

Proposal for Cadre Re-Structuring of Survey of India

Group 'B' and 'C' Cadres

1. Introduction

Survey of India, a more than 245 years old organization, is the national surveying and mapping agency under the Department of Science and Technology, Ministry of Science and Technology, Government of India. Survey of India has played an invaluable role in the saga of India's nation building process. The scientific and development initiatives of the organization have played an indispensable/ pioneering role in defining the country's priorities in growth and development field.

2. Group 'B' and 'C' Posts in Survey of India

Survey of India is a technical organization with the mandate of surveying and mapping the entire country. As per the work requirements the organization has a large number of Group 'B' and 'C' cadres. These can be classified as follows:

- (i) Topographic Cadre
- (ii) Draftsman Cadre
- (iii) Printing Cadre
- (iv) Stores and Records Cadre
- (v) Ministerial Cadre
- (vi) Stenographic Cadre
- (vii) Miscellaneous Cadre/Posts

(i) Topographic Cadre

Topographic cadre is the main cadre of Survey of India. The survey work is the primary responsibility of this cadre. The cadre contains the posts of Officer Surveyor, Surveyor, Survey Assistant, Plane Tabler, Topo Auxiliary, Air Survey Draftsman etc. These posts had different, specialized duties before the advent of computer technology. Officer Surveyors were deployed as Camp Officers, while posted in the field and as Section Officers when posted in the technical sections. Surveyors were responsible for 'control provision' and other work requiring sophisticated instruments while Plane Tablers and Air Survey Draftsmen were responsible for preparing maps by detailed 'surveying' and 'contouring' in the field. They also did 'fair mapping' work. Presently, the field techniques have changed as a result of which most of them are capable of carrying out field work using GPS, Total Station and Mobile Mapping System. They are also carrying out work of data acquisition using Digital Photogrammetry and Remote Sensing as well as cartographic work on computers (Computer Assisted Cartography).

(ii) **Draftsman Cadre**

The draftsman cadre consists of Chief Draftsman, Draftsman Div I and Div II. The primary work of this cadre was fair mapping and cartographic work. Now they are working on computer assisted cartography or Digital Cartography.

(iii) **Printing Cadre**

Survey of India prepares different types of maps which need printing as per the organizational standards. To perform this task Survey of India has 4 printing directorates called the 'Printing Groups'. These printing groups are kept under a zone called the 'Printing Zone'. The printing is a task technically different from the survey work and requires manpower having specific qualifications/skills. To perform the tasks of printing, the printing cadre has Assistant Managers at supervisory level and Reprographic Staff at working level. Presently there are many trades in printing, each trade for a specific work. **It has been proposed to merge a number of trades into single trade and naming it as 'Printing Technologist'.**

(iv) **Stores Cadre and Record Cadre**

Survey of India uses a variety of instruments and equipments that are huge in numbers. The quantum of work load requires a separate stores cadre. Similarly 'record management' in the organization is a very important and high responsibility job. The records are managed by 'records cadre'. It has been proposed to merge these two cadre into Stores-cum-Records cadre.

(v) **Ministerial cadre**

The organization has a workforce of about 7500 employees of which the ministerial cadre forms a major chunk. The establishment work of the organization is carried out by the ministerial cadre. This cadre provides the Administrative officers who are discharging important financial duties as Drawing and Disbursing Officers. An efficient ministerial cadre is essential for the smooth functioning of the organization. After reorganization of GDCs and Zones there is an acute shortage of Administrative officers as a result of which at many places the technical staff is discharging the Drawing and Disbursing Officers duties. Some modifications have been proposed in this cadre to set these shortcomings right.

(vi) **Stenographic cadre**

Survey of India has several Zones and GDCs/directorates headed by senior Group 'A' officers. The members of stenographic cadre are attached to these officers.

(vii) **Miscellaneous Cadres /Posts**

Survey of India carries out extensive field work as a result of which there are many departmental vehicles in each GDC/ directorate. There are posts of Motor Driver cum Mechanics, Vehicle Superintendent for management of these vehicles. Some of the Directorates have canteens having the posts of Manager, Counter Clerk, Coupon Clerk, Halwai, Tea maker, Bearer, Washboy etc. Survey of India has the repository of large amount of maps, records and data; some of which has

been classified as secret or restricted. Hence, Security staff (Security Supervisors and Guards) is needed for safety and security of this data. Some of the offices maintain Fire Brigades with Fire Fighting staff.

3. Past Vs Present

Being a more than 245 years old organization, the cadres and trades came into existence according to then available surveying and mapping techniques. These diverse cadres were required for performing specialized duties in the old times using manual techniques. The triangulation technique used for control provision (control is a network of ground points with accurately known coordinates) required rigorous observations and computations so there were posts like Surveyor, Survey Assistant, Trig Computer, Topo Computer, Topo Auxiliary etc. The detail survey was done by plane tabling, air survey etc. so the posts of Plane Tablers, Air Survey Draftsmen etc. were created. There were observatories which necessitated the presence of Observatory Assistants.

The process of mapping required drawing/scribing by hand so the posts of Draftsman were required. Most of the optical instruments needed periodic maintenance at SOI workshops so there were posts of Workshop Superintendent, Supervisor Instrument Repair Workshop, Instrument Mechanic, Fitter etc. Most of the general maintenance was done by artificers, painters etc.

Similarly the map reproduction process consisted of photography, plate making, printing etc. Accordingly the printing cadre had a number of trades like Photographer, Litho Draftsman, Photo Litho Printer, Grainer, Printer Up, Printer Down, Retoucher Photo, Plate Maker, Engraver etc.

Now the surveying and mapping technology has entirely changed. Most of the modern survey instruments have computer based technology. Mapping process is also computer based. Therefore, to fully utilize the latest technology, the organization demands multi-skilling and multi-tasking.

Instead of heaving separate trade for each work, the organization now needs lesser number of trades capable of carrying out diversified tasks.

4. Objectives of Restructuring of Group 'B' and 'C' Cadres

The objective of the cadre review proposal is to strike a healthy balance between the functional requirements of the Organization and the career progression of the officers and staff. It is well known that a satisfied workforce leads to enhanced efficiency; with a greater sense of belongingness which in turn benefits the organization. The cadre review of the organization has been undertaken with the objectives to:

- a) Estimate the future manpower requirements on a scientific basis;
- b) Plan recruitment in such a way so as to avoid future promotional blocks and at the same time prevent gaps from building up;
- c) Restructure the cadre so as to harmonize the functional needs with the legitimate career expectations of its members; and
- d) Enhance the effectiveness of the services/posts.

There has been a continuous and significant change in the very concept of governance. The cadre management has become a complex exercise because of several factors like changes in the role of Government Ministries/Departments, technological advancements, higher public expectations supported by a robust economic growth, thrust on greater participation of public in governance etc. that need to be taken care of to keep a service/cadre relevant.

The present restructuring exercise is comprehensive and done with the objective of organizing the organization to fulfill its goal in an efficient manner in tandem with the Govt. of India's policy and directives. **While proposing restructuring an effort has been made to retain the functionality of organizational cadres and reorganize them in simpler, leaner and more efficient structure by abolition or merger of existing cadres. The number of cadres has been reduced by merging similar cadres while the obsolete cadres have been abolished.**

Presently, the organization has several isolated posts which were required in the earlier days for specific purposes. **These isolated posts, have no role in the present technological scenario. Such posts have to be abolished/merged.** However, the present incumbents of some of the posts can be absorbed in the mainstream depending on their qualifications, experience, capabilities and the requirement of the mainstream post. Such posts have to be merged in the mainstream posts which are identical in pay scales and qualifications.

5. Zero Base Review

At present, Survey of India has 32 GDCs/Directorates and 9 zones. There is a basic functional requirement of the officers/staff for these offices to complete the routine assigned duties. Further, Survey of India is going to undertake several projects of national importance e.g. the 1:10000 mapping project, the CMPDI project etc. These projects will require several Group 'B' officers and Group 'C' staff. The required strength of the Group 'B' officers and Group 'C' staff proposed has been determined based on a zero base review.

An effort has been made to identify the practices and processes that are currently relevant to the organization so as to ensure that optimum utilization of human resources is done. Keeping this in view abolition of posts has been proposed wherever considered necessary eg. posts of Instrument Technologist, Production Technologist, Engineer, OC MRIO, Mathematical Advisor, Senior Scientific Officer and Labour Welfare Officer.

An exercise has been carried out to work out the ideal manpower requirement of each office as shown at Annexure 'F'. Accordingly the number of posts required at Group 'A', Group 'B' and Group 'C' level have been determined. The details are discussed below.

5.1 Proposed Organizational Structure of Survey of India

The proposed structure of Survey of India is discussed in following sections. Survey of India is proposed to be organized as follows:

5.1.1 Headquarter Office

The headquarters of Survey of India known as -Surveyor General's Office is headed by the Surveyor General of India (Apex scale). He will be assisted by 03 Additional Surveyor Generals (Addl.SG) (in HAG Grade), each in-charge of Administration, Technical and Project respectively. Since SOI is now embarking on many National Level Projects which are only likely to increase in future due to emerging technical/geospatial needs across the departments; an Addl.SG (Project) will be posted at the Surveyor General's Office to monitor various projects undertaken by Project Directorates of Survey of India. He will be assisted by one Joint SG (Projects) and one DSG (Projects). The Addl.SG (Admn.) will be assisted by 04 DSGs viz. DSG (Admn.), DSG (Legal), DSG (HR) and DSG (Work Study). The Addl.SG (Tech.) will be assisted by 02 DSGs viz. DSG (Technical Monitoring) and DSG (Printing). The International Boundary Directorate headed by Joint Surveyor General will also be under his overall control. In addition, there will be a post of Director (Admn. and Finance) and a post of DSG (Vigilance) who will report directly to the Surveyor General of India. A summary of organizational structure of SGO is shown as **Annexure F-3**.

5.1.2 Since Survey of India is largely a field surveying department requiring presence across the country, it is proposed to divide the area of responsibilities for field work in state directorates which would be located in each state and union territory of the country. For better administrative control, these state directorates would come under 07 Zonal Offices. The state level offices to be called as Geo-Spatial Data Centre (GDCs) would be headed by a Director (PB-4 GP-8700) Level officer and the Specialized wings being proposed for UTs and smaller states (depending on the quantum of work); to be headed by a SS rank officer. The Zonal offices would be headed by Joint Surveyor General (SAG Grade) rank officer. The Summary of the organizational structure of Survey of India is shown as **Annexure F-2**.

5.1.3 In addition to the state directorates, there will be 05 Specialized Directorates looking after the specialized works in the field of Geodetic Surveys, Digital Mapping, GIS, Remote Sensing, Data Storage and Map Archival. The details of the directorates are as follows:

5.2 State Directorates

At present, Survey of India has directorate level offices called Geospatial Data Centre (GDC) in almost each state except a few smaller states/Union Territories. **It is now proposed that Survey of India will have an office for each State and Union Territory.** The size of such office has been decided according to the work load and area of responsibility. The number of Survey of India Toposheets on scale 1:50,000 in a State indicates the area of jurisdiction and workload.

For each state having more than 40 Toposheets of 1:50,000 scale there will be a Directorate. However, for smaller states and Union Territories (having less than 40 toposheets) there will be Specialized Wings which; will though be independent offices headed by Superintending Surveyor but under the control of the nearby State Directorate. The Directorates will be headed by Directors while the Special Wings will be headed by the officers of the rank of SS.

To start with, the special wings will be located at the places where Survey of India offices already exist. Later, the wings will be shifted to the concerned State Capital/UT after recruiting the staff from that area.

Further, the state GDCs have been categorized into 4 types i.e. Type A, Type B, Type C and Type D according to the number of 1:50,000 Toposheets falling in the area. The categorization has been done as follows ó

GDC Type	Number of 1:50,000 Toposheets	Number of such GDCs	Name of the States
Type A	More than 300	6	Rajasthan, Gujarat, Maharashtra, Andhra Pradesh, Uttar Pradesh, Madhya Pradesh
Type B	201 - 300	3	J&K, Orissa, Karnataka
Type C	101 - 200	11	Haryana, Punjab, Himachal Pradesh, Uttarakhand, Tamil Nadu, West Bengal, Bihar, Jharkhand, Chhattisgarh, Arunanchal Pradesh, Assam
Type D	41 ó 100	3	Delhi, Kerala, Meghalaya
Special Wing	upto 40	12	Chandigarh, Daman & Diu, Goa, Dadar and Nagar Haweli, Pudducherry, Andaman & Nicobar Islands, Lakshadweep, Sikkim, Nagaland, Tripura, Manipur, Mizoram

The manpower has also been distributed as per the workload in the above categories. The manpower requirements are shown as **Annexure F-4 to F-20**.

5.3 Zonal Offices

The GDCs/ Specialized Directorates will be under different Zones. There will be **07 Zones** viz. Northern Zone, Southern Zone, Eastern Zone, Western Zone, North Eastern Zone, Central Zone and Specialized Zone. The State Directorates will be under different zones and the Specialized Directorates will be under Specialized Zone. The 04 Printing Groups which are at present under Printing Zone, have been proposed to be kept under the respective regional zone. The organization of a zonal office is shown at **Annexure F-4**.

5.4 Specialized Directorates

Survey of India currently has 06 Specialized Directorates which carry out specialized type of jobs. These are (i) Geodetic & Research Branch (G&RB), Dehradun, (ii) National Geospatial Data Center (NGDC), Dehradun, (iii) Digital Mapping Center (DMC), Dehradun, (iv) Map Archival & Dissemination centre (MA&DC), Dehradun, (v) Directorate of Survey (Air) (DSA), New Delhi and (vi) GIS & Remote Sensing Directorate (GIS&RS), Hyderabad. Presently these directorates are under the Specialized Zone, Dehradun.

It has been proposed to merge the existing specialized directorate namely Digital Mapping Centre (DMC), Dehradun into National Geospatial Data Centre (NGDC), Dehradun as both of them carry out almost similar type of jobs. A new Research and Development Directorate is proposed to be created. After this re-organization and upgrading G&RB into a zonal level office there would be 05 Specialized Directorates each headed by a Director rank officer (PB-4 GP-8700). A brief about these Specialized Directorates is as follows ó

(a) Research & Development Directorate

Research & Development is an essential activity for any scientific/technical organization. It is necessary for enabling an organization in keeping pace with fast changing technology. However, at present there is no R&D Directorate in Survey of India.

It is proposed to create a Research & Development Directorate at Dehradun. It will have separate Wings for research on Geodesy, GIS&RS, Modern Mapping, Infrastructure Development and Projects. Besides research in the field of Surveying and Mapping, R&D Directorate will also be responsible for testing the new instruments/tools/software, preparing Standard Operating Procedures for surveying/mapping and suggesting suitable methodology for project surveys or special surveys tasks.

(b) National Geospatial Data Centre (NGDC)

State GDCs prepare maps in the digital format. This data is to be properly scrutinized and then archived. For the GDCs of Northern India this is done at NGDC. It is headed by a Director level officer. Director NGDC also gives advice to the Surveyor General of India on matters related to Data Management and Data Archival.

(c) GIS & Remote Sensing Directorate (GIS&RS)

GIS&RS Directorate, Hyderabad is responsible for archival of digital data of GDCs of Southern India. In addition, it also carries out the specialized mapping works which require preparation of Geographical Information System (GIS) and/or use of Remote Sensing technique.

(d) Directorate of Survey Air (DSA)

Directorate of Survey (Air) is a specialized directorate to meet the surveying and mapping requirement of Indian Air Force. Various products like Aeronautical Maps, Charts and Catalogues and their periodical updation/reissue based on original/revision surveys are the major activities of this directorate. Besides this, private airfield surveys of other states are also taken up as and when required in the project mode.

National Library of Aerial Photography is maintained at this Directorate. This directorate also monitors the aerial photography undertaken for the department by IAF and NRSC. Procurement of satellite imagery for GDCs is processed in this Directorate. IAF Map Depot and Map Sales Counter are also functioning in this directorate for storing and distributing IAF Maps/charts and Sale of maps respectively.

(e) **Map Archival & Dissemination Centre (MADC)**

The Map Archival & Dissemination Centre is responsible for systematic archival of old maps and records after scanning in digital format. It also maintains proper backups as per the policies in this regard. It is also responsible for archival of all types of paper maps and its issue to various map sales offices of Survey of India and Managing of SOI exhibitions at various seminars etc. for publicity. This specialized directorate is headed by a Director level officer.

5.5 Geodetic & Research Branch (G&RB)

One of the existing Specialized Directorates named Geodetic and Research Branch (G&RB) is responsible for carrying out geodetic work of Zero Order (most accurate control) and First Order accuracy on which accuracy of all subsequent surveys depend. It has nation wide responsibility. This directorate is also responsible for tidal observations, geodetic observations, geophysical (Geomagnetic, Gravity) observations and providing horizontal & vertical control all over India.

Considering the area of jurisdiction, responsibilities and importance of work, it is proposed that this Directorate be headed by a SAG level officer and report directly to SGO rather than the Specialized Zone. The head of G&RB would be assisted by two Director level Officers. The detailed structure is shown as **Annexure F-10**.

5.6 Indian Institute of Surveying and Mapping (IISM)

The Human Resources are to be properly managed and developed for efficient functioning of any organization. Any new technique of surveying/mapping can be successfully implemented in the department only when the manpower is properly trained in that technique. The Indian Institute of Surveying and Mapping (IISM), Hyderabad is responsible for Human Resource Development in Survey of India by imparting training to Officers and Staff. It is a premier institute in the field of Surveying and Mapping and runs the courses not only for Survey of India personnel but also for other Indian/Foreign organizations.

The head of IISM is adviser to the Surveyor General on training issues and assist in framing the policies related to human resource development. He has to liaise with other organizations for training related matters. There are various faculties headed by DSG level officers (PB-4 GP-8700) for specialized fields. Considering the importance of human resource development, it is proposed that the IISM be headed by an Addl. Surveyor General (HAG level officer). The organizational Structure of IISM is shown in **Annexure F-19**.

5.7 Project Directorates

Survey of India takes different survey projects from various agencies. At present, for the smaller projects covering area within the jurisdiction of a GDC, the concerned GDC is responsible. For the larger projects covering several states or country as a whole, one of the officer of Addl.SG rank is made the Project Director for coordinating the activities. In the latter case, the manpower and resources of several GDCs are used as a common pool to execute the project. This arrangement is creating several administrative difficulties as the projects don't have dedicated manpower and resources as experienced in ICZM & CMPDI Projects.

In time to come, the Project Works of SOI will only increase. It is therefore proposed that Survey of India will have separate Project Directorates. These Project Directorates will be responsible for taking up the survey projects of national level. These project directorates will have dedicated manpower and resources. It is assumed that at any time at least 04 national level/big projects will be going on in Survey of India, therefore 04 Project Directorates are proposed. These would be created in states/area as per the project requirements.

The GDCs or Directorates are kept under Zones headed by Joint Surveyor General. Similarly the Project Directorates are to be kept under the administrative control of a Joint Surveyor General (SAG Grade). For this purpose, it is proposed that one Joint SG will be posted at SGO as Joint SG (Projects).

The national level projects are very important in the sense that by completing them successfully, the Organization earns reputation and revenue. Therefore, one post of Addl. Surveyor General (Project) is proposed at Surveyor General's Office. He will have the overall responsibility for coordination of the projects. He will formulate the policies related to the projects.

5.8 Printing Groups

The maps prepared by various GDCs are printed in establishments called Printing Groups. There are 04 Printing Groups viz. Northern Printing Group (NPG) Dehradun, Western Printing Group (WPG) Delhi, Eastern Printing Group (EPG) Kolkata and Southern Printing Group (SPG) Hyderabad. Each Printing Group is headed by a Director rank officer.

At present, the 04 printing groups are kept under a Printing Zone. Now it is proposed to keep each Printing Group under the nearest Zone. The organization of Printing Groups is shown in **Annexure F-16, F-17 and F-18.**

6.0 Manpower Requirement

A Zero Based Review has been carried out to determine the requirement of total number of officers/staff in each grade for all the offices of Survey of India. The organizational structures of SGO, Zones, each type of Directorate/GDC, Specialized Directorates, Printing Groups, G&RB and IISM have been prepared down to section level, showing the number of officers and staff functionally required. From these structures the total number of officers/staff in each grade required by Survey of India as a whole has been determined and is now being proposed. The details are shown as **Annexure F-1 to F-20.**

The Defence Stream of SOI Group -A Officers also man the posts in Military Survey. Hence while doing the review the requirement of Military survey has also been considered that has to be staffed by SOI Officers. While doing this exercise the total requirement of posts projected by Military survey has been added to the total group -A strength and then divided amongst -Civil and -Defence streams as per the existing rules.

6.1 Cadre Structure

The Fifth Central Pay Commission has suggested an ideal or rather a normative cadre structure as per which on a scale of hundred Senior Duty Posts, the recommended strength at HAG is 03, at SAG is 17, at NFSG is 20, at JAG is 30 and at STS is 30.

The existing and proposed structure of SOI Group 'A' Service has the following ratios

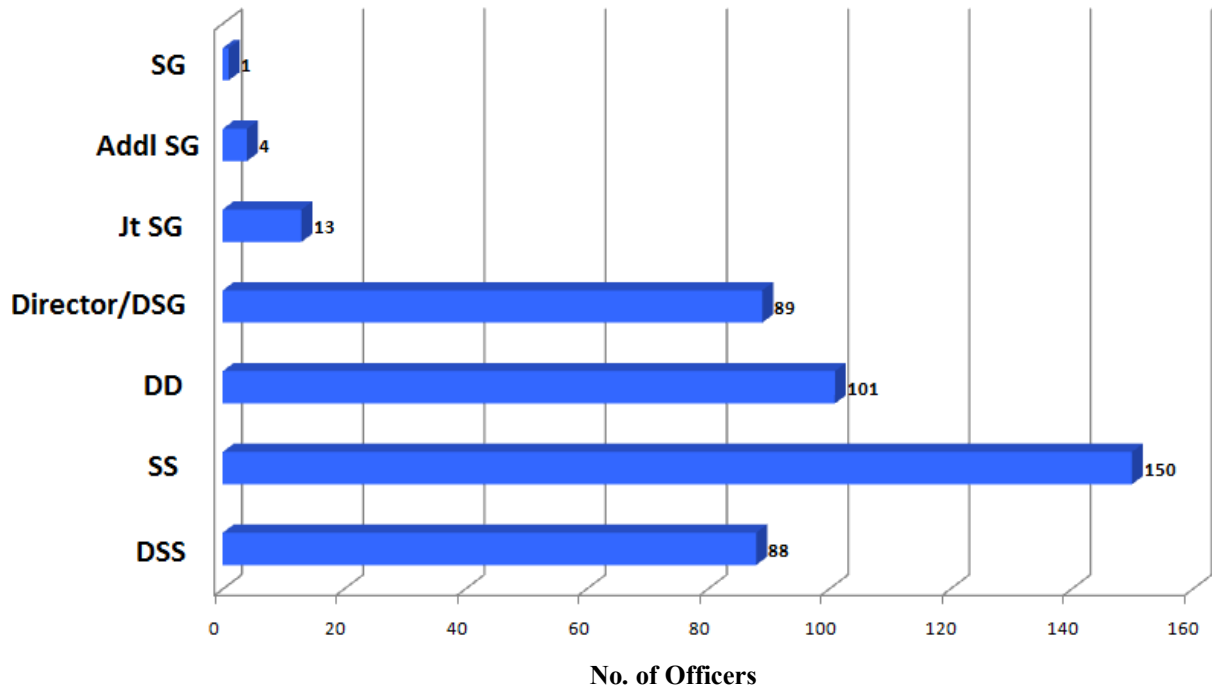
Grade	Ideal%	Existing %	Proposed %
HAG	3	0.5	1.5
SAG	17	3	4.5
NFSG	20	30	24.2
JAG	30	30	29.5
STS	30	36	40.2

In Survey of India, at STS level there are more number of posts than the norms due to the functional requirement. Each Directorate/GDC has several wings headed by STS level officer called Superintending Surveyor (SS). The responsibility of execution of the survey projects is vested with the Superintending Surveyor (SS). Further, the special wings created for very small states and UTs are to be headed by STS level officers. Therefore 40% of the Senior Duty posts have been kept in the STS level.

6.2 Demand for competitive upward mobility (Threshold analysis)

The GOI has defined the promotional norms in STS, JAG, NFSG, SAG and HAG levels at 5, 9, 14, 17 and 25 years respectively. There is a competitive pressure in the organizations to match the threshold limits of other sister services so as to avoid the feeling of 'injustice'. In SOI an effort has been made while working out the cadre review proposals, to see that

- (a) All direct recruits shall be promoted to the senior time scale from junior time scale around 5th or 6th year.
- (b) All the direct recruits in the senior time scale shall be promoted to the JAG (100%).
- (c) A reasonable proportion of the direct recruits shall see their way to SAG and some to HAG (about 80% and 20% respectively).



6.3 Skill gaps and Capacity Building

Survey of India has a training institute at Hyderabad known as the Indian Institute of Surveying and Mapping (IISM). The departmental officers and other staff are trained at IISM in various subjects of Surveying and Mapping. IISM can take care of the general training in surveying and mapping. To upgrade the quality of training, possibilities will be explored at IIS&M by entering into collaboration with some International Institutes/Organizations/ Universities.

While our training requirements are met in all technical fields by the existing facilities, there is a gap in the Geodesy field. Even though it is a very important field and is the base of whole surveying and mapping, very few officers trained in this field are available. There are few experts in Geodesy field within the country. Therefore, some officers need to be sent to some reputed National/International Institutes for training in Geodesy. Officers also need to be sent to reputed International Institutes like ITC, Netherlands

Moreover, in the new upcoming projects, Survey of India has to produce GIS enabled data/maps. This requires special expertise in Data Base Management System (DBMS), web operations and coordination skills. There are some international institutes/universities which give a high level of exposure on these techniques. It is proposed to send officers for training at these universities/institutes in Digital Photogrammetry, GIS, Web GIS operations etc. Officers will also be regularly nominated for refresher courses in Administration/Management run by Institutes in India like Indian Institute of Public Administration, Institute of Secretariat Training and Management etc.

7. Functional Aspects of the Organization

While making an effort to bring about a qualitative shift in the cadres, it is also essential to do an internal assessment to look into the functional aspects of the organization.

7.1 Organizational changes

Survey of India has seen several organizational changes since last cadre restructuring. Earlier the department was organized into 04 Zones and several Topo Circles (Directorates). The areas of jurisdictions of the circles were not according to the states. In the year 2003, the Survey of India was reorganized into State Geo-spatial Data Centre (GDCs). Each GDC was given the responsibility of carrying out surveying and mapping in the corresponding state. Later 09 Zones were created. Each zone had several GDCs/Directorates under its control.

It is proposed that Survey of India should have offices in all the states for better coordination with the state government offices and for fulfilling their geospatial/mapping needs. Accordingly, the organizational structure of Survey of India has been modified in tendency with the geographical demarcation of the States/UTs.

7.2 Outsourcing

(i) In the present scenario several services such as security, house-keeping etc. are being outsourced. Outsourcing such services doesn't affect the requirement of the Group 'A' officers. Survey of India has several upcoming projects like 1:10,000 scale mapping. In such projects, various surveying and mapping tasks will be outsourced. However, the supervision and quality control will be done by SOI personnel/Officers.

(ii) There are certain services which cannot be performed by Survey of India cadres for which outsourcing will need to be done e.g. repair/maintenance of instruments/equipments, Annual Maintenance Contracts, hiring of vehicles, hiring of camp orderlies for field work, maintenance of Canteens and guest houses etc. (where permanent staff is not available).

Survey of India needs large manpower to assist in field activities. In early days, Contingent Khalasis were recruited for the purpose. In present scenario, the requirement of such personnel varies according to the nature of survey and workload. Therefore, it has been proposed that some fixed number of Skilled Work Assistants will be kept in each Directorate. There will be certain sanctioned strength of Hired Local Labour (HLL) so that local labour may be hired as and when required for field work. Such type of outsourcing has no impact on the requirement of number of Group 'A' posts.

7.3 Automation of Business Processes

There have been significant technological developments in the last few years. Many of the processes which earlier required intensive manual work have now been automated. In Survey of India some of the processes discussed below will be automated ó

7.3.1 Data Archival

There has been significant advancements in the data acquisition technology. This has necessitated the required changes in the processing, management, storage and diffusion of data. In view of the present work and new projects which are to be implemented, digital data will grow manifold, which would need a systematic management. Hence a uniform Database Management System is required for each office as well as centrally for Survey of India.

7.3.2 Printing Automation

The printing technology has changed in past few years. Earlier, the printing was a lengthy process so the maps were printed in huge quantity and were stored. The storage needed large amount of space. Further the retrieval was time consuming and the safe custody of the paper maps required a large number of dedicated staff. Now, with the increasing demand of maps in digital format the need for paper printing is considerably reduced. Wherever required the process will have to be changed into plotting, thereby reducing the quantum of space and storage requirements. This will be a viable economical solution.

7.3.3 Office Automation

Due to the incoming projects the quantum of work is going to increase exponentially which may not be handled fully by the available staff. Working procedures will need to be redesigned through the emerging new tools/trends of governance viz. Business Automation, Office Automation, file automation, e-returns, e-procurements, video-conferencing etc.

7.4 Business Processes Reengineering

The technology in the field of surveying and mapping has seen major advancements in the past few decades. The conventional triangulation technique of control provision was much more time taking. The manpower requirements were also several times higher. These techniques have now been replaced by the modern satellite based GPS technique. The field surveying techniques like plane tabling etc. were also much labour intensive and time taking. Now these techniques are gradually being replaced by remote sensing and mobile mapping techniques. The mapping process also has changed from fair drawing and scribing to digital cartography. Accordingly the demand of digital data has increased.

All these advancements in technology have necessitated the change in the working of organization. The users are using GPS for their location based needs. Old maps were on Everest Datum so they were not compatible with GPS. Now, Survey of India has switched from Everest Datum to WGS 84 / ITRF datum thereby making the new maps compatible with GPS/ changed technology.

7.5 Change in the Mandate

There has been no basic change in the mandate of the organization. As before, Survey of India will continue to carry out surveying and mapping jobs. However, there has been a change in the user demand and expectations. Earlier, the paper maps were the main products. Now with the advancements in the computing technology, Survey of India has to produce the digital products along with the paper maps. The method of carrying out the work has also undergone a change.

8. Restructuring Proposal of Group 'B' and 'C' cadres

The proposed restructuring of Group 'B' and Group 'C' cadre of Survey of India is discussed below. The functional requirements and justification of proposed increase/decrease is also discussed cadre-wise and post-wise:

8.1 Topographic Cadre

Group 'B' Posts

8.1.1 Officer Surveyor

Officer Surveyor is a Group -B Gazetted post. At present, the sanctioned strength of Officer Surveyor is 474. There are 35 posts of Chief Draftsman which are also Group -B Gazetted post. In the modern technology the posts of Chief Draftsman are not required. It is proposed to transfer these posts of Chief Draftsman to Officer Surveyor. This will be done when there is no Draftsmen available for promotion to the post of Chief Draftsman.

Further, as per the functional requirement determined through zero based review, 524 posts of Officer Surveyor are required. **Thus 524 posts of Officer Surveyors have been proposed.**

The post of Officer Surveyor carries the Grade Pay of 4600 in PB2. It is an important post in Survey of India. Officer Surveyors play a vital role in all the professional activities of the organization. Officer Surveyors perform the duties of Section Officers of Technical Sections comprising of 10-15 Surveyors, Plane Tablers and other technical staff. They are also deputed as Camp Officers in the field survey camps. In absence of Superintending Surveyor, they also perform the duties of the Wing In-charge.

In many organizations, the Group 'B' Officers are in GP 4800 so it is proposed to grant GP 4800 to Officer Surveyors.

8.1.2 Surveyor (Senior)

At present the posts of Surveyor and Survey Assistant are in PB-2 GP-4200. The posts of Surveyors are filled 50% by Direct Recruitment and 25% by Limited Departmental Competitive Examination of Div II Topo Staff and 25% by promotion. The posts of Survey Assistants are filled by Promotion of Div II Topo Staff.

It has been proposed to re-designate Surveyors and Survey Assistants as Surveyor (Senior). Considering the organizational structure and work load, 1635 posts of Surveyor (Senior) have been proposed in the PB-2 with GP-4200. The posts of Draftsman Div I and Draftsman Grade II which carry the same pay scale will be merged into Surveyor (Senior) when the present incumbent are retired / promoted and nobody is available in the feeder grade.

In future, these posts are proposed to be filled 50% by Direct Recruitment of Graduates, 25% by Limited Departmental Competitive Examination of Surveyor (Junior) and remaining 25% by DPC of Surveyor (Junior). The element of direct recruitment is retained to balance the proportion of experienced staff and the young and better qualified staff.

Group ‘C’ Posts

8.1.3 Surveyor (Junior)

The posts of Div II Topo Staff i.e. Plane Tabler, Air Survey Draftsman, Topo Auxiliary, Trig Computer etc. will be merged and re-designated as Surveyor (Junior). 2025 Posts of Surveyor (Junior) have been proposed in PB-1 with GP-2800. Existing Div II Topo Staff i.e. Plane Tabler, Air Survey Draftsman, Topo Auxiliary, Trig Computer etc. will be absorbed as Surveyor (Junior). In future, it is proposed to fill 75% of these vacancies by Direct Recruitment with minimum qualification of intermediate and 25% by LDCE of Skilled Work Assistants (Erstwhile Group -DØ) who are at least Intermediate pass.

8.1.4 Skilled Work Assistant

There were a large number of posts of Khalasi, Daffadar, Daftri, Jemadar in Pay Band 1 GP 1800. The number of posts is proposed to be decreased. However, considering the nature of the work of the organization which is field intensive requiring the trained staff, a large number of Skilled Work Assistants are still needed. **The nomenclature is proposed to be changed to Skilled Work Assistant (Cash)/(Daftry)/(Survey).**

8.2 Printing Cadre

Survey of India (SOI) has four Printing Groups located at Kolkata, Dehradun, Hyderabad and Delhi. It is proposed to place them under Joint SG (Printing Zone) (SAG Level officer) to streamline the printing work. Considering the sophistication in printing technology, lesser number of staff is required but at the same time the staff needs to be more qualified. The proposed new structure of printing cadre is as follows.

Group ‘B’ Posts

8.2.1 Assistant Manager

The post of Assistant Manager is a Group -BØ Gazetted post in PB-2 GP-4600. It is proposed to reduce the number of posts from 35 to 28 as per the functional requirements. **It is also proposed to grant the GP-4800 to Assistant Managers who are equivalent to other Group ‘B’ Officers.**

At present, the post of Assistant Manager is filled 40% by Direct Recruitment and 60% by promotion of Senior Reprographer. As the posts of Assistant Managers are less in number, to improve the promotional avenues of Senior Reprographers (to be re-designated as Printing Technologist Sr.) it has been proposed to fill 100% of the vacancies will be filled by promotion of Printing Technologist Senior.

There are 10 sanctioned posts of Works Manager, against which only 4 are posted in Printing Groups. The posts of Works Manager are isolated posts in PB-2 GP-4600, with no promotional avenues. **It is proposed to abolish the post of Works manager and absorb the present incumbents into the equivalent post of Assistant Manager.**

8.2.2 Printing Technologist (Senior)

There are 148 post of Senior Reprographer in PB-2 GP-4200. **The nomenclature of Senior Reprographer is proposed to be changed to Printing Technologist (Senior).** At present these posts are filled by promotion of Div II Reproduction Staff. However, considering the advancements in the technology in printing, it is proposed to fill 75% of the vacancies by Direct Recruitment with minimum qualification Diploma in Printing with 2 years of experience in printing.

Group 'C' Posts

8.2.3 Printing Technologist (Junior)

Earlier the printing staff, namely, the Reproduction Staff of Division II was recruited from TTTB and placed in Division II and Division I of Group C Service of SOI like topo and store cadres. However the new cadre will be recruited with the minimum qualification as Diploma in Printing. The present sanctioned strength of Reproduction Staff of Division II is 537. Keeping in view, the advancement in the printing technology, only 80 posts of the Printing Technologists are proposed in PB-2 GP-2800.

8.2.4 Printing Assistant

The Printing Assistants will be required for upkeep of printing machines, assisting in printing work etc. At present this work is done by Technical Labourers. The present sanctioned strength is 540, but in the modern technological scenario, lesser numbers will be required. **In the present proposal 100 posts of Printing Assistants have been proposed in PB-1 GP-1800.**

8.3 Stores Cadre

Survey of India has to maintain a large amount of stores due to the nature of jobs. The store items include the precision field instruments, survey and mapping instruments, computers, laptops and other equipments. Survey of India also maintains a large amount of records in the form of Topo Sheets, data in Hardcopy/Softcopy etc. Till now, to look after the Stores and Records, there are two different cadres i.e. Stores Cadre and Records Cadre respectively. In the changed scenario, as more and more emphasis is on multi-skilling, it has been felt that the stores and record cadres can be merged. The posts under stores cadre in proposed structure will be as below.

Group 'B' Posts

8.3.1 Assistant Stores Officer

The post of Assistant Stores Officer (ASO) in Survey of India is a Group -B Gazetted post. It is in the PB-2 GP-4200. **However, it is proposed to place this post equivalent to other Group B Gazetted posts, in GP-4800.**

At present there are 18 sanctioned posts of ASO. However, for smooth functioning, each Directorate needs one ASO. Therefore, it is proposed to increase the posts of ASO to 39. Every Directorate will be posted with one ASO each.

The post of ASO will be filled 100% by promotion of Store Assistants.

8.3.2 Store Assistant

There are 35 posts of Store Assistants in the PB-2 GP-4200. However, as per functional requirements, it is proposed to increase these posts to 46.

Group 'C' Posts

It has been proposed to merge the Records Cadre into Stores Cadre. The nomenclature for the common post has been proposed as Store-cum-Record Keeper.

8.3.3 Store-cum-Record Keeper (Senior)

There are 99 sanctioned posts of Store Keepers. These posts are in Grade IV, II and II. Like other Div 2 Topo Staff, Store Keepers also are recruited as TTTB and after the training classified as Store Keeper Grade IV in PB-1 GP-1900. After 3 years in Grade IV, they become Grade III (GP-2400) after qualifying the Trade Test. Similarly after 2 years in Grade III and qualifying the trade test, they become Grade II (GP-2800). Similarly there are 111 sanctioned posts of Record Keepers in Grade IV, II and II. The grade promotions are not vacancy based, and there is no separate sanctioned strength for each grade. Thus there are total 220 posts of Store Keepers and Record Keepers.

It is proposed to divide the Div II staff into two grades i.e. Store-cum-Record Keeper Senior and Store-cum-Record Keeper Junior. 84 posts of Store-cum-Record Keeper Senior will be in PB-1 GP-2400 and 93 posts of Store-cum-Record Keeper Junior will be in PB-1 GP-2800. The present Storekeepers Grade II and Record Keepers Div I and Grade II will be re-designated as Store-cum-Record Keeper Senior. The existing Store Keepers Grade IV/III and Record Keepers Grade IV/III will be re-designated as Store-cum-Record Keeper (Junior). When the existing strength falls below 93 then the vacancies will be filled by Direct Recruitment.

8.3.4 Store-cum-Record Keeper (Junior)

Please Refer to para 11.3.3 above.

8.4 Ministerial Cadre

Group 'B' Posts

8.4.1 Establishment & Accounts Officer

E&AO is the Head of Office and also performs the duty of Drawing and Disbursing Officer (DDO). He also deals in financial and budgetary matters and proper accounting of the expenditure. He supervises the work of all ministerial sections of a GDC/Directorate. There are 29 sanctioned posts of Establishment & Accounts Officers (E&AO) in PB-2 GP-4600. There are 33 GDCs/Directorates/IISM. Each GDC/Directorate needs one E&AO but the present strength is not sufficient and many offices are functioning without the E&AOs. There, the duties are being performed by the technical officers, who have otherwise been trained in technical works. Moreover, SGO, IIS&M and G&RB need 2 to 3 E&AOs each. **Therefore, 39 posts of E&AOs have been proposed.**

It has been proposed to place this post in GP-4800, equivalent to other Group -B Gazetted posts.

8.4.2 Office Superintendent

Each GDC/Directorate has at least 3 ministerial sections, whereas the SGO and larger Directorates have more number of sections. The work of each section is supervised by the Office Superintendent. At present the strength of Office Superintendent falls short of the requirements. Total 111 posts of Office Superintendents have been proposed as per zero based review.

Office Superintendent is in-charge of a section comprising of 12 to 15 personnel. These include 3 to 4 Assistants who are in the GP-4200. Prior to 6th CPC, Assistants were in the scale of 5000-150-8000 and Office Superintendents were in 5500-175-9000. However, at present the post of Office Superintendent has also been placed in GP-4200. There is functional requirement of this post. It is the promotional post for Assistant and has the duties and responsibilities higher to that of Assistants. Therefore it has been proposed to place the post of Office Superintendent in GP-4600.

8.4.3 Assistant

There are 286 sanctioned posts of Assistants in PB-2 GP-4200. As it has been proposed to increase the posts of Office Superintendents, **therefore in lieu it is proposed to reduce the strength of Assistants to 251.**

Group 'C' Posts

8.4.4 Upper Division Clerk

At present, the sanctioned strength of Upper Division Clerk (UDC) is 545. However, in the present technological scenario, when more work is computer based, lesser number of staff is required at this level. **So, it has been proposed to have 321 posts of UDC as per functional requirements.**

8.4.5 Lower Division Clerk

There are 235 sanctioned posts of Lower Division Clerk (LDC). **Due to the reasons given above, only 191 posts of LDC have been proposed in new structure.**

8.5 Stenographic Cadre

Group 'B' Posts

8.5.1 Private Secretary

There are 6 sanctioned posts of Private Secretary in PB-2 GP-4600. The Private Secretaries (PS) are to be attached with the Additional Surveyor Generals and Joint Surveyor Generals.

8.5.2 Stenographer Senior (Selection Grade)

At present there are 12 posts of Stenographer Grade I and 50 posts of Stenographer Grade II and III. The Stenographer Grade I and Stenographer Grade II, both are in the PB-2 GP-4200, while Stenographer Grade III are in PB-1 GP-2400. After 6th CPC, the promotion from Grade II to Grade I

has no financial benefit. So it is proposed to upgrade the Stenographer Grade I to GP-4600 with nomenclature as Stenographer Senior (Selection Grade).

8.5.3 Stenographer Senior

There are 50 posts of Stenographer Grade II and III. However as per functional requirements 64 are required. So, 29 posts have been proposed in GP-4200 with nomenclature Stenographer Senior and 35 posts in GP-2800 with nomenclature Stenographer Junior.

Group 'C' Posts

8.5.4 Stenographer Junior

As described in 11.5.3 above.

8.6 Official Language Cadre

The pay scales of Official Language Cadre (OL Cadre) of Department of Official Language, Ministry of Home Affairs, Govt. of India have been extended to the OL Cadre of subordinate organizations also. Accordingly, the OL cadre of Survey of India is getting the similar pay scales.

The strength of OL Cadre in Survey of India is as follows -

Senior Hindi Translator (PB-2 GP-4600)	:	5
Junior Hindi Translator (PB-2 GP-4200)	:	20

It is proposed to increase the posts of Senior Hindi Translator to 10 and Junior Hindi Translator to 25 so that each of the Directorates may be posted with a Hindi Translator. Two posts of Asst Director (OL) and one post of Dy. Director (OL) are proposed.

8.7 Miscellaneous Cadre/Posts

The posts of Motor Driver cum Mechanic will be kept as these are required. The posts of Mali, Safaiwala, Guard etc have been kept as these are essential requirements. The Canteen staff is also required, so it has been retained with some changes like transfer of few posts of Counter Clerk to Assistant Halwai. The Fire Fighting Staff being the essential service under the Factories Act has also been retained.

There are a number of isolated posts in Survey of India. Some of them have been proposed to be merged into mainstream cadre for example JTA/JIA, Instrument Mechanics etc. Many of such posts have been proposed to be abolished. The details are enclosed at the Annexure -Aø and -Bø

There are a number of Div II posts in Miscellaneous Cadre which are no longer required. Many of the incumbents are presently employed in the technical jobs like digitization, Field Survey etc. **While these posts have been proposed to be abolished, the present incumbents may be given one time opportunity to join the mainstream cadre. A Qualifying Examination may be conducted and the successful candidates may be given special training at IIS&M. Those candidates, who successfully complete the training, may be re-designated as Surveyor (Junior).**

9. Cadre Restructuring Proposal of Group B and C Cadres/Posts of Survey of India

In view of the aforementioned paras the cadre restructuring proposal for Survey of India Group B and C cadres along with the annexures is placed below-

- (i) Existing/Proposed Structure of Group :-Bø Cadres/Posts - Annexure A
- (ii) Existing/Proposed Structure of Group :-C' Cadres/Posts - Annexure B

10. Financial Implications

The financial implications have been computed based on sanctioned strength and also taking into consideration the number of occupied posts which will be personal to the incumbents after abolition of the posts. Although, due to retirements, this number will be greatly reduced by the time the restructuring is implemented.

The total financial implication of restructuring of Group 'B' and Group 'C' cadres of Survey of India will result in a saving of About Rs. 17 Crores annually as shown at Annexure :-Cø The net financial implication of Restructuring of Survey of India (Group 'A', 'B' and 'C') will be the annual saving of About Rs. 11 Crores. Therefore there will not be any additional burden on the Government even after pay up-gradation of several posts as proposed in the restructuring proposal.

11. List of Enclosures

- (i) Summarized Structure of Group :-Bø Cadres/Posts - Annexure A
- (ii) Summarized Structure of Group :-C' Cadres/Posts - Annexure B
- (iii) Summary of Financial Implications - Annexure C
- (iv) Financial Implications in Group :-Bø Cadres/Posts - Annexure D
- (v) Financial Implications in Group :-Cø Cadres/Posts - Annexure E
- (vi) Zero Base Review for optimal staff requirements of GDC - Annexure F(F1toF20)
- (vii) Flow Charts of Group 'B' and 'C' Cadres/Posts - Annexure G
- (viii) Recruitment Rules for the posts proposed - Annexure H
- (ix) Duties and responsibilities of proposed posts - Annexure I
- (x) Complete Cadre review Chart - Annexure J