



Treasury Board of Canada
Secrétariat

Secrétariat du Conseil du Trésor
du Canada

CLASSIFICATION STANDARD

PHOTOGRAPHY

TECHNICAL CATEGORY

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PHOTOGRAPHY

TECHNICAL CATEGORY

Issued by:
Classification, Human Resources
Information Systems and Pay Division
Personnel Policy Branch 1986

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Classification Standard
 Photography Group
 RECORD OF AMENDMENTS

Amendment No.	Date	Remarks
1	1971	B. M. P. Nos 1; 13: Added
2	1986	a) Group Definition: Amended
		b) B. M. P. Nos 1; 12; 13: Deleted
		c) B. M. P. Nos 14; 15; 16: Added
		d) B. M. P. No. 4: Amended
		e) Factors: - <u>Skill and Knowledge</u> : Notes to Raters: Clarified
		- Technical Responsibilities: Degree definitions: Clarified
		- <u>Supervision</u> : Definitions: Notes to Raters: and, Degree definitions: Clarified
		f) Sexual Stereotyping: Eliminated
		g) Statement of Minimum Qualifications: Deleted

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INTRODUCTION

This standard describes the point-rating plan to be used to evaluate jobs allocated to the Photography Group. It consists of an introduction, general definitions of the Technical Category and the occupational group, point-rating scales and bench-mark position descriptions.

Point rating is an analytical, quantitative method of determining the relative values of jobs. It is particularly suited to heterogeneous occupational groups in which jobs consist of varied combinations of tasks. Essentially, point-rating plans define characteristics or factors common to the jobs being evaluated. They define degrees of each factor and allocate a point value to each degree. The total value determined for each job is the sum of the point values assigned by the raters.

All methods of job evaluation require the exercise of judgement and the orderly collection and analysis of information in order that consistent judgements can be made. The point-rating method facilitates rational discussion and resolution of differences in determining the relative values of jobs.

Factors

The combined factors do not describe all aspects of jobs. They deal only with those characteristics that can be defined and distinguished and that are useful in determining the relative values of jobs.

Five factors are used in this plan. Two of these are two-dimensional, three are defined in terms of two or more related elements, and two are single element factors.

Point Values

The maximum point value assigned to each factor reflects its relative importance. Similarly, point values have been assigned to the degrees of the factors.

Point values of the degrees of each factor increase arithmetically. The minimum point value assigned to four of the factors is one-fifth of their respective maximum value, and for the fifth, Supervision, it is one-tenth.

Rating Plan

In the rating plan the following factors, elements, weights and point values are used.

<u>Factor</u>	<u>Element</u>	<u>Percentage of Total Points</u>	<u>Point Values</u>	
			<u>Minimum</u>	<u>Maximum</u>
Skill and Knowledge		30%	60	300
Technical Responsibility	Scope for Initiative and Judgement	30	60	300
Responsibility for Contacts	Nature and Purpose of Contacts Persons Contacted	10	20	100
Conditions of Work		20	40	200
	Concentration		10	50
	Physical Effort		10	50
	Environment Hazards		10 10	50 50
<u>Supervision</u>	Nature of Supervisory Responsibility Number of Employees Supervised	10	10	100
		<u>100</u>		

Bench-Mark Positions

Bench-mark position descriptions are used to exemplify degrees of each factor or element. Each description consists of a brief summary, a list of the principal duties with the percentage of time devoted to each, and a specification describing each of the point-rating factors and elements as it appears in the job. The bench-mark positions have been evaluated, and the degree and point value assigned to each factor are shown in the specifications.

The rating scales identify the bench-mark position descriptions that exemplify each degree. These descriptions are an integral part of the point-rating plan and are used to ensure consistency in application of the rating scales.

Use of the Standard

There are six steps in the application of this classification standard:

1. Allocation of the position to the category and the group is confirmed by reference to the definitions and the descriptions of inclusions and exclusions.
2. The position description is studied to ensure understanding of the position as a whole and of each factor. The relation of the position being rated to positions above and below it in the organization is also studied.
3. Tentative degrees of each factor in the position being rated are determined by comparison with degree definitions in the rating scales. Uniform application of degree definitions requires frequent reference to the descriptions of factors and the notes to raters.

4. The description of the factor in each of the bench-mark positions exemplifying the degree tentatively established is compared with the description of the factor in the position being rated. Comparisons are also made with descriptions of the factor in bench-mark positions for the degrees above and below the one tentatively established.
5. The point values for all factors are added to determine the tentative total point rating.
6. The position being rated is compared as a whole to positions to which similar total point values have been assigned, as a check on the validity of the total rating.

Determination of Levels

The ultimate objective of job evaluation is the determination of the relative difficulty of jobs in each occupational group. Jobs that fall within a designated range of point values will be regarded as of equal difficulty and will be allocated to the same level.

CATEGORY DEFINITION

Occupational categories were repealed by the Public Service Reform Act (PSRA), effective April 1, 1993. Therefore, the occupational category definitions have been deleted from the classification standards.

GROUP DEFINITION

For occupational group allocation, it is recommended that you use [the Occupational Group Definition Maps](#), which provide the 1999 group definition and their corresponding inclusion and exclusion statements. The maps explicitly link the relevant parts of the overall 1999 occupational group definition to each classification standard.

RATING SCALES

PHOTOGRAPHY GROUP

FACTOR WEIGHTS

SKILL AND KNOWLEDGE	300
TECHNICAL RESPONSIBILITY	300
RESPONSIBILITY FOR CONTACTS	100
CONDITIONS OF WORK	200
SUPERVISION	100
	1,000

SKILL AND KNOWLEDGE

This factor is used to measure the difficulty of the duties in terms of the vocational preparation required to learn the skills and to acquire the knowledge needed to perform the duties of the position.

Definitions

"Skill" refers to the facility to apply or modify available photographic techniques, equipment and processes to the range of subject matter encountered, and to perform such tasks as preparing and arranging the subject for photography.

"Knowledge" refers to understanding of the theories and techniques pertaining to photography and of the characteristics of the photographic subject matter, of the capabilities and limitations of the materials, processes and equipment, of the use to be made of photographic work, of the standards required, of the programs and requirements of the organization served, and of the administrative practices and procedures.

Notes to Raters

Skill and knowledge in photography is normally acquired by formal or private study, by on-the-job training under a qualified worker, and by working in related and progressively more responsible jobs.

The degrees of the Skill and Knowledge factor assigned to bench-mark positions have been established by the comparative ranking of key positions in the Photography Group. The eight degrees of the factor are not directly related to the numbers of years required to acquire skill and knowledge but indicate the relative requirements of positions within the group.

In evaluating positions under this factor, raters are to consider the number and difficulty of such techniques as studio, industrial and field photography, micro-, and macro-photography, infrared, ultraviolet and high speed photography; subject illumination techniques, such as cross polarizing light illumination, back lighting, oblique, reflected and shadowless lighting, infrared luminescence and ultraviolet fluorescence; projection printing; colour film developing; colour isolation; and, chemical process control techniques. Raters should also consider the variety of equipment and material used, the variety and characteristics of the subject matter, and the requirement for knowledge of the photographic applications and requirements of the fields of work for which the service is provided.

The degree tentatively selected is to be confirmed by comparing the duties of the position being rated with the duties and specifications of the bench-mark positions that exemplify that degree.

RATING SCALE - SKILL AND KNOWLEDGE

Degree of Skill and Knowledge	<u>Points</u>	Bench-mark Position Descriptions	Page
1	60	Photographer, Military College, Department of National Defence Photographic Processor, Department of National Defence	9.1 11.1
2	94	Junior Photographer, Archaeological Project	6.1
3	128	Assignment Photographer, Department of National Health and Welfare	2.1
4	162	General Photographer, Department of National Defence Technician, Earth Imagery Reproduction, Department of Energy, Mines and Resources	5.1 15.1
5	196	Photographer, Physical Metallurgy Division, Department of Energy, Mines and Resources	10.1
6	230	Medical Photographer, Department of Veterans Affairs Photographer, Agricultural Research Station	7.1 8.1
7	265	Chief Photographer, Geological Survey of Canada Technologist, Earth Imagery Reproduction, Department of Energy, Mines and Resources	3.1 16.1
8	300	Chief Photographer, National Gallery of Canada Technical Supervisor, Earth Imagery Reproduction, Department of Energy, Mines and Resources	4.1 14.1

TECHNICAL RESPONSIBILITY

This factor is used to measure the difficulty and importance of the duties of the position in terms of the scope for initiative and judgement within the limits imposed on the position.

Definitions

"Scope for initiative and judgement" refers to the freedom to take particular courses of action within the framework of guidelines and directives, the requirement to select, modify or devise procedures and techniques, the existence of precedents, the availability of suitable equipment, and the extent to which the work is checked or reviewed.

"Officer" refers to persons to whom the head of the photographic unit reports for administrative purposes or engineers, scientists or other personnel for whom photographic work may be performed, and who may establish requirements for the work and review the adequacy of finished work.

Notes to Raters

In evaluating positions under this factor all the characteristics of each degree of initiative and judgement required are to be considered. Generally speaking, the criterion for the assignment of positions to degrees is that a position must include most of the characteristics of the degree to which it is assigned.

The degree tentatively selected is to be confirmed by comparing the duties of the position being rated with the duties and specifications of the bench-mark positions that exemplify the degree tentatively selected.

RATING SCALE - TECHNICAL RESPONSIBILITY			
Scope for Initiative and Judgement	Degree/ Points	Bench-mark Position Descriptions	Page
Basic photographic work. - Work is assigned in terms of specific requirements and is performed according to established practices and instruction, using standard material, basic procedures and techniques. The material and the equipment available are adequate for the work required. Some adjustment of specified procedures and limited selection of techniques, material and equipment are necessary. There is little scope for independent action and decisions. Completed work is checked for quality and to ensure that requirements are met.	1 / 60	Photographic Processor, Department of National Defence	11.1
General or specialized photographic work. - Work is assigned in terms of specific requirements, is performed according to established practices and general instructions, and requires selecting and using basic or established specialized procedures and techniques. Some interpretation and adaptation of precedent may be necessary. There is some scope for independent action and decisions within the framework of instructions and established practices. Completed work is checked for quality and to ensure that requirements are met.	2 / 120	Assignment Photographer, Department of National Health and Welfare General Photographer, Department of National Defence Junior Photographer, Archaeological Project Photographer, Military College, Department of National Defence Technician, Earth Imagery Reproduction, Department of Energy, Mines and Resources	2.1 5.1 6.1 9.1 15.1
Advanced and specialized photographic work. - Work is assigned in terms of a set of specific objectives and is performed according to standard, new or modified specialized methods and techniques and technical general instructions. Advice or guidance can be obtained when dealing with unusual difficulties or requirements. Instructions concerning priorities, and general methods for scheduling, organizing and controlling the work are available. The work requires selecting, modifying or devising, basic and advanced or new procedures and techniques and providing technical assistance in their application. Existing precedents usually require somewhat involved interpretation and adaptations. Particular combinations of available equipment and materials are required to overcome technical or other limitations imposed by the subject matter or other factors. There is appreciable scope for independent actions and decisions in adjusting or adapting standard or established procedures and techniques when dealing with special requirements or in overcoming limitations. Completed work is reviewed by the officer concerned or by a senior photographer for precision, optimum rendition and quality of the result obtained.	3 / 180	Photographer, Physical Metallurgy Division, Department of Energy, Mines and Resources	10.1
Work is assigned in term of general objectives or particular aim of the undertakings supported, outlined in discussion with the scientist or professional concerned. Critical details of the results desired may be expressed in general terms only. Advanced and specialized new or standard and modified methods complemented by text books and specialized literature are available for the specialization area. Planning general instructions, directives and guidelines are also available. Broad instructions and limited help can be obtained in dealing with unusual problems. Most of the precedents that exist are remotely applicable and necessitate broad interpretation and considerable adaptations. There is a requirement to provide technical leadership in the resolution of problems and in the adaptation and the utilization of advanced new or modified procedures and techniques. The work requires devising intricate adaptations or unique combinations of equipment, material, techniques and procedures; devising, evaluating, recommending or approving the adoption of new or modified techniques and standards. There is a requirement to specify, evaluate and advise on new acquisitions. There is considerable scope in deciding independently on the best approach to be taken to deal with new requirements and technical problems, in organizing and conducting involved undertakings, in deciding on critical modifications of the techniques and procedures employed and in determining, recommending or approving corrective techniques. Considerable scope is given in planning and allocating tasks, utilizing resources and in controlling the work performed. The work of the position is reviewed by the officer, the scientist or other professionals concerned and/or by a technical supervisor for acceptability of the results. The organization of the work, the utilization of the resources and the cost and quality of the service provided by the Unit are reviewed by a supervisor or the administration officer concerned.	4 / 240	Chief Photographer, Geological Survey of Canada Chief Photographer, National Gallery of Canada Medical Photographer, Department of Veterans Affairs Photographer, Agricultural Research Station Technologist, Earth Imagery Reproduction, Department of Energy, Mines and Resources	3.1 4.1 7.1 8.1 16.1
Work is assigned in terms of long range and/or unique scientific project support demand and requirements, the main aims of the scientific projects supported, and of the budgetary resources and administrative limitations, determined in conjunction with the officers, professionals or scientists concerned. The work is undertaken, planned and conducted or controlled by the position considering the priorities, the Service's resources capability, the contribution required and the Service's policies, general directives and guidelines. There is a requirement to deal with situations or unique technical difficulties for which, in most cases, no precedents are known to exist. Work for which the technical assistance usually obtainable is only indicative of hypothetical solutions due to the unusual or pioneering nature of the scientific undertakings supported and the diversity and variability of the specific results and requirements to be met. There is a requirement to direct, advise on and/or conduct work involving the devising, the evaluation and the use of unique, new and advanced photographic techniques, systems and procedures, the in-house construction or extensive modification of special photographic apparatus, set up or systems, involving experimenting unusual combinations of material, equipment and techniques. There is broad scope in taking independent actions and decisions to deal with situations or technical problems for which no precedents exist, or in undertaking, conducting and controlling the work, utilizing and controlling the resources and the quality. Broad scope in determining the technical capability of the Service, the feasibility of the results and the extent of the photographic contribution. The organization of the Service work, the utilization of the resources, the cost and the quality of the photographic support provided and the acceptability of the results, are reviewed by the administration officer, the professionals or research and development scientists concerned.	5 / 300	Technical Supervisor, Earth Imagery Reproduction, Department of Energy, Mines and Resources	14.1

RESPONSIBILITY FOR CONTACTS

This factor is used to measure the difficulty and importance of the duties in terms of the purpose and nature of contacts, and the level of persons contacted.

"Officer" refers to administrators, engineers, scientists or other personnel for whom photographic work may be performed, and who may establish requirements for the work, and review the adequacy of finished work.

Notes to Raters

Only those contacts that are an integral part of the work and that result from the duties assigned or sanctioned by management are to be considered. Contacts between subordinates and superiors will be rated at the minimum A1.

If the work of the position requires contacts of more than one kind or with persons at more than one level, the points for each combination are to be determined and the highest point value assigned.

Points are to be assigned for written contacts only if the duties of the position being rated include responsibility for signing letters or memoranda. Points will not be assigned if responsibility is limited to contacts by form or pattern letters.

Contacts between photographers and human subjects posing for portrait, group, publicity or similar photographs, when for the purpose of eliciting appropriate posture and facial expression or to put the subject at ease, are not to be considered under this factor. Such aspects of photographic work are to be considered as inherent in the skill required to carry out assignments of this nature.

RATING SCALE - RESPONSIBILITY FOR CONTACTS

Nature and Purpose of Contacts, Degree and Points				
Level of Persons Contacted and Degree	To exchange information on the provision of photographic service, requiring limited explanation,	To exchange information on the provision of photographic service, requiring elaboration and understanding.	To provide advice and guidance on the provision of photographic service, such as participating in project planning, when different points of view may be expected, with authority to seek common ground on which to base solutions.	To provide advice and guidance on the provision of photographic service, such as participating in long-range planning, when differences in interest may be expected, with authority to recommend solutions.
	A	B	C	D
Such persons as employees in own work group and employees of own department other than officers.	<p>20/ Page</p> <p>1 Photographic Processor, 11.1 Department of National Defence</p> <p>Technician, Earth Imagery Reproduction 15.1 Department of Energy, Mines and Resources</p>	<p>35/ Page</p>	<p>50/ Page</p>	<p>Page</p>
Such persons as officers in own department, employees other than officers of other departments and outside agencies, and members of the general public.	<p>37/</p> <p>2 General Photographer, 5.1 Department of National Defence</p> <p>Photographer, Military Collège, Department of National Defence 9.1</p>	<p>52/</p> <p>Junior Photographer, 6.1 Archaeological Project</p> <p>Photographer, Physical Metallurgy Division, 10.1 Department of Energy, Mines and Resources</p>	<p>67/</p> <p>Photographer, 8.1 Agricultural Research Station</p>	<p>82/</p> <p>Chief Photographer, 3.1 Geological Survey of Canada</p>
Such persons as officers of other departments and outside agencies.	<p>3 Assignment Photographer, 2.1 Department of National Health and Welfare</p>	<p>69/</p> <p>Medical Photographer, 7.1 Department of Veterans Affairs</p>	<p>84/</p> <p>Technical Supervisor, 14.1 Earth Imagery Reproduction, Department of Energy Mines and Resources</p>	<p>100 /</p> <p>Chief Photographer, 4.1 National Gallery of Canada</p>

CONDITIONS OF WORK

This factor is used to measure the demands of the work in terms of the requirements for concentration and physical effort and for exposure to disagreeable conditions and to hazards.

Notes to Raters

The definitions of degrees of the Concentration element refer to "attention" and to "concentration". The term "attention" is used to describe the effort involved in being observant and exercising care in carrying out the duties of the position. The term "concentration" is used to describe the effort involved in focusing total attention on some aspect of the work, often to the exclusion of everything else.

In evaluating positions under the Concentration element raters are to consider the extent to which the worker is able to control the frequency and duration of attention or concentration.

In evaluating positions under the Physical Effort element raters are to consider the kind, frequency, intensity and duration of muscular exertion, the work positions, and the weights of objects handled.

In evaluating positions under the Environment element raters are to consider the kinds, severity, and frequency of exposure to undesirable conditions.

In evaluating positions under the Hazards element raters are to consider the requirement to work under conditions that may result in sickness or injury. Raters are to consider those hazards that are probable and not those that are remotely possible.

Only those conditions that are of value in assessing relative differences between jobs in the occupational group are to be considered. The degree of each element tentatively selected is to be confirmed by comparing the duties of the position being rated with the duties and specifications of the bench-mark positions.

RATING SCALE - CONDITIONS OF WORKCONCENTRATION

"Concentration" refers to the kind, frequency, intensity and duration of attention and mental-sensory co-ordination required by the work.

Concentration and Degree	Points	Bench-mark Position Descriptions	Page
<p>The work requires a moderate level of attention or mental-sensory co-ordination, with occasional short periods of concentration.</p>	10	<p>Assignment Photographer, Department of National Health and Welfare</p> <p>Chief Photographer, Geological Survey of Canada</p> <p>General Photographer, Department of National Defence</p>	2.1 3.1 5.1
<p>The work requires a high level of attention or mental-sensory co-ordination, with frequent short periods of concentration.</p>	23	<p>Medical Photographer, Department of Veterans Affairs</p> <p>Photographer, Agricultural Research Station</p> <p>Technician, Earth Imagery Reproduction, Department of Energy, Mines and Resources</p>	7.1 8.1 15.1
<p>The work requires a high level of attention or mental-sensory co-ordination, with sustained periods of concentration.</p>	36	<p>Chief Photographer, National Gallery of Canada</p>	4.1
<p>The work requires a very high level of attention or precise mental-sensory co-ordination, with sustained periods of concentration.</p>	50	<p>Technologist, Earth Imagery Reproduction, Department of Energy, Mines and Resources</p>	16.1

RATING SCALE - CONDITIONS OF WORKPHYSICAL EFFORT

"Physical effort" refers to the kind, frequency, intensity and duration of muscular exertion, the working positions, and the weight of objects handled.

Physical Effort and Degree	<u>Points</u>	Bench-mark Position Descriptions	Page
1	10	Chief Photographer, Geological Survey of Canada	3.1
		Technologist, Earth Imagery Reproduction, Department of Energy, Mines and Resources	16.1
2	30	Assignment Photographer, Department of National Health and Welfare	2.1
		General Photographer, Department of National Defence	5.1
		Photographer, Agricultural Research Station	8.1
		Photographer, Military College, Department of National Defence	9.1
		Photographic Processor, Department of National Defence	11.1
		Technician, Earth Imagery Reproduction, Department of Energy, Mines and Resources	15.1
3	50	The work requires considerable physical effort, as in frequently climbing, working from ladders, handling medium-weight objects, or working in a difficult position. The duties occasionally require greater physical effort for short periods.	

RATING SCALE - CONDITIONS OF WORK

ENVIRONMENT

"Environment" refers to the kind, severity, and frequency of exposure to disagreeable conditions during the performance of the work. Examples of disagreeable conditions include:

- exposure to dust, fumes, odours, extremes of weather, temperature, noise, vibration, wet, darkness or subdued light,
- the required wearing of cumbersome protective clothing or equipment, and
- the requirement to be away from home frequently or for significant periods.

Environment and Degree	<u>Points</u>	Bench-mark Position Descriptions	Page
Good working environment, with no significant disagreeable conditions.	1 10	Chief Photographer, Geological Survey of Canada	3.1
Fair working environment, such as significant exposure to one disagreeable condition or occasional exposure to either several disagreeable conditions or to one very disagreeable condition.	2 30	Assignment Photographer, Department of National Health and Welfare General Photographer, Department of National Defence Junior Photographer, Archaeological Project Photographer, Agricultural Research Station Photographic Processor, Department of National Defence Technologist, Earth Imagery Reproduction, Department of Energy, Mines and Resources	2.1 5.1 6.1 8.1 11.1 16.1
Poor working environment, such as significant exposure to several disagreeable conditions or to one very disagreeable condition.	3 50	Medical Photographer, Department of Veterans Affairs Technician, Earth Imagery Reproduction, Department of Energy, Mines and Resources	7.1 15.1

RATING SCALE - CONDITIONS OF WORKHAZARDS

"Hazards" refers to the requirement to work under conditions that may result in sickness or injury to the employee, although the usual safety measures have been taken.

		Probable Severity of Injury, Degree and <u>Points</u>					
Frequency of Unavoidable Exposure to Hazards, and Degree	Minor sickness or injuries.			"Lost-time" sickness or injuries.		Sickness or incapacitating injuries that can result in diminished capacity.	
	A			B		C	
Occasional	1	10/	Page	23/	Page	36/	Page
		Chief Photographer, Geological Survey of Canada	3.1	Chief Photographer, National Gallery of Canada	4.1	Assignment Photographer, Department of National Health and Welfare	2.1
		Technical Supervisor, Earth Imagery Reproduction, Department of Energy, Mines and Resources	14.1			Junior Photographer, Archaeological Project	6.1
Frequent	2	24/		37/		50/	
		General Photographer, Department of National Defence	5.1	Medical Photographer, Department of Veterans Affairs	7.1		
		Photographer, Agricultural	8.1				
		Photographic Processor, Department of National Defence	11.1				
		Technician, Earth Imagery Reproduction, Department of Energy, Mines and Resources	15.1				

SUPERVISION

This factor is used to measure the continuing responsibility that the incumbent of the position assumes for the work and guidance of other employees as indicated by the nature of supervisory responsibility and the number of employees supervised.

Definitions

"Nature of supervisory responsibility" refers to the extent to which the incumbent of the position has such responsibilities as controlling the quantity and quality of work, assigning work, allocating staff, evaluating employee performance, training and disciplining staff, and making recommendations on the number and classification of positions needed to perform the work.

"Number of employees supervised" refers to the total number of employees for whom line supervisory responsibility is exercised directly or through subordinate supervisors.

Notes to Raters

In all positions there is, from time to time, a requirement to show others how to perform tasks or duties; therefore no position will be assigned less than 10 points on this factor (A₁).

Occasional supervision, such as that performed during the absence of a supervisor on annual or sick leave, is not to be rated.

For the purposes of this standard, "number of employees supervised" will be the total of the following:

1. The annual average number of employees supervised by the position.
2. The number of person-years of work performed by term, casual, part-time and seasonal employees supervised by the position.

In evaluating positions all the characteristics of each degree of supervisory responsibility must be considered. Generally speaking, the criterion for the assignment of degrees to positions is that a position must include most of the characteristics of the degree assigned.

The rating scale shows the point values assigned to four degrees of the Nature of Supervisory Responsibility element. These degrees, which are designated as A, B, C, and D on the scale, are defined in the table appearing on the next page.

Nature of Supervisory Responsibility, and Degree	Bench-mark Position Descriptions	
Shows other employees how to perform tasks or duties. A	Assign. Photo. NHW Gen. Photographer DND Junior Photographer Arch. Project Photographer, Agr. Res. Station Photo., Mil. College, DND Photographer, Phys. Metallurgy Div. Technician, Earth Imagery Reproduction, Department of Energy, Mines and Resources	<u>Page</u> 2.1 5.1 6.1 8.1 9.1 10.1 15.1
Assigns work to lower level employees and provides guidance for dealing with the more difficult aspects of the work assigned. Sets work standards exemplifying acceptable results. Checks work in progress or at critical stages for quality and to ensure that requirements are met. May participate in the assessment of skills and in the identification of training needs of lower level employees. B		
Instructs employees and ensures correct application of work methods and procedures, and compliances to standards of quality and quantity. Assigns and coordinates work and maintains work flow. Advises employees on the solution of problems. Reviews work performed and reports on employee performance and on training required. Assists in the training of staff. C	Medical Photographer, Department of Veterans Affairs Technologist, Earth Imagery Reproduction, Department of Energy, Mines and Resources	7.1 16.1
Organizes and controls the work of employees directly or through subordinate supervisors. Schedules and assigns work to meet production requirements and to ensure the effective use and development of staff. Evaluates the work performance of subordinates and participates in the appraisal of employees. Implements a staff training program. Proposes promotions and disciplinary action. Proposes changes in number and classification of positions and participates in the staffing and classification processes. D	Chief Photographer, Geological Survey of Canada Chief Photographer, National Gallery of Canada Technical Supervisor, Earth Imagery Reproduction, Department of Energy, Mines and Resources	3.1 4.1 14.1

RATING SCALE - SUPERVISION

Number of Employees Supervised, and Degree	Nature of Supervisory Responsibility, Degree and <u>Points</u>			
	A	B	C	D
Indeterminate	1	10		
1 - 3	2		30	42
4 - 6	3		45	57
7 - 10	4		60	72
11 and over	5		75	87

PHOTOGRAPHY GROUP

<u>Level</u>	<u>Point Boundary</u>
PY 1	- 260
PY 2	261 - 350
PY 3	351 - 460
PY 4	461 - 570
PY 5	571 - 680
PY 6	681 - 790
PY 7	791 -

- BENCH-MARK POSITIONS -

- RATINGS -

- FACTORS -

JOB TITLE	LEVEL	TOTAL POINTS	SKUN	TECH. RESP.	CNTCTS	CONCEN.	PHY. E	ENVRN.	HZRDS.	SPRVSN.
11 - Photographic Processor (DND)	1	244	1 - 60	1 - 60	A ₁ - 20	1 - 10	2 - 30	2 - 30	A ₂ - 24	A ₁ - 10
9 - Photographer, Military College (DND)	2	321	1 - 60	2 - 120	A ₂ - 37	1 - 10	2 - 30	2 - 30	A ₂ - 24	A ₁ - 10
6 - Jr. Photographer, Archeo. Project	3	382	2 - 94	2 - 120	B ₂ - 52	1 - 10	2 - 30	2 - 30	C ₁ - 36	A ₁ - 10
1 - Aerial Photographic Processor	DELETED									
2 - Assign'mt Photographer (NHW)	3	418	3 - 128	2 - 120	A ₃ - 54	1 - 10	2 - 30	2 - 30	C ₁ - 36	A ₁ - 10
5 - Gen'l Photographer (DND)	3	423	4 - 162	2 - 120	A ₂ - 37	1 - 10	2 - 30	2 - 30	A ₂ - 24	A ₁ - 10
*15 - Technician, Earth Imagery Reprod'n (EMR)	3	439	4 - 162	2 - 120	A ₁ - 20	2 - 23	2 - 30	3 - 50	A ₂ - 24	A ₁ - 10
10 - Photographer, Phys. Metallurgy Div. (EMR)	4	532	5 - 196	3 - 180	B ₂ - 52	1 - 10	2 - 30	2 - 30	A ₂ - 24	A ₁ - 10
13 - Supervising Aerial Photo Processor	DELETED									
8 - Photographer, Agr. Research St'n	5	654	6 - 230	4 - 240	C ₂ - 67	2 - 23	2 - 30	2 - 30	A ₂ - 24	A ₁ - 10
3 - Chief Photographer, Geological Survey of Canada	6	711	7 - 265	4 - 240	D ₂ - 82	1 - 10	1 - 10	1 - 10	A ₁ - 10	D ₄ - 84
7 - Medical Photographer (DVA)	6	721	6 - 230	4 - 240	B ₃ - 69	2 - 23	2 - 30	3 - 50	B ₂ - 37	C ₂ - 42
*16 - Technologist, Earth Imagery Reprod'n (EMR)	6	731	7 - 265	4 - 240	C ₃ - 84	4 - 50	1 - 10	2 - 30	A ₁ - 10	C ₂ - 42
*4 - Chief Photographer, Nat'l Gallery	7	813	8 - 300	4 - 240	D ₃ - 100	3 - 36	2 - 30	2 - 30	B ₁ - 23	D ₂ - 54
12 - Photomicrographer (AGR)	DELETED									
*14 - Technical Supvr., Earth Imagery Reprod'n (EMR)	7	870	8 - 300	5 - 300	C ₃ - 84	3 - 36	1 - 10	2 - 30	A ₁ - 10	D ₆ - 100

LEVEL POINT RANGE

- 260	Level 1
261 - 350	Level 2
351 - 460	Level 3
461 - 570	Level 4
571 - 680	Level 5
681 - 790	Level 6
791 -	Level 7

(*) Addition
 (**) Revision

BENCH-MARK POSITION DESCRIPTION INDEX

In Alphabetical Order

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12	DELETED (Photomicrographer)	--
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BENCH-MARK POSITION DESCRIPTION

Bench-Mark Position Number: 2

Level: 3

Descriptive Title: Assignment Photographer,
Department of National Health and Welfare

Point Rating: 418

Summary

Under the supervision of a senior photographer, takes photographs on location or in a studio of people and events for such purposes as publications, displays, brochures, posters and news releases; processes black-and-white film and makes contact and projection prints; and performs related duties.

Duties% of Time

Photographs, on location, occasionally working from ladders or other insecure support, or in a studio, in black and white or in colour, people and events for such purposes as departmental publications, displays, brochures, posters and news releases: 60

- by reading requisitions for photographic services and discussing the requirements of the assignments with the officer in charge;
- by selecting and using cameras, accessories and film materials suitable to the nature of the assignment; and,
- by aligning and positioning equipment, positioning and posing subjects, selecting lenses, focal lengths, shutter speeds and lens openings, and using flood, flash or available lighting and filter combinations to achieve desired results in finished prints, and by exposing film.

Processes black-and-white films and makes contact and projection prints in the darkroom in accordance with users' specifications: 20

- by mixing chemical solutions and developing, fixing, washing and drying photographic negatives;
- by positioning negatives in projection and contact printing equipment;
- by selecting appropriate printing paper and printing test strips to ensure correct adjustment and exposure times;
- by exposing the requisite number of prints and, when necessary, cropping, dodging and burning-in to achieve desired effects; and,
- by developing, fixing, washing, drying, trimming and mounting prints.

Photographs biological specimens to show pathological symptoms and conditions: 10

- by using regular camera equipment in the studio, with tungsten lighting; and,
- by using macrophotographic equipment for small specimens.

Performs related duties such as making continuous tone and line negatives of original documents, carrying out routine maintenance and cleaning of cameras, accessories and darkroom equipment, and retouching negatives and prints. 10

SpecificationsDegree/
PointsSkill and Knowledge

The work requires a good knowledge of the characteristics, applications and limitations of a wide variety of film materials and photographic processing chemicals. It also requires some knowledge of human relations to elicit cooperation and support for officials

3 / 128

and subjects in hospitals and other institutions when carrying out assignments on location, an awareness of the news or public relations value of situations and events, and some knowledge of the requirements for illustrating pathological conditions in biological material for reference and publication. Some knowledge of administrative practices is required to keep records and indexes. The work requires skill in using a wide variety of cameras and accessories and studio and darkroom equipment.

Technical Responsibility

The work requires the selection and use of cameras, accessories, films and printing papers most suitable for a given assignment. Darkroom procedures are adjusted to compensate for extremes of exposure and to provide emphasis of specified features of a photograph. Assignments are made by the chief photographer, and the officer in charge of the project explains the objectives and reviews and approves the completed work. Photographic problems encountered on assignments or in the darkroom are referred to the supervisor for guidance and instruction.

2 / 120

Responsibility for Contacts

The work requires contacts with departmental officers to clarify the requirements of assignments, with photographers in other departments and with technical representatives of equipment and materials suppliers to exchange information on applications and techniques, and with officers of hospitals and other institutions or agencies to clarify requirements of assignments and to elicit support and cooperation.

A3 / 54

Conditions of Work

Concentration - The work requires attention to ensure that cameras and accessories are handled properly and that completed photographs are correctly identified. Periods of concentration are required when positioning and adjusting equipment on location under conditions that preclude return visits should desired results not be obtained.

1 / 10

Physical Effort - The work involves standing and walking in the field and in the darkroom. There is a requirement to carry a selection of cameras, accessories, supplies and lighting equipment while on field assignments.

2 / 30

Environment - The work requires exposure to extremes of temperature while on location, and exposure to chemical fumes while processing materials in the dark or in subdued light.

2 / 30

Hazards - The work requires exposure to bruises, cuts, sprains and fractures when carrying photographic equipment on location and occasionally taking photographs from insecure places such as roofs, ladders or scaffolding. There is also exposure to photographic chemicals and a possibility of eye strain caused by working in subdued light.

C1 / 36

Supervision

The work requires occasionally showing other employees how to perform photographic duties and keep records.

A1 / 10

BENCH-MARK POSITION DESCRIPTION

Bench-Mark Position Number: 3

Level: 6

Descriptive Title: Chief Photographer,
Geological Survey of Canada

Point Rating: 711

Summary

Under the supervision of the Administrative Officer, Administrative Services Branch, Geological Survey of Canada, organizes and directs the work of the photographic section engaged in taking photographs of geological and related subjects to illustrate reports and publications, for scientific study, for displays, lectures and exhibits, and for sale; supervises the activities of a staff of nine; and performs related duties.

Duties% of Time

Organizes and directs the work of photographers engaged in the production of photographs of mineral and rock samples, palaeontological specimens, drill cores, meteorites and other related geological subjects to illustrate reports and publications, for scientific study, for displays, lectures and exhibits, and for sale to the public: 75

- by reviewing requisitions for photographic services and discussing unusual requirements with the requisitioner to determine problems likely to be encountered and to establish priorities, workloads and completion dates;
- by allocating work to staff in accordance with technical capability, reviewing work in progress, and taking corrective action when necessary to meet target dates;
- by overseeing photographic processing, giving advice and guidance on problems, and suggesting or approving modifications or adaptations of equipment or procedures;
- by overseeing the filing, cataloguing and indexing of material submitted for inclusion in the photographic library; and,
- by requisitioning equipment and supplies and arranging for maintenance.

Supervises a staff of nine employees by giving on-the-job training, resolving personnel problems, acting on selection and rating boards, taking or recommending disciplinary action, and reviewing and reporting on employees' work performance. 15

Performs related duties such as evaluating and reporting on new photographic equipment and materials, compiling periodic reports on activities, assembling information on equipment and material requirements for inclusion in annual estimates, and conducting correspondence on technical photography. 10

Degree/
PointsSpecificationsSkill and Knowledge

The work requires a thorough knowledge of the equipment, materials and procedures used to take photographs of geological subjects, including photomicrographs and photomacrographs, in black-and-white and in colour. It also requires a knowledge of geology sufficient to be able to discuss and understand the photographic requirements of geologists. There is a requirement for a knowledge of the administrative practices of the department to

7 / 265

prepare and substantiate estimates submissions and to carry out the business administration of the unit. The work requires skill in using and modifying a variety of photographic equipment and accessories and in adapting procedures to meet specific requirements.

Technical Responsibility

The work requires careful planning and coordination of tasks assigned to photographers in the unit. Photographic requirements are discussed with the geologists concerned to determine the equipment and materials necessary, determine the necessity to adapt and modify equipment and procedures, and foresee problems that will be encountered by the photographers carrying out the assignment. Resolution of photographic problems encountered is the responsibility of the incumbent of the position.

4 / 240

Responsibility for Contacts

The work requires contacts with geologists and other officers of the department to discuss projects and to make short- and long-term plans to accommodate their photographic requirements, provide guidance on the photography of geological and related subjects, and explain the feasibility of the problems to be anticipated in dealing with photographic requirements of a unique nature.

D2 / 82

Conditions of Work

Concentration - The work requires attention to detail in organizing and allocating work and preparing reports and correspondence. Short periods of concentration are required when reviewing completed work for adequacy and presentation.

1 / 10

Physical Effort - The work is performed mainly while sitting with an occasional requirement for short periods of standing and walking while checking work progress or discussing problems arising from the subject matter, equipment or procedures.

1 / 10

Environment - The work is performed mainly in an office environment with few disagreeable conditions.

1 / 10

Hazards - The work normally does not require exposure to materials or conditions likely to cause sickness or injury.

AI / 10

Supervision

The work requires supervising nine employees by organizing and allocating work, assigning staff, developing and implementing new work procedures, formally appraising work performance, evaluating employees, taking and recommending disciplinary action, establishing leave programs, and recommending classifications and establishment of positions.

D4 / 84

BENCH-MARK POSITION DESCRIPTION

Bench-Mark Position Number: 4

Level: 7

Descriptive Title: Chief Photographer,
National Gallery of Canada

Point Rating: 813

Summary

Under the direction of the Assistant Director, Administration and Operations, plans, organizes, directs and controls the activities of the Photography Service of the Gallery and directs and supervises staff. Photographs historical and contemporary art objects and performs such photography investigational tasks as authentication. Assists the Assistant Director in the long range planning and in ensuring required capacity and resources capability to meet current and future needs; deals with production quality and service related problems; prepares annual estimate and budgetary forecasts of the Service. Acts as the technical consulting authority of the Service providing advice or consultation services concerning works of art photography, photographic rendition techniques, type of support offered and feasibility of the photographic work requested. Performs other work related to the utilization of the resources and the provision of the services.

Duties% of Time

Plans, organizes, directs and controls the activities of the Photography Service of the National Gallery to provide a highly specialized photographic support to curators, conservators and other specialists engaged in the authentication, acquisition, curatorship, restoration, cataloguing, conservation and exhibition of fine arts such as historical and contemporary paintings, drawings, sculptures and collections of a wide diversity of art objects and artifacts, and in support of the Gallery's publications and sales programs, by:

30

- reviewing and discussing with the specialists, the request particulars, the material submitted, the desired result and use, and aims of the project supported;
- assessing the feasibility of the work requested, the availability of and the resources required, and determining the time frame and the priority of the work;
- making required internal arrangements or advising on the photographic related conditions for photographing works of art on loan from other Galleries or organizations or for photographing private collections of work of arts, artifacts or particular artists' works, for the Gallery;
- scheduling the work to be performed, committing the resources, coordinating the work, and ensuring efficient utilization of the material and equipment;
- ensuring compliance to work plans, request specifications, established procedures and quality standards, and taking action to correct deviations;
- assessing the need for particular photographic work to be done on contract, making required arrangements and authorizing invoices for payment;
- evaluating impact of unforeseen technical difficulties or changes in conditions on the work and determining course of action;
- resolving problems arising from new or changed priorities, resource requirements and commitments, or discussing alternatives with the Assistant Director or the user as applicable;
- establishing required liaisons to deal with technical problems;
- reviewing and evaluating progress of work and approving work produced;
- controlling and ensuring an adequate inventory of materials and supplies, and maintenance of equipment;
- reporting as required, on the work performed, unusual problems, production, cost, resources utilized, and on major technical difficulties, equipment breakdowns and maintenance.

Photographs historical and contemporary art objects in support of the Gallery activities, photographs three dimensional art objects and produces final print or transparency which conveys all the artistic subtleties or technical information that the medium is capable of embodying so as to provide a valid information link among art historians, scholars and other professionals, and performs a variety of photographic investigation tasks for authentication purposes by: 30

- discussing with the Gallery professional personnel or specialists particulars of the request, feasibility, time frame, handling and storage of art collection, objects, and priorities;
- determining the photographic techniques, equipment, material, chemicals and processes to be used;
- making required adaptations or devising and developing new techniques, experimenting different combinations of photographic material, equipment, techniques and set-ups, and applying the particular methodology to assure a precise control in the utilization of the material and procedures and to produce the desired result;
- identifying and photographically capturing, recording and illustrating evidence of alterations of art objects such as eradications, consistency of colors, type of paint used and layer sequence, markings, shading, repainting, damages and rebuilt spots or restoration work done;
- photographically accentuating, regaining or surfacing and showing latent images, eradicated marks, and illustrating differences or consistency of specific elements or distinguishing characteristics of the art object such as artist's paint brush stroke particulars or other artistic subtleties;
- performing photographic work in studio or on exhibition site, involving a variety of light sources and illumination techniques such as infra-red, ultra violet, back lighting, oblique, reflected and shadowless lighting, and various specialized or in-house developed or modified photographic techniques, accessories or apparatus, and unusual uses or combinations of equipment, material and processes such as required for an exacting rendition of shape or surface details on reflective art objects or black on black details;

Supervises personnel to ensure optimum performance and efficient photographic service by: 20

- following established practices; allocating work, instructing staff and providing technical leadership in the diagnosing and resolution of unusual problems;
- ensuring compliance to safety and security procedures;
- monitoring work progress, evaluating results and appraising employees' performance;
- developing employees' skills and capability through training and assignment rotation;
- recommending changes in job content, promotions, extension of probation or release, and disciplinary actions; participating in the position classification, staffing and grievance processes; and making recommendations.

Assists the Assistant Director in planning and ensuring required Service capacity and resources technical capability to meet forecast needs, and deals with related production, technical or service problems by: 10

- assessing capability of the Service's technical resources against new requirements, technical problems encountered and need for new techniques, equipment, materials and quality controls;
- reviewing pertinent technical developments, evaluating applicability of new techniques, processes, equipment and materials for adoption, and specifying and recommending acquisition of new equipment;

- identifying and assessing production and quality problems or improvements needed, and conducting required developmental work to meet new or unique photographic needs of the Gallery specialists, enhance the technical capability of the Service, achieve greater controllability of the photographic processes, the precision of the procedures or higher quality and consistency of the product;
- preparing annual estimates and budgetary forecasts of the Service
- reviewing production and maintenance costs, service demand trends, estimating labour, material and capital requirements and, proposing and discussing estimates.

Provides technical advice to specialists of the Gallery, other galleries, university research groups, artists, authors and publishers concerning the photographic techniques and the capability developed at the Service by:

- maintaining required awareness of technological changes and trends concerning art object photography, photographic reproduction and investigational photography;
- advising on the feasibility, the techniques available, their limitations and the particular results obtainable;
- acting as the Gallery technical contact for manufacturer/supplier representatives to discuss new developments or to deal with difficulties related to the materials, equipment, or systems supplied and to discuss particular technical limitations and possible modifications.

Degree/
Points

Specifications

Skill and Knowledge

An in-depth knowledge of works of art photography and of the technical capabilities of the Gallery Photographic service is necessary to determine the particular photographic support or assistance which can be provided, the feasibility of the desired results and the most effective photographic techniques to be used to satisfy new or unusual photographic requirements and maintain the level of quality of the photographic service prescribed by the Gallery. A very sound knowledge of photographic theory and techniques as applied in the field of works of art photography and of the related photographic investigational work is required as well as considerable skill and expertise in studio photography, photographic chemistry, and emulsion making technology, colour theory, sensitometry, densitometry, process control systems, photometry and of the characteristic and limitations of the diverse color, black and white, micro-, infra-red and ultra violet photography techniques, studio and darkroom equipment and reproduction systems utilized is necessary to provide the photographic support requested, assess and approve modifications or new system proposals and technical problem solutions. A very good knowledge of the photographic characteristics and constraints such as heat and light sensitivity of the wide diversity of ancient and modern materials used in the making of paintings, artifacts or fine art objects and of particular identifying markings or characterizing artistic subtleties is necessary to photographically surface, capture and to reproduce the particular details or imagery required by the specialists, perform effective photographic investigation tasks and to prevent damage or aging acceleration of subject in producing the desired results. Particular artistic skills are necessary for producing high aesthetic quality photographs. The work requires knowledge and skill in planning, administering, directing and controlling the activities of the Service. Sufficient knowledge of the staffing and classification processes is necessary to participate effectively to these processes. A very good knowledge of the policy, directives and administrative practices and procedures pertinent to the provision of the services, the utilization of the resources, and the conservation of works of art and associated security requirements is necessary.

8 / 300

Technical Responsibility

Work assigned in terms of current, new and future photographic demands of the Gallery, and of the particular project aims. Specifics of the photographic work requested and of the particular photographic service contribution expected require discussions with the Gallery's and other specialists to assess technical feasibility, and establish timeframe, cost and priority. General instructions are given for planning, scheduling and allocating the work, committing the resources and producing the required results. The work requires selecting and using or directing and assisting specialized staff in selecting, applying, or modifying, testing and evaluating the applicability of advanced new and specialized techniques, materials, equipment or procedures. Must advise on, approve or develop effective approaches to overcome technical limitations or constraints imposed by the nature or condition of particular art objects and achieve the desired results. There is a requirement to modify techniques and equipment, and to specify and recommend acquisitions of new systems, material and equipment. Considerable scope is allowed to deal with special requirements or situations where precedents are remotely applicable, determine advisability and ensure the development of new techniques, quality control standards and procedures, devise or evaluate and approve adaptations or unique combinations of various photographic materials, equipment or processes or to decide on the fabrication of in-house devised apparatus to resolve technical difficulties or limitations. There is a requirement to plan the activities of the Service, to establish and realign priorities and to identify and deal with difficulties associated with changes in requirements, production, cost and new commitments, material and equipment defectiveness and suppliers services. Work problem solutions involve setting precedents and limited help is available due to the highly specialized nature of the work at the Gallery. The position is responsible for evaluating and approving the work produced by specialized photographers; the photographic results are reviewed for acceptance with the specialist requesting the service, and the work of the position is reviewed by the Assistant Director for effective utilization of resources, conformance to plan requirements, cost and appropriateness of support provided in meeting Gallery's and other users' requirements.

4 / 240

Responsibility for Contacts

The work requires participation in the long-range planning of photographic services such as required in the photographic recording and cataloguing of large collections of art objects, the long-range planning of photographic facilities requirements or for major acquisitions of photographic processing and studio equipment. The work involves negotiating conditions such as concerning long term provision of special photographic work by Canada Photo Centre with officers of the Centre, with authority to recommend conditions of acceptance. Contacts are also required with curators of other museums and Galleries in Canada and outside, with university researchers, artists, authors and publishers to make required arrangements, to advise on the work, discuss artistic and technical conditions, requirements and constraints associated with the photography of particular art objects on loan to the National Gallery, and to recommend solution to difficulties, and obtain approval of conditions. Frequent contacts are required with officers, curators, conservators and technical personnel of the Gallery to discuss, plan and prioritize the photographic support required, advice on feasibility of request and, discuss the results obtainable, the constraints and photographic difficulties associated with particular subjects, the technical limitations, the specifications and the results obtained. There is a requirement to contact manufacturers' or suppliers' technical representatives to discuss and seek common ground to resolve quality problems or difficulties experienced with the materials and the equipment provided, or the processes and procedures recommended.

D3 / 100

Conditions of Work

Concentration - Concentration is required for sustained periods. The work requires a high level of attention and considerable care to prevent damage in the handling, positioning of work of art of great value and in the illumination and exposition to photographic lighting of unique paintings or other delicate art objects to prevent deterioration from light and its effects on aging and preservation or other damages. High degree of mental-sensory co-ordination is required to carry out the photography investigational work requested to assure precision in the arrangement of the subject, lights, cameras and other equipment and to identify and photographically regain or surface and record a latent image, particular artistic subtleties or specific fine details. Concentration and high mental-sensory co-ordination is also required in the simultaneous control of the depth of field and focus to achieve the optimum depth of the imagery required and in the precise control of the swings and tilts of the camera back and lens board to achieve the trueness and sharpness of the particular imagery details demanded. High level of attention with concentration for sustained periods is required when checking work and results produced by photographers and examining completed reproduction for detail accuracy. Concentration is also required in assessing the technical feasibility of the photographic investigational tasks required, to assess the applicability of new developments or to devise modifications or special combinations of equipment, materials and procedures in dealing with technical difficulties.

3 / 36

Physical Effort - The work requires bending, stooping, standing, walking, and carrying lighting apparatus or medium-weight objects while arranging and photographing works of art of various sizes and shapes. There is a requirement to climb and carry out a portion of the work while standing on ladders or scaffolding such as when large objects or large exhibits must be photographed. Must walk to the various work stations to supervise activities, deal with technical difficulties encountered by subordinates and review work produced.

2 / 30

Environment - Fair working environment. Work involves frequent exposures to high intensity studio lights and radiant heat for sustained periods; occasional exposures, for varying periods, to ultra-violet light, and to several moderately disagreeable elements such as noise, fumes, odours, heat and humidity and skin irritating chemicals from operating equipment and chemical process, and to darkness or subdued light when working or checking work in the darkrooms. Must wear protective clothing such as rubber gloves, apron and face shield when working with chemicals. Other work such as administrative related work is performed in an office environment.

2 / 30

Hazards - Exposed to injuries such as sprains or fractures when working on elevated scaffold or ladder to photograph large objects or exhibits from various views or angles.

BI / 23

Supervision

The work requires organizing, directing and controlling the work of the Service and supervising a staff of two specialized photographers and one administrative clerk. Supervisory duties include setting work performance standards, assigning and reviewing work, directing and instructing personnel, ensuring compliance to procedures, security and safety standards, evaluating performance, training and developing staff, recommending promotions and disciplinary action, proposing changes in the number and classification of positions and participating in the classification and selection process.

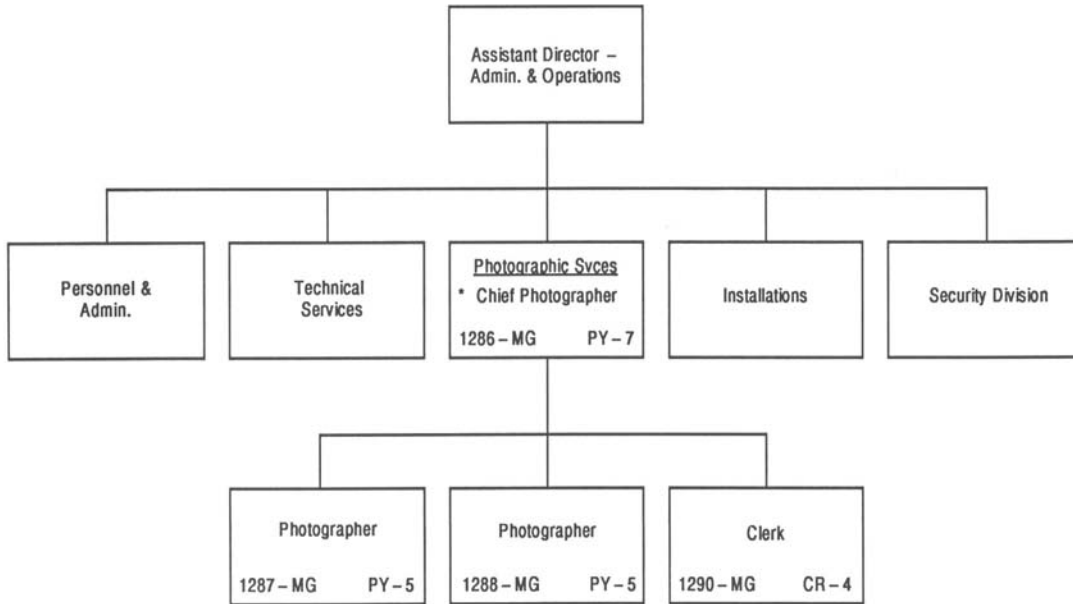
D2 / 54

ORGANIZATION CHART

National Museums of Canada

Component: National Gallery of Canada

Branch: Administration and Operations



* Bench - Mark Position

BENCH-MARK POSITION DESCRIPTION

Bench-Mark Position Number: 5

Level: 3

Descriptive Title: General Photographer,
Department of National Defence

Point Rating: 423

Summary

Under the supervision of a planning officer at a central ordnance depot, provides a general photographic service to the depot by taking and processing photographs to be used for technical, supply, training, investigation and public relations purposes, and performs related duties.

Duties

% of Time

Provides a general photographic service to a central ordnance depot and takes photographs to be used for publication in manuals and bulletins, to show modifications or damage and for administrative and public relations purposes:

85

- by discussing with officers of the depot the requirements and purposes of photographic work;
- by selecting and adjusting photographic equipment, arranging lighting, determining poses for and taking portraits in the studio;
- by selecting and adjusting photographic equipment, arranging proper lighting and selecting views of places, equipment or stores required to illustrate the desired aspects of the subject;
- by mixing chemical solutions and developing, fixing, washing and drying photographic film materials;
- by positioning negatives in projection and contact printing equipment;
- by selecting appropriate printing paper and printing test strips to ensure correct adjustment and exposure times;
- by exposing the requisite number of prints and, when necessary, cropping, dodging and burning-in to achieve the desired effects; and,
- by developing, fixing, washing, drying, trimming and mounting prints.

Performs related duties such as retouching photographs; mounting and framing photographs; referencing, recording and filing negatives; and maintaining a stock of photographic supplies.

15

Specifications

Degree/
Points

Skill and Knowledge

The work requires a thorough knowledge of black-and-white photographic negative and positive materials, equipment and chemicals and of effective poses and arrangements of the subjects. It requires a knowledge of the characteristics of a wide variety of items in stores and of equipment, apparatus, and other subjects. The work requires a knowledge of administrative practices of the depot to maintain a small photographic service, order supplies and equipment, and record and file photographs. The work requires skill in using a variety of cameras, accessories, and darkroom and studio equipment, and the ability to gain cooperation for photography projects and portrait work.

4 / 162

Technical Responsibility

The work requires the selection and use of cameras, accessories, film and printing papers most suitable for particular tasks. Some adaptation of established procedures is occasionally required when photographing sites and artifacts with little contrast between identifying and distinguishing features. Darkroom procedures are adjusted to compensate for extremes of exposure caused by field conditions and to provide emphasis of specified features of a photograph. Assignments are made by the supervisor, and the archaeologist explains the results desired and reviews and approves the completed work. Photographic problems encountered in the field or darkroom are referred to the supervisor for guidance and instruction.

2 / 120

Responsibility for Contacts

The work requires contacts with archaeologists and other officers of the department at the project, to discuss and clarify the requirements of the work as a basis for determining the type of equipment required for field assignments.

62 / 52

Conditions of Work

Concentration - The work requires attention to ensure that cameras and accessories are handled properly and that completed photographs are correctly identified. Short periods of concentration are necessary at critical stages in photographing and processing.

1 / 10

Physical Effort - The work involves standing and walking while taking or processing photographs. There is a requirement to handle light- and medium-weight equipment while on field assignments and to work from ladders and scaffolding.

2 / 30

Environment - The work requires exposure to extremes of temperature when on field assignments. There is also exposure to chemical fumes and a requirement to work in the dark or in subdued light while performing processing and printing tasks.

2 / 30

Hazards - The work requires exposure to cuts, bruises, sprains and fractures when carrying photographic equipment and climbing ladders, scaffolding and catwalks at an archaeological restoration site. There is also exposure to photographic chemicals and a possibility of eye strain caused by working in subdued light.

C1 / 36

Supervision

The work requires occasionally showing other employees how to perform photographic tasks and keep records.

A1 / 10

BENCH-MARK POSITION DESCRIPTION

Bench-Mark Position Number: 6

Level: 3

Descriptive Title: Junior Photographer,
Archaeological Project

Point Rating: 382

Summary

Under the supervision of the senior photographer at the Fortress of Louisbourg restoration site, provides photographic services to archaeologists in the field; processes black-and-white film in the darkroom and makes contact and projection prints for illustrative, record, display and publicity purposes; assembles photographic mosaics of large subjects; copies maps, charts and other material to scale; carries out minor maintenance and adjustments on equipment, and performs related duties.

Duties% of Time

- | | |
|--|----|
| <p>Takes photographs of archaeological subjects in the field, to record features and objects as found at excavations and to record the progress of restoration activities:</p> <ul style="list-style-type: none"> - by discussing photographic requirements with the archaeologist and own supervisor; - by selecting cameras, films and accessories appropriate to the subject to be photographed; and, - by aligning and positioning equipment, selecting lenses, determining shutter speed, lens opening, lighting and filter combinations to achieve desired results, and by exposing film. | 30 |
| <p>Processes black-and-white film in the darkroom and makes contact and projection prints:</p> <ul style="list-style-type: none"> - by mixing chemical solutions and developing, washing, fixing and drying photographic negatives; - by positioning negatives in projection or contact printing equipment; - by selecting appropriate printing paper and printing test strips to ensure proper setting and exposure times; - by exposing the required number of prints and, when necessary, cropping, dodging or burning-in to achieve desired effects in finished prints; and, - by developing, fixing, washing, drying, trimming and mounting finished prints. | 45 |
| <p>Performs related duties such as making minor repairs and adjustments to equipment, maintaining records of work performed, making mosaics, making photographic and ozalid copies of maps, charts and illustrations, and showing other employees how to carry out assigned tasks when requested to do so by the senior photographer.</p> | 25 |

SpecificationsDegree/
PointsSkill and Knowledge

The work requires a good knowledge of the characteristics, applications and limitations of regular commercially available film and photographic processing chemicals. It also requires a knowledge of archaeology sufficient to understand the photographic requirements of an archaeologist and to work at an excavation site and handle artifacts without causing damage. Some knowledge of administrative practices is required to maintain records and indexes. The work requires skill in using a variety of cameras and accessories, and darkroom and studio equipment.

2 / 94

Technical Responsibility

The work requires the selection and use of cameras, accessories, film and printing papers most suitable for particular tasks. Some adaptation of established procedures is occasionally required when photographing sites and artifacts with little contrast between identifying and distinguishing features. Darkroom procedures are adjusted to compensate for extremes of exposure caused by field conditions and to provide emphasis of specified features of a photograph. Assignments are made by the supervisor, and the archaeologist explains the results desired and reviews and approves the completed work. Photographic problems encountered in the field or darkroom are referred to the supervisor for guidance and instruction.

2 / 120

Responsibility for Contacts

The work requires contacts with archaeologists and other officers of the department at the project, to discuss and clarify the requirements of the work as a basis for determining the type of equipment required for field assignments.

B2 / 52

Conditions of Work

Concentration - The work requires attention to ensure that cameras and accessories are handled properly and that completed photographs are correctly identified. Short periods of concentration are necessary at critical stages in photographing and processing.

1 / 10

Physical Effort - The work involves standing and walking while taking or processing photographs. There is a requirement to handle light- and medium-weight equipment while on field assignments and to work from ladders and scaffolding.

2 / 30

Environment - The work requires exposure to extremes of temperature when on field assignments. There is also exposure to chemical fumes and a requirement to work in the dark or in subdued light while performing processing and printing tasks.

2 / 30

Hazards - The work requires exposure to cuts, bruises, sprains and fractures when carrying photographic equipment and climbing ladders, scaffolding and catwalks at an archaeological restoration site. There is also exposure to photographic chemicals and a possibility of eye strain cause by working in subdued light.

C1 / 36

Supervision

The work requires occasionally showing other employees how to perform photographic tasks and keep records.

A1 / 10

BENCH-MARK POSITION DESCRIPTION

Bench-Mark Position Number: 7

Level: 6

Descriptive Title: Medical Photographer,
Department of Veterans Affairs

Point Rating: 721

Summary

Under the direction of an assistant medical director at a veterans' hospital, provides photographic service to the hospital and takes photographs of physical facilities, equipment, and anatomical, surgical, pathological or other medical subjects for use in conjunction with training, medical records, research, and diagnostic and treatment activities, involving a variety of photographic techniques including macro-, micro- and endoscopic photography in still, motion picture, time lapse and slow-motion, specialized photographic equipment and processes; processes film and makes contact and projection prints; edits and splices motion picture film; supervises the work of a junior photographer; and performs related duties.

Duties% of Time

Provides a photographic service at a veterans' hospital and takes photographs of physical facilities, anatomical, surgical, pathological and other medical subjects, using a variety of photographic techniques, specialized photographic equipment and processes, for such purposes as training, medical records, research data, and diagnostic, and treatment procedures: 45

- by selecting and operating the appropriate size and type of motion picture or still camera, with black-and-white or colour film appropriate to the assignment;
- by photographing operations in the operating room and autopsies in the morgue;
- by using, in conjunction with a camera, gastroscopes, ophthalmoscopes, microscopes or other instruments to photograph body organs or tissues;
- by using fundas, endoscopic and photomicrographic cameras to photograph body organs, selected area, or microspecimens;
- by selecting and applying infrared or ultraviolet light, fluorescent dyes or other appropriate techniques to film special subjects; and,
- by devising equipment and techniques suitable for photographing difficult subjects under difficult circumstances.

Performs general photography: 15

- by photographing patients in wards, examining rooms, and the studio;
- by taking studio photographs of hospital staff for identification purposes;
- by photographing special events and visits by officials; and,
- by photographing engineering, construction and maintenance projects and building areas, showing progress and conditions.

Processes a variety of film materials such as black-and-white, colour, infrared, ultraviolet and metal plates, and does contact and projection printing: 20

- by mixing chemical solutions and developing, fixing, washing and drying photographic negatives according to manufacturers' specifications;
- by developing exposed emulsion-coated glass into projection slides;
- by developing and anodizing metal photographic plates;
- by positioning negatives in projection and contact printing equipment;
- by selecting appropriate printing paper and printing test strips to ensure correct adjustment and exposure times; and,
- by exposing the requisite number of prints and, when necessary, cropping, dodging and burning-in to achieve the desired highlights or other effects.

% of Time

Performs related duties such as consulting with and advising hospital department heads on photographic requirements and problems; operating projection equipment; maintaining files of negatives, transparencies, slides and films; editing and splicing film for motion pictures; evaluating, requisitioning and maintaining equipment and supplies; writing reports; attending meetings concerning photography; making layouts for displays, mounting and framing photographs, spotting prints, and retouching negatives; and supervising a junior photographer.

20

Specifications

Degree/
Points

Skill and Knowledge

The work requires a thorough knowledge of the use of specialized medical photographic equipment and supplies and the techniques used in photographing anatomical, pathological and medical specimens in black and white and in colour. It requires some knowledge of the need for maintaining sterile conditions, an appreciation of the value of photography for medical training and record purposes, and some knowledge of pathological and medical symptoms and conditions. The work requires knowledge of the administrative practices of the hospital to maintain the records of a small photographic service, order supplies and equipment, and file and index negatives and prints. The work requires skill in the use of a variety of cameras and accessories, specialized equipment for medical photography, and studio and darkroom equipment and techniques.

6 / 230

Technical Responsibility

The work requires the selection, adaptation and use of a variety of photographic equipment, specialized equipment, black-and-white and colour materials, and basic and advanced techniques for the production of photographs of a wide range of gross and microscopic biological subjects for diagnosis, treatment, record and training purposes where fidelity of colour, size and shape may be critical. Work planning and resolution of photographic problems is the responsibility of the incumbent. Finished work is reviewed for adequacy by medical and administrative officials.

4 / 240

Responsibility for Contacts

The work requires contacts with medical staff in the hospital, hospital administration staff, suppliers' representatives, and hospital patients to discuss and clarify requirements of the work, explain photographic capabilities, and keep abreast of new techniques pertaining to medical photography.

B3 / 69

Conditions of Work

Concentration - The work requires a high degree of attention in handling and positioning specialized equipment under difficult circumstances, in photographing subjects with severe limitations as to time and positioning, and when using special instruments in conjunction with camera equipment.

2 / 23

Physical Effort - The work requires considerable standing and walking while taking photographs. There is a requirement to carry cameras and equipment to location.

2 / 30

Degree/
Points

Environment - The work requires frequent exposure to the odours and fumes of chemicals, cleaning and sanitation agents, and tissue preservatives and to diseased or decomposing tissue. There is also a requirement to work in the dark or in subdued light while performing processing and printing tasks.

3 / 50

Hazards - The work requires frequent exposure to contagious diseases while photographing pathological specimens and infected patients. Such exposure could result in contracting disease, but safeguards are provided and extreme precautions are taken to minimize the hazards. There is also exposure to minor cuts, scratches and burns in handling equipment and photographic laboratory chemicals.

B2 / 37

Supervision

The work requires supervising one photographer, instructing in work methods, assisting with problems, assigning and reviewing work and reporting on performance.

C2 / 42

BENCH-MARK POSITION DESCRIPTION

Bench-Mark Position Number: 8

Level: 5

Descriptive Title: Photographer, Agricultural Research Station

Point Rating: 654

Summary

Under the direction of the Administrative Officer, Vancouver Agricultural Research Station, provides photographic services to scientific and administrative staff at the station; takes photographs of various types of biological and other subjects; processes black-and-white film and makes contact and projection prints, slides and transparencies; designs layouts of illustrations for scientific papers and publications; and performs related duties.

Duties% of Time

Provides photographic services to scientific and administrative staff at an agricultural research station, and takes photographs and macrophotographs for such purposes as illustration of technical reports and publications, research data and records, administrative records and reports, and publicity and displays:	30
<ul style="list-style-type: none"> - by discussing requirements with scientists and other individuals to determine the features or aspects of the subject to be recorded; - by selecting cameras, lights, accessories and equipment, and black-and-white or colour film materials appropriate to the nature of the subject; and, - by aligning and positioning equipment and the subject, selecting lenses, determining exposures, lighting and filter combinations to achieve the desired results, and by exposing the film. 	
Processes black-and-white film materials and makes contact and projection prints, and prepares slides and transparencies in accordance with users' specifications:	40
<ul style="list-style-type: none"> - by mixing chemical solutions and developing, fixing, washing and drying photographic negatives; - by positioning negatives in projection and contact printing equipment; - by selecting appropriate printing paper and printing test strips to ensure correct adjustment and exposure times; - by exposing the requisite number of prints and, when necessary, cropping, dodging and burning-in to achieve the desired effects; and, - by developing, fixing, washing, drying, trimming and mounting finished prints, slides and transparencies. 	
Designs layouts of illustrations for scientific papers and publications:	20
<ul style="list-style-type: none"> - by placing letters, numbers, symbols and other reference marks in the proper locations on the photographs; - by printing and matching photographs to retain a suitable size relationship; and, - by drawing charts, graphs, diagrams and signs. 	
Performs other duties such as making copies of letters, papers and books; maintaining photographic supplies; maintaining, cleaning and making minor repairs to cameras, accessories and darkroom equipment; keeping files of negatives and other material relating to assignments; and requisitioning equipment and supplies.	10

Specifications

Skill and Knowledge

The work requires a thorough knowledge of the characteristics, applications and limitations of a wide variety of film and printing materials and photographic processing chemicals. It also requires a good knowledge of the scientific research activities of the station to be able to understand the photographic requirements of agricultural research scientists and to work in laboratories, greenhouses and outdoors without damaging specimens or disturbing experimental work. The work requires a knowledge of the characteristics of a wide variety of subjects, including plants, insects, pathological conditions, soil samples and profiles, laboratory equipment, apparatus, and buildings and other general subjects. The work requires a knowledge of the administrative practices of the research station to maintain the supplies and equipment of a photographic service. It requires skill in using and adapting to special purposes a variety of cameras and accessories and darkroom and studio equipment.

6 / 230

Technical Responsibility

The work requires the selection and use of several types of cameras, accessories for macrophotography, lenses, strobe and floodlighting, developing and contact printing equipment, a wide range of black-and-white and colour films, and printing papers most suitable for particular assignments in technical and general photography. It requires adaptation and modification of equipment and of established procedures for producing macrophotographs of high quality of such things as insects, plants, pathological conditions in biological specimens and subjects of similar difficulty, at various stages of their development. Darkroom procedures are modified and adjusted to compensate for extremes of exposure and to produce special effects. Assignments are made by the Administrative Officer or by the scientists concerned with research projects, and the results desired are discussed with the individual or group for whom the photography is being carried out. Resolution of photographic problems encountered on assignments is the responsibility of the incumbent of the position.

4 / 240

Responsibility for Contacts

The work requires contacts with officers of the research station to obtain information on the nature of assignments, to discuss limitations imposed by difficult subjects, and to give guidance on the application of photographic techniques to research projects.

C2 / 67

Conditions of Work

Concentration - The work requires attention to ensure that cameras and equipment are handled properly and that completed photographs are correctly identified. Periods of concentration are required when positioning and adjusting equipment and subjects to produce photographs and macrophotographs of fragile laboratory specimens, and during critical stages of processing films and prints.

2 / 23

Physical Effort - There is a requirement to carry a selection of cameras, accessories, supplies and lighting equipment while taking photographs in laboratories, greenhouses, or outdoors.

2 / 30

Environment - The work requires exposure to extremes of temperatures while taking photographs in greenhouses, cold rooms or outdoors, and exposure to chemical odours while processing materials in the dark or in subdued light.

2 / 30

Degree/
Points

Hazards - The work requires frequent contact with photographic chemicals, resulting in stains to hands and clothing or irritation to the skin. There is also a possibility of eye strain caused by working in subdued light and by making the effort necessary to bring into focus and light minute, active subjects such as insects.

A2 / 24

Supervision

The work requires occasionally showing other employees how to keep records or showing part-time or temporarily assigned employees how to perform photographic tasks.

A1 / 10

BENCH-MARK POSITION DESCRIPTION

Bench-Mark Position Number: 9

Level: 2

Descriptive Title: Photographer, Military College,
Department of National Defence

Point Rating: 321

Summary

Under the direction of the College Services Officer, Collège Militaire Royal de Saint-Jean, provides photographic services to students, teaching staff and administrative staff; processes black-and-white photographs in the darkroom and makes contact and projection prints for illustrative, record and training purposes; and performs related duties.

Duties% of Time

Provides photographic services to students, teaching staff and administrative staff in a military college for such purposes as public relations releases, illustration of college publications, teaching and research aids, and administrative records and reports: 30

- by discussing photographic requirements with individuals and groups to determine composition, poses, and subjects to be illustrated;
- by selecting and using cameras, films and accessories suitable to the nature of the assignments; and,
- by aligning and positioning equipment, positioning and posing subjects, selecting lenses, shutter speeds, lens apertures, lighting and filter combinations to achieve the desired results in finished prints, and by exposing film.

Processes black-and-white film in the darkroom and makes contact and projection prints in accordance with users' requirements and specifications: 50

- by mixing chemical solutions and developing, fixing, washing and drying photographic negatives;
- by positioning negatives in projection and contact printing equipment;
- by selecting appropriate printing paper and printing test strips to ensure correct adjustment and exposure times;
- by exposing the requisite number of prints and, when necessary, cropping, dodging and burning-in to achieve the desired effects; and,
- by developing, fixing, washing, drying, trimming and mounting prints.

Performs related duties such as making photostatic copies; maintaining photographic and photostatic supplies; carrying out routine maintenance, cleaning and repairs to cameras, auxiliary equipment and darkroom equipment; maintaining files of negatives and other material relating to work assignments; and preparing requisitions for equipment and supplies. 20

Degree/
PointsSpecificationsSkill and Knowledge

The work requires a good knowledge of regular commercially available films and printing materials and of photographic processing chemicals. It also requires a knowledge of human relations sufficient to elicit cooperation from subjects posing for individual and

1 / 60

group portraits and an awareness of the news or public relations value of photographs of regular or specialized events. The work requires a knowledge of the administrative practices of the department sufficient to maintain the supplies and equipment of a photographic service and to keep records and indexes. The work requires skill in using a variety of cameras and accessories, and darkroom and studio equipment.

Technical Responsibility

The work requires the selection and use of several types of cameras, accessories, film and printing paper most suitable for particular tasks. Darkroom procedures are adjusted to compensate for extremes of exposure and to produce special effects. Assignments are made by the College Services Officer and the results desired are discussed with the individual or groups for whom the photography is being carried out. Resolution of photographic problems encountered on assignments is the responsibility of the incumbent of the position.

2 / 120

Responsibility for Contacts

The work requires contacts with officers of the college to obtain information on the nature of photographic assignments.

A2 / 37

Conditions of Work

Concentration - The work requires attention to ensure that cameras and accessories are handled properly and that completed photographs are identified correctly. Short periods of concentration are necessary at critical stages in photographing and processing.

1 / 10

Physical Effort - The work requires mainly standing and walking while photographing or working in the darkroom. There is a requirement to carry a selection of cameras, accessories and a battery pack while covering regular or special events held outdoors.

2 / 30

Environment - The work occasionally requires exposure to extremes of weather when covering regular or special events held outdoors, and exposure to chemical fumes when processing materials in the darkroom. Developing and printing is carried out in subdued light.

2 / 30

Hazards - The work requires frequent exposure to photographic chemicals, which can result in stains to clothing and irritation to the skin. There is a possibility of eye strain caused by working in subdued light.

A2 / 24

Supervision

The work requires occasionally showing other employees how to keep records or showing part-time or temporary replacement photographers how to perform photographic tasks.

A1 / 10

BENCH-MARK POSITION DESCRIPTION

Bench-Mark Position Number: 10

Level: 4

Descriptive Title: Photographer, Physical Metallurgy Division,
Department of Energy, Mines and Resources

Point Rating: 532

Summary

Under the general supervision of a senior photographer in the photography unit of the Physical Metallurgy Division, takes photographs, in black and white and in colour, of machinery, equipment, laboratory apparatus, metal samples, and other subjects, for purposes of illustrating reports, scientific papers and publications; processes black-and-white film, and makes contact and projection prints, and lantern slides; makes photographic copies of photographs, line drawings and printed matter; and performs related duties.

Duties

% of Time

Takes photographs, in black and white and in colour, of foundry and welding operations, metal extrusions, castings, laboratory apparatus, etched, polished or corroded samples, and similar subjects, for inclusion in scientific papers, reports and publications: 35

- by selecting and adjusting lenses, filters, appropriate film materials, cameras, lights and other photographic equipment, orienting the subject, determining exposures and exposing the film; and,
- by mixing chemical solutions according to manufacturers' specifications, and developing, fixing, washing and drying black-and-white film.

Makes contact and projection prints: 30

- by positioning negatives in printing equipment;
- by choosing a grade and type of printing paper suitable for the negative and the results required;
- by exposing and developing test strips to check adjustments and exposure times;
- by exposing the required number of prints; and,
- by developing, washing, drying, trimming and mounting prints.

Makes photographic copies of photographs, line drawings and typed and printed matter: 20

- by mounting and aligning the object to be photographed;
- by arranging lights for even illumination;
- by choosing appropriate film material;
- by selecting compensation or contrast filters when required;
- by adjusting camera alignment, focus and shutter speed; and,
- by exposing and developing film.

Performs related duties such as opaquing and spotting negatives, preparing and binding lantern slides, filing negatives, maintaining indexes and records, and occasionally showing other employees how to perform tasks. 15

SpecificationsDegree/
PointsSkill and Knowledge

The work requires a thorough knowledge of commonly available black-and-white and colour films, and chemicals and papers for black-and-white processing and printing. It requires

5 / 196

some knowledge of the characteristics of metal surface structures and textures in order to light and photograph samples of cracked or corroded materials. It requires a knowledge of clerical procedures to file and index negatives and prints and to maintain records. The work requires skill in the use of several types of cameras, light sources, black-and-white processing and contact and projection printing equipment.

Technical Responsibility

Work is assigned by the senior photographer on receipt of requisitions or requests from users of the service. The work requires the selection of cameras, lighting, film and printing paper most suitable for the results desired, and the use of both common and more difficult techniques for the photography of molten metal, equipment and apparatus, corrosion samples and similar subjects. Some modification of procedures and techniques is required to deal with difficult subjects or with environmental conditions such as heat or smoke. Such changes are discussed with the supervisor. Resolution of photographic problems on location is the responsibility of the incumbent of the position. Problems encountered in processing or photo-laboratory work may be referred to the senior photographer for advice and guidance. The adequacy of completed work is determined by the unit for whom the work is done.

3 / 180

Responsibility for Contacts

Contacts are mainly with officers and technical employees of the department to exchange information on the requirements of photographic assignments, and occasionally with suppliers of photographic equipment and materials to discuss or to resolve problems in application and use.

B2 / 52

Conditions of Work

Concentration - The work requires attention to ensure that cameras and equipment are handled and set up properly. Short periods of concentration are required in handling laboratory samples and at critical stages of exposing film and processing films and prints.

1 / 10

Physical Effort - The work requires mainly standing and walking while taking photographs in the studio and on location and while processing materials. When photographing subjects in laboratories, foundries and similar locations, cameras, lights and accessories must be carried and set up.

2 / 30

Environment - The work requires frequent exposure to chemical odours and low levels of light in the darkroom. When photographing subjects outside the studio there is exposure to heat, smoke, fumes, dust or noise.

2 / 30

Hazards - The work requires frequent contact with photographic chemicals that can cause skin irritation and stains. Protective clothing is worn. Photographic subjects on location occasionally requires exposure to dust, smoke or fumes that can cause irritation or injury to respiratory passages.

A2 / 24

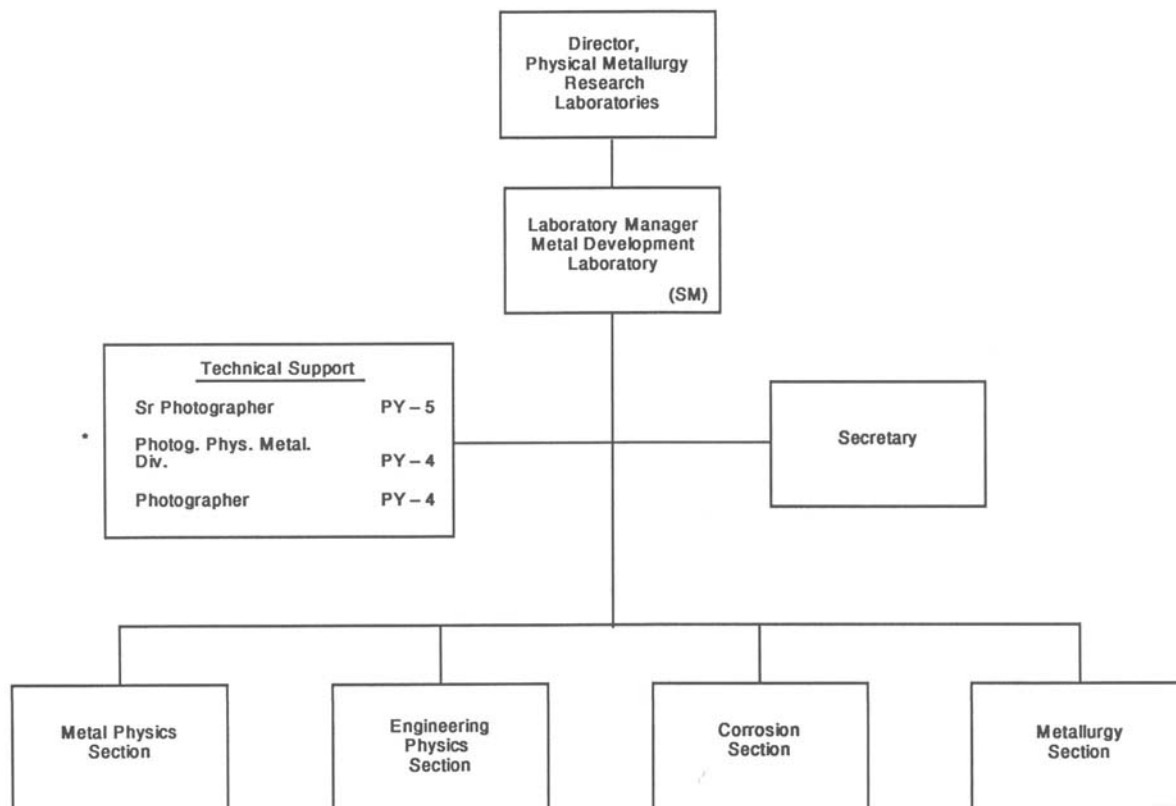
Supervision

The work occasionally requires showing other employees how to perform photographic tasks and maintain records.

A1 / 10

ORGANIZATION CHART

Department of Energy, Mines and Resources
Physical Metallurgy Research Laboratories
Metal Development Laboratory



* Bench - Mark Position

BENCH-MARK POSITION DESCRIPTION

Bench-Mark Position Number: 11

Level: 1

Descriptive Title: Photographic Processor,
Department of National Defence

Point Rating: 244

Summary

Under the supervision of a supervising technician in a Canadian Forces photo detachment develops black-and-white film; makes prints, enlargements, slides and transparencies; and performs related duties.

Duties% of Time

Develops various sizes and types of black-and-white photographic films received from Canadian Forces units:

25

- by measuring and mixing chemicals and making solutions for developing and fixing films, in accordance with the manufacturer's directions regarding temperature, proportions and ingredients;
- by immersing and agitating films in developing and fixing solutions, under darkroom conditions;
- by adjusting specified developing periods to compensate for over- or under-exposure of film, and to achieve desired effects in photographic prints, as requested by user units; and,
- by washing, drying and filing developed photographic negatives for subsequent printing and retention or return to user units.

Makes photographic prints, enlargements, slides and transparencies in accordance with specifications provided by user units:

70

- by measuring and mixing developing and fixing solutions;
- by selecting photographic printing material of appropriate characteristics and for the desired finish and weight of paper;
- by focusing lenses, determining exposure time and selecting filters for printing and enlarging equipment;
- by testing focus, print contrast and print density with a test strip of printing material;
- by exposing printing material under contact printing or enlarging equipment;
- by shielding or shading printing material during exposure to achieve the desired density or special effects in the finished print;
- by developing, fixing, washing and drying prints; and,
- by trimming, mounting and collating finished prints and mounting slides and transparencies in projector frames and glass plates.

Performs related duties such as instructing new and temporarily assigned staff in work procedures and allocating and checking their work, maintaining files of copies of photographic production samples, and collecting and safeguarding classified material in accordance with prescribed procedures.

5

Specifications

Skill and Knowledge

The work requires a good knowledge of the properties of regular commercially available film, printing paper and photographic processing chemicals. It also requires a sufficient knowledge of the activities of the various units served to understand their requirements and make suggestions to improve the finished photographic product. A knowledge of simple clerical procedures is required to maintain records. The work requires skill in using a variety of darkroom and studio equipment, and chemical solutions, and in judging the exposure, development and finishing of contact and projection prints.

1 / 60

Technical Responsibility

The work requires the use of darkroom equipment, printing papers and chemical formulae most suitable for particular tasks. It also requires the use of established processes and procedures for developing film and making prints. Special instructions or requests are explained by representatives of user units. Unusual problems encountered in the darkroom are referred to the supervisor for guidance and instruction.

1 / 60

Responsibility for Contacts

The work requires contacts with user unit support staff to exchange information on requirements.

AI / 20

Conditions of Work

Concentration - The work requires attention to ensure that correct formulae are used for processing various types of films and that finished prints are correctly identified. Short periods of concentration are required at critical stages in processing films and making prints.

1 / 10

Physical Effort - The work requires continual standing or walking while working in the darkroom.

2 / 30

Environment - The work requires exposure to chemical fumes and occasionally to the heat of electric driers. Work is performed in the dark or in subdued light. Protective gloves and aprons are worn to protect against splashes of chemical solutions.

2 / 30

Hazards - The work requires frequent contact with photographic chemicals that can result in temporary loss of smell, and skin rashes. There is a possibility of eye strain caused by working in subdued light.

A2 / 24

Supervision

The work requires occasionally showing other employees how to perform photographic tasks and keep records.

AI / 10

BENCH-MARK POSITION DESCRIPTION

Bench-Mark Position Number: 14

Level: 7

Descriptive Title: Technical Supervisor, Earth Imagery Reproduction,
Department of Energy, Mines and Resources

Point Rating: 870

Summary

Under the direction of the Chief, National Air Photo Library Reproduction Centre (NAPL/RC) plans, organizes, and implements the daily production activities of technologists and technicians engaged in the reproduction of colour, infrared false colour and black and white earth imagery originated by optical systems and electronic sensors carried aboard imaging satellites, airborne radar systems and aerial surveys, in support of scientific programmes such as Remote Sensing, the National Mapping Program and other scientific work concerned with resources development and environmental control, and requiring high fidelity reproduction of earth imagery.

Assists the Chief in the long range planning and in ensuring required capacity and resources capability to meet current and future needs to deal with related problems; and, in the control of cost and production and the preparation of annual estimate and budgetary forecasts of the Centre. Acts as a senior technical consulting authority of the Centre providing advice or consultation services concerning earth imagery reproduction techniques, applicability and type of support offered and feasibility of the work requested.

Performs other work related to the utilization of the resources and the provision of the services offered by the Reproduction Centre.

Duties% of Time

Organizes the work of technologists and technicians engaged in the provision of earth imagery reproduction services, and ensures efficient and effective utilization of the resources and quality of the service provided, in support of scientists and specialists engaged in scientific programmes such as Remote Sensing programme, National Mapping Programme, aerial surveys and various earth science related projects requiring high precision in the reproduction of earth imagery, by:

40

- reviewing and discussing with scientific users request particulars and material submitted, desired result, particulars and use and project supported;
- assessing feasibility of the work requested, considering capability, availability and estimate of resources required, and determining time frames, cost and priority, for agreement and acceptance of the undertaking;
- planning and scheduling the work to be performed, setting objectives, defining the tasks and establishing work priorities;
- allocating work, committing resources, delegating project leadership and instructing personnel;
- coordinating, controlling and supervising the work, the utilization of the material and equipment and the quality of the results produced;
- ensuring compliance to plans, specifications, established procedures, quality standards and taking action to correct deviations;
- evaluating impact of unforeseen difficulties or changes in conditions on special work or projects and determining course of action;
- resolving problems arising from priorities, resource requirements and commitments or recommending and discussing alternatives with the Chief or the user as applicable;
- adjusting work schedule and realigning work priorities to meet changed or new conditions and requirements;

- identifying and advising on technical problems and establishing required liaisons;
- reviewing and evaluating progress of work and approving work produced;
- reporting as required, on the work performed, unusual problems, production, cost, resource utilized, equipment breakdowns and maintenance.

Supervises technical resource personnel performing at the various skill levels in the imagery reproduction field, to ensure optimum performance and related conditions by:

30

- following established personnel relations practices;
- allocating work assignments or projects considering technical skills required, employee capabilities and need for assignment rotation;
- instructing staff in the execution of the work, and providing technical leadership in the diagnosing and resolution of unusual problems;
- monitoring progress in the execution of the work, reviewing and evaluating results, determining need for training, counselling employees and formally evaluating and reporting on employees' performance;
- reviewing the progress of technicians on on-the-job training and effecting assignments rotation to develop employees' skills and capability;
- resolving conflicts as required;
- instructing staff and ensuring compliance to established safety procedures and practices;
- identifying changes in the work and corresponding new skill requirements, staff training needs, required technical courses and on-the-job training;
- developing technical training plans and programs, recommending and discussing syllabi and training standards with the Chief, supervising and participating in the conduct of courses to develop staff capability to meet requirements;
- recommending changes in job content, promotions, extensions of probation or release, and disciplinary actions;
- participating as a technical adviser in the position classification and staffing processes and in the evaluation of employee training program and results;
- reporting and making recommendations as required.

Assists the Chief (NAPL/RC) in planning and ensuring required capacity and resources capability to meet forecast new or changed needs, and in dealing with related production, technical or service problems by:

10

- reviewing current trends in technological and technical developments in the imagery reproduction and photographic fields;
- assessing capability of current resources against current and foreseeable new imagery services requirements to be met, technical problems encountered and need for new or changes in techniques, equipment, materials, quality controls, and technical training program;
- evaluating applicability of new techniques, processes, equipment and materials; and making recommendations for adoption and acquisition;
- establishing procedures and parameters to ensure that the specific and narrow tolerances required by the scientific community are maintained;
- directing and coordinating special or developmental work to meet new or unique imagery reproduction needs of scientists;
- assessing reports of technologists recommending solutions to production problems, improvements on reproduction systems components or on the quality of the imagery produced.

% of Time

Assists the Chief in the control of cost and production, and in the preparation of annual estimates and budgetary forecasts by: 10

- periodically reviewing production and maintenance costs;
- responding to queries on production status and production cost involving evaluation of production records and reports, flow charts and periodic statistics;
- reviewing production records, service demand trends, cost reports, estimating labour, material and capital requirements based on current and projected future work loads; and,
- proposing and discussing estimates.

Provides technical advice concerning the earth and air survey imagery reproduction techniques and the support capability developed at the Centre, to the scientific community of industry and of domestic and foreign governments by: 10

- maintaining required awareness of technological changes and trends with particular reference to satellite and airborne imagery;
- attending meetings of scientists, engineers and investigators to provide advice and guidance on imagery problems;
- advising on the feasibility, techniques, and methods of imagery reproduction required or available to meet the particular requirements;
- acting as assigned technical contact for manufacturers technical representatives to discuss matters pertaining to new developments, materials, equipment and systems related to imagery reproduction, materials, equipment difficulties and support.

SpecificationsDegree/
PointsSkill and Knowledge

8 / 300

An in-depth knowledge of the capabilities, limitations and precedents of the Centre photographic reproduction systems to select the most effective reproduction course for new or unusual reproduction requirements, or to maintain the prescribed quality of service to the clients. A sound knowledge of both photographic theory and applications in photographic chemistry, emulsion making technology, colour theory, sensitometry, process control systems, photometry and of each of the diverse color and B&W reproduction systems utilized at the Centre to discuss, assess, and approve new system proposals, changes to existing systems or solutions to production problems. A good knowledge of Aerial, Remote Sensing and Satellite systems and their uses is necessary to understand the particular requirements of the scientific users and approve the production proposals to meet these requirements. Knowledge and skill required in planning, scheduling, coordinating, controlling and reporting on the activities. The position requires a knowledge of the staffing and classification processes sufficient to participate effectively to these processes. A good knowledge of the departmental administrative practices and procedures pertinent to the control of the services provided and the resources utilized is also necessary as well as a good knowledge of the safety practices applicable to the various materials and equipment used.

Technical Responsibility

5 / 300

Work assigned in terms of current, new and long-term demands to be satisfied; of requirements for program activities supported, and of particular scientific project aims. Specifics of the imagery requested and of the particular photographic service contribution expected must be discussed with the Chief and/or the Research Project

Scientists or specialists to assess technical feasibility, timeframe, cost and priority. General instructions are given for planning, scheduling and allocating the project work, committing the resources and producing the required results within set cost and timeframe limits. The work requires directing and assisting specialized technical staff in selecting, applying or modifying, testing and evaluating applicability of advanced new or unique techniques, materials, equipment or procedures, advising on or approving most appropriate approach to deal with technical limitation and achieve desired results. There is a requirement to recommend acquisition of new equipment; and considerable scope is allowed to determine advisability and ensure the development of new techniques, quality control standards and procedures; in evaluating and approving adaptations of photographic materials, equipment, processes and material combinations to deal with unique or new demands, unusual technical difficulties or particular limitations of available equipment/material/process. There is a requirement to identify alternatives; recommend and effect solution to priority realignments, resource requirements, conflicts, commitments, material and equipment, suppliers services and cost overrun. Must establish precedents in situations arising from difficulties in present reproduction systems or their components. Limited help is available due to the uniqueness of the work of the Centre. The position is responsible for evaluating and approving the work produced by subordinate technologists and technicians. The work results are reviewed with the Chief and/or the Research Scientist or specialist requesting the service; the work of the position is reviewed by the Chief for effective utilization of resources, conformance to plan requirements, cost and appropriateness of support provided in meeting multiple users' requirements.

Responsibility for Contacts

The work requires frequent contacts with research scientists and other officers from Federal and Provincial government departments and agencies, officers of foreign governments, universities, and private industry, to discuss problems relating to imagery reproduction and to advise them on most suitable procedure to achieve optimum data for their requirements. Daily contact is made with engineers and scientists from the Canada Centre for Remote Sensing to discuss and analyze requirements and recommend procedures for the reproduction of Satellite and remote sensing imagery. Frequent contacts are made with technical representatives of manufacturers of imagery reproduction equipment and materials to discuss new products offered or to resolve problems experienced with supplied equipment and materials.

C3 / 84

Conditions of Work

Concentration - The work requires high level of attention with concentration for sustained periods when examining completed reproductions for details accuracy, and adherence to specifications. More frequent short periods of concentration with a high level of attention are required when studying sensorimetric data, verifying image scales, and endeavouring to isolate faults such as chemical degradation, loss of chemical control in processes, unexpected reactions by sensitized materials and determining corrective action when the fault has been isolated.

3 / 36

Physical Effort - Little physical effort required. Desk work involving walking or standing for varying periods when checking work in progress, supervising production in the work areas, dealing with problems or providing guidance to subordinates at the various work units.

1 / 10

Degree/
Points

Environment - Fair working environment. - Work is usually performed in an open office area in the production workroom, and involves some exposure to noise and disagreeable chemical odours and fumes. Exposed to elements such as odours from chemicals, noise from operating equipment and heat from driers, when necessary to work in dark room to provide assistance to subordinates or to check work in progress.

2 / 30

Hazards - The work requires occasional contacts with photographic chemicals that can result in skin irritations or allergic reactions. There is a possibility of eyestrain caused by repeatedly moving from a darkroom to brightly illuminated area to check work in progress or to provide guidance as may be required.

A1 / 10

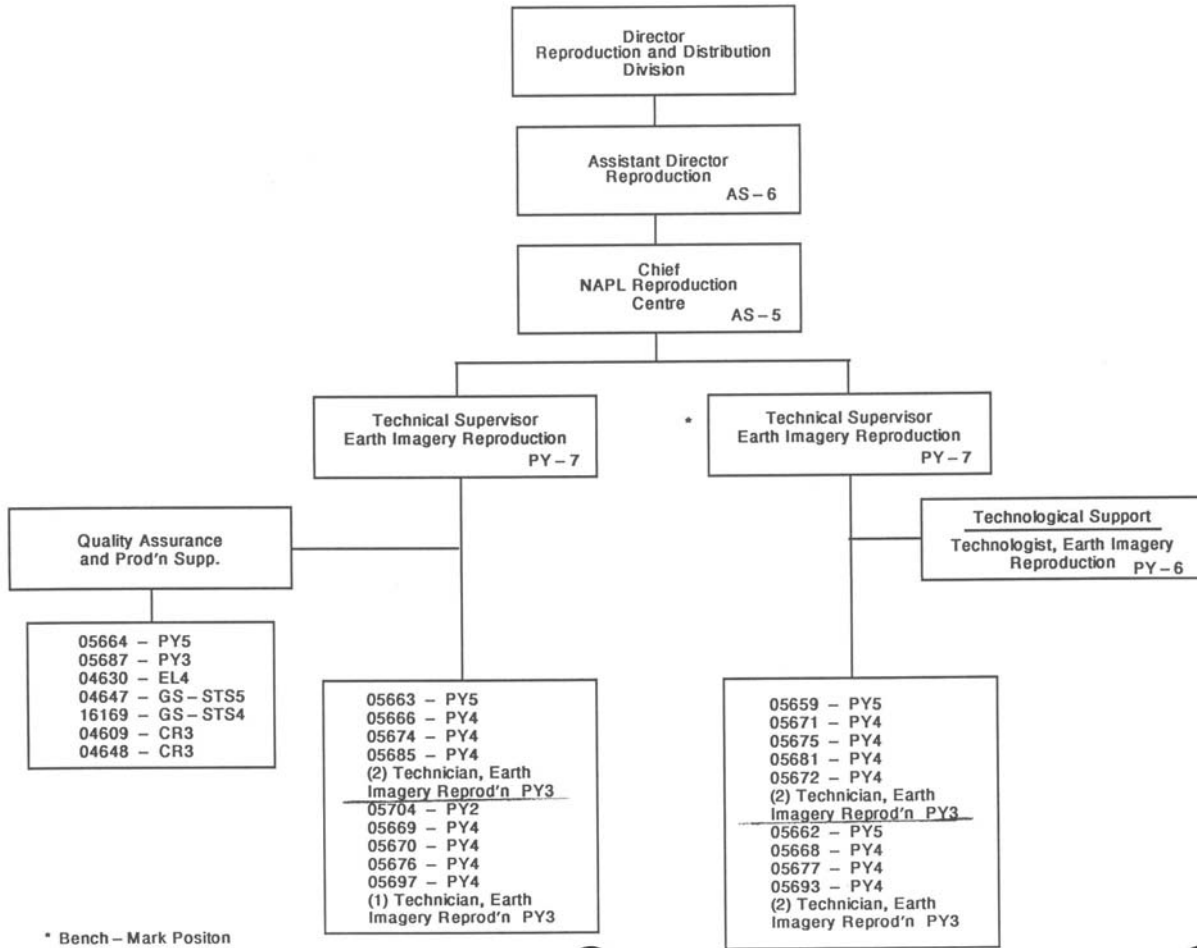
Supervision

The work requires scheduling, organizing, assigning, supervising and controlling the work of 15 employees, and to evaluate performance, participate in appraisal of employees, recommend promotions and disciplinary actions, implement technical training program and to participate in the staffing and classification process.

D5 / 100

Organization Chart

Department of Energy, Mines and Resources
 Surveys and Mapping Branch
 Reproduction and Distribution Division
 NAPL Reproduction Center



BENCH-MARK POSITION DESCRIPTION

Bench-Mark Position Number: 15

Level: 3

Descriptive Title: Technician, Earth Imagery Reproduction,
Department of Energy, Mines and Resources

Point Rating: 439

Summary

Under the supervision of a technical supervisor, produces B.W. enlargements which may exceed 40" x 60" in size on a paper or film base airborne and satellite generated negatives and processes various aerial films to average gradient; produces colour microfiche from maps; operates and controls a wide track processor; produces black and white contact prints and enlargements on manual printers or electronic scanning printers; produces aerial microfilm on specialized equipment; and, performs related work for the reproduction of satellite earth imagery, airborne radar systems and aerial surveys in support of scientific projects.

Duties% of Time

Produces black and white (B&W) earth imagery enlargements and scaled enlargements on a paper or film base from airborne and satellite roll film negatives and processes aerial film to average gradient and basic density, in support of scientific and engineering work carried out by government, industry or private groups by:

- reviewing the requisition and determining the scale of enlargement, type of material, density, contrast, and equipment needed to obtain the desired results;
- operating different types of vertical and horizontal enlargers, capable of producing reproduction suitable to aerial, remote sensing and satellite imagery;
- selecting the required negative on the roll, and inspecting for freedom from foreign matters; inspecting the optical elements and optical stage plates to ensure freedom from dust and scratches;
- adjusting the enlarger for scale; focussing the image on the easel and adjusting the lens diaphragm to the selected stop;
- selecting the proper type, grade and size of sensitized material and accurately locating it on the easel; 45
- determining the degree and method of manual dodging and, the exposure required;
- manually processing the exposed print, using specialized development techniques when sensitized material must be processed in method other than continuous processor in normal operation;
- operating a wide track sheet paper and film processor and ensuring that the chemical solutions are in control.

Produces images on black and white sensitized paper on electronic and manual printers, from colour and other specialized images requiring a different negative evaluation and treatment, in support of scientific and engineering projects by:

- determining from the requisition, the photographic characteristics, type of material and procedure;
- placing and cleaning the negative on the printer, locating it as required on the platen, and selecting a correct colour and density mask; 25
- evaluating the characteristics of the image including the degree of fall-off from center to corners, the contrast or density range and major terrain characteristics;

% of Time

- selecting appropriate paper, determining dodging, exposure time, and the size and intensity of the scanning; adjusting the printer, centering the sensitized paper, lowering the printer head and making the exposure;
- processing the print manually when necessary or with a continuous processor;
- checking the processed prints as required for optimum quality; taking corrective action; and applying chemical tests to the processed prints to ensure that the residual chemical and silver content is within standards limits for archival quality;
- informing the supervisor in cases such as when the chemistry has gone beyond established tolerances, when approved corrective action is ineffectual, or where correction of malfunctions is beyond position's capability, and discussing possible modifications of the equipment, chemicals or procedures;
- carrying out periodic maintenance inspections, removing chemical deposits from the transport components as laid down by established schedules, and advising the supervisor of defective parts or signs of abnormal wear.

Processes, to specified archival and photographic quality standards, stable based specialized satellite and aerial films for use in the compilation and revision of topographical maps or as a source of scientific information by:

- using a continuous black and white film processor such as a Versamat 11CM, processing special films such as aerial, electron beam recording, reversal and direct reversal films;
- selecting and adhering to appropriate established process control procedure for the type of film being used and result required;
- verifying adequacy of selected control procedure through processing control strips, reading densities on densitometer and plotting and interpreting readings of graph;
- determining from sensitometrically exposed test wedge, the degree of development, the temperature and replenishment rate required to achieve the specified average gradient and effective aerial film speed;
- informing supervisor when approved corrective actions are ineffective in producing specified results.

15

Produces special microfilm imagery on in house designed equipment for the Aerial Microfilm Library of the National Air Photo Library by:

- reviewing requisition list and determining quantity of reproduction capable of being contained in each cassette;
- assessing quality, contrast, density, and numerical sequence of the original aerial film rolls;
- setting roll on copy table; checking camera for format, focus, and image position; setting the counter; and, exposing each frame in sequence;
- processing master microfilm roll in either Versaflo, 885 or type A chemistry; checking processed roll for quality; duplicating master roll on in house modified equipment; processing duplicated rolls; and recording required data.

10

Produces colour fiche from maps for the Aerial Microfilm Library and subsequent cross reference by earth resources investigators by:

- Loading magazine with 35 mm colour film; setting magazine in K and E camera; sizing and focussing for each map to be copied; checking light source for Kelvin rating to determine colour filtrations to be used, evenness of illumination, exposure and to ensure correct density and colour fidelity; and exposing each frame.

5

Degree/
PointsSpecificationsSkill and Knowledge

The work requires a good working knowledge of the processes, systems, procedures, chemistries, sensitometry, emulsions and their properties, as well as of the spectral sensitivity of a diversity of emulsions, and of process monitoring procedures associated with the processing and reproduction of a wide range of special black-and-white aerial films. Special skill is particularly required to produce, within the close precision tolerance limits allowed and at the degree of quality requested, black-and-white imagery enlargements in various sizes, (sometimes exceeding 40" x 60") and reproduced on a diversity of sensitized emulsions such as: papers, films and translucent materials of various types; and to operate and calibrate highly specialized equipment such as used in the work. A good understanding of the manufacturers and Centre standards and specifications pertaining to the work, the material, the equipment and the processes, and of the established safety practices is essential.

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Technical Responsibility

The work is specialized but largely standardized with some customization, and is assigned in terms of immediate task objective. Work is specified in terms of the results to be obtained, and the instructions provided are sufficient to visualize the appropriate means of production. Closely related precedents exist in custom work; these require some interpretation and limited adaptations. Assistance is provided in cases where work must deviate from the established precedents and normal practices. The equipment, materials and procedures available are adequate for the work assigned. The work requires the selection of a variety of specialized equipment, particular processing cycles and chemistries, and materials in various combinations. Within prescribed standards and procedures, there is a requirement to determine exposure level, adjust reproduction equipment, select and adapt procedures and conditions for processing film or paper to achieve required results. There is some scope for initiative and judgement in making required adaptations, adjustments and modifications within the limits prescribed. Major deviation from established standards are referred to higher level technicians or to the supervisor. Work requiring borderline adjustment is checked at critical stages. Upon completion, work is checked and approved by the technical supervisor.

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Responsibility for Contacts

The work requires contacts with the supervisor and with other staff members to exchange information on the requirements of the project and for the co-ordination of various tasks.

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Conditions of Work

Concentration - The work requires a high level of attention when handling and positioning aerial roll negatives in a variety of enlargers and rectifiers, calculating scale requirements and evaluating negative characteristics. Short periods of concentration are frequently required when adjusting settings on enlargers and rectifiers, focusing and adjusting lens systems; and when scrutinizing imagery products for quality.

2 / 23

Physical Effort - Moderate physical effort. The work requires continual standing and walking or working at times in a bent over position while working in the darkroom. Greater physical effort is required for short periods, when lifting rolls of sensitized material or changing processing racks. Occasionally handles packaged material or container of chemicals weighing up to 50 pounds, for short periods.

2 / 30

Environment - The work involves significant exposure to several disagreeable elements simultaneously present such as fumes and odours from photographic chemical, noise from operating equipment and to heat from electric driers. Most of the work is performed in the dark or in subdued light. Must wear respirator, face shields, protective rubber gloves and aprons to mix chemistry and clean processors.

3 / 50

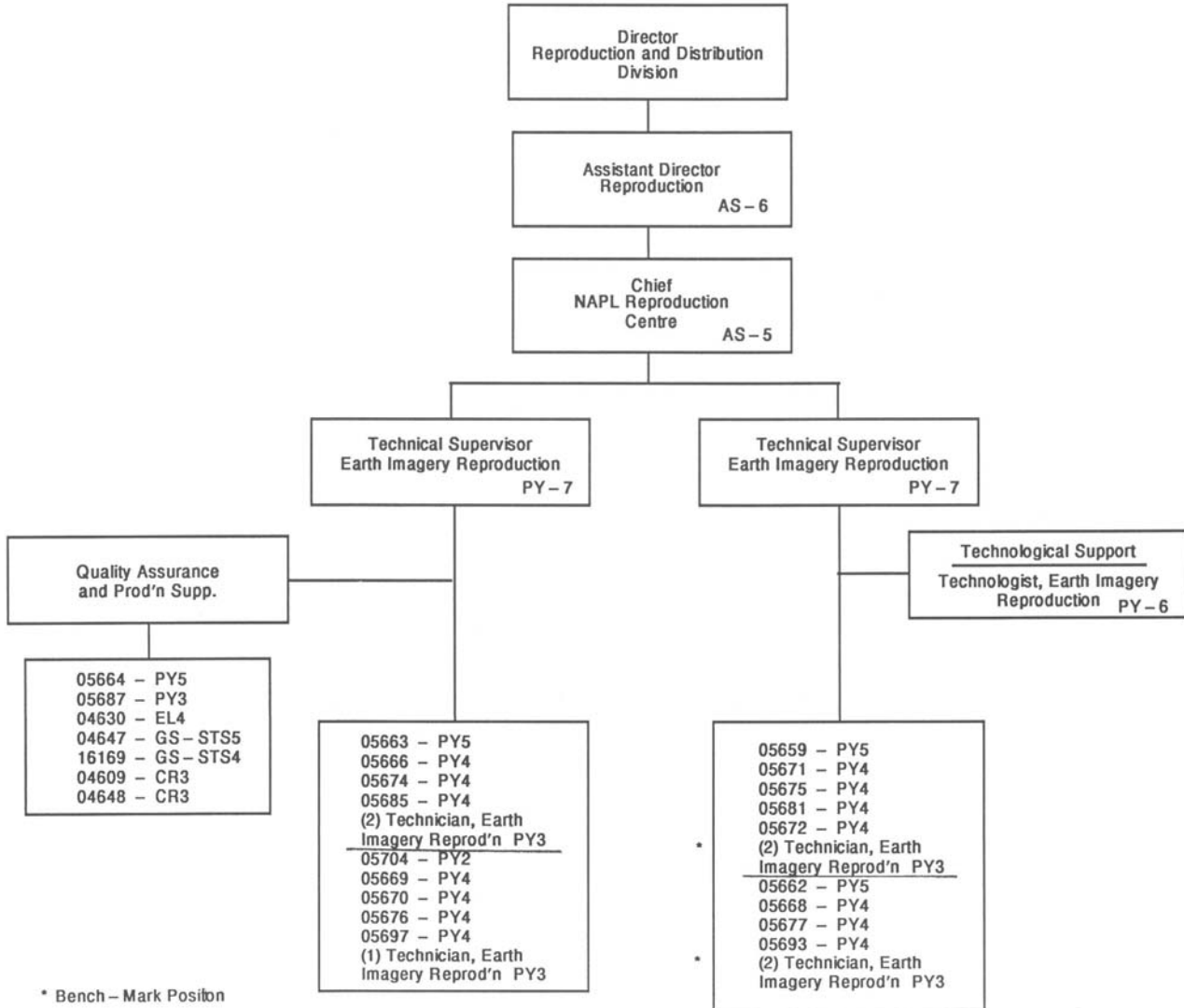
Hazards - The work requires frequent contact with photographic chemicals that can result in skin burns, irritations and allergic reactions. Exposed to significant eyestrain caused by working in subdued light for extended periods and concentrating on imagery precision requirements.

A₂ / 24Supervision

The work occasionally requires showing less experienced employees how to perform duties related to reproduction of imagery.

A₁ / 10

Organization Chart
 Department of Energy, Mines and Resources
 Surveys and Mapping Branch
 Reproduction and Distribution Division
 NAPL Reproduction Center



BENCH-MARK POSITION DESCRIPTION

Bench-Mark Position Number: 16

Level: 6

Descriptive Title: Technologist, Earth Imagery Reproduction
Department of Energy, Mines and Resources

Point Rating: 731

Summary

Under the general supervision of a Technical Supervisor, chemically processes a wide range of colour and infrared False colour films exposed by image recorders, cameras and sensors carried aboard aircraft or satellites, and produces colour enhanced contacts, enlargements, transparencies, corrected photogrammetric mapping diapositives and a wide variety of special imagery products; provides technical guidance to technicians and deals with unusual technical problems; determines technical feasibility of providing required new imagery reproduction; assists supervisor; and, performs related duties; in support of scientific research and development projects involving reproduction of earth imagery.

Duties% of Time

Deals with special requests from the scientific community to meet new or unique product requirement such as extracting a single colour from a spectrum of colours contained in a satellite or remote sensing image; obtaining for such imagery a very high level of resolution or colour fidelity; developing new masking techniques to improve or highlight specific information in the imagery; optimizing interpretation of details in the imagery through maximization of colour separation; undertaking any other similar work which is out of the ordinary by:

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- studying and discussing request with supervisor and scientists, determining technical feasibility of producing the required results;
- assessing suitability of materials, equipment, technical modifications required, and applicability of precedents; and discussing alternatives with supervisor;
- determining the degree of development and other processing parameters using densitometric and chemical analysis;
- testing non-standard film for colour fidelity and resolution;
- modifying any reproduction systems components to produce required enhancement of spectral bands or to isolate a unique colour from a full spectrum of colour in the imagery;
- producing colour master negatives to density and colour balance specifications with narrow tolerances set by a densitometer linked to computer precision analysis program and using enlarger or hand registration equipment;
- modifying procedures in processing, using non-standard photographic chemicals, unusual or unique film combinations, to produce optimum colour fidelity or colour enhancement;
- testing, in conjunction with National Research Council scientists and the Topographical Survey engineers new systems of producing photogrammetric diapositives with very high level resolution and pointing accuracy;
- maximizing colour separation through density splicing of image details to achieve optimum interpretation of imagery;
- enlarging negatives and positive images to exact same size; registering each film image in exact overlay position; exposing each image through individual separation filters onto one sheet of colour film for colour enlarging of satellite stereo images.

Deals with unusual technical problems such as degradation of colour chemistry and abnormal processor behavior during processing of colour film, and presence of particular stress and processing marks on processed colour film by:

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- investigating and diagnosing cause of problem, and carrying out verifications e.g. ;
- duplicating process by substituting each chemical, checking pH and specific gravity of each chemical and checking for conditions causing degradation;
- printing and processing colour paper for correct colour fidelity, checking the paper effecting the colour shift for possibility of a defective batch, comparing for colour, speed and contrast;
- checking conditions and alignment of equipment components such as racks, tines, bearings, operation of rollers, room humidity and temperature, presence of condensation on drying racks; and, processing a test and checking at each stage;
- taking required actions to correct defectiveness, resolve difficulties, or recommending possible corrections;
- establishing optimum tolerance for operation of sensitometric control systems and deciding on solution replacement;
- resolving unusual processing defects on various colour film emulsions.

Produces, in color, unusual earth imagery transparencies and prints from Landsat original and involving grey scale control, enlargements and internegatives, on specialized emulsions such as employed in remote sensing techniques, satellite film (NASA neg. and pos.), aerial survey roll film (neg. and pos.), infrared false colour and satellite earth imagery recording films, requiring the application and the utilization of a wide diversity of specialized or unique imagery reproduction techniques and procedures, materials, and equipment; in support of remote sensing, national mapping and aerial survey programs, and of earth science discipline scientists requiring precise reproduction of earth imagery by:

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- interpreting the requirement; discussing with the Supervisor and client as required; and, determining appropriate type of colour reproduction;
- evaluating the colour balance of the original using colour precision evaluation devices such as densitometer, spectrophotometer; calculating the colour correction filters and exposure; evaluating the exposure, the colour balance; and, determining corrections;
- producing large dimension colour enhanced enlargements such as 60"-40" in size, from various types of aerial colour films; operating and monitoring the sensitometric and chemistry control systems for the particular type of processor;
- correcting and maintaining over prolonged periods, the chemical balance within narrow tolerances, using colour densitometer, sensitometer, pH meter and manufacturers control strip.

Assists the supervisor in determining the technical feasibility of providing special service or satisfying unusual requirements, in the devising, adaptation or evaluation and utilization of new techniques, equipment or material, or in the application of quality control procedures or in the training and guidance of lower level technicians for the reproduction of earth imagery by:

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- evaluating applicability of new photographic material, equipment, techniques, and making recommendations to supervisor on needs, quality standards, and feasibility of satisfying changed or emerging new demands;
- ensuring the completion and accuracy of process control tests, calibration, exposures and new emulsion cross-over procedures;
- checking the work in progress of lower level technicians for quality, precision of rendition and compatibility with work requests;

% of Time

- instructing in the formal training programme;
- providing technical leadership advice and guidance to technicians and in resolving technical problems, in the selection and/or use of particular, or the more difficult procedures, techniques, materials, equipment or processes to be utilized and referring technicians to applicable technical data, precedents or reference material.

SpecificationsDegree/
PointsSkill and Knowledge

An in-depth knowledge of photographic theory which includes: photographic chemistry, emulsion making technology, color theory, sensitometry, process control systems and photography is required. A good knowledge of Aerial, Remote Sensing and Satellite systems, and their uses is necessary to understand the particular requirements of the scientific users, the conditions and characteristics of the captured imagery in order to achieve effective results. A high level of skill is required in solving unusual photographic systems problems as well as the ability to adapt current, modified or new imagery reproduction technology to existing and evolving Aerial, Remote Sensing and Satellite imaging systems. A sound knowledge of the limitations of the photographic reproduction systems (i.e. equipment, materials, techniques and procedures) is required to identify, evaluate, select and propose optimum alternatives, approach or systems to deal with technical problems, improve results or meet new requirements. A very high level of working skill is required to overcome technical difficulties in reproducing unusual or unique imagery generated by aerial/remote sensing/satellite systems.

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Technical Responsibility

Work performed is highly specialized, customized for particular scientific disciplines, or new and unique to the Centre. Work is assigned in terms of general objective, or as a scientific user requirement that needs discussions with the user as to precision and tolerance of rendition. Broad or general instructions are given and precedents that exist may be remotely applicable and provide only limited assistance. Some help may be obtainable from the immediate supervisor or from the Reproduction Research and Development Group in determining possible new or best approaches. The work requires the selection, modification or adaptation of new or existing reproduction systems or of components of these. Considerable scope is allowed to the position in deciding independently on selection, critical modifications or adaptation of procedures, technique and equipment, and on the best approaches to resolve unusual technical problems as well as in organizing and conducting the work for the interpretation and application of established and new standards such as photogrammetric standards and others established by the scientific community. There is a requirement to identify, test and evaluate the applicability of specialized and advanced or unique reproduction systems or of components of these. The incumbent must provide technical leadership and advice to senior and lower levels technicians in these systems and in resolving technical difficulties. Intricate adaptations or unique combination/configuration of equipment/material, modification of process, control of chemistry mixture is required to overcome limitations, achieve the required precision, enhancement and quality of the imagery desired or to resolve special technical problems encountered. The results produced are discussed and reviewed against requirements with the immediate supervisor and if necessary, the scientific user concerned.

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Responsibility for Contacts

The work requires contacts with scientists and officers within the department and from other government departments, universities and private industries to clarify client requirements and/or to provide technical advice and guidance on the application of unusual photographic techniques to special projects, and with engineers and scientists working in the field of Remote Sensing with the federal, provincial or other governments to discuss and analyze requirements for a special product. The work requires contacts with member of the technical staff of the Centre to discuss production problems. Contacts are required with suppliers of photographic equipment and material as necessary to discuss new items or to resolve problems experienced with the products provided.

C3 / 84

Conditions of Work

Concentration - The work requires a very high level of attention and of concentration for sustained periods when analyzing and comparing charts, graphs and tables to find trends and arrive at a solution, or when studying data with optical equipment such as microscopes. Precise mental-sensory coordination required for work requiring utilization of material and equipment at the very limit of their capabilities to produce an unusual product. Concentration is also required when checking work in progress, dealing with reproduction problems involving false colour separations, or when scrutinizing completed reproduction for details, accuracy and adherence to scientific requirement specifications.

4 / 50

Physical Effort - Little physical effort usually required in performing laboratory work, standing at a light table to make measurements or evaluate film image quality, or in performing work such as studying and comparing graphs, tables and formulae and reading and writing reports while sitting at a desk. Assignments may require darkroom work involving standing, walking or working at time in a bent-over position. Greater physical effort is required for short periods when occasionally handling rolls of sensitized materials.

1 / 10

Environment - An appreciable part of the work is performed in a laboratory at close proximity to the production workroom, and involves some exposure to noise and disagreeable chemical odors. Exposed to noise from operating equipment, heat from electric dryers and to odors from photographic chemicals, working in the dark or in subdued light, when performing work in darkrooms as necessary to deal with special or unusual requirements, or to resolve particular technical problems. Must wear face shield or respirator, protective rubber gloves and apron when mixing chemistry.

2 / 30

Hazards - The work involves occasional contacts with photographic chemicals that can result in skin burns, irritation or allergic reactions. Exposed to eyestrain caused by working in subdued light for varying periods or from concentrating on imagery precision, and using microscope, optical micrometers and other eyestraining laboratory instruments such as used for determining quality of the imagery and precision with which metric requirements have been met.

A1 / 10

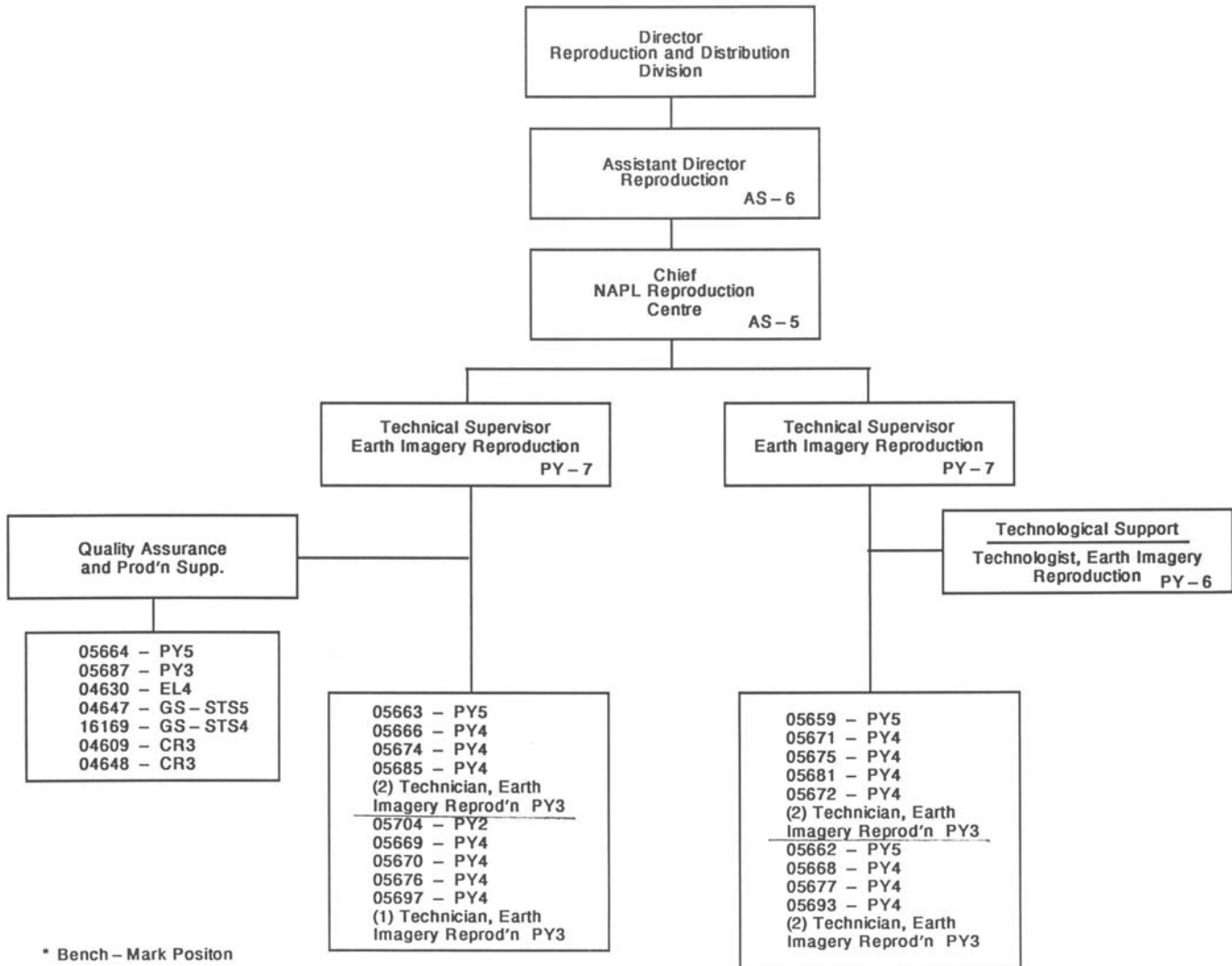
Degree/
PointsSupervi si on

Must provide technical leadership and advice to the technicians in the resolution of technical problems and the use of particular or new techniques, material and procedures. Instructs technicians in the correct interpretation of quality standards and in the formal training program. On various projects or assignments, assigns, coordinates and controls the work of usually up to three technicians and reports on their performance. Provides supervisory assistance to the Technical Supervisor in the allocation and control of special project work or tasks and in the checking of the work performed by the technicians for conformance to standards, quality and required precision of imagery rendition.

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Organization Chart

Department of Energy, Mines and Resources
 Surveys and Mapping Branch
 Reproduction and Distribution Division
 NAPL Reproduction Center



* Bench - Mark Positon

