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CLASSIFICATION STANDARD

defence scientific service

scientific and professional category

Canada

CLASSIFICATION AND SELECTION STANDARD

defence scientific service

scientific and professional

category

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PREFACE

This standard describes the plan to be used in evaluating and classifying Defence Scientists and Defence Science positions, and in selecting personnel for appointment to the group and to positions in the group.

The classification and evaluation plan is a level description plan against which the relative level of performance and job responsibility of individual scientists may be judged and positions classified where applicable. The selection plan describes the method to be used for determining the qualifications required of candidates and assessing the extent to which they possess them.

The standard is designed for the use of classification officers, staffing officers and line managers.

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Occupational categories were repealed by the Public Service Reform Act (PSRA), effective April 1, 1993.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.

PART I

LEVEL DETERMINANT AND POSITION CLASSIFICATION PLAN

INTRODUCTION

This part of the standard consists of an introduction, a glossary of terms and level determinants for the group.

The standard is a level determinant standard which incorporates some important differences from those normally associated with position classification. It provides levels which accommodate the wide varieties of duties and responsibilities characteristic of the activities of defence scientists and the varying degrees of managerial responsibility associated with positions in the laboratories and in staff, advisory and liaison activities.

The work performed within the defence research organizations requires frequent formulation and dissolution of multidisciplinary teams of scientists and reassignment of duties in response to changing departmental priorities and objectives. To meet this requirement the scientists must be given an opportunity to acquire broad experience to function at the full level of their capacity. This standard is intended to assist in making valid judgments about the worth of scientists even though the nature of their work may change frequently and they may develop professionally at varying rates.

Within the particular Research and Development community covered by this standard, a variety of full time liaison advisory and evaluation activities are closely associated with laboratory activities and are manned on a rotational basis by research scientists with relevant knowledge, experience and capabilities. Although such duties might be identified and evaluated separately, the rotational nature of the assignment and their role in career development makes this inadvisable. In practice candidates are chosen for the ability to fill a particular need at a point in time and therefore may move to assignments without an automatic change in designation.

This standard will be applied as a person oriented system in which the assessment of the scientist's achievements and such characteristics as may be required by the responsibilities of the position will determine the position's level. Classification specialists in the department are not involved in determining the classification level for a scientist except on a consultant basis to Management Committees which have formal responsibility for this activity. As a consultant, the classification specialist is required to advise on the relationship of an assignment to one or more of the classification level characteristics.

Use of Classification Level Characteristics

As indicated in the group definition, the duties of members of this group would involve the following kinds of work: scientific research and development, scientific analysis, scientific liaison, scientific advice, scientific policy and evaluation, and scientific information services. The duties of an individual may involve these kinds of work both concurrently and consecutively. The degree of complexity and responsibility in all of these kinds of assignments tend to increase as the employee matures, i.e., as knowledge and abilities develop with experience. The assignments and expected performance described for each classification level include only those features that are useful in describing a quality distinction for successfully higher classification levels. It is not intended that each individual would necessarily contribute in respect of all of these features; nor does the order in which they are presented imply relative importance.

Classifying Positions and Incumbents

The correct allocation of an employee or a position to this occupational group is of fundamental importance to the management and administration of this group. The method to be employed is as follows:

a) When an authorized man-year is to be utilized for employing a defence scientist, a statement is to be prepared by management in summary form describing the primary purpose for which the position is established. The summary description should include the following kinds of information:

(i) a statement of the duties and responsibilities of the job encompassing responsibility and authority for policy and program formulation, advice, direction and control; specialist responsibilities; scientific direction and control of R&D activities, projects, studies, etc., contracting, consultative or administrative assignments in relation to both in-house and contracted R&D and related defence scientific activities should be included where applicable.

(ii) the nature and scope of the qualifications and defence scientific expertise required;

(iii) the extent of scientific leadership available to the incumbent of the position;

(iv) the extent of scientific leadership expected to be provided by the incumbent;

(v) the relationship of the position to the career development and rotational assignments of members of this group.

b) The position may be allocated to this group provided it satisfies the category and group definition but the classification level is not formally assigned at this stage.

c) The candidate is appointed by staffing action at a designated classification level in relation to the characteristics of the work to be performed and individual qualifications of the candidate.

d) A matching classification level is formally assigned to the position. This completes the classification action.

e) When a position incumbent is progressed in his or her-own position to the next higher classification level, the position classification will be adjusted to correspond, to ensure coincidence between incumbent and position level.

f) When a position classified in this group is vacated, management must reconsider the classification, level and future utilization of the authorized man-year before the position is filled.

GLOSSARY*

THE DEFENCE SCIENCES

(a) For this group, research and experimental development work encompasses all of the natural sciences including

the biological sciences - studying the origin, development, structure, function and interaction of biological materials;

the medical sciences - involving the identification, treatment and cure of diseases and disabilities;

the physical sciences - the study of the material universe and its phenomena;

the mathematical sciences - employing logical reasoning in the theoretical design of methods and systems used to generate data and in the interpretation of data;

the engineering sciences - generating and applying integrated scientific and engineering knowledge in the development of prototypes, systems or processes scaled-up to operational effectiveness.

Investigations in many subject-matter areas interrelate combinations of these sciences, and possibly some other specialties as well, to varying degrees. Furthermore, the interactions between men and machines, military forces and operational systems and men and their environments (physical and human) are critically important to military activities and therefore defence science and technology encompasses some areas of the human sciences, e.g., investigations, studies, and research and development in those aspects of psychology, sociology, human performance, operational research, political science, economics, etc., that are relevant to defence and military problems.

RESEARCH

(b) For this Group, no distinction is made between "basic" or "applied" research in the natural sciences. All aspects of creative work are included, the primary purposes of which may range the complete spectrum, i.e., from -

* Terms in this Glossary that are not used in the standard are provided for the sake of consistency in preparation of summary job descriptions.

(Exploratory) contributing to the accumulated, objective and systematic knowledge of the inherent properties and interactions of matter, space, energy, natural phenomena or bio-systems;

(Mission-Oriented) utilizing scientific processes, phenomena or methods to acquire new knowledge, and applying such knowledge to achieve pre-determined practical or operational objectives.

R&D (c) Research and experimental- development (R&D) is creative work systematically undertaken to add to the existing body of scientific and technological knowledge and to use such knowledge in new applications. The central characteristic of R&D is an appreciable element of novelty - new knowledge (new information integrated into existing hypotheses; new hypotheses derived from new facts; the re-evaluation of known data) or new products or processes are sought.

MAKE (d) Mission-oriented R&D that is supplied using the employees and facilities of the federal government departments.

BUY (e) Mission-oriented R&D that is purchased by the federal government from external sources, i.e., industry, business enterprises or individuals.

MAKE OR BUY ANALYSIS (f) A detailed comparison of the advantages/disadvantages of the Make option with the advantages/disadvantages of the Buy option.

AUTHORITY (g) Authority refers to the extent of the powers delegated to the incumbent of a position to enable him to discharge his responsibilities effectively. Delegated authority carries with it commensurate accountability.

SCIENTIFIC AUTHORITY FOR CONTRACTED R&D (h) In the process of contracting R&D, the scientist in the operating department who has primary responsibility for all scientific and technological matters and for bringing the contracted R&D project to completion, is the Scientific Authority. The following are specific responsibilities of-the Scientific Authority:

- determining the scientific objective, scope of work, specifications, methods and project description;

- evaluating and advising on Make or Buy Analysis, costing, publicity aspects, capability of external R&D sources and proposals for R&D project tenders from external sources;

- monitoring, co-ordinating and controlling the scientific and technological content of contracted project, and approving changes in the scope of the work as required, during its progress;

- interpreting results obtained where the contractor is not capable of doing so;
- evaluating the scientific results and the overall conduct of the contract in relation to objectives, specifications and other prescribed requirements; and

- recommending acceptance or qualified acceptance of the product and payment for work done ranging from partial to complete product of the contract.

POLICY (i) Policy refers to a declaration of aims and intent established by legislation or ministerial authority to guide future courses of action.

PROGRAM (j) A program is a major departmental function designed to achieve general objectives that have been authorized by Parliament. It is also the level at which Parliament will vote funds. A program incorporates the general plans designed to achieve the objectives determined by the department to meet the aims and intent of policy.

ACTIVITY (k) An activity is a major segment of a program.

PROJECT/STUDY

(l) These are segments of a program or activity for which specific objectives have been defined; which are circumscribed by distinct budgetary controls, time limits and resources committed; and which are subject to periodic progress reviews. A project or study can be the work of one scientist or a team of scientists under the leadership of an experienced scientist.

PROJECT LEADER

(m) A project leader plans and organizes work; and co-ordinates the work activities of other employees, the use of facilities and the selection and application of methods required to achieve results that are consistent with project objectives. A project leader is responsible for quality and quantity of work output but has limited authority for the administration of other employees.

MANAGER

(n) A manager controls an organization, and is accountable for achieving the objectives set for the organization and for administering the financial, personnel and material resources committed. The manager plans, organizes and allocates these resources; advises and consults with superiors as to the policies, priorities and objectives; negotiates contracts for the provision of supplies or services; and evaluates the output of the organization, and of individuals in the organization, for effectiveness of contribution toward achievement of objectives. The manager is also the intermediary for all influences affecting the organization from the outside. One or more project leaders normally report to a manager.

MANAGERIAL CONTROL

(o) The superior-subordinate relationship in an organization: The following terms describe the spectrum of control received ranging from the least to the greatest degree of individual freedom. Under Supervision describes the control received by an academically qualified but inexperienced employee during the initial learning stages; an overview that involves appropriate assessments of the work while in progress. The employee's assignments, objectives, work plan and tasks are prescribed by the supervisor but the employee is responsible for proficient and timely execution of his/her

assignments. The work results will be reviewed at intervals during execution and on completion in terms of quality, quantity, timeliness and conformity with the supervisor's guidance and advice.

Under General Supervision describes the control received by an employee during the learning process; an overview that does not intimately bear upon the details of the work. The employee is responsible for accomplishing prescribed objectives within prescribed timeframes, with freedom from overview by superiors while work is in process except at his own request. The employee is expected to solve most problems of detail but to refer any unusual problems to the superior. The work results are reviewed by superiors at critical stages and on completion for scientific validity, and for compliance with such general instructions as are inherent in the work plans for the project(s) and the relevant operating procedures of the organization.

Under Direction describes control received by an employee who is responsible for achieving agreed-upon objectives within agreed-upon timeframes. Organizing the work and determining the methods of producing the desired results are the employee's responsibility. He is expected to overcome all scientific and technical problems and to solve other problems through selection and application of guidelines and relevant operating procedures of the organization. On general problems of wider scope he is expected to consult with colleagues and to seek advice and decisions from superiors. Although making no decisions that directly affect a departmental program, there may be a requirement to make recommendations that affect program planning as it relates to the organization of area of work. Project leaders and managers below the senior officer level normally work under direction.

Under General Direction describes a kind of broad control received that takes the form of consultation and discussion with other senior officers on general management matters. The employee is responsible for decisions normally involving allocation and expenditure of substantial sums of money and for the effective planning and conduct of the overall program. Contributions to policy formulation and depart mental program strategies are normally expected.

SURVEY (p) The systematic accumulation of scientific observations, specimens or samples by known or standardized methods of observations, analysis or sampling.

TEST (q) The evaluation, comparison or screening of a series of materials, products, processes, methods of phenomena using known defining characteristics and known or standardized techniques.

SPECIALIST (r) A specialist is an experienced individual who, regardless of his managerial abilities, is recognized by his superiors and peers as an authority in a scientific field or subject-matter area.

CONSULTATIONS (s) Responsiveness by a specialist to the needs of the program in a consultative capacity, often external to the employing organization. The expertise of the specialist is applied to provide interpretations and advice ranging from the scientific aspects of government policy issues to specific scientific problems. Routine monitoring or surveillance is not included.

TECHNOLOGY TRANSFER (t) A terminal phase of a R&D project to assure effective operational, industrial or commercial application, and understanding by clients, of the products and processes that have been derived from the proven in principle through R&D efforts.

CLASSIFICATION STRUCTURE AND LEVEL DETERMINANTS

DS-1

DS-2

DS-3

DS-4

DS-5

DS-6

DS-7

DS-8

DEFENCE SCIENTIST LEVEL 1

General Characteristics

This is the recruiting and learning level for members of the group who possess a bachelor's degree or a bachelor's degree and limited experience. The work is done under supervision either as a member of R&D teams or as an assistant to more senior members of the group. The level is also used for term appointments of university graduate students who demonstrate an interest in continuing employment within the group on completion of their graduate studies.

Characteristic Duties and Responsibilities

Participates in research and development projects and studies, feasibility studies, field trials, tests and experiments; in operational research and scientific analysis projects and studies; in scientific and technological evaluation of foreign military activities, capabilities and equipment; in the identification, location, and selective acquisition of scientific and technological information from classified and propriety sources.

Responsibilities are restricted in scope, complexity and requirement for independent interpretation. Supervisory responsibilities are limited to guidance and supervision of technical or support staff.

Other Level Determinants

Demonstrated competence in comparison with established standards of competence for scientists of similar academic background and experience, and evidence of promise of professional development.

General Characteristics

This is the recruiting and developmental level for those with a master's degree or for members of the group with a bachelor's degree and research experience relevant to defence science. The work is done under general supervision either as a member of R&D teams, or as an assistant to more senior members of the group.

Characteristic Duties and Responsibilities

Participates in research and development projects and studies, feasibility studies, field trials, tests and experiments; in operational research and scientific analysis projects and studies; in scientific and technological evaluation of foreign military activities, capabilities and equipment; in the identification, location and selective acquisition of scientific and technological information from classified and propriety sources.

Responsibilities are restricted either in scope, complexity or requirement for independent interpretation. Supervisory responsibilities are limited to guidance and supervision of technical or support staff.

Other Level Determinants

Demonstrated competence, comparison with established standards of competence for scientists with similar relevant experience, evidence of promise of professional development.

DEFENCE SCIENTIST LEVEL 3

General Characteristics

This is a junior working level for those with the experience and expertise needed to undertake independent work in defence science and technology. It is the entrance level for those with a doctorate degree and developmental level for those with a bachelor's or master's degree and experience directly related to the field of employment. Work will normally be done under general supervision and often as a member/of a team.

Characteristic Duties and Responsibilities

Plans, organizes and conducts research, development, investigations, studies, evaluations, field trials and experiments requiring specialized knowledge in a professional discipline, of defence science and technology or of military operations and defence problem areas. Plans and conducts evaluations of foreign science and technology and work in the area of scientific information.

Responsibilities include accountability for evaluation, interpretation and reporting of results and for judgments made in the conduct of work; for providing professional advice to scientific and military colleagues involved in the work. May be responsible for coordination of technical activities with internal and external elements and for responding in timely fashion to external requests for consultation and problem-solving. May represent the department on scientific and technological issues.

Responsibilities may include general supervision of junior professionals and technical support staff.

Other Level Determinants

Demonstrated competence and capabilities, comparison with established standards of competence for scientists with similar relevant experience, evidence of promise of professional development.

DEFENCE SCIENTIST LEVEL 4

General Characteristics

This is the working level for experienced officers who have demonstrated the ability to accept responsibility for and conduct successfully specific projects and investigations in specialized areas of defence science and technology and who may be required to plan and coordinate the work of project teams internally and with external organizations. Work will be under general supervision or under direction depending on the individual's demonstrated ability.

Characteristic Duties and Responsibilities

In scientific research and development and scientific analysis plans, organizes and conducts investigative activities requiring current specialized knowledge of defence science and technology; accepts responsibility and accountability for the evaluation, interpretation and reporting-of results; formulates solutions for and provides advice on operational and equipment problems of the Canadian Forces; supervises technical and junior professional staff. In scientific liaison, maintains contacts and exchanges information with colleagues in defence organizations in other countries, represents the department as technical expert in limited fields or as a junior member of an official liaison element in other countries. Duties in scientific advice, scientific planning and evaluation are normally limited in scope and outputs are intended for use within the department.

Other Level Determinants

Demonstrated competence and capabilities, depth and scope of work being done and of achievements, estimated potential for further advancement and comparison with group members with similar relevant experience.

DEFENCE SCIENTIST LEVEL 5

General Characteristics

This is the senior working level for mature experienced officers who have established a recognized reputation and professional competency and leadership in a complex area of science and defence technology. They must have consistently demonstrated the ability to work under direction, to generate original and novel solutions to problems, and to meet scientific and technological objectives that are defined in broad terms, subject only to policy, budgetary or other general managerial or military limitations.

Characteristic Duties and Responsibilities

In scientific research and development and scientific analysis plans, organizes, conducts and controls projects, studies, etc., that demand leadership and direction of work of considerable scientific and technological scope and often involve several different aspects of the R&D spectrum. Work may require supervision of personnel and direction of multi-disciplinary matrix-management type projects.

In scientific liaison maintains contacts with national and international science communities and represents national and organizational scientific and technological interests at national and international meetings. In scientific advice provides comprehensive scientific and technical evaluations and advice and in scientific planning and evaluation formulates and develops proposals on scientific and technological policies and research and development programs and provides comprehensive assessments and evaluation of existing R&D programs and activities. Duties in relation to the evaluation of foreign science and military technology and in scientific information activities are comprehensive and varied.

Other Level Determinants

Demonstrated competence and capabilities, depth and scope of work being done and of achievements, evidence of continued professional growth and development, estimated potential for further advancement and comparison with group members with similar relevant experience.

DEFENCE SCIENTIST LEVEL 6

General Characteristics

This is the select level of those who have consistently demonstrated exceptional scientific leadership and ability in highly complex and significant fields of defence science and technology and scientific analysis, and/or in directing and managing the work of multi-disciplinary groups of R&D personnel. This level is also associated with senior staff positions in headquarters and foreign offices which require broad experience and exceptional ability to provide authoritative advice on the policy, planning, evaluation, coordination, technology transfer, foreign liaison, intelligence and information aspects of major national, international, and departmental programs and issues in defence research and development. Wide latitude is provided for the application of independent scientific and technological judgment.

Characteristic Duties and Responsibilities

In scientific research and development and scientific analysis and normally under direction on the objectives of the work, conducts and manages major projects and scientific investigations requiring outstanding leadership abilities and performance in major complex areas of defence science, technology, military operations and policies. In scientific liaison represents the department on major issues of defence science and technology both nationally and internationally and provides support to national political and military representatives in foreign countries over the whole spectrum of defence science and technology. Provides advice to senior departmental personnel by the analysis, assessment and review of highly complex and advanced fields of defence science and technology and of departmental research and development programs and activities. In the areas of foreign science and military technology and acquisition of scientific and technological information determines thrust, scope and depth of activities within the prescribed broad policy and resource limitations.

Other Level Determinants

Demonstrated competence and capabilities, depth and scope of work being done, of achievements, and of associated responsibilities, evidence of continued professional growth and development, evidence of development of managerial and similar skills and abilities, estimated potential for further advancement and comparison with other members at this level.

DEFENCE SCIENTIST LEVEL 7

General Characteristics

This level is primarily for those who have demonstrated exceptional ability to manage the R&D activities of defence research and development and scientific analysis organizations and the resources - personnel, facilities, and operating funds - allocated to those organizations and/or the coordination of R&D programs or activities including determining the nature and priority of objectives within such organizations. Scientists with an exceptional record of achievements and scientific advisors in very senior advisory roles may also attain this level.

Duties and Responsibilities

The management of defence research establishments and the coordination of major R&D programs and activities.

The direction and conduct of research and development at an exceptionally high level of achievement.

The provision of defence scientific and technological advice to the executive levels of the department.

DEFENCE SCIENTIST LEVEL 8

General Characteristics

This level is reserved for defence research positions with responsibilities for program development and activities at the very senior level.

Defence Scientific Service

PART II SELECTION PLAN

March 1976

PART II

SELECTION PLAN

INTRODUCTION

The Selection Plan includes the Selection Standard for this Group, developed pursuant to Section 12 of the Public Service Employment Act, with instructions for adapting it to the requirements of individual positions in the form of a Statement of Qualifications.

Section 6 of the Public Service Employment Regulations requires that a Statement of Qualifications be prepared for each position to which an appointment is to be made. Each Statement of Qualifications is to specify and differentiate between those qualifications that are essential and those qualifications, if any, that
are desirable for the performance of the duties and responsibilities of a position.

Qualifications refer to any training, ability, knowledge, accomplishment or personal attribute that is essential or desirable for performance of the duties and responsibilities of a position.

Qualifications vary with the job content requirements of individual positions. They must be identified for each position for which staffing action is intended. They are to be based on the duties and responsibilities of the position concerned and expressed in the form of a Statement of Qualifications. These qualifications then become the criteria against which selections are made for that staffing action.

The following pages contain an explanation of the various parts of a Statement of Qualifications, a description of qualifications for positions in this Group, a Rating Guide, a description of the methods to be used in assessing the qualifications of candidates for these positions, and two Example Statements of Qualifications.

STATEMENT OF QUALIFICATIONS

Structure

The basic structure of a Statement of Qualifications is as follows:

ESSENTIAL QUALIFICATIONS

BASIC REQUIREMENTS

- Education Factor
- Occupational Certification Factor
- Productivity or Recognition Factor
- Language Requirement Factor
- Experience Factor

RATED REQUIREMENTS

- Knowledge Factor
- Abilities Factor
- Personal Suitability Factor

DESIRABLE QUALIFICATIONS

- (Individual qualifications that are desirable, if any)

Definitions

A Statement of Qualifications consists of two components:

ESSENTIAL QUALIFICATIONS - This component provides for the inclusion of qualifications which a person must possess in order to adequately perform the duties and responsibilities of a position. It consists of two sub-components.

BASIC REQUIREMENTS - This sub-component provides for the inclusion of those essential qualifications that are used for initial screening purposes. Applicants must meet the Basic Requirements before consideration can be given to their other qualifications. Basic Requirements are minimum criteria and are not rated by degree. Basic Requirements include the following five Selection Factors:

Education - (a) Refers to a background in academic, vocational or technical studies and training which is recognized through the actual or imminent conferring of a degree, diploma, certificate or other official document by an approved educational institution or agency.

(b) Acceptable performance on tests prescribed by the Public Service Commission may be an alternative, when specified.

Occupational Certification - Refers to the possession of or eligibility for occupational credentials in the form of a licence, certificate, registration, letter, papers or other documents which constitute official recognition of occupational competence.

Productivity or Recognition - Refers to achievement in the form of authorship of published or unpublished reports, papers or other communications resulting from; research, experimental development, tasking associated with operational equipment and problems; operational research and scientific analysis; planning, analysis and evaluation of national and foreign programs in research and development, assessment and evaluation of policies affecting the planning, implementation and utilization of defence research. Includes developmental work leading to the issue of patents or the creation of improved varieties or designs; and recognition of research achievement by the scientific community.

Language Requirement - Refers to the need for a knowledge of either the English language, the French language, either one or the other, or both in relation to the performance of the duties and responsibilities of a position.

Experience - Refers to actual participation or practice in activities related to the duties and responsibilities of a position. It means the acquisition or exercise of knowledge or abilities in vocational or a vocational circumstances including voluntary work; and it is conditioned by the achievement realized during its acquisition and
by the environment in which it is gained. Experience requirements must not be expressed in terms of a specific number of years.

NOTE: Pre-employment medical examination requirements are to be in accordance with Appendix 13 of the Staffing Manual, and are not to be included in the Statement of Qualifications.

RATED REQUIREMENTS - This sub-component provides for the inclusion of those essential qualifications which are used for the rating and ranking of candidates who have met the Basic Requirements. Rated Requirements include the following three Selection Factors:

Knowledge - Refers to information concerning facts, theories, systems, practices, regulations and other subject-matter relevant to the performance of the duties and responsibilities of a position.

Abilities - Refers to competence in the use of tools, materials, and equipment or the application of methods, systems, techniques, practices, policies, regulations and other subject-matter relevant to the performance of the duties and responsibilities of a position.

Personal Suitability - Refers to personal traits or characteristics which condition the utilization of knowledge and abilities in the performance of the duties and responsibilities of a position.

DESIRABLE QUALIFICATIONS - This component provides for the inclusion of qualifications which, although not essential, may further contribute to or enhance a candidate's performance of the duties and responsibilities of a position. The use of Desirable Qualifications is optional, but they must not be used for screening purposes. When they are applicable, they are to be included in the

Statement of Qualifications at the same time as the Essential Qualifications are specified, and they are to be assessed only as part of the rating and ranking of candidates who have met both the Basic Requirements and Rated Requirements for the position. Any job-related qualifications other than knowledge of a second official language may be used as Desirable Qualifications, but they should be used sparingly, if at all.

SELECTION STANDARD - DEFENCE SCIENTIFIC SERVICE GROUP

Qualifications applicable to positions in the Defence Scientific Service Group are as follows:

ESSENTIAL QUALIFICATIONS

BASIC REQUIREMENTS

Education Factor

This factor is applicable to all positions in this Group. Based on the duties and responsibilities of the position, include in the Statement of Qualifications a description of the Education considered necessary.

- Graduation with an acceptable degree from a recognized university with specialization in engineering, chemistry, physics, biology, economics, sociology or some other specialty relevant to the position is the minimum educational qualification for the Defence Scientific Service Group.

For positions at classification level 1, the minimum educational qualification is:

- Graduation with an acceptable bachelor's degree from a recognized university with specialization in engineering, chemistry, physics, biology, economics, sociology or some other specialty relevant to the position.

For positions at classification level 2, the minimum educational qualifications are:

- Graduation with an acceptable master's degree from a recognized university with specialization in engineering, chemistry, physics, biology, economics, sociology or some other specialty relevant to the position; or graduation with an acceptable bachelor's degree from a recognized university with specialization in engineering, chemistry, physics, biology, economics, sociology or some other specialty relevant to the position coupled with experience as specified under the heading Experience.

For positions at classification level 3, the minimum educational qualifications are:

- Graduation with an acceptable doctoral degree from a recognized university with specialization in engineering, chemistry, physics, biology, economics, sociology or some other specialty relevant to the position; or graduation with an acceptable master's degree or an acceptable bachelor's degree from a recognized university with specialization in engineering, chemistry, physics, biology, economics, sociology or some other specialty relevant to the position coupled with experience as specified under the heading Experience.

NOTE: Employees who were "grand fathered" into this Group under the provisions of the paragraph entitled "Minimum Qualifications" on page (v) of this Standard will be deemed to have met the minimum qualifications for appointment to other positions classified in this Group requiring the same minimum qualifications as those which served as the basis for the initial grand fathering.

Productivity or Recognition Factor

This factor is applicable to positions in this group in which there is a requirement for evidence of authorship of research reports or papers, developmental work or scientific recognition. Based on the duties and responsibilities of the position, include in the statement of qualifications a description of applicable productivity or recognition requirements. Following is an example of a Productivity or Recognition qualification:

"Productivity or Recognition - Recognition in the international defence community as an effective contributor to research and development in one or more of the following technologies: electronics, telecommunications, radar or signal processing."

Language Requirement Factor

This factor is applicable to all positions in this Group.

From the qualifications listed below, determine which one is applicable to the position to be staffed.

- A knowledge of the English language is essential for this position.
- A knowledge of the French language is essential for this position.
- A knowledge of either the English language or the French language is essential for this position.
- A knowledge of both the English language and the French language is essential for this position.

Experience Factor

This factor is applicable to positions in this Group for which it is necessary to have had previous experience related to the duties and responsibilities involved. Based on the duties and responsibilities of the position include in the Statement of Qualifications a description of the Experience considered necessary. Following is an example of an Experience qualifications:

"Experience - Experience in the conduct of applied research or development in the physical or social sciences.

NOTE: (a) To raise Basic Requirements for positions in this Group above the minima prescribed, special permission must be obtained from the Public Service Commission.

(b) When used in regard to Basic Requirements, terms such as "recognized", eligibility", "approved", "acceptable", "accredited", or "equivalent" refer to acceptability for staffing purposes as regulated by the Public Service Commission through the PSC Staffing Program concerned.

(c) The assessment of Basic Requirements is to be based on performance demonstrations including the use of tests or examinations, educational or occupational credentials, or other evidence available at the time of the screening process.

RATED REQUIREMENTS

Knowledge Factor

This factor is applicable to all positions in this Group except those used for developing inexperienced personnel.

Based on the duties and responsibilities of the position, include in the Statement of Qualifications a description of the Knowledge considered necessary. Following is an example of a Knowledge qualification:

"Knowledge - Knowledge of the principles and practices of scientific investigation."

Abilities Factor

This factor is applicable to all positions in this Group except those used for developing inexperienced personnel.

Based on the duties and responsibilities of the position, include in the Statement of Qualifications a description of the Abilities considered necessary. Following is an example of a an Abilities qualification:

"Abilities -Ability to conduct briefings and meetings and prepare scientific reports, technical papers and correspondence."

Personal Suitability Factor

This factor is applicable to all positions in this Group.

Based on the duties and responsibilities of the position, include in the Statement of Qualifications a description of the Personal Suitability considered necessary. Following is an example of a Personal Suitability qualification:

"Personal Suitability - Work effectively under the pressure of deadlines."

DESIRABLE QUALIFICATIONS

Based on the duties and responsibilities of the position, include in the Statement of Qualifications a description of those qualifications considered desirable, if any. Following is an example of a Desirable Qualification:

"-Experience in administration, or completion of an approved course in management."

PREPARATION OF A STATEMENT OF QUALIFICATIONS

The steps involved in preparing a Statement of Qualifications are as follows:

1. Gain a thorough understanding of the duties and responsibilities for the position to be staffed.

2. Review the Selection Plan carefully.

3. Examine the examples of Statements of Qualifications presented on pages II-15 and II-17 in order to become familiar with the format and sorts of qualifications required for positions in this Group.

4. Based on the duties and responsibilities of the position, describe the qualifications required for the position under the appropriate

   Component, Sub-Component, and Selection Factor headings.

NOTE: The examples of Statements of Qualifications provided in this Standard are for illustrative purposes only. It is not necessary, therefore, to adhere to the qualifications specified in the examples when staffing positions of a similar nature. For other positions, a suitable Statement of Qualifications must be prepared.

In determining which qualifications are to be included in the Statement of Qualifications, the prime considerations are:

(a) their relevancy to the duties and responsibilities of the position;

(b) their assess ability for selection purposes; and

(c) their value in differentiating between candidates.

In arranging qualifications within each Selection Factor they should be laid out in a style and in patterns that:

(a) combine closely-related qualifications;

(b) obviate unnecessary duplication and verbiage;

(c) emphasize salient features; and

(d) facilitate assessment and selection.

The completed Statement of Qualifications specifies the qualifications for staffing the position, and the contents are to be used as a basis for:

(a) advertising notices;

(b) initial screening of applicants;

(c) developing a selection rating guide;

and (d) rating and ranking of candidates.

RATING GUIDE

In assessing the qualifications of candidates for a position, a narrative or numerical rating plan may be used.

Following is an illustration of a format for a selection rating" guide using qualifications contained in the Example of a Statement of Qualifications presented on pages II-17 and II-18. Basic Requirements are not included in the rating guide, since, as minimum criteria, they will have been taken into account during the initial screening to determine which applicants were qualified for further consideration. The ranking of the remaining candidates is accomplished through rating them on the Rated Requirements, and the Desirable Qualifications, if any, that are specified in the Statement of Qualifications for the position being staffed.

Suggested Format

	ALLOTTED RATING	PASS RATING	MAXIMUM RATING
A. RATED REQUIREMENTS			
Knowledge Factor			
Knowledge of:			
1. The organizations and activities of the international science community, particularly in relation to electronic technology.			
2. The organization structure, policies and functions of NDHQ, CRAD branch and its Defence Research Establish ments.			

	ALLOTTED RATING	PASS RATING	MAXIMUM RATING
3. Current technology applicable to the activities of the Defence Electronics Division.			
4. Budget preparation and control.			
5. Personnel administration.			
Total Knowledge Factor			
Abilities Factor			
Ability to:			
1. Plan for, organize, co-ordinate and control a defence science research program.			
2. Schedule and assign work, set priorities, resolve work problems, train staff, and assess staff performance.			
3. Conduct briefings and meetings, and prepare scientific reports, technical papers and corre spondence.			
Total Abilities Factor			
Personal Suitability Factor			
1. Effective interpersonal relation ships, particularly in dealing with members of the international scientific community or senior military personnel.			

	ALLOTTED RATING	PASS RATING	MAXIMUM RATING
2. Thoroughness, reliability, tact and persuasiveness.			
3. Work effectively under the pressure of deadlines or peak work loads.			
Total Rated Requirements			
B. DESIRABLE QUALIFICATIONS			
1. Experience in administration, or completion of an approved course in management.		N/A	
Total Desirable Qualifications			
Rating for:			
Rated Requirements			
Desirable Qualifications			
COMBINED RATING			

COMMENTS:

ASSESSMENT INSTRUCTIONS

ESSENTIAL QUALIFICATIONS

BASIC REQUIREMENTS

Basic Requirements are assessed as minimum criteria on a pass/fail basis and are not to be rated by degree. Applicants must meet at least the minimum standard required for each applicable Selection Factor, or they are eliminated from further consideration.

RATED REQUIREMENTS

The relative importance of Selection Factors and Qualifications related to the duties and responsibilities of the position being staffed is determined by those administering the selection process. The weightings which may be applied to Selection Factors and Qualifications in the case of a numerical rating plan, and the differences in emphasis which may be assigned to Selection Factors and Qualifications when a narrative rating plan is used, must be applied consistently throughout the assessment process.

In assessing Rated Requirements candidates must achieve an overall pass rating on the aggregate of Qualifications contained within each Selection Factor. Where a numerical rating plan is used candidates must achieve a pass mark of at least sixty per cent on each applicable Selection Factor. In the case of a narrative rating plan candidates must meet at least the minimum degree of Qualifications required for each applicable Selection Factor. Candidates who fail to gain an overall pass rating on each applicable Selection Factor are eliminated from further consideration.

DESIRABLE QUALIFICATIONS

Once candidates have met the Rated Requirements, any credit given for Desirable Qualifications specified in the Statement of Qualifications is to be added to the rating for Rated Requirements to reach a composite assessment. As credit given for Desirable Qualifications has an effect on the ranking of individuals, Desirable Qualifications must be assessed with the same care and consistency as that given to Rated Requirements.
The total maximum marks allowed for Desirable Qualifications must not exceed ten percent of the total maximum marks allowed for Rated Requirements. This percentage may also serve as a guide in establishing the degree of emphasis that may be given to Desirable Qualifications when a narrative rating plan is used.

EXAMPLE OF A

STATEMENT OF QUALIFICATIONS

FOR DEFENCE SCIENCE RESEARCH OFFICER (DS-2)

ENGINEERING AND DEVELOPMENT GROUP

ESSENTIAL QUALIFICATIONS

BASIC REQUIREMENTS

Education	- Graduation with an acceptable master's degree from a recognized university with specialization in engineering or physics or some other specialty relevant to the position; or graduation with an acceptable bachelor's degree from a. recognized university with specialization in engineering or physics or some other specialty relevant to the position coupled with experience as specified under the heading Experience.
Language Requirement	- A knowledge of the English language is essential for this position.
Experience	- Experience in the conduct of applied research or development in the physical or social sciences.

RATED REQUIREMENTS

Knowledge	- Knowledge of the principles and practices of scientific investigation.
Abilities	- Ability to plan and conduct original research.
	- Ability to perceive problems.
	- Ability to prepare a scientific report or a technical paper.

Personal Suitability	- cooperativeness, thoroughness, dependability and initiative. - Work effectively under the pressure of deadlines.

EXAMPLE OF A

STATEMENT OF QUALIFICATIONS FOR

DIRECTOR DEFENCE ELECTRONICS DIVISION (DS-6)

DEFENCE RESEARCH ESTABLISHMENT, OTTAWA

ESSENTIAL QUALIFICATIONS

BASIC REQUIREMENT

Education	- Graduation with an acceptable degree from a recognized university with specialization in electrical engineering, physics or some other specialty relevant to the position.
Productivity or Recognition	- Recognition in the international defence community as an effective contributor to research and development in one or more of the following technologies: electronics, telecommunications, radar, or signal processing.
Language Requirement	- A knowledge of both the English language and the French language is essential for this position.
Experience	- Experience in the development and management of R and D projects or programs.

RATED REQUIREMENTS

Knowledge	- Knowledge of the organizations and activities of the international science community, particularly in relation to electronic technology.
	- Knowledge of the organization structure, policies and functions of NDHQ, CRAD Branch and its Defence Research Establishments.

- Knowledge of current technology applicable to the activities of the Defence Electronics Division.

- Knowledge of budget preparation and control.

- Knowledge of personnel administration.

Abilities

- Ability to plan for, organize, co-ordinate and control a defence science research program.

- Ability to schedule and assign work, set priorities, resolve work problems, train staff, and assess staff performance.

- Ability to conduct briefings and meetings, and prepare scientific reports, technical papers and correspondence.

Personal Suitability

- Effective interpersonal relationships, particularly in dealing with members of the international scientific community or senior military personnel.

- Thoroughness, reliability, tact and persuasiveness.

- Work effectively under the pressure of deadlines or peak work loads.

DESIRABLE QUALIFICATIONS

- Experience in administration, or completion of an approved course in management.

Classification and Selection Standard - Norme de classification et de sélection

Defence Scientific Service - Services scientifiques de la défense

RECORDS OF AMENDMENT - REGISTRE DES MODIFICATIONS

Amendment No./ Modification n	Date	Inserted by / Faite par	Remarks/Remarques