CHAPTER- III

PERFORMANCE APPRAISAL SYSTEM IN DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION

3.1. An Overview of Defence Research and Development Organisation

Defence Research & Development Organisation (DRDO) was formed in 1958 from the amalgamation of the then already functioning Technical Development Establishment of Indian Army and the Directorate of Technical Development and production with Defence Science Organisation. DRDO functions as wing of the Department of Defence Research and Development of Ministry of Defence. The first decade, upto 1970s, was a phase of providing planning and advisory services and of learning by doing and setting up of science Laboratories. It was also a phase of meeting short term requirements of the users to maintain, substitute or improve the imported defence equipment. Initially DRDO was engaged in the development of small arms and ammunitions. Subsequently, from 1970-80, it started work in reverse engineering and started gaining know-how of system engineering. Many infrastructure and facility projects got into action during this period. The period 1980-85 witnessed sharp growth in DRDO with laboratories taking up contemporary systems development. Today DRDO is a network of 51 laboratories which are deeply engaged in developing Defence Technologies covering various disciplines, like Aeronautics, Armaments, Electronics, Combat Vehicles Engineering System, Instrumentation, Missiles, Advanced Computing and Simulation, Special Materials, Naval Systems, Life Sciences, Training, Information Systems and Agriculture. Presently the organisation is backed by over 6000 scientists and about 25 thousand other technical and supporting personnel. Several major projects for the development of missiles, armaments, light combat aircrafts, radars, and electronics Warfare Systems have
been successfully completed and significant achievements made in the several such
technologies. DRDO encourages and supports basic research in academic
institutions through a scheme of extramural research and four Research Boards
devoted to Aeronautics, Naval Research, Life Sciences and Armaments. The DRDO
also promotes active participation of Indian industries in defence production. Private
industry is called upon to exploit the civil spin-offs from defence technology by
effecting required re-packaging/modification. DRDO is dedicatedly working towards
enhancing self-reliance in defence systems and undertakes indigenous design and
development leading to production of world class weapon systems and equipment in
accordance with the expressed needs and the qualitative requirements laid down by
the three wings of armed forces-Army, Navy and Air force. DRDO, while striving to
meet the cutting edge weapons technology, provides ample spinoff benefits to the
society at large thereby contributing to the nation building.

Vision

Make India prosperous by establishing world class Science and Technology
base and provide our defence services decisive edge by equipping them with
internationally competitive system and solution.

Mission

- Design, develop and lead to production state of the art sensors, weapon
  systems, platforms and allied equipment for our Defence Services.
- Provide technological solutions to the Defence Services to optimize combat
effectiveness and to promote well being of the troops.
- Develop infrastructure and committed quality manpower and build strong
technology base.
Core Competence

Having developed several advanced defence systems, DRDO has acquired expertise in a wide spectrum of defence technologies. Areas of the core competence of the organisation include Systems Design and Integration of Complex Sensors, Weapon Systems and Platforms, Development of Complex High-end Software Packages, Development of Functional Materials, Test and Evaluation, Technology Transfer and absorption. In addition, expertise and infrastructure have been built up for carrying out basic/ applied research in areas of relevance to defence science and technology, quality assurance and safety, project and technology management.

Organisation Structure

DRDO is headed by the Scientific Advisor to Raksha Mantri (Defence Minister). He is also the Secretary, Department of Defence Research and Development and Director General, Defence R & D. He is assisted by Chief Controllers (R & D). Chief controllers are in the helms of various technical directorates and corporate directorates at the corporate office. The organisation has a two tier system, viz. technical and corporate directorates at DRDO Headquarters, New Delhi and laboratories/establishments located at different stations all over the country. The Directors of technical directorates and corporate directorates and Laboratories are functional heads reporting to the respective chief controllers(R & D)

3.1.1 Focus and orientation in changed scenario

The production value for the last seven years for the products developed by the DRDO is estimated around Rs. 100,000 crore. The DRDO products for which armed forces have placed these orders include missiles, main battle tanks, unmanned aerial vehicles,, Light Combat Aircraft(LCA) Tejas, radars, sonars, anti-corrosion and non-skid paints, torpedos, rifles, ammunition, parachutes, portable sitcom terminals. Orders have been placed for technologies developed by the DRDO against nuclear,
biological and chemical (NBC) warfare agents. In terms of tangible outputs, the value of orders executed/under execution for the services has crossed Rs 100.000 crore. This gives a return on investment of approximately five times. The cost of similar products, when imported, may be four to five times this value (of Rs. 100.000 crore). However, the production value of DRDO products is by no means the only measure of impact that it has made in its strategic systems development. These systems cannot be imported or developed jointly with any other country in the era of embargo and technology denial. The other tangible benefits that DRDO offers are its capability in a broad range of military critical and advanced technologies, efforts in ensuring continuity of supply of components, spares in the face of changing international scenario, developing self-reliant defence R & D base, spin-offs into civil industry and evaluation of imports of cutting edge technologies. The major partners in our nation building are three arms of the user services, defence PSUs, private industry, international collaborators and academic/researchers.

DRDO, mainly involved in the development of military technology, is planning to diversify and go commercial. A commercial arm is planned to be set up to aggressively market its spin-off technologies for civilian society. Further, DRDO is already in a franchisee kind of agreement with Indian Chambers of Commerce and Industry (FICCI) to market about 20 DRDO-licensed products for civil application. Besides, DRDO will also be involved in the development of a number of customized technologies for the para-military forces for use in low intensity conflicts and for carrying out surveillance of the borders. In addition, DRDO is also looking at the options of exporting the missiles in the future.
3.1.2 Future perspectives

Plan is on the anvil to restructure DRDO to make it more accountable, leaner and commercially orientated. Instead of the DRDO’s present system of a single Director-General(DG) with various chief controllers reporting to him, the new system will upgrade the DG to a chairman with seven DGs, each heading various functional clusters of Laboratories like land systems, aeronautics reporting to him. All 51 laboratories/establishments will be distributed into functionality based clusters called ‘centres’ headed by DGs. The DGs will be given autonomy and financial powers. Several laboratories deemed non-core area will be done away with. Defence Technology Commission will be set up for formulating the policy for enhancing self-reliance, identifying the critical technologies for the DRDO to work on, set targets for self-reliance and tasks of the organisation with long-term integrated perspective plan besides monitoring the functioning of the organisation. The commission will be headed by the Defence Minister with three service chiefs and secretaries of space, atomic energy, defence and defence finance as members among others. This is also an effort to minimize an institutional gap between DRDO, armed forces and the production agencies in public sector that make up the troika of designer, manufacturer and user. Over 70 percent requirements of the armed forces come from foreign arms firms. In the changed scenario, when the definition of self reliance is modified to suit the nation, DRDO still strives to keep design and development aspects even though they require global cooperation and collaboration to either find or support components to make their products cost effective and to stave off heavy import dependence on foreign arms firms.
3.1.3 Human Resources

In pursuit of self-reliance in critical technologies relevant to national security, DRDO formulates and executes programmes of scientific research, design, development, testing and evaluation of various systems, subsystems, devices and products required for defence of the nation. DRDO employs highly qualified competent scientists and technologists who constitute the Group `A' (Class I Gazetted) service known as Defence Research and Development Service (DRDS). The other two cadres of employees employed in the organisation are technical cadre and administrative and allied cadre. Technical cadre employees are skilled manpower to assist scientists and engineers engaged in research and development. Employees belonging to administrative and allied cadre provide administrative and establishment support.

Scientists are the backbone to the Defence research and development organisation. The organisation recruits/selections scientists and engineers at entry level in Scientist B grade through an annual competitive examination at national level called Scientist Entry Test (SET) through open advertisement. Candidates possessing first class Bachelors degree in Engineering or Post Graduate degree in Science are eligible to apply for Scientist Entry Test. Candidates with higher qualifications and experience are considered for higher grade. Talent Search through campus interviews, scholarship Scheme through Aeronautic Research Development Board and fresh Ph.D. Scholars under registration of students with scholastic aptitude is also in vogue. In order to attract the futuristic talent, the Junior Research Fellow (JRF), Senior Research Fellow (SRF) and Research Associate Schemes are open for young and dynamic personnel interested in defence research development.
The details of emoluments of DRDS Scientists are as given below:

Table 3.1: Pay scales of scientists in DRDO

<table>
<thead>
<tr>
<th>Grade</th>
<th>Pay Band Rs.</th>
<th>Grade Pay Rs.</th>
<th>Initial Pay in Pay Band Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientist 'B'</td>
<td>15,600-39,100/-</td>
<td>5400/-</td>
<td>15,600/-</td>
</tr>
<tr>
<td>Scientist 'C'</td>
<td>15,600-39,100/-</td>
<td>6600/-</td>
<td>18,750/-</td>
</tr>
<tr>
<td>Scientist 'D'</td>
<td>15,600-39,100/-</td>
<td>7600/-</td>
<td>21,900/-</td>
</tr>
<tr>
<td>Scientist 'E'</td>
<td>37,400-67,000/-</td>
<td>8700/-</td>
<td>37,400/-</td>
</tr>
<tr>
<td>Scientist 'F'</td>
<td>37,400-67,000/-</td>
<td>8900/-</td>
<td>40,200/-</td>
</tr>
<tr>
<td>Scientist 'G'</td>
<td>37,400-67,000/-</td>
<td>10,000/-</td>
<td>43,000/-</td>
</tr>
<tr>
<td>Scientist 'H' (Outstanding</td>
<td>67,000-79,000/-</td>
<td>---</td>
<td>67,000/-</td>
</tr>
<tr>
<td>Scientist (DS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distinguished Scientist</td>
<td>75,500-80,000/-</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>(HAG+Scale)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secretary Def R&amp;D, DG R&amp;D</td>
<td>80,000 (fixed)</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>and Scientific Adviser to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raksha Mantri (SA to RM)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Recruitment and Assessment centre, DRDO in its website www.rac.drdo.in

In addition to the Basic Pay (Pay in Pay Band plus Grade Pay), DRDS scientists are entitled to get House Rent Allowance upto 30% of Basic Pay in case of non-availability of government accommodation and other allowances viz. DA, Transport Allowance with DA on it etc. as admissible to Central Government employees. Perquisites like leave travel concession, medical facilities and advances for PCs/conveyance/house building are also admissible. In addition, DRDS Scientists are also eligible for grant of amount equivalent to two increments in the grades of Scientist ‘C’ to ‘F’ and special pay of Rs. 4000/- to Scientist ‘G’ per month; Professional update allowance of Rs 10,000/- (for Scientist ‘B’ , ‘C’ and ‘D’), Rs 20,000/- (for Scientist ‘E’ and Scientist ‘F’) Rs 30,000/- (for Scientist G onwards) per annum and reimbursement of expenditures on newspapers/periodicals in accordance with
provisions of relevant Rules. DRDO has introduced the performance related incentive scheme for scientists in the year 2009 by way of granting variable increments to meritorious scientists on their promotion to next higher grade based on their performance in the lower grade.

3.2 Performance Appraisal of Scientific Personnel

3.2.1 Evolution of performance appraisal practices

Performance appraisal is the process of systematically evaluating an employee’s job performance as also his potential for growth and development. Typically, appraisals have been used as a control mechanism. Lack of possession of traits or characteristics as seen by the supervisor were good enough reason to deny an employee opportunity for growth / advancement. Control, however, was a motivator to get the job done, to conform to an organisation’s ethos, a work life style and discipline one to the system’s requirements of job role demands. At DRDO, performance appraisal by annual confidential report was prevalent for scientists during initial years. The supervisor evaluated his subordinate’s strength / weakness with regard to traits of a nature which gave an assessment of subordinate’s personality and his work performance. Five point Grading scale ranging from poor to excellent was used in annual confidential report for benchmarking individual’s potential for promotion and higher assignment. Later, Confidential performance appraisal report (C-PAR) was introduced for annual performance assessment of scientists. The C-PAR format was common but there were three types of rating sheet for scientist B/C, scientist D and scientist E/F. Self appraisal and rating sheet were the main components of the appraisal format. The appraisee used to indicate actual work done/achievement/shortfall against project and assignment / target and comment on job satisfaction, work environment, training/ specialization needed, time usefully spent on project/ R & D work and capacity to take up
additional workload. Assessing Officer evaluates the performance of assessee on 100 point scale with only two dimensions of work output/contributions and attributes with weightage of 50 and 50 each for scientist B/C and with weightage of 70 and 30 each for scientist D/E/F. Quantum and quality of work carried equal share of weightage within dimension of work output. Intellect, theoretical/experimental/managerial, originality/innovativeness, knowledge in own field, attitudes towards work, perseverance, resourcefulness, communication skills, interpersonal relations and shared values were the ten attributes with each 5-points scale were assessed under the dimension of ‘attributes’ for scientist B and scientist C. For scientist D, attributes viz. intellect, theoretical/ experimental /managerial, professional knowledge, originality/innovativeness, communication skills, interpersonal relationship, resourcefulness and shared values were common with the junior level scientists but skills of technical judgment, sense of responsibility, tenacity, ability to guide, and planning and organizing were added. Each attribute was rated on 10-point scale. Dimension of attributes for scientists of the grade E/F included intellect, professional abilities, leadership qualities and managerial skills. The reviewing officer, superior to assessing officer, reviewed the rating given by the assessing officer and also awarded the rating grade on each dimension of performance and also made general assessment of the assessee. The head of the establishment/unit would modulate the grading in case of variation between ratings of assessing officer and reviewing officer and indicate final total score of rating on appraisal report.

In the context, where the educational profile of an employee changed and where job / roles were drastically redesigned to provide for greater empowerment, participation and involvement, supervision had to move towards lesser control orientation and more towards a joint / team process. In such an environment in addition to the control, a development orientation was added on to the entire appraisal process. The focus then was on the
effectiveness of the employee in the job/role assigned. With the initiations of several HRD interventions relating to the scientists of Defence Research & Development Services (DRDS), it became imperative to revise existing performance management system of scientists. Existing confidential performance appraisal report (C-PAR), the instrument of performance appraisal system for scientists in DRDO, was revised since 2002. The C-PAR for various levels were segregated - one for Scientist `B' and `C', second for Scientist `D', `E' and `F'. Performance review discussion between assessing officer and the assessee was introduced to formally discuss accomplishment of targets, facilitating factors/impediments to performance, training and development need and personal attributes of the assessee for a minimum period of 30 minutes. Target for the next year was also planned out in the discussion. Work output and attributes were assessed in 100 point scale with equal weightage for all grades scientists under study. Factors of attributes were changed for two levels of scientists- scientist B/C and Scientist D/E/F as far as performance appraisal rating is concerned. Attributes of scientist B and scientist C include ten factors for rating on five point scale each. Attributes are intellect, technical and professional knowledge, updating of knowledge and skills, responsibility, innovation, initiative, commitment to work and the organisation, adaptability, communication skills and team work. For scientists D/E/F, attributes are measured on broadly two aspects, personality (Knowledge and its application in problem solving, achievement orientation, responsibility) and managerial effectiveness (commitment, planning and directing, decision making, leadership, subordinate development and training). The process of performance assessment of initiation by assessing officer, review by reviewing officer and final grading by the head of the laboratories continued.

3.2.2 Present performance appraisal practice

DRDO in today's globally competitive environment has sharply begun to focus on their business goals, strategies and is working towards competence at the unit level as well
as at the corporate level against the threat from the sole customer (armed forces) of importing from foreign firms. In view of new guidelines on annual performance Assessment for all civilian government employees issued by Department of Personnel and Training, Government of India during May 2009, existing performance appraisal system of scientists in DRDO was again revised and updated in December 2009. The existing nomenclature of confidential annual assessment report is now modified to annual performance assessment report (APAR). Communication of full APAR including the overall grade and assessment of integrity will be disclosed to the assessee. Right to appeal of the assessee against the contents of the appraisal report and performance rating score was introduced in the performance appraisal system. Performance criteria are now modified. Scientists are rated on 100-point scale based on 40% weightage on assessment of work output and 30% each for assessment of personal attributes and functional competence. Forced distribution of assessed scientists into three grading—outstanding, very good and below very good—based on overall score in performance assessment and grade wise maximum percentage of scientists to be awarded the three grading is also new norm of the performance appraisal process. The performance assessment of scientific personnel in DRDO has three principal objectives: (a) to align individual’s goals with the goals of the organization, (b) to assess the performance of an individual with reference to the assigned tasks/goals target and advise the individual on possible improvements, and (c) to ascertain the suitability of an individual for specific jobs in the organisation and for consideration for determining eligibility and suitability for promotion. Integrity and moral fibre of assessee is an important aspect of performance appraisal for the scientists in government organisation.
3.3 Performance appraisal (PA) System

In the current context, the PA system components in the organisation are the following:

1. Task and Targets
2. Self Assessment/Appraisal
3. Performance Review Discussion (PRD)
4. Assessment
5. Training and development
6. Potential Review for promotion

It is highlighted that every member of the organisation needs to perform to his/her potential. Annual performance appraisal system is an instrument realising this goal. The organisation values appraisal to have tremendous motivational impact on people through goal setting, meaningful feedback and recognition. The present appraisal system has therefore been designed to integrate individual goals with organisation’s mission and objectives.

3.3.1 Tasks and Targets

In an open participative system that prevails, the assessor/Initiating officer and the subordinate scientist jointly agree to the scope and content of the job for the year in advance. Tasks are activities that are identified and listed down for the appraisee to perform. Tasks are prioritized, assigned importance and the project requirements stressed. Tasks spell out the volume of work that an individual should concentrate on and gives a clear idea of direction to take by indicating the various activities the individual has to perform. On the other hand, targets are fixed for job that has quantifiable indicators. Assignments/activities are discussed and the level of achievement is spelt out in physical/quantifiable/qualitative terms. The output/outcome indicators are clearly spelt out...
and consequently there is a great deal of clarity. Deviation from the target can easily be measured, as can target itself. Targets are clear, unambiguous and specific. They are easy to comprehend, implement and review. The appraisee reviews his tasks/assignments with the help of appraiser/seniors and thus is in a position to take stock, plan and move in a direction in concerted manner. Targets and tasks are sometimes subject to modification depending upon the progress of the project and other additional assignments.

3.3.2 Self Assessment/ Appraisal

A self appraisal is a process whereby an appraisee reviews his work over a predetermined period of time viz. annually, evaluates whether landmarks that have been fixed have been achieved and the causes for success or failure. It helps to identify areas where he has done well and pinpoint deficiencies in terms of personality, learning skill and situational responses. It is a reflective process helping one to keep a detailed documentation of one’s achievements, the circumstances and constraints under which they were achieved and the facilities and support that is needed for the future from the superior and the organisation. Additionally, it provides data to discuss with one’s superior at the time of review discussion and helps in the appraisal process to clarify one’s efforts over the appraisal period. The appraisee mentions set targets in projects, assignments etc. that were planned for him for the period of the report (calendar year) and any other additional assignment undertaken by him during the period. Publications and reports are also mentioned. Project/assignment, set targets against the assignment/tasks and achievements vis-à-vis set targets are detailed in this portion of the report. The Assessing/Initiating Officer (Assessor) is required to comment and pass remarks on the achievements of the assessee vis-à-vis set targets. Besides, assessee offers comments on his job satisfaction, working environment desired/suggested change in the nature of work presently handled.
3.3.3 Performance Review Discussion (PRD)

The PRD is a dialogue between the appraiser and the appraisee once a year to mutually understand and share the work performed for the period under review. Besides going over the targets/commitments, the special conditions, the situational constraints and the facilities, comfort/difficult areas of the Job and whether one is learning or growing are areas for discussion. A review discussion meeting is a formal prefixed interaction where both the parties have agreed upon the tasks/targets and have had a chance to reflect on the issues. Informal interactions, clarifying job role expectations, giving suggestions for improvements in performance, direct feedback on performance/ non-performance are given in a day-to-day basis informally. The PRD is a formal setting, where much more than task, outcomes and behavioural temperament is discussed. It is the total behaviour pattern and profile of the individual that is systematically analyzed in a job role setting by the appraiser and the appraisee.

Regular communication and mutual feedback at workplace between the individual and his superior is an important element of the organisation’s performance management system. PRD is an effort to formalize the process once in a year. It is a dyadic process envisaging a healthy dialogue between the assessee and assessor with focus on individual and organisational performance and also employee’s development. Assessing officer at all levels discusses with the assesses their performance vis-a-vis their targets, factors that have contributed to the performance favorably or otherwise, and training and development needs of the assessee. He also shares with the assessee his specific observations, if any, on assessee’s personality and suggests corrections wherever required. Key issues to be discussed during PRD are with respect to (a) Performance (accomplishment of targets, facilitating factors/ impediments to performance etc.), (b) Demonstrated aptitudes and training and development needs of the assessee, (c) Personality attributes (Temperaments,
attitude, bahaviour etc) and corrections suggested, if any and (d) Targets for the next year (Projects/assignments and Targets)

Most important component of the PRD is target setting for the next calendar year. Targets are primarily to be spelt out by the assessee which is only fine-tuned by the assessor. While setting the targets, both Initiating officer and the assessee, are advised to take into consideration the available resources and constraints, if any. The principle of ‘SMART’ (Specific, Measurable, Agreed, Realistic, Time bound) is generally followed for setting targets.

Initiating Officer (IO) keeps the following points in mind while holding the PRD: (i) This is to help the scientists to realize his full potential; (ii) It should help the scientist appreciate his/her strengths and understand weakness; (iii) Focus on individual’s behaviour and the individual as such; (iv) Encourage the individual to continuously improve performance through planning and seeking guidance; and (v) Provide an empathic atmosphere for individual to share his/her tensions, conflicts, concern and problems. Initiating officer is expected to spend at least half an hour with each assessee. Details of PRD formats duly filled are retained by the HRD cell of the establishment/unit after being filled up for taking suitable steps to fulfill development needs of the assessee.

3.3.4 Assessment:

In spite of identifying tasks and targets, the availability of a veritable data base in the form of a self-appraisal document and the appraiser's own notes, there is tendency in most cases for the appraiser to use the normal distribution of his subordinates, some of whom are in the high end, most in the middle range and some in the low end. After introduction of mandatory disclosure of grading and contents of APAR, the appraiser is entrusted with a delicate task which is to be done with a great deal of objectivity using all the inputs that have been generated on one hand and distributing grading among the appraisees as per the
norms on the other hand. The appraiser obviously faces problems of awarding inflated rating to any of his subordinates to maintain conducive working relationship. Bias, either negative or positive, and other factors can contaminate appraiser’s ratings. While acknowledging the importance of grading/differentiating employees’ performance, minute scale variations are going to make difference for their future career prospects in organisation where the appraisal scores count heavily for such a process. There is excessive reliance on the appraisals as the sole database for promotions and performance related pay based on promotion. The appraiser uses all the data, including one-to-one discussions and then applies his mind and puts down his ratings that need not be shared per se before disclosure. The judgment of the appraiser is important, but its arbitrariness and bias is sought to be controlled by checks and balances in the form of a database and discussion with the appraisee to clarify the same. The role of an appraiser is moving from a career arbitrator, new order per se to that of a coach, facilitator, and guide and developer also, keeping the twin interests of the organisation and the individual’s career growth needs.

Performance appraisal rating is carried out by the appraiser (Initiating/Assessing Officer) and the Reviewer (RO) and the final is score is awarded by the Accepting Authority. Scientist is rated broadly on three main parameters i. work output ii.personal attributes iii. functional competence with weightage of 40 point for work output and 30 each for personal attributes and functional competence on 100 points scale. Work output and other two attributes assigned separately for each level are assessed and numerically graded.

(i) Work output

Total work output measured in 40-point scale accounts for the quantity, the quality of work and innovation etc. Work output relevant to job functions are contribution to project, products, sub-system, system design and development, new technologies, papers published and other scientific and technical activities. Amount of work accomplished during
the year characterized by completion of most of the task, maintenance of momentum right through instead of in-bursts, logging in significantly more hours beyond the normal working hours whenever need arises. On the other hand, the quality of work is characterized by brilliance, thoroughness, originality, timeliness and effectiveness as compared with standards, established principles, policies, procedures, plans and objectives. The numerical grade for work output is recorded in view both the quantum of work done as well as the quality of work and innovation.

(ii) Personal Attributes

Initiative and discipline with equal weightage of 15 point each are the personal attributes for rating of scientists B, scientists C and scientists D. For scientists of grade E and F, leadership skills and team building are considered as main two personal attributes with equal weightage under overall 30 point scale.

(iii) Functional Competence

Scientific capability and team work are broadly two factors of functional competence with equal weightage of 15 point each for junior level scientists B, scientists C and scientists D whereas scientists of senior grades E and F are rated for functional competence of scientific and technological vision and organisational commitment with equal weightage under subtotal of 30 point scale.

The objective of the APAR is to evaluate and record the performance of the scientists, motivate them to plan and perform increasingly better, counsel and help them in overcoming their shortcomings and make use of the data for the optimum utilization of human recourses for achieving organisational objectives. Appraisal reports form a record of the scientist’s ability and performance and as such are extremely important documents that provide essential data for the organisation on several issues concerning the career of a scientist.
3.3.5 Training and Development

Demonstrated aptitudes and training and development needs are identified during the course of performance review discussion. The focus is on the present job demands and future assignment and looming changes in new products or technology. Following up of the training and development needs identified through the annual assessment process is a big practical challenge for the organization at the unit level. But otherwise the organization has a sound training policy for the scientific personnel. Continuing Educational Programmes are executed as part of short-term training and development programmes for addressing training needs of the scientists. Scientists are also deputed for short–term training courses to various institutes/ organisations. Under the Research and Training (R&T) scheme, the scientists are sponsored for ME / M Tech programmes at IITs / IISC and reputed universities. The fees are also reimbursed where scientists undergo Ph.D. Programme. In addition to this, the organisation through its two Premier Institutes namely Institute of Technology Management and Defence Institute of Advanced Technology, a deemed university, offer short term and long term courses viz. M. S./ M. Tech./ Ph. D. for the scientists. Opportunities are also available for foreign deputations for training/presentation of paper/specific assignments. As per prevalent practice, majority of scientific personnel are provided training through short term/long term training programmes. At the entry level, the newly recruited scientists undergo a 16 weeks induction course at Defence institute of Advanced Technology, Pune.

3.3.6 Potential Review through promotion

The employee potential review through annual assessment process builds a data base, regarding the suitability of an individual for variety of options – succession plan, cross functional movement, growth in vast area of specialization and suitability for promotion to a higher level of job, with more responsibility and authority. Potential review through
APAR is generally directed to stress the suitability for promotion. Area of discipline/sub
discipline/specialization is indicated by the scientist in APAR. His/her performance in the
respective discipline is evaluated through appraisal. Potential appraisal is combined with
Performance appraisal.

Promotion from one grade to the next higher grade of scientists in Defence Research and
Development service (DRDS) is made under Flexible complementary scheme. Under
DRDS Rules, 1979, as scheme for promotion up to the grade of scientists H from one
grade to the next higher grade is in force. Under the scheme, promotion is not vacancy
based. The post held by scientist shall stand upgraded automatically to the next higher
grade on merit-based promotion under the scheme. The organisation operates a Fully
Flexible Complementing scheme (FCS) wherein, the post is upgraded automatically up to
the grade of scientist H. FCS operates on the basis of evaluation of annual performance
assessment report (A-PAR) and assessment interviews of scientists in the grades of
scientist B upto scientist E by assessment boards and assessment of scientist F upto
scientist ‘H’ by peer Review.

Table 3.2: Eligibility criteria for assessment for Promotion

<table>
<thead>
<tr>
<th>Number of years in the grade</th>
<th>Minimum percentage (of APAR Marks) for eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scientist B</td>
</tr>
<tr>
<td>3</td>
<td>85</td>
</tr>
<tr>
<td>4</td>
<td>80</td>
</tr>
<tr>
<td>5</td>
<td>75</td>
</tr>
<tr>
<td>6</td>
<td>70</td>
</tr>
<tr>
<td>7 or more</td>
<td>70</td>
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</tbody>
</table>

Source: Swamy’s Establishment and Administration-Flexible Complementing Scheme (Modified)
Eligibility criteria to be called for assessment for promotion of scientists ‘B’, ‘C’, ‘D’ & ‘E’ is shown in Table 3.2 against period of service in a particular grade called residency period. Scientists ‘B’, ‘C’, ‘D’ securing less than 70% marks as an average and scientist ‘E’ securing less than an average of 75% marks shall not be eligible for assessment. To be eligible for promotion to the higher grade, Scientists, ‘C’, ‘D’, & ‘E’ with minimum 3 years in the grade should consistently secure minimum of 90% score in APAR rating. Marks indicated in the table are the minimum marks to be obtained by the scientists averaged over a maximum preceding five years. Residency period is reckoned as on 30th June of the year to which the assessment board pertains. Internal screening committee is constituted to review performance appraisal reports of scientists ‘B’ to scientist ‘E’. The Internal screening committee evolves its own criteria for deciding the eligibility of scientists for consideration by Assessment Boards and award average marks for the scientists.

Assessment board for promotion: Assessment Board for interviewing candidates for promotion from the level of scientist ‘B’ and up to the level of scientist ‘F’ is constituted with chairperson and external members from academic institution/R & D organization/industry as well as internal members to assess both academic foundation and applied research and development. Assessment Boards are convened at least once in a year. For promotion up to the level of scientist ‘F’, if the overall merit caliber of the scientist as adjudged by the assessment board matches with the prescribed qualifying marks requirements based on required current residency period, the candidate is fit for promotion. Otherwise, the recommendation is either ‘defer the fitness for promotion by one year’ or ‘not yet fit’ for promotion. Recommendations of the assessment boards shall be implemented from 1st July of the year to which Assessment Board pertains except in those cases where the Board makes specific recommendations. After taking into account the performance/merit of the candidate,
the concerned assessment board decides number of variable increments maximum up to six as a performance incentive. This is addition to increment accruing due to promotion to the next higher grade.

The bottleneck in making appraisals effective is linking appraisals with promotion system. By linking appraisal data with promotion, it is observed that instead of appraisal data forming inputs for promotion, promotions influence appraisal data. In other words, the appraisal process gets polluted as the appraisee and appraiser have at the back of their minds promotion decisions, rather than performance plans and participative reviews. When the appraisal process is expected to end with numbers, the process takes a back seat, numerals or ratings take the driver’s seat. To reduce the entire year’s work as performance of any employee into a few numbers is difficult. It is difficult because numbers are not comparable between different Groups/ projects, different appraisals, and different functions and for the same appraisee at different points of time. Internal screening committee plays a role to some extent normalizing ratings of all scientists spread over different Groups / projects and also different locations/ establishments.

3.4 Awards

The various laboratories in cooperation with industry, other R & D laboratories and academic institutions make valuable contributions towards development of defence systems. With a view to motivating, encouraging and recognizing the contribution of DRDO scientists and their partners in academia, industries and to create an atmosphere of enthusiastic competitiveness, the Government of India has instituted DRDO Awards Scheme. Thirty six individual ‘scientist of the year’ and ‘young scientist’ awards at the organizational level and two ‘laboratory scientist of the year’ awards in each laboratory are awarded annually. Five ‘Technology leadership’ awards are given to senior scientists of DRDO who have provided outstanding leadership for
programmes, projects, technology or management. Besides, team awards for path
breaking research, excellence in self reliance, performance excellence, innovation/
futuristic development, popular science communication and strategic contribution are
also given every year. In addition, Silicon Trophy and Titanium Trophy are awarded to
system laboratory and science laboratory of DRDO respectively. Nominations are
made by the Director of the laboratories, Project Director of major programmes and
chief controller to the screening committee. Then, the award committee finalizes the
awards after consideration of recommendations of the screening committee.

3.5 Conclusion

Defence Research and Development organisation, the premier Indian
organisation in defence science and technology, employs the largest pool of scientific
personnel in the government sector of the country. The organisation values employee
performance appraisal to have tremendous motivational impact on employees through
goal setting, feedback and recognition. Performance appraisal system, as followed in
the organisation, has primary components of setting performance standard, self
appraisal, performance review discussion and assessment broadly on three
parameters- work output and innovation, personal attributes, and functional
competence. Annual performance assessment report is primarily utilized for
determining promotion eligibility of the scientific personnel.