal/External Resources.
- A 11 - Evaluate Employee/Employer Awareness of Legislative Requirements.
- A 12 - Check Plans/Equipment/Process for Meeting Approved Specifications.
- A 13 - Review and Evaluate Safe Work Procedures and Policies.

- A 14 - Determine Credibility of Information obtained from Inspections.
- A 15 - Provide Appropriate Assistance to Employers During Inspections.
- A 16 - Recognize and Resolve Confrontation Situations.

General Area B - Maintain Professional Role

- B 1 - Attend Internal/External Courses in Area of Occupational Health and Safety.
- B 2 - Obtain and Relate Information to Employer and/or Employee.
- B 3 - Participate in Safety Associations.
- B 4 - Use Verbal Communications at Appropriate Level.
- B 5 - Maintain a High Level of Self-Control.
- B 6 - Recognize Areas Which Need Training and/or Upgrading.
- B 7 - Provide Equal and Unbiased Service to Employee and Employer.
- B 8 - Project a Confident and Competent Image.
- B 9 - Perform First Aid at the Standard Level.
- B 10 - Keep Current With Legislation Changes.
- B 11 - Motivate Self.
- B 12 - Plan Personal Career Objectives and Activities.

B 13 - Review Current Publications to Keep Abreast of New Technology.

B 14 - Recognize Areas That May be in Conflict of Interests.

B 15 - Recognize and Cope With Stress Factors.

General Area C - Use Relevant Equipment

C 1 - Operate Motor Vehicles.

C 2 - Use Telephone Effectively.

C 3 - Use Photo Copying Equipment.

C 4 - Use Appropriate Instrument Devices.

C 5 - Use and Read Angle Meter to Determine Slopes of Walls of Trenches, Etc.

C 6 - Operate and Maintain 35mm and Polaroid Cameras.

C 7 - Wear Appropriate Protective Equipment as Required.

C 8 - Maintain Personal First Aid Kit.

C 9 - Operate and Maintain Appropriate Fire Extinguishers.

C 10 - Use Mobile Communication Devices.

C 11 - Operate Projectors/16mm Slide/Overhead.

C 12 - Use and Maintain Respiratory Protective Devices.

C 13 - Locate Worksites by Legal Site Description.

- C 14 - Use Survival Kits.
- C 15 - Use Light Meter to Measure Light Intensity.
- C 16 - Use Sound Level Meter to Measure Decibel Levels.
- C 17 - Use Direct Reading Air Sampling Equipment.
- C 18 - Use Video Camera and Monitor.

General Area D - Communicate Effectively

- D 1 - Listen Effectively.
- D 2 - Write Legibly.
- D 3 - Use Effective Telephone Techniques.
- D 4 - Recognize Communication Barriers.
- D 5 - Recognize Non-Physical and Physical Cues to Communication.
- D 6 - Receive and Provide Constructive Criticism.
- D 7 - Organize Material Into a Sequential Manner.
- D 8 - Prepare and Write Memoranda.
- D 9 - Prepare Telephone Conversation Reports.
- D 10 - Write Meeting Reports.
- D 11 - Interpret Technical/Industrial Terminology.
- D 12 - Write and Edit Various Reports Effectively.
- D 13 - Employ Appropriate Interviewing Techniques.

General Area E - Analyze Worksites

- E 1 - Request Search Master File.
- E 2 - Access and Review Previous Orders.

- E 3 - Access and Review Previous Prosecution/Fatal Files.
- E 4 - Review Alert Sheets.
- E 5 - Consult Colleagues for Previous Involvement With Employers.
- E 6 - Review Accident Frequency Data for Similar Industries.
- E 7 - Determine Other Branch Activity With Employers.
- E 8 - Appraise Employer/Employee Attitudes Towards Health and Safety.
- E 9 - Use Data and Information to Assess Potential Hazards of the Industry.
- E 10 - Use Data to Make Employer/Employee Aware of Potential Hazards.
- E 11 - Observe/Evaluate and Make Recommendations on Work Processes and Procedures.

General Area F - Enforce Legislation

- F 1 - Ensure Compliance After Inspection.
- F 2 - Assemble Information For a Possible Prosecution.
- F 3 - Utilize and Follow Division Operation Proceedings Regarding Enforcement.
- F 4 - Determine When to Write a Stop Work Order.

- F 5 - Display and Demonstrate a Diplomatic Approach.
- F 6 - Determine and Obtain Supervisory Assistance
When Required.
- F 7 - Inform and Clarify the Duties and
Responsibilities of All Parties.
- F 8 - Determine Whether to Recommend a Prosecution.
- F 9 - Prepare "Recommend to Prosecute" Form.
- F 10 - Review and Prepare to Give Evidence At Court.

General Area G - Perform Administrative Duties

- G 1 - Complete Daily and Correction Activity Sheets.
- G 2 - Review Reading Files and Interdepartmental
Information.
- G 3 - Use Microfiche Reader.
- G 4 - Use Computer Terminals.
- G 5 - Complete Order Forms With Details.
- G 6 - Use and Access Filing System.
- G 7 - Complete Standardized Forms As Required By
Operational Procedures Book.
- G 8 - Complete Accident Information Forms.
- G 9 - Plan and Schedule Personal Activities.
- G 10 - Use Internal and External Information
Resources.
- G 11 - Prepare Minutes of Meetings.

G 12 - Update and Amend Personal Files/Operational Procedures/Manuals/References.

G 13 - Provide Information For Reports Monthly/Quarterly/Annually.

G 14 - Act In a Temporary Supervisory Role.

General Area H - Interface With Various Groups

H 1 - Relate to Various Levels of Division Management.

H 2 - Obtain Information From Various External Organizations.

H 3 - Request Assistance From Internal Division Resources.

H 4 - Conduct Co-Inspections With Other Regulatory Agencies.

H 5 - Establish Credibility With All Parties At the Worksite.

H 6 - Assist Employers In Conducting Their Own Inspections.

H 7 - Relate to Various Levels of External Management.

H 8 - Recognize Limitation In Dealing With Law Enforcement Agencies.

H 9 - Provide Media Information In Accordance With Branch Policy.

General Area I - Perform Accident/Incidents

- I 1 - Prepare Supplies and Equipment For Investigations.
- I 2 - Gather Initial Information Prior to Investigations.
- I 3 - Measure and Sketch Site of Accidents/Incidents.
- I 4 - Photograph Accidents/Incidents In An Appropriate Manner.
- I 5 - Determine Severity of Accidents/Incidents.
- I 6 - Verbally Brief Appropriate Personnel on Accidents/Incidents.
- I 7 - Take/Obtain Meaningful Statements.
- I 8 - Gather Technical Information Specific To the Accidents/Incidents.
- I 9 - Liaise With Other Applicable Jurisdictions During Investigations.
- I 10 - Ensure Compliance After Accidents/Incidents.
- I 11 - Analyze To Ensure No Further Danger Exists.
- I 12 - Analyze Accident/Incident Scenes For Information.
- I 13 - Determine Cause of Accidents/Incidents.
- I 14 - Determine Additional Resource Required To Investigate Accidents/Incidents.

- I 15 - Follow Up To Finalize Investigation of Accidents/Incidents.
- I 16 - Complete Detailed Accident/Incident Reports.
- I 17 - Present Accident Information To Appropriate Groups.

General Area J - Promote Educational Activities

- J 1 - Complete Request For Education Service Form.
- J 2 - Attend Health and Safety Meetings.
- J 3 - Promote and Discuss Available Programs and Materials.
- J 4 - Identify Need For Education and/or Training.
- J 5 - Deliver In-Service Presentations To Colleagues.
- J 6 - Assist With Field Training of Colleagues.
- J 7 - Prepare and Present Safety Talks To Interested Groups.
- J 8 - Act As a Resource to the Education and Program Development Branch.
- J 9 - Assist Education Branch In Development of Specialized Programs.
- J 10 - Assist With Division Training Programs.
- J 11 - Prepare and Present Information At Significant Accident Review Board.

General Area K - Interpret Legislation

- K 1 - Identify Specific Legislation Relevant To the Situation.
- K 2 - Interpret the Intent of the Legislation.
- K 3 - Form An Opinion Based On Reliable Sources, Such As, Codes/Standards.
- K 4 - Use Layman's Terms To Explain Legislation.
- K 5 - Explain the Reasons For Having Legislation.
- K 6 - Describe the Positive Benefits of Receiving Compliance.
- K 7 - Recognize Alternative Methods to Achieve Compliance.

General Area L - Use Consulting Skills

- L 1 - Advise and Refer Inquiring Parties To Appropriate Information Sources.
- L 2 - Present Information Which Will Be Accepted By Employer/Employee.
- L 3 - Motivate Employer/Employee In Health and Safety Issues.
- L 4 - Organize and Conduct Effective Meetings.
- L 5 - Evaluate Employer/Employee Proposals To Ensure Compliance With Division Standards.

Stage II - Occupational Skills Profile (OSP) Validation

Question #2

To what extent do all the occupational health and safety officers (inspectors) in Alberta agree with the skills identified by the representative group?

This question was answered by carrying out a validation process of the (OSP) which was developed by the Stage I participants. The validation was conducted with the total population of inspectors in Alberta and was designed to show the extent to which all the occupational health and safety inspectors in Alberta agree that the skills identified by the Stage I participants are relevant.

Agreement was considered to include respondents who reported use of the skill or perceived the skill to be required for the job of an occupational health and safety inspector. The level of agreement to show that a skill is relevant represents the combined reported use of each skill and the perceived requirement of each skill even when the skill was not reported as used.

The statistics for the percentage distribution of all validation responses are included in Appendix E. These responses are derived from all forty-one respondents.

Tables 6 to 17 report the level of agreement that all forty-one respondents have regarding the relevance and

non-relevance of the skill statements developed by the representative group in each general area of competence category.

Table 6 reports the level of agreement for the skill statements in general area of competence category A - Inspect Worksites. All the skills statements in this category except A5, A14 and A16 are reported to be 100% relevant. Skill statements A5 and A16 are both reported to be 98% relevant. Skill statement A14 was reported as 97% relevant and 2% of the respondents gave no response or an invalid response.

Table 7 reports the level of agreement for the skill statements in general area of competence category B - Maintain Professional Role. Nine skill statements in this category were reported to be 100% relevant for the occupation of an inspector. The lowest percentage of relevance for this category was reported for skill statement B3 at 83%.

Table 8 reports the level of agreement for the skill statements in general area of competence category C - Use Relevant Equipment. Six skill statements in this category were reported to be 100% relevant for the occupation of an inspector. The lowest percentage of relevance for this category was reported for skill statements C10 and C15 at 80%.

TABLE 6
OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS

Skill Relevance
General Area A: Inspect Worksites

<u>Skill Statement</u>	<u>Percent Relevant</u>	<u>Percent not Relevant</u>	<u>Percent Other</u>
A 1	100	0	0
A 2	100	0	0
A 3	100	0	0
A 4	100	0	0
A 5	98	0	2
A 6	100	0	0
A 7	100	0	0
A 8	100	0	0
A 9	100	0	0
A10	100	0	0
A11	100	0	0
A12	100	0	0
A13	100	0	0
A14	97	3	0
A15	100	0	0
A16	98	2	0

LEGEND

Relevant: use or do not use as need training or not yet assigned
Not Relevant: not required for the job
Other: no response/invalid response

TABLE 7

OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS

Skill Relevance

General Area B: Maintain Professional Role

<u>Skill Statement</u>	<u>Percent Relevant</u>	<u>Percent not Relevant</u>	<u>Percent Other</u>
B 1	100	0	0
B 2	100	0	0
B 3	83	17	0
B 4	100	0	0
B 5	100	0	0
B 6	95	2	3
B 7	100	0	0
B 8	100	0	0
B 9	95	5	0
B10	100	0	0
B11	100	0	0
B12	100	0	0
B13	95	2	3
B14	98	2	0
B15	97	3	0

LEGENDRelevant: use or do not use as need training or not yet assigned

Not Relevant: not required for the job

Other: no response/invalid response

TABLE 8
OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS

Skill Relevance
General Area C: Use Relevant Equipment

<u>Skill Statement</u>	<u>Percent Relevant</u>	<u>Percent not Relevant</u>	<u>Percent Other</u>
C 1	100	0	0
C 2	100	0	0
C 3	100	0	0
C 4	97	3	0
C 5	100	0	0
C 6	100	0	0
C 7	100	0	0
C 8	95	5	0
C 9	98	2	0
C10	80	20	0
C11	97	3	0
C12	98	2	0
C13	98	2	0
C14	91	7	2
C15	80	20	0
C16	85	15	0
C17	86	12	2
C18	83	17	0

LEGEND

Relevant: use or do not use as need training or not yet assigned
Not Relevant: not required for the job
Other: no response/invalid response

Table 9 reports the level of agreement for the skill statements in general area of competence category D - Communicate Effectively. Seven skill statements were reported to be 100% relevant for the occupation of an inspector. The lowest percentage of relevance for this category was reported for skill statement D5 at 93%.

Table 10 reports the level of agreement for the skill statements in general area of competence category E - Analyze Worksites. All the skill statements in this category except E11 were reported to be 100% relevant. Skill statement E11 was reported to be 97% relevant.

Table 11 reports the level of agreement for the skill statements in general area of competence category F - Enforce Legislation. Five skill statements were reported to be 100% relevant. The lowest percentage of relevance for this category was reported for skill statement F7 and 93%.

Table 12 reports the level of agreement for skill statements in general area of competence category G - Perform Administrative Duties. Seven skill statements in this category are reported to be 100% relevant for the occupation of an inspector. The lowest percentage of relevance was reported for skill statements G4, G11 and G12 all at 93%.

TABLE 9
OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS

Skill Relevance
General Area D: Communicate Effectively

<u>Skill Statement</u>	<u>Percent Relevant</u>	<u>Percent not Relevant</u>	<u>Percent Other</u>
D 1	100		0
D 2	100	0	0
D 3	98	2	0
D 4	96	2	2
D 5	93	5	2
D 6	98	0	2
D 7	100	0	0
D 8	100	0	0
D 9	100	0	0
D10	100	0	0
D11	100	0	0
D12	98	2	0
D13	95	5	0

LEGEND

Relevant: use or do not use as need training or not yet assigned
 Not Relevant: not required for the job
 Other: no response/invalid response

TABLE 10
OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS

Skill Relevance
General Area E: Analyze Worksites

<u>Skill Statement</u>	<u>Percent Relevant</u>	<u>Percent not Relevant</u>	<u>Percent Other</u>
E 1	100	0	0
E 2	100	0	0
E 3	100	0	0
E 4	100	0	0
E 5	100	0	0
E 6	100	0	0
E 7	100	0	0
E 8	100	0	0
E 9	100	0	0
E10	100	0	0
E11	97	3	0

LEGEND

Relevant: use or do not use as need training or not yet assigned
 Not Relevant: not required for the job
 Other: no response/invalid response

TABLE 11
OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS

Skill Relevance
General Area F: Enforce Legislation

<u>Skill Statement</u>	<u>Percent Relevant</u>	<u>Percent not Relevant</u>	<u>Percent Other</u>
F 1	100	0	0
F 2	100	0	0
F 3	100	0	0
F 4	100	0	0
F 5	100	0	0
F 6	97	3	0
F 7	93	5	2
F 8	95	5	0
F 9	95	0	5
F10	98	0	2

LEGEND

Relevant: use or do not use as need training or not yet assigned
Not Relevant: not required for the job
Other: no response/invalid response

TABLE 12

OCCUPATIONAL SKILLS PROFILE (OSP) INSPECTORS

Skill Relevance

General Area G: Perform Administrative Duties

<u>Skill Statement</u>	<u>Percent Relevant</u>	<u>Percent not Relevant</u>	<u>Percent Other</u>
G 1	98	2	0
G 2	100	0	0
G 3	100	0	0
G 4	93	5	2
G 5	100	0	0
G 6	98	0	2
G 7	96	2	2
G 8	100	0	0
G 9	100	0	0
G10	100	0	0
G11	93	7	0
G12	93	5	2
G13	100	0	0
G14	95	0	5

LEGEND

Relevant: use or do not use as need training or not yet assigned
 Not Relevant: not required for the job
 Other: no response/invalid response

Table 13 reports the level of agreement for the skill statements in general area of competence category H - Interface with Various Groups. Three skill statements in this category were reported to be 100% relevant. The lowest percentage of relevance for this category was reported for skill statement H9 at 80%.

Table 14 reports the level agreement for the skill statements in general area of competence category I - Perform Accident/Incident Investigation. Fourteen of the seventeen skill statements in this category were reported to be 100% relevant for the occupation of an inspector. The lowest percentage of relevance for this category was reported for skill statement I17 at 95%.

Table 15 reports the level of agreement for the skill statements in general area of competence category J - Promote Educational Activities. Five skill statements in this category were reported to be 100% relevant. The lowest percentage of relevance for this category, and for the entire profile was reported for skill statement J10 at 79%. This skill statement had a reported level of not relevant of 14% and 7% no response or invalid response.

Table 16 reports the level of agreement for skill statements in general area of competence category K - Interpret Legislation. Two skill statements were reported

TABLE 13

**OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS**

Skill Relevance

General Area H: Interface with Various Groups

<u>Skill Statement</u>	<u>Percent Relevant</u>	<u>Percent not Relevant</u>	<u>Percent Other</u>
H1	95	5	0
H2	97	3	0
H3	100	0	0
H4	95	5	0
H5	100	0	0
H6	97	3	0
H7	98	2	0
H8	100	0	0
H9	80	17	3

LEGEND

Relevant: use or do not use as need training or not yet assigned

Not Relevant: not required for the job

Other: no response/invalid response

TABLE 14

OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORSSkill Relevance

General Area I: Perform Accident/Incident Investigations

<u>Skill Statement</u>	<u>Percent Relevant</u>	<u>Percent not Relevant</u>	<u>Percent Other</u>
I 1	100	0	0
I 2	100	0	0
I 3	100	0	0
I 4	100	0	0
I 5	98	2	0
I 6	100	0	0
I 7	100	0	0
I 8	100	0	0
I 9	100	0	0
I10	98	0	2
I11	100	0	0
I12	100	0	0
I13	100	0	0
I14	100	0	0
I15	100	0	0
I16	100	0	0
I17	95	0	5

LEGEND

Relevant: use or do not use as need training or not yet assigned
 Not Relevant: not required for the job
 Other: no response/invalid response

TABLE 15

**OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS**

Skill Relevance

General Area J: Promote Educational Activities

<u>Skill Statement</u>	<u>Percent Relevant</u>	<u>Percent not Relevant</u>	<u>Percent Other</u>
J 1	97	3	0
J 2	100	0	0
J 3	100	0	0
J 4	100	0	0
J 5	100	0	0
J 6	95	3	2
J 7	98	2	0
J 8	90	5	5
J 9	87	10	3
J10	79	14	7
J11	100	0	0

LEGEND

Relevant: use or do not use as need training or not yet assigned
 Not Relevant: not required for the job
 Other: no response/invalid response

to be 100% relevant. The lowest percentage of relevance for this category was reported for skill statement K6 at 97%.

Table 17 reports the level of agreement for skill statements in general area of competence category L - Use Consulting Skills. Three skill statements in this category were reported to be 100% relevant for the occupation of an inspector. The two remaining skills in this category were reported to be 97% relevant.

Table 18 reports the average level of agreement for all the general area of competence categories and for the entire profile. The highest average of relevance is reported to be 99.8% for general area of competence category E - Analyze Worksites. The lowest average of relevance is reported to be 93.7% for general area of competence category C - Use Relevant Equipment. The average level of agreement on the entire profile was 97.7%.

TABLE 16

OCCUPATIONAL SKILLS PROFILE (OSP) INSPECTORS

Skill Relevance General Area K: Interpret Legislation

<u>Skill Statement</u>	<u>Percent Relevant</u>	<u>Percent not Relevant</u>	<u>Percent Other</u>
K1	98		2
K2	98		0
K3	100	0	0
K4	98	2	0
K5	98	2	0
K6	97	3	0
K7	100	0	0

LEGEND

Relevant: use or do not use as need training or not yet assigned.

Not Relevant: not required for the job

Other: no response/invalid response

TABLE 17

OCCUPATIONAL SKILLS PROFILE (OSP) INSPECTORS

Skill Relevance General Area L: Use Consulting Skills

<u>Skill Statement</u>	<u>Percent Relevant</u>	<u>Percent not Relevant</u>	<u>Percent Other</u>
L 1	100	0	0
L 2	100	0	0
L 3	100	0	0
L 4	97	3	0
L 5	97	0	3

LEGEND

Relevant: use or do not use as need training or not yet assigned
 Not Relevant: not required for the job
 Other: no response/invalid response

TABLE 18

**OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS**

Average Skill Relevance
General Area of Competence Categories

<u>Category</u>	<u>Average Percent Relevant</u>	<u>Average Percent not Relevant</u>	<u>Average Percent Other</u>
A	99.5	0.3	0.2
B	97.6	2.1	0.3
C	93.7	6.0	0.3
D	98.1	1.3	0.6
E	99.8	0.2	0.0
F	97.8	1.2	1.0
G	97.4	1.6	1.0
H	95.9	3.8	0.3
I	99.5	0.1	0.4
J	95.1	3.3	1.6
K	98.3	1.4	0.3
L	99.0	0.5	0.5
<hr/>			
Profile Average %	97.7	1.8	0.5

LEGEND

Average percent: the average of the skill percentages
 Profile average percent: the averages of the general area percentages

Relevant: use or do not use as need training or not yet assigned

Not Relevant: not required for the job

Other: no response/invalid response

Stage II - Skill Acquisition

Question #3

At what point in career development the identified skills were acquired?

This question was directed to respondents who indicated use of a specific skill statement. Respondents were asked to indicate whether a skill was most significantly acquired prior to employment as an inspector (P) or on the job during informal training by a colleague, supervisor or other informal means while employed as an inspector (J) or in a formal course seminar or workshop while employed as an inspector (C).

Tabulation was by frequency count and results presented for each skill statement in each of the general areas of competence categories.

Tables 19 to 30 report the statistics provided by Stage II respondents concerning where they perceive the skills were acquired. The responses are derived only from those respondents who indicated they use the skill. Respondents who indicated they did not perform or use the skill were not included in the tabulations.

Table 19 shows where the respondents reported they acquired the skills for general area of competence category A-Inspect Worksites. In this category an average of 64.8% of respondents report that they acquired the

TABLE 19

**OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS**

Skill Acquisition
General Area A: Inspect Worksites

<u>Skill Statement</u>	<u>Percent Prior</u>	<u>Percent Job</u>	<u>Percent Course</u>	<u>Percent Other</u>	<u>Number Reporting Use of Skill</u>
A 1	10	85	5	0	41
A 2	5	88	7	0	41
A 3	47	46	7	0	41
A 4	7	75	18	0	40
A 5	18	73	10	0	40
A 6	15	83	2	0	41
A 7	8	75	17	0	40
A 8	54	44	2	0	41
A 9	51	49	0	0	41
A10	10	73	12	5	41
A11	20	76	4	0	41
A12	40	40	18	2	40
A13	24	71	5	0	41
A14	32	68	0	0	38
A15	27	66	7	0	41
A16	70	25	5	0	40
<hr/>					
General Area Average %	27.2	64.8	7.5	.5	40

LEGEND:

Skill (primarily) acquired

Prior: prior to INSPECTOR employment

Job: on the job while INSPECTOR employed

Course: from a formal course while INSPECTOR employed

Other: no response and other invalid response

General Area Average %: the average of the skills in the general area

NOTE: This sample of responses includes only those respondents who indicated "yes" they do use the skill.

skills by on the job informal training while employed as an inspector. A high number of respondents 88% reported that skill statement A2 (Select and Locate Appropriate Work Sites) was acquired by on the job informal training while employed as an inspector. A total of 70% reported that skill statement A16 (Recognize and Resolve Confrontation Situations) was acquired prior to employment as an inspector. A total of 5% of respondents did not respond or provided an invalid response for skill statement A10.

Table 20 reports where the respondents acquired the skills for general area of competence Category B - Maintain Professional Role. In this category an average of 51% of respondents reported that they acquired the skills prior to employment as an inspector. A high number of respondents 88% report that they acquired both skill statements B5 (Maintain a High Level of Self Control) and B11 (Motivate Self) prior to employment as an inspector.

Table 21 reports where the respondents acquired the skills for general area of competence Category C - Use Relevant Equipment. Eleven of the eighteen skill statements in this category had a higher number of respondents reporting that they acquired the skills prior to employment as an inspector than informally on the job.

TABLE 20

OCCUPATIONAL SKILLS PROFILE (OSP) INSPECTORS

Skill Acquisition

General Area B: Maintain Professional Role

<u>Skill Statement</u>	<u>Percent Prior</u>	<u>Percent Job</u>	<u>Percent Course</u>	<u>Percent Other</u>	<u>Number Reporting Use of Skill</u>
B 1	10	45	45	0	38
B 2	25	63	10	2	41
B 3	39	58	3	0	31
B 4	85	10	2	3	41
B 5	88	7	2	3	41
B 6	39	55	3	3	38
B 7	54	46	0	0	41
B 8	68	29	0	3	41
B 9	38	18	44	0	39
B10	10	66	22	2	41
B11	88	5	0	7	41
B12	68	27	0	5	41
B13	38	59	3	0	39
B14	40	60	0	0	40
B15	64	18	15	3	39
General Area Average %	51	37.3	9.8	1.9	40

LEGEND:

Skill (primarily) acquired

Prior: prior to INSPECTOR employment

Job: on the job while INSPECTOR employed

Course: from a formal course while INSPECTOR employed

Other: no response and other invalid response

General Area Average %: the average of the skills in the general area

NOTE: This sample of responses includes only those respondents who indicated "yes" they do use the skill.

TABLE 21

OCCUPATIONAL SKILLS PROFILE (OSP) INSPECTORS

Skill Acquisition General Area C: Use Relevant Equipment

<u>Skill Statement</u>	<u>Percent Prior</u>	<u>Percent Job</u>	<u>Percent Course</u>	<u>Percent Other</u>	<u>Number Respondents Using Skill</u>
C 1	100	0	0	0	41
C 2	85	15	0	0	41
C 3	59	37	2	2	41
C 4	51	32	14	3	37
C 5	41	51	5	3	41
C 6	54	41	5	0	41
C 7	78	20	2	0	41
C 8	59	33	8	0	39
C 9	76	21	3	0	38
C10	48	52	0	0	29
C11	51	40	6	3	35
C12	43	23	34	0	35
C13	20	54	26	0	39
C14	34	38	28	0	29
C15	18	47	29	6	17
C16	21	42	33	4	24
C17	24	36	36	4	25
C18	47	33	20	0	15
General Area Average %	54.0	33.0	11.8	1.2	34

LEGEND:

Skill (primarily) acquired:
 Prior: prior to INSPECTOR employment
 Job: on the job while INSPECTOR employed
 Course: from a formal course while INSPECTOR employed
 Other: no response and other invalid response
 General Area Average %: the average of the skills in the general area

NOTE: This sample of responses includes only those respondents who indicated "yes" they do use the skill.

or in a course while employed. Skill statements C18 (Use Video Camera and Monitor) had only 15 out of 41 respondents indicating they use this skill. This may be due to the fact that the video camera is just now being introduced for recording accidents at work sites in Alberta.

Table 22 shows where the respondents reported they acquired the skills for general area of competence Category D - Communicate Effectively. All but two skills D9 and D10 report a higher number of respondents indicating they obtained the communication skills prior to employment as an inspector. Skill statements D9 (Prepare Telephone Conversation Reports) and D10 (Write Meeting Reports) had 71% and 66% of respondents indicating they acquired these skills on the job.

Table 23 reports where the respondents acquired the skills for general area of competence category E - Analyze Worksites. In this category an average of 75.3% of respondents report that they acquired the skills on the job while employed as an inspector. All the skills statements in this category report a higher number of respondents acquiring the skills informally on the job while employed as an inspector than by a formal course or prior to employment as an inspector. A high number of

TABLE 22

OCCUPATIONAL SKILLS PROFILE (OSP) INSPECTORS

Skill Acquisition

General Area D: Communicate Effectively

<u>Skill Statement</u>	<u>Percent Prior</u>	<u>Percent Job</u>	<u>Percent Course</u>	<u>Percent Other</u>	<u>Number Reporting Use of Skill</u>
D 1	92	0	5	3	39
D 2	73	15	10	2	41
D 3	85	13	2	0	40
D 4	63	29	5	3	38
D 5	75	11	11	3	36
D 6	78	20	2	0	40
D 7	61	34	5	0	41
D 8	48	38	12	2	40
D 9	15	71	12	2	41
D10	17	66	15	2	41
D11	51	44	5	0	39
D12	41	33	26	0	39
D13	46	38	14	2	37
General Area Average %	57	31.8	9.6	1.6	39

LEGEND:

Skill (primarily) acquired

Prior: prior to INSPECTOR employment

Job: on the job while INSPECTOR employed

Course: from a formal course while INSPECTOR employed

Other: no response and other invalid response

General Area Average %: the average of the skills in the general area

NOTE: This sample of responses includes only those respondents who indicated "yes" they do use the skill.

TABLE 23

OCCUPATIONAL SKILLS PROFILE (OSP) INSPECTORS

Skill Acquisition General Area E: Analyze Worksites

<u>Skill Statement</u>	<u>Percent Prior</u>	<u>Percent Job</u>	<u>Percent Course</u>	<u>Percent Other</u>	<u>Number Reporting Use of Skill</u>
E 1	2	68	28	2	40
E 2	7	90	3	0	41
E 3	3	90	5	2	41
E 4	3	90	5	2	40
E 5	24	73	3	0	41
E 6	10	78	10	2	40
E 7	10	85	2	3	40
E 8	44	54	2	0	41
E 9	17	63	17	3	41
E10	22	73	5	0	41
E11	35	65	0	0	40
General Area Average %	16.1	75.3	7.2	1.4	40

LEGEND:

Skill (primarily) acquired
 Prior: prior to INSPECTOR employment
 Job: on the job while INSPECTOR employed
 Course: from a formal course while INSPECTOR employed
 Other: no response and other invalid response
 General Area Average %: the average of the skills in the general area

NOTE: This sample of responses includes only those respondents who indicated "yes" they do use the skill.

respondents 90% reported that skill statements E2 (Access and Review Previous Orders, E3 (Access and Review Previous Presentation/Fatal Files) and E4 (Review Alert Sheets) were acquired on the job while inspector employed.

Table 24 reports where the respondents indicated they acquired the skills for general area of competence Category F - Enforce Legislation. In this category, an average of 63.8% of respondents indicated they acquired the skills by on the job informal training while employed as an inspector. Skill statements F5 (Display and Demonstrate a Diplomatic Approach) and F6 (Determine and Obtain Supervisory Assistance when Required) reported a higher number of respondents indicating that these skills were acquired prior to employment as an inspector.

Table 25 shows where the respondents reported they acquired the skills for general area of competence category G - Perform Administrative Duties. In this category an average of 64% of the respondents indicated they acquired the skills informally on the job while inspector employed. Skill statement G2 (Review Reading Files and Interdepartmental Information) was reported by 88% of the respondents to be acquired on the job.

Table 26 reports where the respondents indicated they acquired the skills for general area of competence

TABLE 24

OCCUPATIONAL SKILLS PROFILE (OSP) INSPECTORS

Skill Acquisition General Area F: Enforce Legislation

<u>Skill Statement</u>	<u>Percent Prior</u>	<u>Percent Job</u>	<u>Percent Course</u>	<u>Percent Other</u>	<u>Number Reporting Use of Skill</u>
F 1	10	80	7	3	41
F 2	5	68	24	3	41
F 3	7	71	20	2	41
F 4	10	68	20	2	41
F 5	73	24	3	0	41
F 6	59	38	3	0	39
F 7	40	55	5	0	38
F 8	8	82	10	0	39
F 9	3	82	13	2	38
F 10	10	69	21	0	39
General Area Average %	22.4	63.8	12.5	1.3	40

LEGEND:

Skill (primarily) acquired
 Prior: prior to INSPECTOR employment
 Job: on the job while INSPECTOR employed
 Course: from a formal course while INSPECTOR employed
 Other: no response and other invalid response
 General Area Average %: the average of the skills in the general area

NOTE: This sample of responses includes only those respondents who indicated "yes" they do use the skill.

TABLE 25

OCCUPATIONAL SKILLS PROFILE (OSP) INSPECTORS

Skill Acquisition

General Area G: Perform Administrative Duties

<u>Skill Statement</u>	<u>Percent Prior</u>	<u>Percent Job</u>	<u>Percent Course</u>	<u>Percent Other</u>	<u>Number Reporting Use of Skill</u>
G 1	12	60	28	0	40
G 2	5	88	5	2	41
G 3	7	81	12	0	41
G 4	6	82	12	0	34
G 5	2	76	17	5	41
G 6	23	72	5	0	40
G 7	5	77	15	3	39
G 8	12	81	7	0	41
G 9	66	29	3	2	41
G10	41	51	5	3	41
G11	63	31	6	0	35
G12	35	56	6	3	34
G13	24	64	12	0	41
G14	56	41	3	0	32
General Area Average %	25.1	64.0	9.8	1.1	39

LEGEND:

Skill (primarily) acquired

Prior: prior to INSPECTOR employment

Job: on the job while INSPECTOR employed

Course: from a formal course while INSPECTOR employed

Other: no response and other invalid response

General Area Average %: the average of the skills in the general area

NOTE: This sample of responses includes only those respondents who indicated "yes" they do use the skill.

TABLE 26

**OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS**

Skill Acquisition

General Area H: Interface with Various Groups

<u>Skill Statement</u>	<u>Percent Prior</u>	<u>Percent Job</u>	<u>Percent Course</u>	<u>Percent Other</u>	<u>Number Reporting Use of Skill</u>
H 1	49	47	2	2	39
H 2	46	49	5	0	39
H 3	17	78	5	0	41
H 4	6	86	5	3	37
H 5	54	39	5	2	41
H 6	13	92	5	0	40
H 7	60	35	5	0	40
H 8	33	62	5	0	40
H 9	0	80	20	0	20
<hr/>					
General Area Average %	32.6	60.9	5.6	.9	37

LEGEND:

Skill (primarily) acquired
Prior: prior to INSPECTOR employment
Job: on the job while INSPECTOR employed
Course: from a formal course while INSPECTOR employed
Other: no response and other invalid response
General Area Average %: the average of the skills in the general area

NOTE: This sample of responses includes only those respondents who indicated "yes" they do use the skill.

category H - Interface With Various Groups. In this category an average of 60.9% of respondents report that they acquired the skills on the job while employed as an inspector. A high number of respondents 86% report that skill statement H4 (Conduct Co - Inspections with Other Regulatory Agencies) was acquired by on the job informal training while employed as an inspector. Skill statements H9 (Provide Media Information In Accordance with Branch Policy) had only 20 out of 41 respondents indicating they perform or use this skill. This may be due to more experienced inspectors using the skill whereas more inexperienced staff may avoid the media or let more senior staff perform this responsibility.

Table 27 reports where the respondents acquired the skills for general area of competence category I - Perform Accident/Incident Investigations. In this category an average of 66% of respondents reported that they acquired the skills informally on the job while employed as an inspector. All the seventeen skill statements in this category had a higher number of respondents indicating they acquired these skills informally on the job rather than in a formal course or prior to inspector employment.

Table 28 shows where the respondents reported they acquired the skills for general area of competence

TABLE 27

OCCUPATIONAL SKILLS PROFILE (OSP) INSPECTORS

Skill Acquisition
General Area I: Perform Accident/Incident Investigations

<u>Skill Statement</u>	<u>Percent Prior</u>	<u>Percent Job</u>	<u>Percent Course</u>	<u>Percent Other</u>	<u>Number Reporting Use of Skill</u>
I 1	17	68	12	3	41
I 2	15	73	10	2	41
I 3	34	54	12	0	41
I 4	29	59	10	2	41
I 5	20	70	10	0	40
I 6	29	61	7	3	41
I 7	17	66	17	0	41
I 8	34	51	15	0	41
I 9	15	78	7	0	41
I10	10	78	12	0	40
I11	34	63	3	0	41
I12	37	56	5	2	41
I13	34	54	12	0	41
I14	24	69	7	0	41
I15	14	76	10	0	41
I16	20	70	10	0	41
I17	13	87	0	0	38
<hr/>					
General Area Average %	23.2	66.0	9.3	.7	41

LEGEND:

Skill (primarily) acquired

Prior: prior to INSPECTOR employment

Job: on the job while INSPECTOR employed

Course: from a formal course while INSPECTOR employed

Other: no response and other invalid response

General Area Average %: the average of the skills in the general area

NOTE: This sample of responses includes only those respondents who indicated "yes" they do use the skill.

TABLE 28

**OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS**

Skill Acquisition

General Area J: Promote Educational Activities

<u>Skill Statement</u>	<u>Percent Prior</u>	<u>Percent Job</u>	<u>Percent Course</u>	<u>Percent Other</u>	<u>Number Reporting Use of Skill</u>
J 1	0	83	17	0	40
J 2	27	61	12	0	41
J 3	25	75	0	0	40
J 4	44	46	10	0	41
J 5	28	62	8	2	39
J 6	24	74	2	0	34
J 7	18	71	11	0	38
J 8	6	91	3	0	34
J 9	21	79	0	0	24
J10	19	71	10	0	21
J11	0	95	5	0	40
General Area Average %	19.4	72.9	7.4	.3	36

LEGEND:

Skill (primarily) acquired
Prior: prior to INSPECTOR employment
Job: on the job while INSPECTOR employed
Course: from a formal course while INSPECTOR employed
Other: no response and other invalid response
General Area Average %: the average of the skills in the general area

NOTE: This sample of responses includes only those respondents who indicated "yes" they do use the skill.

category J - Promote Educational Activities. Similarly this category shows an average of 72.9% of respondents reporting that they ⁴acquired the skills informally on the job while inspector employed. All the skill statements in this category had a higher number of respondents indicating they acquired these skills informally on the job than in a formal course or prior to inspector employment. Only 21 out of 41 respondents report that they use skill statement J10 (Assist with Division Training Programs).

Table 29 reports where respondents acquired the skills for general area of competence Category K - Interpret Legislation. This category also reports a higher number of respondents indicating they acquired all seven skills on the job while inspector employed.

Table 30 reports where the respondents acquired the skills for general area of competence Category L - Use Consulting Skills. In this category an average of 61.1% of respondents reported that they acquired the skills informally on the job. Only skill statement L4 (Organize and Conduct Effective Meetings) had a higher number of respondents 65% indicating they acquired this skill prior to inspector employment.

TABLE 29
OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS

Skill Acquisition
General Area K: Interpret Legislation

<u>Skill Statement</u>	<u>Percent Prior</u>	<u>Percent Job</u>	<u>Percent Course</u>	<u>Percent Other</u>	<u>Number Reporting Use of Skill</u>
K 1	0	71	27	2	41
K 2	8	64	28	0	39
K 3	33	60	7	0	40
K 4	33	59	8	0	39
K 5	25	60	15	0	40
K 6	18	75	5	2	40
K 7	34	66	0	0	41
<hr/>					
General Area Average %	21.4	65.0	12.9	.7	40

LEGEND:

Skill (primarily) acquired

Prior: prior to INSPECTOR employment

Job: on the job while INSPECTOR employed

Course: from a formal course while INSPECTOR employed

Other: no response and other invalid response

General Area Average %: the average of the skills in the general area

NOTE: This sample of responses includes only those respondents who indicated "yes" they do use the skill.

TABLE 30

OCCUPATIONAL SKILLS PROFILE (OSP) INSPECTORS

Skill Acquisition General Area L: Use Consulting Skills

<u>Skill Statement</u>	<u>Percent Prior</u>	<u>Percent Job</u>	<u>Percent Course</u>	<u>Percent Other</u>	<u>Number Reporting Use of Skill</u>
L 1	15	78	7	0	41
L 2	39	56	5	0	41
L 3	39	59	0	2	41
L 4	65	33	2	0	37
L 5	18	79	3	0	38
<hr/>					
General Area Average %	34.9	61.1	3.5	.5	40

LEGEND:

Skill (primarily) acquired
 Prior: prior to INSPECTOR employment
 Job: on the job while INSPECTOR employed
 Course: from a formal course while INSPECTOR employed
 Other: no response and other invalid response
 General Area Average %: the average of the skills in the general area

NOTE: This sample of responses includes only those respondents who indicated "yes" they do use the skill.

Table 31 reports the average of where the respondents acquired the skills for all the general area categories as well as for the entire profile. The largest number of respondents 75.3% reported that they acquired the skills informally on the job while inspector employed for general area of competence category E - Analyze Worksites. The general area of competence category D - Communicate Effectively skills were reported as 57% acquired prior to inspector employment. The category which had the highest number of invalid or no responses at 1.9% was B - Maintain Professional Role. The highest number of respondents, a 58% average, reported that the skills on the entire (OSP) are obtained informally on the job while inspector employed. An average of 32% of respondents report that the skills on the (OSP) are acquired prior to employment as an inspector. A total average of 9% respondents report that the skills on the (OSP) are acquired in a formal course, seminar or workshop while inspector employed. Only 1% of the responses concerning skill acquisition were invalid or no response.

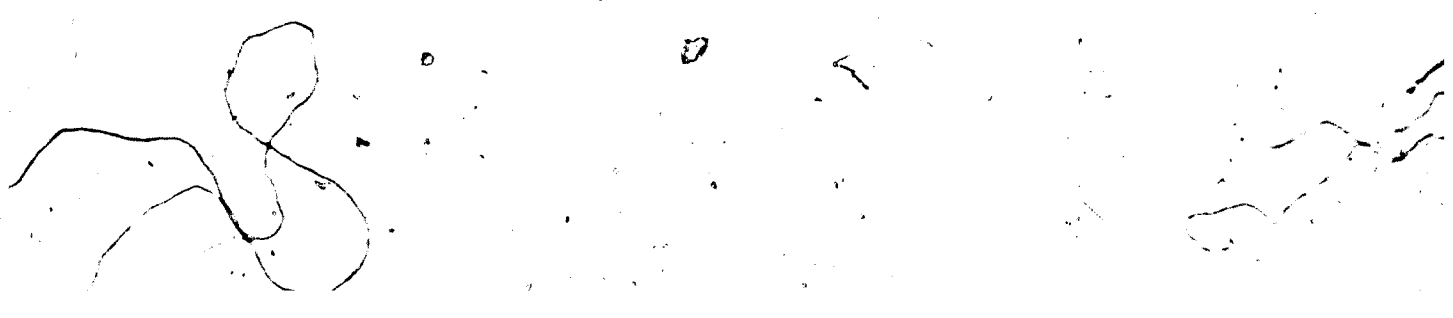


TABLE 31

OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS

Average Skill Acquisition
General Area of Competence Categories

<u>Category</u>	<u>Average Percent Prior</u>	<u>Average Percent Job</u>	<u>Average Percent Course</u>	<u>Average Percent Other</u>	<u>Average Number Reporting Use of Skill</u>
A	27.2	64.8	7.5	0.5	40
B	51.0	37.3	9.8	1.9	40
C	54.0	33.0	11.8	1.2	34
D	57.0	31.8	9.6	1.6	39
E	16.1	75.3	7.2	1.4	40
F	22.4	63.8	12.5	1.3	40
G	25.1	64.0	9.8	1.1	39
H	32.6	60.9	5.6	0.9	37
I	23.2	66.0	9.3	0.7	41
J	19.4	72.9	7.4	0.3	36
K	21.4	65.0	12.9	0.7	40
L	34.9	61.1	3.5	0.5	40
Profile Average %	32.0	58.0	9.0	1.0	39

LEGEND

Skill (primarily) acquired
 Prior: prior to INSPECTOR employment
 Job: on the job while INSPECTOR employed
 Course: from a formal course while INSPECTOR employed
 Other: no response and other invalid response
 Average Percent: the average of the skill percentages
 Profile Average %: the average of the general area percentages

NOTE:

This average of responses includes only those respondents who indicated "yes" they do use the skill.

CHAPTER V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS AND IMPLICATIONS

Summary

The main purpose of this study was systematically to identify and validate the skills required for an occupational health and safety officer (inspector) to perform his/her job. In order to carry out the study the Developing a Curriculum "DACUM" model identified by Adams (1974) and the Competency Analysis Profile system "CAP" model developed by Deane and Manuel (1976) were adapted. The adapted model used in this study to facilitate the identification of skills was named the Occupational Skills Profile system "OSP".

A second purpose of this study was to determine at what point in career development the skills identified and used by the inspectors were acquired.

The study consisted of two stages. The first stage involved the development of an Occupational Skills Profile "OSP" for an inspector. The "OSP" was developed during a three day workshop involving a group of practicing occupational health and safety officers (inspectors). The task for the workshop was to identify the general areas of

competence categories and specific skills required to perform the job of an inspector.

A total of twelve general areas of competence categories were identified with each having a varying number of specific skill statements. A total of one hundred and forty-six skill statements were identified and made up the completed "OSP".

The second stage was designed to determine the level of agreement/disagreement that the entire population of forty-one occupational health and safety officers (inspectors) in Alberta had about the skills or competencies identified on the "OSP". Agreement was considered to include respondents who reported use of the skill or perceived the skill to be required for the job of an inspector. The level of agreement to show that a skill was relevant represented the combined reported use of each skill and the perceived requirement of each skill even when the skill was not reported as used.

The validation stage of this study was based upon forty-one respondents. The extent to which the population of inspectors agreed that a skill statement was relevant varied from category to category and from skill to skill on the "OSP". A total of eighty-four of the one hundred and forty-six skill statements were reported as 100%

relevant by all respondents. The lowest reported level of agreement that a skill is relevant on the entire profile is 79%. The average extent of agreement for the total profile is 97.7%.

Further information was obtained during Stage II regarding the acquisition of the identified skill statements on the "OSP". Respondents who reported use of a skill were asked at what point in their career development they acquired it. From the respondents who indicated they use the skills an average of 67% reported they acquired the skills on the "OSP" while employed as an inspector. This includes an average of 58% of respondents reporting they acquired the skills informally on the job and an average of 9% reporting acquisition of the skills in a formal course, seminar or workshop while inspector employed. An average of 32% of respondents who indicated they use the skills reported they acquired the skills prior to being employed as an inspector.

Conclusions

1. The Stage I of the Occupational Skills Profile system "OSP" was an effective means of performing a skills analysis of an occupational health and safety officer (inspector).

2. The job of an occupational health and safety officer (inspector) consists of identifiable groups of skills as listed on the "OSP" as developed and validated during this study.

3. The acquisition of many of the skills that were identified and validated on the "OSP" occurred informally on the job while employed as an inspector.

Recommendations

As a result of this study, the following recommendations are made:

1. It is recommended that the "OSP" developed and validated in this study be utilized as a planning document in determining staff development needs.

2. It is recommended that the "OSP" be utilized as a basis for the development of a comprehensive staff training program.

3. It is recommended that specific modules of resource information be developed based upon the "OSP" which will enhance the opportunity for inspectors to access and improve skill competency and skill information on the job in a more formal manner.

4. It is recommended that the "OSP" be used as a basis for hiring new inspectors. The skills reported in this study as "primarily acquired prior to employment" be considered as

entry level requirements for new inspectors.

5. It is recommended that inspectors be provided with copies of the "OSP" and that self analysis be conducted by each inspector to determine his/her level of competency in each skill identified.

Implications for further study

The job of an Occupational Health and Safety Officer (Inspector) in Alberta is a specialized occupation with relatively few individuals working in this field. Training of inspectors is primarily conducted on the job and informally by a colleague or supervisor. The formal educational preparation of occupational health and safety officers (Inspectors) has not been carried out in a systematic manner based upon analyzed skills.

It is hoped that this study will provide an impetus for further research in this area. Recommendations for such research might include the following questions.

1. At what level of competence do the inspectors in Alberta perform the specific skill statements identified in this study?
2. What informal methods of training are used in assisting inspectors to acquire the skills?
3. Does the choice of method for training inspectors affect the level of competence at which skills are performed?

4. What types of training methods are used and most efficient and effective in training inspectors to perform the skills identified in this study?

5. What training approaches (such as modular training packages, computer software and other innovative training methods) need to be developed which will provide the required inspector skills.

6. What skills are required in other jurisdictions for similar inspectors to perform their jobs.

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APPENDIX A

COPY OF OCCUPATIONAL SKILLS PROFILE (OSP)
FOR OCCUPATIONAL HEALTH AND SAFETY
EDUCATION OFFICER

APPENDIX B

COPY OF OCCUPATIONAL SKILLS PROFILE (OSP)
FOR OCCUPATIONAL HEALTH AND SAFETY
OFFICER (INSPECTOR)

10F

REVIEW APPROPRIATE DATA AND INFORMATION FOR INSPECTIONS				
A 1				
Y	P	J	C	
N	NA	NT	NR	

SELECT AND LOCATE APPROPRIATE WORKSITES				
A 2				
Y	P	J	C	
N	NA	NT	NR	

RECOGNIZE HAZARDS DURING INSPECTIONS				
A 3				
Y	P	J	C	
N	NA	NT	NR	

ATTEND INTERNAL EXTERNAL COURSES IN AREA OF DHS				
B 1				
Y	P	J	C	
N	NA	NT	NR	

OBTAIN & RELAY INFORMATION TO EMPLOYER & OR EMPLOYEE				
B 2				
Y	P	J	C	
N	NA	NT	NR	

PARTICIPATE IN SAFETY ASSOCIATE				
Y	P			
N	NA			

OPERATE MOTOR VEHICLES				
C 1				
Y	P	J	C	
N	NA	NT	NR	

USE TELEPHONE SYSTEMS EFFECTIVELY				
C 2				
Y	P	J	C	
N	NA	NT	NR	

USE PHOTO-COPYING EQUIPMENT				
C 3				
Y	P	J	C	
N	NA	NT	NR	

USE APPROPRIATE INSTRUMENT DEVICES				
C 4				
Y	P	J	C	
N	NA	NT	NR	

USE A READ ANGLE METER TO DETERMINE SLOPES OF WALLS OF TRENCHES ETC.				
C 5				
Y	P	J	C	
N	NA	NT	NR	

OPERATE & SERVE & PO CAMERAS				
Y	P			
N	NA			

LISTEN EFFECTIVELY				
D 1				
Y	P	J	C	
N	NA	NT	NR	

WRITE LEGIBLY				
D 2				
Y	P	J	C	
N	NA	NT	NR	

USE EFFECTIVE TELEPHONE TECHNIQUES				
D 3				
Y	P	J	C	
N	NA	NT	NR	

REQUEST "SEARCH MASTER FILE"				
E 1				
Y	P	J	C	
N	NA	NT	NR	

ACCESS & REVIEW PREVIOUS ORDERS				
E 2				
Y	P	J	C	
N	NA	NT	NR	

ACCESS & REVIEW PREVIOUS PROSECUTION /FATAL FILES				
E 3				
Y	P	J	C	
N	NA	NT	NR	

COMPLETE DAILY & CORRECTION ACTIVITY SHEETS				
G 1				
Y	P	J	C	
N	NA	NT	NR	

REVIEW READING FILES & INTERDEPARTMENTAL INFORMATION				
G 2				
Y	P	J	C	
N	NA	NT	NR	

USE MICROFICHE READER				
G 3				
Y	P	J	C	
N	NA	NT	NR	

USE COMPUTER TERMINALS				
G 4				
Y	P	J	C	
N	NA	NT	NR	

COMPLETE ORDER FORMS WITH DETAILS				
G 5				
Y	P	J	C	
N	NA	NT	NR	

USE & ACT FILING S				
Y	P			
N	NA			

PREPARE SUPPLIES AND EQUIPMENT FOR INVESTIGATIONS				
I 1				
Y	P	J	C	
N	NA	NT	NR	

GATHER INITIAL INFORMATION (PRIOR TO INVESTIGATION)				
I 2				
Y	P	J	C	
N	NA	NT	NR	

MEASURE AND SKETCH SITE OF ACCIDENTS/ INCIDENTS				
I 3				
Y	P	J	C	
N	NA	NT	NR	

COMPLETE "REQUEST FOR EDUCATION SERVICE" FORM				
J 1				
Y	P	J	C	
N	NA	NT	NR	

IDENTIFY LEGISLATIVE RELEVANT SITUATION				
Y	P			
N	NA			

APPENDIX C

INSTRUCTIONS FOR COMPLETING THE VALIDATION OF THE OCCUPATIONAL SKILLS PROFILE (OSP)

INSTRUCTIONS FOR COMPLETING THE
VALIDATION OF THE OCCUPATIONAL
SKILLS PROFILE (OSP)

The accompanying occupational profile was developed by your colleagues. The Chart illustrates in a graphic style skills/tasks that an Occupational Health and Safety Officer performs on a regular basis. Your colleagues have indicated that, in their opinion, this chart is composite representation of the skills. It is now important to get your opinion about each task on the chart, or in other words, validate the complete chart.

There is a series of three questions that will be posed about each individual skill. The questions are:

1. Do you currently perform this skill/task?
2. (If you answered "YES" to question #1)
Where did you most significantly acquire this task?
3. (If you answered "NO" to question #1) &
Why do you not perform this task?

At the conclusion of the above examination of each skill/task, there is one small additional job:

4. Add omitted tasks that in your opinion should be included.

STEP #0

Acquaint yourself with the complete chart. First, examine the "General Areas of Competence" on the very right of the chart.

Next, take one general area and examine the specific tasks in that line. This step is best done by proceeding from the left to the right. When each line has been examined, you should be able to form a mental picture of the complete occupation.

Do not spend too much time on this aspect. If you wish more information on the development, arrangement, sequencing and format of the occupational profile, do not hesitate to inquire. But, it is not necessary for you to have an indepth knowledge of the production of the chart to perform the validation phase.

Now you are ready for the real work!

STEP #1

- Choose any "general area of competence" and carefully examine each specific skill within that general area.
- Begin with the skill in the left-most position and apply the following question to it. "Do I currently perform this task?" (Answer with a "YES" or "NO")
- Circle the "Y" if you perform the skill, or circle the "N" if you do not perform the skill.

STEP #2

(If you answered "NO" to the above question, then omit this step and proceed to STEP #3. If you answered "yes" then continue with this step)

- If you answered "YES" to the question, then you agree that you now perform the skill. The next question refers to the origin of the acquired skill.
- Apply the following question to the task being reviewed.

"Where did I most significantly obtain the training for this task?"

- 3 -

(Answer with)

- P= Prior to my employment with Occupational Health & Safety Division;
 J= On-The-Job while employed with Occupational Health & Safety Division;
 C= On a Course/Seminar while employed with Occupational Health & Safety Division.

	P	J	C	

- All of the above may have contributed, however which had the most significant effect on you learning this skill.

- You must decide whether you acquired the skill prior to your employment with the Division in which case you circle the "P".

Ⓟ	Ⓟ	J	C	

- If you acquired the skill while performing the regular field duties of your occupation, you would circle the "J".

Ⓟ	P	Ⓟ	C	

- If you acquired the skill while attending a course or seminar (regardless who sponsored it) during the employment with Occupational Health & Safety, then circle the "C".

Ⓟ	P	J	Ⓟ	

- You have now completed this competency and may proceed to the next competency to the right and apply question #1 as outlined in Step #1.

□	□
---	---

- Continue till you complete the whole general area, then proceed to the next general area.

□	□	□	□
□	□	□	□

STEP #3

(You answered "NO" to the first question and state that you do not now perform the skill under consideration)

Ⓝ				

- Now apply the following question to the specific skill.

"Why do I not perform this particular task?"

Answer with:

- NR= Not required by the occupation.
 NT= Required, but I'm not trained on this task.
 NA= Required, but I'm not assigned to this task.

Ⓝ	NR	NT	NA	

- 4 -

- If you feel that this task is not required during your regular duties, you would circle the "NR".
- If you feel that the task is part of the regular duties of the occupation, but you are not trained to do the skill, or the training is still in progress, then circle the "NT" on the chart.
- If you feel that the task is required, but you do not perform it because the task is not your personal assignment, or if the task being performed by someone else as part of their assignment, but is still a required task of your occupation then circle "NA".
- You are now finished with this specific skill and may move to the next skill on the right and apply question #1 as outlined in Step #1.
- Continue till you complete the whole general area and then proceed to the next general area.

NOTE: You must have two circles in the "YES" line or two circles in the "NO" line. It is invalid to have one circle in each line or more than two circles.

STEP #4

- After completing the above series of steps for each task, you are ready for the next chore which is to include additional tasks.
- Choose a row of tasks and critically examine the row for tasks that may have been omitted.
- If in your opinion a task should be included, then decide where on the row you would place your additional task.
- Then, write in your task statement in the appropriate space.
- Also, provide the usual indication as to "Where" this skill should be obtained, (P, J, C,) or "Why" this skill is not being performed (NT, NA) as outlined in Steps #1, 2, and 3.
- Complete each row of tasks by looking for omitted tasks and writing in your addition.

N	NR	NT	NA	

N	NR	NT	NA	

N	NR	NT	NA	

Y		J		

N	NR			

Y				
		NR		

Y		J		
			NA	

✓ OK

✓ OK

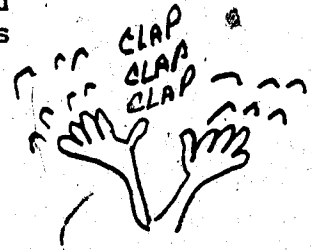
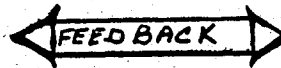
X No

X No

- 5 -

STEP #5

- You have now completed the whole process and should return the chart to the person who is designated as a contact.
- All the participants of this process extend a sincere "Thank You" for a job well done. Everyone appreciates your interest and concern.
- You will be informed of the aggregate results in the near future.
- THANK YOU.



APPENDIX D

DEMOGRAPHIC DATA SHEET
FOR STAGE I AND II PARTICIPANTS

DEMOGRAPHIC DATA SHEET FOR PHASE I AND II PARTICIPANTS

1. NAME:

2. BUSINESS ADDRESS:

PHONE:

3. LENGTH OF TIME IN YOUR PRESENT POSITION:

0 - 1 YEARS () 1 - 5 YEARS () 5 - 10 YEARS ()
10+ YEARS ().

4. TOTAL LENGTH OF TIME IN OCCUPATIONAL HEALTH AND SAFETY:

0 - 1 YEARS () 1 - 5 YEARS () 5 - 10 YEARS ()
10+ YEARS ().

5. LIST PREVIOUS OCCUPATIONAL HEALTH AND SAFETY OFFICER
(INSPECTOR) EXPERIENCE:

EMPLOYER:

HOW LONG?

EMPLOYER:

HOW LONG?

6. PREVIOUS OCCUPATIONAL HEALTH AND SAFETY EXPERIENCE:

EMPLOYER:

HOW LONG?

7. STATE HIGHEST GRADE LEVEL COMPLETED IN HIGH SCHOOL:

8. LIST TRADE CERTIFICATES HELD:

9. LIST ANY OTHER FORMAL TRAINING YOU HAVE COMPLETED.
COLLEGE, UNIVERSITY, TECHNICAL INSTITUTE OR TRADE SCHOOL.
10. WHAT % OF YOUR POSITION TIME IS DEVOTED TO INSPECTION
DUTIES?
11. PLEASE ADD ANY ADDITIONAL COMMENTS BELOW.
- 2

APPENDIX E

PERCENTAGE DISTRIBUTION OF
VALIDATION RESPONSES

**OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS**

122

Percentage Distribution of Validation Responses

Category A: Inspect Worksites

<u>Skill Statement</u>	<u>Percent responses indicating use of an acquired skill</u>				<u>Percent responses indicating skills not used as</u>				<u>Percent No. Response</u>
Percent	P	J	C	O	NR	NT	NA	O	
A 1	10	85	5	0	0	0	0	0	0
A 2	5	88	7	0	0	0	0	0	0
A 3	47	46	7	0	0	0	0	0	0
A 4	7	73	20	0	0	0	0	0	0
A 5	17	71	10	0	0	0	0	0	2
A 6	15	83	2	0	0	0	0	0	0
A 7	7	76	17	0	0	0	0	0	0
A 8	54	44	2	0	0	0	0	0	0
A 9	51	49	0	0	0	0	0	0	0
A10	10	73	12	5	0	0	0	0	0
A11	20	76	4	0	0	0	0	0	0
A12	39	39	17	3	0	2	0	0	0
A13	24	71	5	0	0	0	0	0	0
A14	29	66	0	0	3	0	2	0	0
A15	27	66	7	0	0	0	0	0	0
A16	68	25	5	0	2	0	0	0	0

LEGEND

Acquired Skill:

- P: Prior to OHSO employment
 J: On the job while OHSO employed
 C: Of a formal course while OHSO employed
 O: Indicated used and other invalid response

Skill not used as:

- NR: not required
 NT: need training
 NA: not yet assigned
 O: indicated not used and other invalid response

NO RESPONSE: did not indicate whether skill was used

OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS

123

Percentage Distribution of Validation Responses
Category B: Maintain Professional Role

<u>Skill Statement</u>	<u>Percent responses indicating use of an acquired skill</u>				<u>Percent responses indicating skills not used as</u>				<u>Percent No. Response</u>
Percent	P	J	C	O	NR	NT	NA	O	
B 1	10	42	41	0	0	0	7	0	0
B 2	25	63	10	2	0	0	0	0	0
B 3	29	44	3	0	17	0	7	0	0
B 4	85	10	2	3	0	0	0	0	0
B 5	88	7	2	3	0	0	0	0	0
B 6	37	51	3	2	2	0	0	0	5
B 7	54	46	0	0	0	0	0	0	0
B 8	68	29	0	3	0	0	0	0	0
B 9	37	17	41	0	5	0	0	0	0
B10	10	66	22	2	0	0	0	0	0
B11	88	5	0	7	0	0	0	0	0
B12	68	27	0	5	0	0	0	0	0
B13	37	56	2	0	2	0	0	0	3
B14	39	59	0	0	2	0	0	0	0
B15	62	17	15	2	2	2	0	0	0

LEGEND

Acquired Skill:

- P: Prior to OHSO employment
J: On the job while OHSO employed
C: Of a formal course while OHSO employed
O: Indicated used and other invalid response

Skill not used as:

- NR: not required
NT: need training
NA: not yet assigned
O: indicated not used and other invalid response

NO RESPONSE: did not indicate whether skill was used

**OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS**

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**Percentage Distribution of Validation Responses
Category C: Use relevant equipment**

<u>Skill Statement</u>	<u>Percent responses indicating use of an acquired skill</u>				<u>Percent responses indicating skills not used as</u>				<u>Percent No. Response</u>
Percent	P	J	C	O	NR	NT	NA	O	
C 1	100	0	0	0	0	0	0	0	0
C 2	85	15	0	0	0	0	0	0	0
C 3	59	37	2	2	0	0	0	0	0
C 4	46	29	12	3	3	5	2	0	0
C 5	41	51	5	3	0	0	0	0	0
C 6	54	41	5	0	0	0	0	0	0
C 7	78	20	2	0	0	0	0	0	0
C 8	56	32	7	0	5	0	0	0	0
C 9	68	20	3	2	2	5	0	0	0
C10	32	37	0	2	20	5	4	0	0
C11	41	34	5	5	3	12	0	0	0
C12	37	20	29	0	2	12	0	0	0
C13	20	51	24	0	2	0	3	0	0
C14	24	27	20	0	7	15	5	0	2
C15	10	20	12	2	20	24	12	0	0
C16	12	24	20	2	15	17	10	0	0
C17	15	22	22	2	12	15	10	0	2
C18	17	12	7	0	17	27	20	0	0

LEGEND

Acquired Skill:

- P: Prior to OHSO employment
 J: On the job while OHSO employed
 C: Of a formal course while OHSO employed
 O: Indicated used and other invalid response

Skill not used as:

- NR: not required
 NT: need training
 NA: not yet assigned
 O: indicated not used and other invalid response

NO RESPONSE: did not indicate whether skill was used

**OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS**

125

**Percentage Distribution of Validation Responses
Category D: Communicate Effectively**

<u>Skill Statement</u>	<u>Percent responses indicating use of an acquired skill</u>				<u>Percent responses indicating skills not used as</u>				<u>Percent No. Response</u>
Percent	P	J	C	O	NR	NT	NA	O	
D 1	88	0	5	2	0	2	3	0	0
D 2	73	15	10	2	0	0	0	0	0
D 3	83	12	3	0	2	0	0	0	0
D 4	59	27	5	3	2	2	0	0	2
D 5	66	10	10	2	5	5	0	0	2
D 6	76	20	2	0	0	0	0	0	2
D 7	61	34	5	0	0	0	0	0	0
D 8	47	37	12	2	0	0	2	0	0
D 9	15	71	12	2	0	0	0	0	0
D10	17	66	15	2	0	0	0	0	0
D11	49	42	5	0	0	2	2	0	0
D12	39	32	24	0	2	3	0	0	0
D13	41	34	12	3	5	5	0	0	0

LEGEND

Acquired Skill:

- P: Prior to OHSO employment
J: On the job while OHSO employed
C: Of a formal course while OHSO employed
O: Indicated used and other invalid response

Skill not used as:

- NR: not required
NT: need training
NA: not yet assigned
O: indicated not used and other invalid response

NO RESPONSE: did not indicate whether skill was used

OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS

126

Percentage Distribution of Validation Responses
Category E: Analyze Worksites

<u>Skill Statement</u>	<u>Percent responses indicating use of an acquired skill</u>				<u>Percent responses indicating skills not used as</u>				<u>Percent No. Response</u>
Percent	P	J	C	O	NR	NT	NA	O	
E 1	3	66	27	2	0	0	2	0	0
E 2	7	90	3	0	0	0	0	0	0
E 3	3	90	5	2	0	0	0	0	0
E 4	2	88	5	3	0	0	2	0	0
E 5	24	73	3	0	0	0	0	0	0
E 6	10	76	10	2	0	2	0	0	0
E 7	10	83	2	2	0	0	3	0	0
E 8	44	54	2	0	0	0	0	0	0
E 9	17	63	17	3	0	0	0	0	0
E10	22	73	5	0	0	0	0	0	0
E11	34	63	0	0	3	0	0	0	0

LEGEND

Acquired Skill:

P: Prior to OHSO employment
J: On the job while OHSO employed
C: Of a formal course while OHSO employed
O: Indicated used and other invalid response

Skill not used as:

NR: not required
NT: need training
NA: not yet assigned
O: indicated not used and other invalid response

NO RESPONSE: did not indicate whether skill was used

**OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS**

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**Percentage Distribution of Validation Responses
Category F: Enforce Legislation**

<u>Skill Statement</u>	<u>Percent responses indicating use of an acquired skill</u>				<u>Percent responses indicating skills not used as</u>				<u>Percent No. Response</u>
Percent	P	J	C	O	NR	NT	NA	O	
F 1	10	80	7	3	0	0	0	0	0
F 2	5	68	24	3	0	0	0	0	0
F 3	7	71	20	2	0	0	0	0	0
F 4	10	68	20	2	0	0	0	0	0
F 5	73	24	3	0	0	0	0	0	0
F 6	56	37	2	0	3	0	2	0	0
F 7	37	51	5	0	5	0	0	0	2
F 8	7	78	10	0	5	0	0	0	0
F 9	2	76	12	3	0	2	0	0	5
F10	10	66	20	0	0	2	0	0	2

LEGEND

Acquired Skill:

- P: Prior to OHSO employment
 J: On the job while OHSO employed
 C: Of a formal course while OHSO employed
 O: Indicated used and other invalid response

Skill not used as:

- NR: not required
 NT: need training
 NA: not yet assigned
 O: indicated not used and other invalid response

NO RESPONSE: did not indicate whether skill was used

OCCUPATIONAL SKILLS PROFILE (OSP) INSPECTORS

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Percentage Distribution of Validation Responses Category G: Perform Administrative Duties

<u>Skill Statement</u>	<u>Percent responses indicating use of an acquired skill</u>				<u>Percent responses indicating skills not used as</u>				<u>Percent No. Response</u>
Percent	P	J	C	O	NR	NT	NA	O	
G 1	12	59	27	0	2	0	0	0	0
G 2	5	88	5	2	0	0	0	0	0
G 3	7	81	12	0	0	0	0	0	0
G 4	5	68	10	0	5	5	5	0	2
G 5	2	76	17	5	0	0	0	0	0
G 6	22	71	5	0	0	0	0	0	2
G 7	5	73	15	3	2	0	0	0	2
G 8	12	81	7	0	0	0	0	0	0
G 9	66	29	3	2	0	0	0	0	0
G10	41	51	5	3	0	0	0	0	0
G11	54	27	5	0	7	5	2	0	0
G12	29	46	5	3	5	0	10	0	2
G13	24	64	12	0	0	0	0	0	0
G14	46	32	2	0	0	5	10	0	5

LEGEND

Acquired Skill:

- P: Prior to OHSO employment
J: On the job while OHSO employed
C: Of a formal course while OHSO employed
O: Indicated used and other invalid response

Skill not used as:

- NR: not required
NT: need training
NA: not yet assigned
O: indicated not used and other invalid response

NO RESPONSE: did not indicate whether skill was used

OCCUPATIONAL SKILLS PROFILE (OSP) INSPECTORS

129

Percentage Distribution of Validation Responses Category H: Interface with Various Groups.

<u>Skill Statement</u>	<u>Percent responses indicating use of an acquired skill</u>				<u>Percent responses indicating skills not used as</u>				<u>Percent No. Response</u>
Percent	P	J	C	O	NR	NT	NA	O	
H1	46	44	3	2	5	0	0	0	0
H2	44	46	5	0	3	0	2	0	0
H3	17	78	5	0	0	0	0	0	0
H4	5	78	5	2	5	0	5	0	0
H5	54	39	5	2	0	0	0	0	0
H6	12	80	5	0	3	0	0	0	0
H7	59	34		0	2	0	0	0	0
H8	32	61		0	0	2	0	0	0
H9	0	39		0	17	7	24	3	0

LEGEND

Acquired Skill:

- P: Prior to OHSO employment
J: On the job while OHSO employed
C: Of a formal course while OHSO employed
O: Indicated used and other invalid response

Skill not used as:

- NR: not required
NT: need training
NA: not yet assigned
O: indicated not used and other invalid response

NO RESPONSE: did not indicate whether skill was used

OCCUPATIONAL SKILLS PROFILE (OSP) INSPECTORS

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Percentage Distribution of Validation Responses Category I: Perform Accident/Incident Investigations

<u>Skill Statement</u>	<u>Percent responses indicating use of an acquired skill</u>				<u>Percent responses indicating skills not used as</u>				<u>Percent No. Response</u>
	Percent	P.	J	C	O	NR	NT	NA	O
I 1	17	68	12	3	0	0	0	0	0
I 2	15	73	10	2	0	0	0	0	0
I 3	34	54	12	0	0	0	0	0	0
I 4	29	59	10	2	0	0	0	0	0
I 5	20	68	10	0	2	0	0	0	0
I 6	29	61	7	3	0	0	0	0	0
I 7	17	66	17	0	0	0	0	0	0
I 8	34	51	15	0	0	0	0	0	0
I 9	15	78	7	0	0	0	0	0	0
I 10	10	76	12	0	0	0	0	0	2
I 11	34	63	3	0	0	0	0	0	0
I 12	37	56	5	2	0	0	0	0	0
I 13	34	54	12	0	0	0	0	0	0
I 14	24	69	7	0	0	0	0	0	0
I 15	14	76	10	0	0	0	0	0	0
I 16	20	70	10	0	0	0	0	0	0
I 17	12	80	0	0	0	0	3	0	5

LEGEND

Acquired Skill:

P: Prior to OHSO employment
J: On the job while OHSO employed
C: Of a formal course while OHSO employed
O: Indicated used and other invalid response

Skill not used as:

NR: not required
NT: need training
NA: not yet assigned
O: indicated not used and other invalid response

NO RESPONSE: did not indicate whether skill was used

**OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS**

131

Percentage Distribution of Validation Responses
Category J: Promote Educational Activities

<u>Skill Statement</u>	<u>Percent responses indicating use of an acquired skill</u>				<u>Percent responses indicating skills not used as</u>				<u>Percent No. Response</u>
Percent	P	J	C	O	NR	NT	NA	O	
J 1	0	80	17	0	3	0	0	0	0
J 2	27	61	12	0	0	0	0	0	0
J 3	24	73	0	0	0	3	0	0	0
J 4	44	46	10	0	0	0	0	0	0
J 5	27	59	7	2	0	0	5	0	0
J 6	20	61	2	0	3	0	12	0	2
J 7	17	66	10	0	2	5	0	0	0
J 8	5	76	2	0	5	0	7	2	3
J 9	12	46	0	0	10	5	24	3	0
J10	10	37	5	0	14	5	22	5	2
J11	0	93	5	0	0	0	2	0	0

LEGEND

Acquired Skill:

P: Prior to OHSO employment
J: On the job while OHSO employed
C: Of a formal course while OHSO employed
O: Indicated used and other invalid response

Skill not used as:

NR: not required
NT: need training
NA: not yet assigned
O: indicated not used and other invalid response

NO RESPONSE: did not indicate whether skill was used

OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS

132

Percentage Distribution of Validation Responses
Category K: Interpret Legislation

<u>Skill Statement</u>	<u>Percent responses indicating use of an acquired skill</u>				<u>Percent responses indicating skills not used as</u>				<u>Percent No. Response</u>
Percent	P	J	C	O	NR	NT	NA	O	
K1	0	71	27	2	0	0	0	0	2
K2	7	61	27	0	2	3	0	0	0
K3	32	59	7	0	0	2	0	0	0
K4	32	56	7	0	2	0	3	0	0
K5	24	59	15	0	2	0	0	0	0
K6	17	73	5	2	3	0	0	0	0
K7	34	66	0	0	0	0	0	0	0

LEGEND

Acquired Skill:

P: Prior to OHSO employment
J: On the job while OHSO employed
C: Of a formal course while OHSO employed
O: Indicated used and other invalid response
NO RESPONSE: did not indicate whether skill was used

Skill not used as:

NR: not required
NT: need training
NA: not yet assigned
O: indicated not used and other invalid response

**OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS**

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**Percentage Distribution of Validation Responses
Category L: Use Consulting Skills**

<u>Skill Statement</u>	<u>Percent responses indicating use of an acquired skill</u>					<u>Percent responses indicating skills not used as</u>				<u>Percent No. Response</u>
Percent	P	J	C	O		NR	NT	NA	O	
L1	15	78	7	0		0	0	0	0	0
L2	39	56	5	0		0	0	0	0	0
L3	39	59	0	2		0	0	0	0	0
L4	59	29	2	0		3	7	0	0	0
L5	17	73	2	0		0	0	5	0	3

LEGEND

Acquired Skill:

P: Prior to OHSO employment
J: On the job while OHSO employed
C: Of a formal course while OHSO employed
O: Indicated used and other invalid response

NO RESPONSE: did not indicate whether skill was used

Skill not used as:

NR: not required
NT: need training
NA: not yet assigned
O: indicated not used and other invalid response

OCCUPATIONAL SKILLS PROFILE (OSP)
INSPECTORS

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Average Percentage Distribution of Validation Responses
General Categories

<u>Category</u>	<u>Average percent indicating use of an acquired skill</u>				<u>Average percent indicating skill is not used as</u>				<u>Average Percent No Response</u>
	P	J	C	O	NR	NT	NA	O	
A	26.8	64.0	7.7	0.5	0.3	0.2	0.2	0.0	0.3
B	48.9	35.9	9.4	2.0	2.1	0.2	1.0	0.0	0.5
C	44.2	27.2	9.7	1.4	5.9	7.6	3.7	0.0	0.3
D	54.8	30.5	9.2	1.5	1.3	1.5	0.6	0.0	0.6
E	16.0	74.5	7.1	1.3	0.2	0.2	0.7	0.0	0.0
F	21.7	62.0	12.2	1.2	1.2	0.5	0.2	0.0	1.0
G	23.7	60.3	9.3	1.2	1.6	1.0	1.9	0.0	1.0
H	29.8	55.6	5.1	0.8	3.8	1.1	3.5	0.3	0.0
I	23.2	66.0	9.3	0.7	0.2	0.0	0.2	0.0	0.4
J	16.9	63.4	6.4	0.2	3.3	1.6	6.6	0.9	0.7
K	20.9	63.4	12.5	0.4	1.3	0.7	0.4	0.0	0.4
L	33.7	59.0	3.4	0.5	0.5	1.4	1.0	0.0	0.5
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Profile Average %	30.0	55.2	8.4	1.0	1.8	1.3	1.7	0.1	0.5

LEGEND

Acquired Skill:

- P: Prior to OHSO employment
J: On the job while OHSO employed
C: Of a formal course while OHSO employed
O: Indicated used and other invalid response

Skill not used as:

- NR: not required
NT: need training
NA: not yet assigned
O: indicated not used and other invalid response

NO RESPONSE: did not indicate whether skill was used

AVERAGE %: the average of the skill percentages

PROFILE AVERAGE %: the average of the category percentages