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**STANDING COMMITTEE ON DEFENCE
(2020-21)**

(SEVENTEENTH LOK SABHA)

MINISTRY OF DEFENCE

[Action taken by the Government on the Observations / Recommendations contained in the Fourth Report (Seventeenth Lok Sabha) on Demands for Grants of the Ministry of Defence for the year 2019-20 on 'Ordnance Factories, Defence Research and Development Organisation, Directorate General of Quality Assurance, and National Cadet Corps (Demand No. 19 and 20)'].

THIRTEENTH REPORT



LOK SABHA SECRETARIAT

NEW DELHI

February, 2021/ Magha, 1942 (Saka)

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Presented to Lok Sabha on 12.02.2021

Laid in Rajya Sabha on 12.02.2021



LOK SABHA SECRETARIAT

NEW DELHI

February, 2021/ Magha, 1942 (Saka)

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COMPOSITION OF THE STANDING COMMITTEE ON DEFENCE (2020-21)

SHRI JUAL ORAM

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CHAIRPERSON

Lok Sabha

2. Shri Deepak (Dev) Adhikari
3. Kunwar Danish Ali
4. Shri Ajay Bhatt
5. Shri Devusinh Jesingbhai Chauhan
6. Shri Nitesh Ganga Deb
7. Shri Rahul Gandhi
8. Shri Annasaheb Shankar Jolle
9. Choudhary Mehboob Ali Kaiser
10. Prof. (Dr.) Ram Shankar Katheria
11. Smt. (Dr.) Rajashree Mallick
12. Dr. T.R. Paarivendhar
13. Shri Kapil Moreshwar Patil
14. Shri Anumula Revanth Reddy
15. Shri Jugal Kishore Sharma
16. Dr. Shrikant Eknath Shinde
17. Shri Prathap Simha
18. Shri Brijendra Singh
19. Shri Mahabali Singh
20. Shri Kotagiri Sridhar
21. Shri Durga Das Uikey

Rajya Sabha

22. Dr. Ashok Bajpai
23. Shri Prem Chand Gupta
24. Shri Sharad Pawar
25. Shri V. Lakshmikantha Rao
26. Shri Sanjay Raut
27. Shri Rajeev Satav
28. Dr. Abhishek Manu Singhvi
29. Shri Kamakhya Prasad Tasa
30. Dr. Sudhanshu Trivedi
31. Lt. Gen. Dr. D. P. Vats (Retd.)

SECRETARIAT

- | | | | |
|----|--------------------|---|-----------------------------|
| 1. | Smt Kalpana Sharma | - | Additional Secretary |
| 2. | Dr. Sanjeev Sharma | - | Director |
| 3. | Shri Rahul Singh | - | Deputy Secretary |
| 4. | Shri Rajesh Kumar | - | Assistant Executive Officer |

INTRODUCTION

I, the Chairperson of the Standing Committee on Defence (2020-21), having been authorized by the Committee, present this Thirteenth Report of the Committee on 'Action Taken by the Government on the Observations/Recommendations contained in the Fourth Report (Seventeenth Lok Sabha) on Demands for Grants of the Ministry of Defence for the year 2019-20 on 'Ordnance Factories, Defence Research and Development Organisation, Directorate General of Quality Assurance, and National Cadet Corps (Demand No. 19 and 20)'.

2. The Fourth Report was laid in Rajya Sabha on 13.12.2019, presented to Hon'ble Speaker, Lok Sabha on 20.12.2019 and presented to Lok Sabha on 31.1.2020. The Report contained 33 Observations/Recommendations. The Ministry of Defence furnished Action Taken Replies on all the Observations/Recommendations in July 2020.

3. The Report was considered and adopted by the Committee at their Sitting held on 09.02.2021.

4. For facility of reference and convenience, Observations/Recommendations of the Committee have been printed in bold letters in the Report.

5. An analysis of Action taken by the Government on the Observations/Recommendations contained in the Fourth Report (17th Lok Sabha) of the Standing Committee on Defence is given in Appendix II.

New Delhi
09 February, 2021
20 Magha, 1942 (Saka)

Jual Oram
Chairperson,
Standing Committee on Defence

CHAPTER I

REPORT

This report of the Standing Committee on Defence deals with Action Taken by the Government on the observations/recommendations contained in the Fourth Report of Standing Committee on Defence (17th Lok Sabha) on 'Demands for Grants of the Ministry of Defence for the year 2019-20 on Ordnance Factories, Defence Research and Development Organisation, Directorate General of Quality Assurance (DGQA) and National Cadet Corps (NCC) (Demand No. 20)' which was presented to Lok Sabha on 31.01.2020, laid in Rajya Sabha on 13.12.2020 and to Hon'ble Speaker on 20.12.2019.

2. The Committee's Fourth Report (17th Lok Sabha) contained 33 observations/recommendations on the following aspects:-

Para No.	Subject
<u>ORDNANCE FACTORY BOARD</u>	
1-3	Budgetary provisions
4-5	Modernization
6-8	Delay of projects
9-10	Research & Development
11	Export and import
<u>DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION</u>	
12-14	Budgetary provisions
15-17	Manpower
18-19	Delay in defence projects
20-21	Indigenisation
22	Nuclear, Biological and Chemical (NBC)
23	Closed Projects
24	Public Private Partnership
<u>DIRECTORATE GENERAL QUALITY ASSURANCE</u>	
25-26	Budget
25	Training
26	Quality check

<u>NATIONAL CADET CORPS</u>	
29	Budget
30	Infrastructural constraints for NCC
31	Gainful utilization of the expertise of the 'C' Certificate holders of NCC Cadets
32	Self financing of NCC Units
33	Girls cadets

3. Action Taken Replies have been received from the Government in respect of all the observations/recommendations contained in the Report. The replies have been examined and categorized as follows:-

(i) (a) **Observations/Recommendations which have been accepted by the Government:**

Para Nos. 4,5, 9,10,11, 13,14,15, 20,21,22,23,24,25,26,27, 30, 32,33

(19 Recommendations)

These are included in Chapter II of the Draft Report.

(b) **Observations/Recommendations which have been accepted by The Government and are commented upon:**

Para Nos. 1,2,3,6,7,8,12,16,17,18,19,28,29, 31

(14 Recommendations)

These are included in Chapter II of the Draft Report.

(ii) **Observations/Recommendations which the Committee do not desire to pursue in view of the replies received from the Government:**

Para No. -Nil-

(00 Recommendations)

These are mentioned in Chapter III of the Draft Report.

(iii) **Observations/Recommendations in respect of which replies of Government have not been accepted by the Committee which require reiteration and to be commented upon:**

Para No. -Nil-

(00 Recommendations)

These are included in Chapter IV of the Draft Report.

- (iv) **Observations/recommendations in respect of which Government have furnished interim replies:**

Para No. -Nil-

(00 Recommendations)

These are included in Chapter V of the Draft Report.

- 4. The Committee desire that the Ministry's response to their comments made in Chapter I and final replies to the recommendations/ Observations for which only interim replies have been given by the Government should be furnished to them at the earliest and in any case not later than six months of the presentation of this Report.**

ORDNANCE FACTORIES

A. Budgetary Provisions of Ordnance Factories

Recommendations(Para Nos. No. 1-3)

5. The Committee had recommended as under:

“During the year 2019-20, Ordnance Factories received a net budget outlay of Rs.50.58 crore against Revenue Head. Total projection under this head at BE stage was Rs.17,050.38 crore while the approved budget estimates is Rs.15,653.09 crore. Rs.12,546.32 crore dedicate for defence issues and Rs.3,056.19 crore against other receipts and recoveries. Hence remaining Rs.50.58 crore is net revenue budget allocation.

Representatives of Ordnance Factory Board, submitted before the Committee, during oral evidence said that mid-term targets reduction by the Army after BE finalization has serious adverse effect on costing of Ordnance Factory Board products & budget. It was further intimated that only after receiving indents from Army, the procurement process commences in Ordnance Factories. Sometimes, the indents are withdrawn leading to accumulation of material. The Committee take note of the said hurdles in functioning of Ordnance Factories and recommend that Ministry of Defence shall endeavour to systematize coordination mechanism between Army and Ordnance Factory Board. Further it should be ensured that the requirements of Army and other Defence Forces are met without any compromise while at the same time order book position of Ordnance Factories is not left in lurch.

On this account, the Committee would also like to state that besides Indian Defence Forces, Ordnance Factory Board shall strive to explore more market

for themselves so that their clientele is increased and the orders are received regularly. Various measures like product innovation, meeting delivery variables and cost effectiveness are some areas where Ordnance Factory Board shall focus with a view of improving market base”.

6. The Ministry in its action taken reply has stated as under:-

“According to established practice, a Joint Mechanism exists to finalize the item-wise-targets between Army and OFB for fixing BE targets for the next financial year for OFB. However, sometimes, item-wise targets are re-prioritized by Army to meet the operational requirements.

Further, OFB is making efforts to increase customer base in Non-Defence sectors viz. Central Armed Police Forces (CAPFs), State Police Forces (SPOs) and also in Civil Trade by developing and introducing new quality products, e.g. TAR (Israel Assault Rifle) and Joint Venture Protective Carbine (JVPC). Also, efforts are being made to increase exports too.”

Comments of the Committee

7. The Committee note from the Action Taken Replies submitted by the Ministry that a Joint Mechanism exists to finalize the item-wise-targets between Army and Ordnance Factory Board for fixing BE targets for the next financial year for Ordnance Factory Board, however, sometimes, item-wise targets are re-prioritized by Army to meet the operational requirements. The Committee are happy to note that such a mechanism is in existence but also express their concern that despite this mechanism, the Ordnance Factory Board is facing problems in respect of costing of products and budget as well as accumulation of material due to mid-term target reductions by the Army which points towards some lacunae in the coordination between the Army and Ordnance Factory Board. Therefore, Committee desire that more concrete steps need to be taken in this regard to avoid such difficulties to the Ordnance Factory Board.

The Committee would like to know the details of orders for exports as well as efforts being made to increase customer base while submitting Action Taken Statements.

B. Modernisation

Recommendations(Para No. 4)

8. The Committee had recommended as under:

“The Committee was apprised that modernization in Ordnance Factories is a continuous process and all efforts are made to keep pace with the contemporary manufacturing technologies. Ordnance Factory Board prepares a modernization plan for technological up-gradation as well as capacity enhancements. On-going through the data furnished to the Committee, it was found that the Capital Outlay provided for modernisation has declined from the year 2014-15 to 2018-19. For Machines & Equipment (M&E), Rs.489.00 crore was allocated in 2014-15 which declined to Rs.332.00 crore in the year 2018-19. Similarly, for works Rs.314.19 crore allocations in 2014-15 got reduced to Rs.293.00 crore in the year 2018-19. The Renewal and Replacement (RR) allocation also declined to Rs.400.00 crore in 2018-19 from Rs.500 crore in 2014-15. The above figures compel the Committee to deduce that the current approach of Government towards modernisation of Ordnance Factories needs a serious attention.”

9. The Ministry in its action taken reply has stated as under:-

“Significant efforts are being made by OFB over the years for the modernisation and introduction of new technology by inducting new machines as well as replacing the old Plant & Machineries which are beyond economical repair. Year-wise expenditure under modernisation Renewal and Replacement (RR), New Capital Plant & Machinery (NC P&M), and Civil Works (CW) from 2014-15 to 2018-19 is as follows:

(Rs. in crore)

Outlay	2014-15	2015-16	2016-17	2017-18	2018-19	Total
RR	441.87	385.73	451.77	422.80	398.33	2,100.50
New Capital P&M	485.75	312.30	368.62	488.93	292.27	1,948.92
Civil Works	300.66	336.42	337.84	314.54	289.80	1,579.26
Total	1,228.28	1,034.45	1,158.23	1,226.27	980.40	5,628.68

As deduced by the Hon'ble Committee, the decline in expenditure for modernisation in RR, NC, P&M and Works may be attributed to the following reasons:

- a) **Renewal & Replacement (RR):** Cash flow varies from year to year basis depending on the nature and value of P&M received as per plan of different Ordnance Factories.
- b) **New Capital:** Most of the ongoing projects which were sanctioned are either physically completed or are in the verge of completion, where most of the machines have been received and commissioned or under-commissioning. Due to this, expenditure on projects are showing declining trend.
- c) **Civil Works:** Most of the ongoing projects have already been completed. Construction work of production buildings have been completed in most of the projects and the same has been handed over to the factory or only services work is being carried out.

As per RE projection 2019-20, fund outlay for modernisation in current financial year is:

	Rs. in Crore
Renewal & Replacement (RR)	400.00
New Capital (Plant & Machinery)	534.50
Civil Works	333.50
Total	1268.00

Comments of the Committee

10. From the Action Taken Replies submitted by the Ministry, the Committee note Year-wise expenditure under modernisation (Renewal and Replacement (RR), New Capital Plant & Machinery (NC P&M), and Civil Works (CW) from 2014-15 to 2018-19 of Ordnance Factories is on continuous decline and during 2018-19, it reached its lowest level.

However as per RE projection 2019-20, the Ministry has increased it to Rs. 1268 crore compared to 2018-19 which was Rs. 980.04 crore. The Committee desire that focus of the Ministry as well as OFB should be on modernization and necessary funds should be allocated commensurate with the modernization programme which will make Ordnance Factories world class manufacturing Units.

C. Delay of Projects

Recommendations(Para No. 6-8)

11. The Committee had recommended as under:

“The Committee raised issues regarding delay in delivery of products by Ordnance Factories. The Ministry of Defence agreeing to the concern of the Committee submitted that certain delays have been observed during implementation stage of some projects due to various reasons related to procurement process of Plant & Machinery(P&M) and execution of civil works. Problems are encountered at different stages like tendering, supply and erection of Plant & Machinery (P&M). The Committee suggest that Ordnance Factories shall envisage realistic timelines which can be adhered to. The timelines should be calculated only after due consideration to various factors involved in execution and final delivery of product.

Procedural delays must be avoided to the farthest possible extent as this creates a bad name for the organization in the market and at the same time puts extra burden on exchequer. Moreover, at times such delays had deprived the Defence Forces of critical capabilities. Therefore, necessary action should be taken to do away with slippages at all levels including revamping of procedural aspects so that delays do not take place for such reasons.

The Committee raised the specific case of inordinate delays in case of ‘Dhanush’ project. In this connection, the representatives of Ordnance Factory Board candidly admitted that there had been long slippage in it. The reasons for the same were given to the Committee which includes problems like delay in supply of machines & finalization of contract in Ordnance Factory Board’s internal procedures. In some cases it was also due to delays in civil works done by Military Engineering Service (MES). The Committee urge upon the Ministry of Defence to take care of coordination between Ordnance Factory Board & Military Engineering Service so that the work of Ordnance Factories is not hampered due to any delay by Military Engineering Service (MES) or for that matter any other department”.

12. The Ministry in its action taken reply has stated as under:-

“Ordnance Factories put every effort to adhere to the timelines; there are few factors which are beyond control. The major reasons for the deviation from the laid down timelines are appended below:

- a) Majority of the machines under various projects procured by OFB are Special purpose Machines (SPMs), tooled up and are normally not

available off the shelf. Hence, vendor base for this kind of Plant & Machineries is very limited.

- b) Technology like Forging Plants, Chemical Plants, Metallurgical Plants etc. are not available indigenously.
- c) Even special categories of Explosive Plants have a very limited Global source.
- d) Because of the financial crisis, major suppliers in Europe often fail to respond to our Tender Enquiry (TE) resulting in retendering of cases and also fail to execute the supply timely.
- e) Whenever Global Tender Enquiry (GTE) is floated, it is often observed that either there is no participation or a very limited participation by the vendors resulting in Re-tendering which delays the procurement process significantly.
- f) In order to counter the problems mentioned above and to avoid procedural delays, OFB has taken the following steps in the last few years are as under:
 - i) Provision has been made in OFB Procurement Manual (OFBPM)-P&M-2013 for floating Expression of Interest (EOI) and Pre-bid Conference in technology intensive procurement cases, in order to frame broad based specifications, in line with the technologies available in the market.
 - ii) Efforts are being made to bring the technologies to the country by means of allowing consortium of Indian vendors with foreign collaborators/technology partners. Provision for the same has already been made in the above manual.
 - iii) In order to attract genuine bidders/suppliers, provision has been made in above manual for advance payment to the extent of 15% of the contract value for cost intensive/Turn Key plant and machinery duly safeguarding Government interest.
 - iv) To avoid delay in execution of Civil Works, regular interaction/Review with Military Engineering Services (MES) is being carried out at the factory level as well as OFB level. In addition to this, services of DRDO construction wing has also been taken to execute specialised, high value and time-bound Civil Works for Ordnance Factory, Nalandaas well as major civil works related to Pinaka project.

- v) This is pertinent to mention that OFB is always committed to supply all critical Arms, Ammunition & other Equipment in order to fulfill critical capabilities at maximum extent. Following table represent the level of supply by OFB in last 5 years w.r.t requirement of Armed Forces:

(Rs. in Crore)

Year	Target (Army)	Value of Issue (Army)	% of supply
2014-15 RE	9901.70	9112.52	92.0%
2015-16 RE	10986.88	10551.03	96.0%
2016-17 RE	12935.12	11924.51	92.2%
2017-18 RE	11415.00	11447.32	100.3%
2018-19 RE	10289.33	9513.76	92.5%

Further, with regards to the delay in 'Dhanush' Project, this is mentioned that the Project 'Dhanush' was not an infrastructural project. 'Dhanush' is the first ever indigenous 155 mm x 45 caliber artillery gun. The project started with unique initiative from users who believed in self-reliance in Artillery capabilities. The visionary leadership of users and manufacturers started making a road map of indigenous gun development. With very few believers in the environment, this small team started taking big steps in gun development capabilities, with a mission to develop state-of-the-art weapon system using available knowledge and manufacturing capabilities of the nation. 'Dhanush' aims to give definite strategic and technical advantage to the Indian Army and to assure the country of its indigenous capability to design and produce modern artillery gun systems. The performance of 'Dhanush' has been evaluated under arduous conditions in several phases. The guns travelled extensively in towed/self-propelled mode in all terrains viz desert and high altitude with each gun clocking over 1600 km. The emphasis of user exploitation was on move and deployment as per tactical role of formation. This user exploitation was in addition to other evaluation viz Director General Quality Assurance (DGQA) evaluation, Maintenance Evaluation Trials (MET) and Confirmatory Trials etc. Such an extensive exercise was carried out by the user for the first time for any gun system under the process of induction".

Comments of the Committee

13. The Committee came to know from the Action Taken Replies of the Ministry about the efforts being put by the Ordnance Factories to adhere to the timelines but also pointing out few factors which are beyond its control i.e. non-availability of special purpose machines off the shelf, Forging plants, chemical plants, metallurgical plants etc. indigenously unavailable, very limited global source of special categories of explosive plants, very limited participation for Global Tender Equity due to financial crisis etc. The Committee feel that every effort should be taken by the OFB and the Ministry to encourage development of indigenous industry in the above mentioned sectors, which will not only help Ordnance Factories to get material in time but can also earn foreign exchange by exporting the same.

The Committee also express satisfaction over the fact that few steps have been taken by the OFB to bring down the procedural delays, however, they also note that from 2014-15 to 2018-19(RE) the target of issue to Army has not been achieved by the OFB except 2017-18. The Committee desire that appropriate steps must be taken by the Ministry to avoid the delays in delivery of products to Armed Forces by Ordnance Factories. The Committee desire that impact of the measures taken by the Ordnance Factory Board to minimize the delays must be conveyed to them at the time submitting further action taken replies.

DEFENCE RESEARCH DEVELOPMENT ORGANISATION

D. Budgetary Provisions of DRDO

Recommendation(Para No. 12)

14. The Committee had recommended as under:

“The Committee note that in the year 2017-18 the projection was Rs. 19,936 crore while allocation was Rs. 15,400 crore In the year 2018-19, the allocation was Rs. 17,611 crore against a projection of Rs. 22,204 crore. The projection made by DRDO in BE 2019-20 is Rs. 22,953.95 Crore whereas the allocation is Rs. 19,021.02 crore. There is a shortfall of Rs. 3932.93 crore. The Committee are informed by the Ministry of Defence that the budget of DRDO has always been around 5-6% of the Defence Budget. After keeping aside expenses for Strategic Schemes & Cabinet Committee on Security (CCS) projects, pay & allowances and other non-salary revenues expenditure, each of which essentially keeps growing every year. The amount left for R&D activities remains very less. For the current year, the quantum of funds for projects is Rs. 3500 Crore . The Committee came to know that some of the projects for which, funds may be sought are Advanced Medium Combat

aircraft (AMCA), Airborne Warning & Control System (India) (AWACS)), Unmanned Combat Aerial Vehicle (UCAV Ghatak), Next Generation Main Battle Tank (NGMBT), High Endurance Autonomous Underwater Vehicle (HEAUV), Marinised Engineering AIP Energy Module (MAAREEM) etc. It was further apprised that, DRDO needs budgetary support to take up projects in futuristic areas also. DRDO is managing within the allocations by re-prioritising the project activities. Therefore, the Committee recommended appropriate and adequate funding for DRDO projects keeping in mind the essentialities of research based technological advancements across the globe and to enhance the indigenisation level in a true sense”.

15. The Ministry in its action taken reply has stated as under:-

“Details of BE, Budget Allocations for the Department of Defence R&D at different Budgetary stages and actual expenditure w.e.f financial year 2017-18 is as under.

(Rs in Crore)

Year	BE Proposed	BE Approved	RE Approved	MA Approved
2017-18	19935.60	14818.74	15463.25	15399.25
2018-19	22203.74	17861.19	17610.38	17121.99
2019-20	22953.95	19021.02	17730.78	---
2020-21	23457.40	19327.35		

The comparison of D R&D Defence Expenditure and D DR&D expenditure w.e.f FY 2017-18 is as under

(Rs in crore)

Year	Defence * Expenditure	Projection	Budget allocated to R&D (actuals)	%age of Defence Expenditure
2017-18 (BE)	274114.00	19935.60	14818.74	5.41
2018-19 (BE)	295511.41	22203.74	17861.19	6.04
2019-20 (BE)	318931.22	22953.95	19021.02	5.96
2020-21 (BE)\$	337553.00	23457.40	19327.35	5.73

Note : \$ indicated BE for the FY 2020-21

It may be noted that against the projection of Rs. 22953.95 Cr at BE stage during the FY 2019-20 Ministry has allocated an amount of Rs 19021.02 Cr. However, it is a fact that budgetary allocations are much less than the projections made by the Department of Defence Research & Development (R&D) but the Department is managing within the allocations by re-prioritising the project activities. Further, additional funds would be required to support various projects to be undertaken in futuristic areas”.

Comments of the Committee

16. The Committee had expressed concern in the original report over the fact that the allocation made was only Rs. 19,327.35 crore against the proposed amount of Rs. 23,457.40 crore for the year 2020-21 with a shortfall of Rs. 3932. 93 crore.

The fact is admitted by DRDO, which has observed that budgetary allocations are much less than the projections made by the Department of Defence Research & Development (R&D) but the Department is managing with the allocations by re-prioritising the project activities. Further, additional funds would be required to support various projects to be undertaken in futuristic areas. The Committee had expressed concern over the inadequate budgetary support for ongoing projects and revenue commitments as a result of which major projects involving futuristic technology were put on hold. The Committee, therefore, reiterate their recommendation that all possible measures must be taken to meet the budgetary requirements of DRDO and additional funds may be provided to DRDO for ongoing important projects. The Committee may be apprised of the actual allocations provided additionally based on their recommendations and impact of additional allocations in the further Action Taken Replies.

E. Manpower

Recommendations (Para No. 16-17)

17. The Committee had recommended as under:

“As regards manpower, another point of concern in the opinion of the Committee is authorization of scientific manpower. It was brought to the knowledge of the Committee that since 2001, DRDO had been managing with same authorization in spite of more than 6 times increase in outlay from IX to XII plan. Indigenous research has also increased manifold owing to ‘Make in India’ directives in Defence. Therefore, the Committee desire that revision in authorization of scientific manpower in DRDO shall be taken up for

consideration by the Ministry of Defence and additional posts may be created as per the present requirements.

In this connection, further, the Committee are apprised that current manpower is grossly insufficient for the committed R&D projects under progress in DRDO. Manpower Planning Board (MPB) in April 2010 recommended enhancement of manpower by 4966. Ministry of Finance (MoF) recommended 1316 posts (Phase I - 436 approved by Department of Expenditure (DoE). Case is pending with Cabinet Committee on Security (CCS). The Committee recommend for speeding up the case of enhancement”

18. The Ministry in its action taken reply has stated as under:-

“As per the direction of Cabinet Secretariat dated 23 Sep 2019, a revised and updated Cabinet Note for augmentation of manpower by 436 posts (Scientists 420, Work Cadre Officers-16) in first phase has been submitted for approval of Hon’ble RM to seek fresh inter-ministerial approval”.

Comments of the Committee

19. The Committee appreciate that a revised and updated Cabinet Note as per the direction of Cabinet Secretariat dated 23 September 2019 for augmentation of manpower of 436(Scientists 420, Work Cadre Officers – 16) in the first phase has been submitted for approval of Hon’ble RM to seek fresh inter-ministerial approval. This is a welcome step and it will go a long way in mitigating the problem of shortage of manpower faced by DRDO. The Committee would like the Ministry of Defence to take up this matter proactively at the appropriate level so that the 436 posts in the first phase are filled up at the earliest. The Committee desire to be intimated of the action taken / progress made in this regard.

F. Delay in Defence Projects

Recommendations (Para No. 18-19)

20. The Committee had recommended as under:

“The Committee observe that delay in completion of projects is a part and parcel of DRDO functioning. 20 Major projects of DRDO got delayed valued more than 15 Cr. Different reasons are attributed to such delay viz. technological complexities, technological denial, enhancement of project cost, change in configuration of missile, additional trials and involvement of decision of various stakeholder etc. The Committee are apprised that DRDO is putting stringent review mechanization to review the critical issues periodically with respect to progress of implementation and delays. However, despite the mechanism, inordinate delays are occurring. These delays not

only place a burden of unnecessary cost implications but also deprive the Services of Critical capabilities.

Further, the Committee are not in agreement with viewpoint of DRDO that delay in DRDO project had not affected defence preparedness citing reasons such as Services can import the requisite product and even after delay, the product is contemporary and comparable to the best. In this regard the Committee feel that delay in timelines of project delivery definitely put unnecessary burden on financial outgo of exchequer. The money of taxpayers has to be judiciously and verily utilized by all departments. It is therefore recommended that all out efforts shall be made to complete projects within the stipulated time-frame. No stone shall be left unturned in ensuring that all the milestones, short-term and long-term are achieved for all projects.

21. The Ministry in its action taken reply has stated as under:-

The main reasons for delay in DRDO Projects are given below:

- a) Ab-initio development of state-of-the-art technologies
- b) Technological / technical complexities & setbacks
- c) Mid-term revision in Qualitative Requirements (QRs) & Additional technical requirements from Services during currency of projects
- d) Vast scope of the projects – including User Trials (extensive process)
- e) Extended and repeated trials, non-availability of platforms (Su-30, ALH, Ship) for trials
- f) Trial methodologies availability after prototype realisation – needs re-engineering
- g) Procedural & vendor related delays in procurement
- h) Delay in production of systems by designated production agencies
- i) Procedural delays in acquisition of land for Infrastructure projects

The steps taken/being taken by DRDO for strengthening the functioning of DRDO and expediting the completion of defence projects are:

- a) Mandatory focus on pre-project activities
- b) Increased frequency of Project reviews
- c) Increased involvement of Services & Production Partners during development process and reviews
- d) Synergy with stakeholders – Regular interactions
- e) Revision in Delegation of Financial Powers (Projects/ Procurements) –
 - 1) Higher delegation to Lab Directors for
 - 2) Procurement / sanction of projects.
- f) Engaging academic institutes for increasing knowledge base and TRLs
- g) Implementation of EFP
- h) De-link User Trials from Project Scope of Work
- i) Introduction of Development cum Production Partner (DcPP) culture
- j) Project Monitoring i.e. milestone based review process and online progress update.

- k) New Policies & Procedures i.e. Transfer of Technology (ToT) Policy for industries, Patent Policy – Free access to industries and DRDO Industry Synergy Summit.

It is further submitted that design and development projects undertaken by DRDO are generally “first of its kind” in country. In many cases knowledge gap pertaining to a technology adds to uncertainty in development. This leads to multiple design iterations. The quantum of uncertainty would be difficult to be estimated at beginning of the projects, where capability building is also integral to it. All efforts will be made to minimize design iterations through multi - tiers of reviews and additional review by external experts in similar or related areas along with regular reviews”.

Comments of the Committee

22. The Committee express satisfaction over the fact that various steps have been taken by the DRDO to bring down the number of delayed projects. However, the Committee note that some of the problems being faced by DRDO like Ab-initio development of state-of-the-art technologies, technological / technical complexities & setbacks, mid-term revision in Qualitative Requirements (QRs) & Additional technical requirements from Services during currency of projects, vast scope of the projects – including User Trials (extensive process), extended and repeated trials, non-availability of platforms (Su-30, ALH, Ship) for trials, trial methodologies availability after prototype realisation – needs re-engineering, procedural & vendor related delays in procurement, delay in production of systems by designated production agencies, procedural delays in acquisition of land for Infrastructure projects etc. are issues which need to be pro-actively taken up by the DRDO within the Ministry so as to facilitate in addressing the same in co-ordination with the Services and other agencies. The Committee feel that accountability at the level of project directors be invariably fixed for inordinate delays which leads to cost escalation of the product / project. The Committee also feel that such delays in respect of important projects of DRDO, besides being a burden on the public exchequer also create hurdles in the path of Defence related technological development of the country. The Committee desire that DRDO should be more cautious before initiating a project and make a detailed assessment of the problems likely to arise in future beforehand.

The Committee would like to be apprised of the actual results achieved through these measures so as to have a correct assessment of the impact of these mechanisms and to assess further steps required to be taken in case of any inadequacy that may remain in this regard.

G. Quality Check

Recommendations (Para 28)

23. The Committee had recommended as under:

“The Committee in their earlier reports expressed concerned that despite quality check of products at DGQA, some ammunition or other equipment reaching out to Defence Services turns out to b faulty and not defect free. In this connection, the Committee found that sample testing is carried out by DGQA and the whole lot of material may not be unflawed. Further, on this aspect the Committee found that DGQA mainly conducts process audit and product audit is very little. In this context, the Committee would like to recommend that DGQA carry out some random sample testing also so that the quality of products can be ensured to the maximum possible extent’.

24. The Ministry in its action taken reply has stated as under:-

- (a) DGQA carries out Product audit and process audit. Product audit is carried out on sampling basis for ammunition, wherein few numbers are drawn from the batch and tested by way of static tests and dynamic proof firing. 100% testing of ammunition cannot be done and hence QA is carried out on sampling basis as laid down in IS and international standards. QA on sampling basis has an inherent risk both to the BUYER and SELLER based on the performance of the limited samples resulting in acceptance/rejection
- (b) Provision for revising the frequency of tests is exercised based on continued good performance in line with the governing specifications observed during QA check”.

Comments of the Committee

25. In Action Taken Reply, Ministry stated that 100% testing of ammunition cannot be done and hence Quality Assurance is carried out on sampling basis as laid down in international standards. The Committee express their disappointment over the reply of the Ministry and feel that the Ministry lacks seriousness to deal with the matter as per the recommendation of the Committee. The Committee would like to reiterate their recommendation that DGQA should make all out efforts and ensure stringent quality check of products supplied to the services so only defect free ammunition and other equipment reach to the Armed Forces.

NATIONAL CADET CORPS

H. Budget of NCC

Recommendation(Para No. 29)

26. The Committee had recommended as under:

“The motto of NCC is Unity & Discipline. It aims at creating a pool of organised, trained and motivated youth with leadership quality in all walks of life and serve the nation, whether Armed Forces or Civilian sector. Further, today NCC is the largest uniformed youth organisation in the world. It has presence in 711 out of 718 districts of the country. As on date, 17374 educational institutions have been covered and 9064 institutions are in waiting list. The Committee observe that during the years 2018-19, against the projection of Rs. 1910.42 crore the allocation at BE Rs. 1584.21 crore and at RE it was reduced to Rs. 1551.58 crore. There is a reduction of Rs. 32.63 crore. Further against the allocations of Rs. 1551.58 crore, the actual expenditure is Rs. 1434.92 crore. The underutilisation is to the tune of Rs. 116.66 crore. During the year 2019-20 against the projection of Rs. 1939.96 crore the allocations is Rs. 308.04 crore. The gap is Rs. 308.04 crore. The Committee have been apprised that infrastructural, budgetary and manpower constraints affect the expansion of NCC. The expansion programme of NCC would require adequate Fund. The Committee are pained to note that on the one hand NCC needs more allocation and on the other hand, there have been under utilisation of the allocations given at the RE stage since the year 2015-16. Therefore, the Committee wish to recommend that NCC should make all out efforts to utilise the allocated money fully. At the same time the Ministry of Defence should ensure judicious allocations to NCC at RE stage to meet the expansion programme and minimise the waitlisted institutions”.

Reply of the Government

27. The Ministry in its action taken reply has stated as under:-

“In RE 2019-20, Rs. 1,667.92 Crore (i.e. an increase of Rs. 36 Crore over BE 2019-20) has been allocated to NCC against projections of Rs. 1,692.23 Crore. The details of allocations and expenditure in respect of NCC from 2015-16 onwards is as under:-

Year	Budget Estimates (BE)	Expenditure
2015-16	1021.39	1114.89
2016-17	1189.38	1144.57
2017-18	1303.43	1378.08
2018-19	1584.21	1435.75

Year-wise reasons for less/ excess expenditure than the allocations given at RE stage from 2015-16 onwards are as under:-

- a) In FY 2015-16, excess expenditure was incurred due to bookings for committed liabilities towards procurement of Book Ankle, shoes, Uniforms (NC II). Also due to direct bookings by PCOA (Fcys) amounting to about Rs. 25 Crore.
- b) In FY 2016-17, less expenditure was mainly under Salary head due to part implementation of 7th CPC.
- c) In FY 2017-18, less expenditure was due to non-materialization of procurement cases such as Uniform Navy, DK Whaler, 91 Motor Cycles, 21 LCVs, Uniform cloth and also due to reduction in demand by DGDE and less booking under Salary head.
- d) In FY 2018-19, less expenditure was mainly due to non-materialization of procurement cases and delayed delivery schedule for Uniform Cloth Khaki, Uniform Navy, and Air Uniform. Further, the initial supply of DK Whaler & Uniform khaki commenced in Feb/March, 2019 only. Also, there was less booking under Salary head.

However, the Committee is assured that all efforts will be made to ensure optimum utilization of scarce resources and judicious allocations to NCC to meet their requirements”.

Comments of the Committee

28. The Committee are happy to note that the Ministry has agreed to take steps to ensure judicious allocation and optimum utilization of resources with regard to National Cadet Corps. The Committee has also been apprised by the Ministry of Defence on various reasons for less/ excess expenditure than the allocations given at RE stage from 2015-16 onwards and Committee have noted the same. However, also the Committee note with concern that the underutilization of funds in many cases have been due to non-materialization of procurement cases and delayed delivery schedule. The Committee feel that such deficiencies in the functioning of vneed to be resolved at the earliest. The Committee, therefore, reiterate their recommendation that National Cadet Corps should be allocated adequate funds to meet its requirements so procurements can be done timely and expansion programme of National Cadet Corps can take envisaged shape.

Gainful utilization of the expertise of the 'C' Certificate Holders of NCC Cadets

Recommendation(Para No. 31)

29. The Committee had recommended as under:

“The Committee observe that the matter regarding gainfully utilize the expertise of the 'C' Certificate holders of NCC Cadets in areas like civil defence, disaster management and public Awareness campaigns, is under examination with other Government agencies. The Committee are happy to note that about 7,500 NCC Cadets are joining Army and about 400 to 500 candidates are joining Navy & Air Force. In Short Service Commission the candidates are exempted to appear for the written examination. Other Cadets are going to Central Armed Police Forces.

At Present, Raksha Mantri/Rajya Raksha Mantri is going to write letters to the Armed Guard and Port authorities and Chief Ministers of the States to give concession to 'C' Certificate holders in jobs. The Committee welcome the steps taken by the Ministry of Defence to utilize the trained manpower of NCC with well developed personality and leadership skill for nation building and other activities related to national integration.

The Committee desire the Ministry to send the letters of Raksha Mantri/Rajya Raksha Mantri to all the concerned agencies and State Government at the earliest and regularly pursue this matter in order to materialize the noble intention and gainfully utilize the skills of NCC Cadets. In this way more students will be attracted to join NCC in the future also.

The Committee further learnt that number of Defence corridors are being started by the Government in different parts of the country. Because of the ambitious 'Make in India' projects of Government many private industries have joined the defence production sectors. Many multi National Companies/Investors are showing interest to invest in defence production sectors. In near future India will be a hub for defence production. In view of the possibilities of future expansion of defence production, there will be a strong need for dedicated trained and skilled human resources to man these organization. Therefore, the committee strongly feel that it is high time, NCC should feel the pulse of time and explore the possibilities to impart necessary technical training to the NCC Cadets by tie-up with the public and private defence production agencies.

In this way the training imparted to NCC Cadets can be fruitfully utilized in the field of defence production for which these Defence corridors are being prepared by the Government.

Further on imparting skill development, the committee observe that NCC on its own do not provide Skill Development training as it does not have trained manpower to impart skill development programme. However, it is trying to be associated with State Government Skill Development Centres. It has started a pilot project in Bihar which is being regularly monitoring. While appreciating the initial steps taken in this direction, the committee desire that NCC should proactively pursue this matter with all the State Government and explore the feasibilities to associate the NCC Cadets with the skill development Centres so that they can gain the required skill and utilize it to get gainful employment in future. In this way more students will be attracted to join NCC in future”.

Reply of the Government

30. The Ministry in its action taken reply has stated as under:-

“Ministry of Defence has taken up with Ministry of Home Affairs, Ministry of Railways, Ministry of Surface Transport and Ministry of Civil Aviation the matter of introduction of incentives for NCC Cadets in security related jobs, CAPFs and State Police, similar to the incentives existing in armed forces.

Also, Skill Development and Personality Development has been taken up in a big way by NCC to enhance the employability of the NCC cadets. Services of NCC Exchange Participants Association of India (EXPA) has been suitably integrated in Training of the Cadets. NCC is working as facilitator to facilitate NCC cadets to optimise the Skill development training imparted by State Skill development agencies. Efforts are also being made through the State Governments to facilitate skill development of the cadets

through Government scheme like Pradhan Mantri Kaushal Vikas Yojana (PMKVY),etc.

These measures are expected to help increasing employment avenues for NCC cadets in future”.

Comments of the Committee

31. The Committee appreciate the efforts made by the Ministry of Defence which has taken up the matter with various Ministries, Para Military Forces and States Police to give incentives to NCC Cadets in security related jobs in these organizations. The Committee feel that the fructification of such efforts can lead to a more pro-active role of the NCC Cadets and facilitate their meaningful contribution in the security apparatus of the country especially in view of the likely enhancement in the requirement of manpower in the near future. The Committee while lauding the initial efforts made in enhancing the employability of the NCC Cadets by various means, would like to see some time-bound action plan from the Ministry to ensure the active involvement of the NCC Cadets in various defence areas, especially, civil defence, disaster management and public Awareness campaigns etc. under intimation to the Committee.

CHAPTER II

(A) OBSERVATIONS/RECOMMENDATIONS WHICH HAVE BEEN ACCEPTED BY THE GOVERNMENT

MODERNISATION

Recommendation (Para No. 4)

The Committee was apprised that modernization in Ordnance Factories is a continuous process and all efforts are made to keep pace with the contemporary manufacturing technologies. Ordnance Factory Board prepares a modernization plan for technological up-gradation as well as capacity enhancements. On-going through the data furnished to the Committee, it was found that the Capital Outlay provided for modernisation has declined from the year 2014-15 to 2018-19. For Machines & Equipment (M&E), Rs.489.00 crore was allocated in 2014-15 which declined to Rs.332.00 crore in the year 2018-19. Similarly, for works Rs.314.19 crore allocations in 2014-15 got reduced to Rs.293.00 crore in the year 2018-19. The Renewal and Replacement (RR) allocation also declined to Rs.400.00 crore in 2018-19 from Rs.500 crore in 2014-15. The above figures compel the Committee to deduce that the current approach of Government towards modernisation of Ordnance Factories needs a serious attention.

Reply of the Government:

Significant efforts are being made by OFB over the years for the modernisation and introduction of new technology by inducting new machines as well as replacing the old Plant & Machineries which are beyond economical repair. Year-wise expenditure under modernisation (Renewal and Replacement (RR), New Capital Plant & Machinery (NC P&M), and Civil Works (CW) from 2014-15 to 2018-19 is as follows:

(Rs. in crore)

Outlay	2014-15	2015-16	2016-17	2017-18	2018-19	Total
RR	441.87	385.73	451.77	422.80	398.33	2,100.50
New Capital P&M	485.75	312.30	368.62	488.93	292.27	1,948.92
Civil Works	300.66	336.42	337.84	314.54	289.80	1,579.26
Total	1,228.28	1,034.45	1,158.23	1,226.27	980.40	5,628.68

As deduced by the Hon'ble Committee, the decline in expenditure for modernisation in RR, NC, P&M and Works may be attributed to the following reasons:

- a) Renewal & Replacement (RR): Cash flow varies from year to year basis depending on the nature and value of P&M received as per plan of different Ordnance Factories.
- b) New Capital: Most of the ongoing projects which were sanctioned are either physically completed or are on the verge of completion, where most of the machines have been received and commissioned or under-commissioning. Due to this, expenditure on projects are showing declining trend.
- c) Civil Works: Most of the ongoing projects have already been completed. Construction work of production buildings have been completed in most of the projects and the same has been handed over to the factory or only services work is being carried out.

As per RE projection 2019-20, fund outlay for modernisation in current financial year is:

	Rs. in Crore
Renewal & Replacement (RR)	400.00
New Capital (Plant & Machinery)	534.50
Civil Works	333.50
Total	1268.00

Recommendation(Para No. 5)

In this regard the Committee opine that Ordnance Factories are age old organization playing their role in fulfilling the requirements of Indian Armed Forces. In modern times, new-age technologies & product innovation is essential part of any production industry to sustain competitive milieu. Therefore, modernisation of Ordnance Factories requires due attention and necessary impetus for creation of cost effective and market oriented production line. These aspects would require inflow of adequate funds. The Committee recommends that requisite funds should be directed towards modernization activities in various Ordnance Factories.

Reply of the Government:

To fulfil the requirements of Indian Armed Forces, OFB is committed to create, maintain and modernize its capital assets with appropriate state-of-the-art technology so that products with highest quality standards can be produced and delivered in stipulated time frame.

To achieve this objective, OFB has procured many new Plant & Machineries (P&M) in the last few years and procurement of various P&Ms are in pipeline as a part of modernization. Necessary funds for these are projected in terms of Budgetary Estimates (BE), Revised Estimates (RE) every year based on requirements.

RESEARCH & DEVELOPMENT

Recommendation(Para No. 9)

The Committee are happy to find that Ordnance Factory Board takes up in-house Research & Development projects of design & development of new product of armament, ammunition and equipment. Out of 124 armament & ammunition developed so far by Ordnance Factories, 61 items were designed and developed by in-house R&D. This accounts to approximate 24.57% of output value developed through internal R&D under foreign Transfer of Technology (ToT) and collaboration with DRDO. An increase in R&D expenditure was also witnessed which raised from 0.50% in 2014-15 to 0.71% in 2018-19 as R&D expenditure. The Committee commend the research and development activities being taken by OFs and wish that such efforts should be further continued.

Reply of the Government

OFB is giving increased emphasis on Research & Development (R&D) activities to develop futuristic defence equipment/weapon/platform. In this regard, actions have been taken by OFB to boost in-house R&D activities by allocating more resources towards R&D.

Recommendation (Para No. 10)

During deliberations on Demands for Grants 2019-20, the Committee categorically raised the issue of development of clothing at higher altitude. The representatives of Ordnance Factory Board deposed before the Committee stated that the products for such an altitude could not yet been developed by Ordnance Factories. However, the work towards this end is in progress in collaboration with other institutions. It was also brought to the knowledge of the Committee that Ordnance Factories are in the process of making electric vests for higher altitudes. The Committee desire that the research in this field soon leads to development of necessary material technology for clothing and boots suitable for deployments in higher altitudes.

Reply of the Government

Development of electrically heat vest has been taken up in association with IIT, Kanpur. Presently, there is no project on development of snow boots for high altitude.

EXPORT & IMPORT

Recommendation (Para No. 11)

The Committee took note of the increase in export value of Ordnance Factories products. From Rs.26.64 crore in 2014-15, this has reached Rs.264.60 crore in the year 2018-19. Meanwhile the import content has been limited to 10% only in which spares and components are also included. The Committee wish that efforts are made to further reduce import content in Ordnance Factories products and process. They are also increasing the issue/order to Air Force and Navy by widening the product range, overhauling of Armoured vehicles and Guns and reorienting to focus on new customer and product matrix. Hence, while appreciating the efforts being taken by Ordnance Factory Board to improve export potential as evident in the growth of currency valuation of exports, the Committee desire more steps are to be taken in this direction. However, the needs of Indian Armed Forces shall always remain the first priority of Ordnance Factories. The Committee desire that more efforts are to be made by Ordnance Factories for enhancing export value by making their products cutting- edge and contemporary with a view to beat competitive global market. Exports bring revenue for Ordnance Factories and they can be utilized for further development of these Factories.

Reply of the Government

Greater thrust has been accorded to export. Structured mechanism has been created within OFB for achieving the same. It is brought out that OFB has achieved many fold growth in export revenue realization over the previous years. In order to boost up export potential, the following action has been initiated:

- a. Identification of following products for the next few years:
 - i) Large caliber ammunitions to Middle East, South East Asia & other countries.
 - ii) Medium & small caliber ammunitions to African, Middle East, South East Asia & other countries.
 - iii) Armored vehicle to Middle East, South East Asia & other countries.
 - iv) Troop comforts and other items to African, South East Asia, Central Asia & other countries.
 - v) Propellant, Chemicals & Explosives to Africa, America, South East Asia & other countries

- b. A separate post of Member/Export & Marketing has been created at OFB to review and monitor export activities.
- c. Nodal Officers have been nominated at factory level for improving export performance and identifying potential products which can be offered from the respective unit as per the market requirement.
- d. Started engagements with channel partners in foreign countries for boosting its exports.
- e. Participating in various international exhibitions to promote its products in foreign countries.
- f. Indian Defence Attaché posted abroad and Defence Attaché of various countries posted in India are being contacted for assistance in boosting export.
- g. For targeted countries, OFB has also started preparing Bilingual product catalogues in English & Country's local language.
- h. To explore export potential, various delegations from Original Equipment Manufacturer (OEM) and foreign countries were invited for technical discussions.
- i. Started customization of products as per user requirements.
- j. OFB is certifying products & packing as per International standards accepted by international buyers.

Recommendation(Para No. 13)

The Committee note that the expenditure on Defence Research and Development in the country has remained around 1% of total GDP expenditure. This is considerably less than the share of R&D expenditure out of total defence budget, when compared to other prominent countries of the world. The Committee opine that 'Make in India' vision can only be seen as a reality in Defence sector, when justifiable expenditure is channelized towards Research & Development.

Reply of the Government

Defence (R&D) Expenditure as percentage of GDP w.e.f 2015-16 is as under :

(Rs. in Crore)

Year	TOTAL GDP	DD R&D Exp	DD R&D Exp as % of TOTAL GDP
2015-16	13682035.00	13540.11	0.098
2016-17	15183709.00	13501.00	0.088
2017-18	16847455.00	15399.25	0.091
2018-19	18840731.00	17121.99	0.090
2019-20(AE)	20442233.00	17730.78	0.086

Recommendation(Para No. 14)

During the oral evidence, it was candidly admitted by the representatives of DRDO that the country is still lagging behind in three crucial technologies viz. propulsion, material and chip. The Committee urge DRDO to initiate sincere efforts towards development in these areas and Ministry shall provide essential funding intended for research activities.

Reply of the Government

DRDO is making all possible efforts towards R&D in three Crucial technologies viz propulsion, material & chip as under:

R&D activities in Propulsion:

- a) Dry Kaveri derivative engine development of IUCAV-UHF20 with associated technologies has been taken up at a cost of Rs.1068.69 Cr.
- b) Small Turbo Fan Engine for Missile application is under progress at a cost of Rs.72 Cr.
- c) Turbo-charger for main Battle Tank is under development at a cost of Rs.15.2 Cr.
- d) R&D activities in this area are being pursued with academic institutes also.

R&D activities in Materials:

- a) DRDO laboratories are carrying out Research & Development activities on materials as well as indigenisation of existing materials required for defence applications.
- b) These materials include metallic alloys, ceramics, polymers, composite materials, semi-conductors, high energy materials, nano-materials and smart materials. The application of these materials are in missiles, aero-structures and aero-engines, armour and armaments, ship and submarine hulls, NBC defence, stealth as well as sensors and actuators.
- c) The research on materials in DRDO laboratories is actively supported by academia through projects funded via ARDB, NRB, ARB and ER&IPR.
- d) The projects worth over 1000 Cr are currently underway for development of materials.

R&D activities in Chip design and fabrication:

DRDO is developing various chips for applications in crucial Defence Technologies and also to make country self-reliance in this critical area. The following R&D activities are being pursued:

- a) Wafer fabrication, design and development of microelectronic chips for High Frequency Transmitter/Receiver (T/R) modules, Infrared Imaging sensors, Laser Diodes, Tera Hertz sensors, System on Chip (SoC) etc.
- b) The research on chip design is also supported by academia through ER&IPR projects to various academic institutes like IISc, IITs & Universities.
- c) The fund allocated for the above R&D efforts in progress is worth over Rs 250 Cr (approx).

Total budget allocated during the FY 2020-21 is Rs 19327.35 Cr. The percentage of budget earmarked for the expenditure on the R&D activities is about 65%, which includes implementation of strategic projects.

Total budget allocated during the FY 2020-21 is Rs 19327.35 Cr. The percentage of budget earmarked for the expenditure on towards salary, maintenance etc. is about 29%.

MANPOWER

Recommendation(Para No. 15)

The Committee observe that presently authorized strength of scientists in DRDO is 7353 whereas the held strength is 7107. During last 5 years, 142 scientists had left DRDO on personal grounds. The Committee desire that attrition should be contained to farthest extent as DRDO is an organization, where many sensitive research on National Defence take place. Also, the organisation shall endeavour to fill up the existing vacancies. If required DRDO may also consider option of relaxing the criteria for induction of scientists albeit after duly verifying the feasibility of the same.

Reply of the Government

The Organisation optimally utilizes manpower through dynamic manpower management. The vacant posts created on account of superannuation and resignations are released regularly on annual basis after considering the functional requirements of Labs/Estts of Defence Research & Development Organisation (DRDO) and recruitment to the vacant posts are made as per the relevant SRO. The relaxation of the criteria for induction of Scientists, at present is not required as no shortage of availability of Scientists at the induction level is experienced, against the vacancies released for recruitment.

INDIGENISATION

Recommendation(Para No. 20)

During the examination of Demands for Grants (2019-20) of DRDO, the Committee came to know that the country is self-reliant in many systems that DRDO is currently developing. These systems include missile systems, radars, sonars, electronic warfare systems torpedoes and a recent development guns and ammunition. However, the electronic components are still being imported as the

foundry is not available in the country. The Committee desire that development of electronic components may be initiated by industry within the country which may include Defence Public Sector Undertakings (DPSUs). Government shall take initiatives in this direction.

Reply of the Government

DRDO actively interacted with the industries to develop various chips for crucial Defence Technologies and also making its best efforts to make country self-reliant in this critical area. The following R&D activities are being pursued:

- a) Wafer fabrication, design and development of microelectronic chips for High Frequency Transmitter/Receiver (T/R) modules, Infrared Imaging sensors, Laser Diodes, Tera Hertz sensors, System on Chip (SoC) etc.
- b) The research on chip design is also supported by academia through ER&IPR projects to various academic institutes like IISc, IITs & Universities.
- c) The fund allocated for the above R&D efforts in progress is worth over Rs 250 Cr (approx).

In order to achieve the goal, following two-pronged strategy may be adopted:-

- a) Incentivize companies outside India having foundries, to move to India.
- b) Invest in establishing fab facilities, which could be used or operated by private industries.

Recommendation (Para No. 21)

The Committee also realized that there are certain other areas where the research work needs to be given emphasis by DRDO. As earlier mentioned in this Report, propulsion, material & chip are the three technologies where impetus is required. Also, aero-engine is one area where the country is yet to develop for its own requirements. The Committee wish to see positive deployments in these areas and hope, in near future DRDO supported by Ministry of Defence comes out with tangible results.

Reply of the Government

Aero-Engine

- a) Dry Kaveri derivative engine development of IUCAV-UHF20 with associated technologies has been taken up at a cost of Rs.1068.69 Cr.
- b) Small Turbo Fan Engine for Missile application is under progress at a cost of Rs.72 Cr.
- c) R&D activities in this area are being pursued with academic institutes also.

NUCLEAR, BIOLOGICAL AND CHEMICAL (NBC)

Recommendation(Para No. 22)

The Committee are apprised on various developments in the area of chemical, biological and warfare related aspects. These include protective suits & shelters for Armed Forces. NBC Warfare is an area of research, which bears direct affect on civilian population also. The Committee urge DRDO to enhance research activities in this direction also. During oral evidence, it came to the knowledge of the Committee that some chemical agents being developed by DRDO are also applicable for utility by civilian population. The Committee while appreciating this move desire for more developments in this field, so that the country is prepared for any eventualities in case of NBC warfare. This becomes more crucial considering the hostile neighborhood position India belongs to.

Reply of the Government

Life Sciences laboratories of DRDO have been involved in development of NBC equipment for the last two decades and over the years a large number of items have been developed. These are in regular use in the Services. These products essentially cover the areas like detection, individual and collective protection, decontamination, medical and management systems, which have been delivered to Army.

A CCS approved Programme on NBC Defence was successfully completed. Major achievements of the concluded NBC programme includes NBC permeable Suit Mark V, IPE items, Chemical agent detector, Decontaminants systems, NBC inflatable shelter, NBC mobile shelter, NBC unmanned surveillance vehicle, NBC first aid kits and decontaminating agents, NBC protected food and water packaging, other individual protective equipment (over boots, gloves, canister etc) and H1N1 detection kit.

However, as the technology has been rapidly advancing in the developed world and newer and better NBC equipments being available, it is imperative to continue the effort in NBC defence R&D to maintain the indigenization level and save valuable foreign exchange through import substitution. Keeping this in view, NBC Defence Technology Programme Phase-II to cater to the country's preparedness for present day NBC threat is in progress.

CLOSED PROJECTS

Recommendation(Para No. 23)

Committee came to know that in the last five years, out of 205 projects only 5 projects had been short closed. During the oral evidence, the reasons for the short closed projects were given as not being able to come up to level of technological developments, Secondly, a project also depends on imported sensors or materials. Thirdly, developments are coming up in large numbers and so, the projects is getting extended in its time period. At one point of time, the Services show their interest in

the project and on the other sides they also lost interest as newer system come up. The Committee are happy to note that there is a significant reduction in fore closure of projects. At the same time they wish to recommend that in future there should be stringent scrutiny before starting a project, so that such closures are avoided, so as to avoid waste of public funds as well as to help sustain the project, which can prove to be extremely beneficial for the Services.

Reply of the Government

DRDO is following well established process of sanctioning new projects, wherein multiple levels of feasibility studies are carried out to identify technology gaps and uncertainties involving external experts from academia, industry and users (services). Prior to sanction of a project, AoN is being approved by Cluster Council / DMC based on the need, implementation and activities focused on pre-project aspects. In the recent past, DRDO has put more emphasis in estimation of time and cost to reduce and avoid the uncertainties in its estimation resulting in lesser number of instances of short closure / fore closure. It is submitted that there was no short closure/ foreclosure of a project in last 18 months.

PUBLIC PRIVATE PARTNERSHIP

Recommendation (Para No. 24)

The Committee stressed on the need for a complete revamp and re-orientation of DRDO functions and one of the major Initiatives suggested by the Committee in this regard was to facilitate the active involvement of private sector, Universities, Indian Institute of Technologies and Indian Institute of Science, which could play a major role in the resurgence of DRDO.

The Committee recommend that an environment may be created, where Public Sector and Private Sector can work in collaboration, so that the R&D activities can be synergized and better coordination achieved. The Committee also feel that a level playing field needs to be provided to the Indian Private Industry and they may be allowed to tie-up with foreign manufactures to develop certain equipment based on the requirements of users.

Reply of the Government

DRDO, in its pursuit for excellence in developing the cutting edge technologies for Advanced Defence Systems and Platforms, has delivered many state of the art flagship products to the country. In current global scenario, there is a persistent need to accelerate technology innovation and world-class product development, for boosting the “Make in India” policy to its higher level and to achieve self-reliance in defence and security. DRDO strategic academic persuade

will foster to enhance the research eco system within academic environment in the country.

DRDO has been exploring the knowledge and expertise existing within the country at various academic institutes and research organizations by providing research grants for faculty driven projects through Five Research Boards. The objective of these grants has been to foster knowledge-based growth in science and advanced technologies, catalyze cross-fertilization of ideas and experience between DRDO and academic experts.

In last five years, DRDO has given impetus to collaboration with academia for DRDO requirement driven research in the indentified futuristic technology thrust areas. The Directed research is managed by Directorate of Futuristic Technology Management (DFTM) and DRDO has established eight Advanced Technology Centers (ATCs) at the premier institutes for carrying out research in the niche technology areas related to defence & security.

DRDO primarily awards projects to MSME through Technology Development Fund (TDF) for indigenous technology product development. Within this scheme industry can engage academia for better engineering solutions.

DRDO has research collaboration with around 155 institutes. DRDO has developed a network of more than 1500 industries including MSMEs.

DRDO works in close association and collaboration with private industries for development of it's defence systems and technologies. DRDO has evolved various industry models for engagement and development of Industries. These are Development Partner Model, Consortium Model, Concurrent Engineering Model, Joint Venture (JV) Model, Joint Development Model, Limited Series Production (LSP) Model, Government Owned and Company Operated (GOCO) Model, International Collaboration Model and Transfer of Technology (ToT) Model. These modes of industry engagements, facilitate smooth transfer of DRDO developed technologies, provide necessary hand holding support to industries, provide technical support and support to facilitate exports.

The following steps have been taken by DRDO during the last three years to enhance the involvement of private sector in DRDO projects and programmes:

- a) DRDO has promulgated new ToT policy and procedures with zero ToT fee for its industry partners (Development cum Production Partners (DcPP)/ Development Partner (DP) and zero royalty for supply to Indian Armed Forces and Govt Deptt. Nil ToT fee and royalty will reduce the financial burden on Indian industries and Indian Armed Forces. Only 5 % ToT fee will be charged from non DcPP/DP industries. The policy has been made compatible with DPP-2016. This will provide further boost to Indian industries in defence manufacturing sector to achieve more self reliance.

- b) To facilitate ToT for Cat A (Military Technologies) and Cat B (Spin off/ Commercial use Technologies), a user friendly portal has also been launched for more transparency and clarity for the industry entrepreneurs.
- c) To unearth the hidden potential of spin off technologies and bring in more transparency, DRDO has entered into MOUs with four leading industry chambers namely Associated Chamber of Commerce and Industry of India (ASSOCHAM), Confederation of Indian Industry (CII), PHD Chamber of Commerce and Industry (PHDCCI) and National Research Development Corporation (NRDC) for technology assessment and commercialization of dual use, non-security sensitive technologies so that fruits of our technological progress reach the common man.
- d) DRDO has carried out intense interactions with industries all over the country to boost Defence Manufacturing sector and to achieve self reliance in Defence manufacturing. More than 900 industries from various cities in India were apprised on DRDO technologies and to facilitate the industries (including MSMEs) to absorb DRDO technologies to boost defence manufacturing sector and achieve self reliance in the defence technologies.

BUDGET

Recommendations (Para Nos. 25-26)

In Budget Estimate 2019-20, projection of DGQA is Rs. 1241.18 crore whereas the allocation Rs. 1213.66 crore. Out of this budget Rs. 1202.70 crore goes for Revenue Head while Rs. 10.96 crore is made for Capital Head. The projection for Capital allocation was Rs. 30.00 Crore. The Revised Estimate allocation in Revenue is Rs. 1317.05 crore and in capital segment it is Rs. 15.96 crore. The total allocation in RE is even more than BE projection. The Committee take note of the increased allocations to DGQA. DGQA has to ensure quality and reliability to enhance combat capability of Armed Forces. The Committee greet the Ministry of Defence for providing adequate funds to DGQA.

On glancing through the documents furnished by the Ministry of Defence, the Committee found that there were cases of surrender of funds by DGQA in the past. Even in the year 2018-19, 7% of the allocated funds were surrendered by DGQA that too when allocations were only 83% of projections. During the financial year 2019-20, against the allocations of Rs. 1213.66 crore, it has spent Rs. 501.95 crore upto October 2019 i.e. during the seven months period. Another Rs. 711.71 crore has to spent during the remaining 5 months of the fiscal. At this, the Committee opine that the department must project the funds which are essential and accordingly spend them judiciously wholesomely for execution of the mandated role

& responsibilities. Any superfluous requirements shall be restrained as this puts unnecessary burden on exchequer and funds are constrained from appropriately being distributed among other departments of defence.

Reply of the Government

In FY 2018-19, surrender of funds was due to the unspent amount in Pay & Allowances Head and balance in other heads.

All efforts will be made to ensure optimum utilization of scarce resources and to project the funds which are essential and to spend them judiciously for execution of the mandated role and responsibilities.

TRAINING

Recommendation (Para No. 27)

DGQA is one Orgn which affects performance of every other department/Organisation of Defence. The quality of products being used by Defence Forces is ensured by DGQA. In present times when technological advancements are frequent and regular feature, it becomes quite essential for DGQA to regularly update their training module. The Committee were updated that DGQA has a training institute called 'DIQA located in Bangalore. They keep updating training along with induction of modern equipment and they even collaborate with private training institutes for the purpose. The committee appreciate these measures and desire that DGQA ensures availability of best possible stocks for Defence forces at all times

Reply of the Government

DGQA shall continue training its personnel to meet the technological advancement in equipment procured by Armed Forces.

INFRASTRUCTURAL CONSTRAINTS FOR NCC

Recommendation (Para No 30)

The committee observe that as on date 17374 educational institutions (both schools & colleges) have been covered under NCC. There are 9064 waitlisted institutions throughout the country. Lack of adequate training facilities is one of the reasons that affect the expansion of NCC. The committee have been apprised that there are only 9 training institutions in seven states. There is a requirement of minimum one training institute in one state and NCC should have 98 training institutions. At present NCC has been using the training institutes of Army, Navy and Air Force. However, because of shortage of manpower of Army, Navy and Air Force many a time they regret to provide necessary facilities to NCC. As a result, NCC is being deprived of getting adequate training. At present NCC is also pursuing

the State Police and Home Guard to spare their training institutions. The Committee are of the opinion that the stop gap arrangements will jeopardise the quality of training to be provided for NCC. Therefore, for giving due impetus to quality of training to NCC, adequate allocations should be provided to increase the number of training institutes of NCC. The Committee desire that the Ministry of Defence should take right steps in this regard at the earliest. Further, the Committee wish to state that while opening up of new Units of NCC, in the schools & collages due care should be taken to ensure availability of parade ground, so that drill and other physical activities can be undertaken.

The Committee observe that another constraint being faced by NCC for its expansion and imparting quality training is manpower. There are only 94 Army Officers working for NCC to supervise 17374 number of educational institutions and there are 9064 educational institutions which are in waiting list. Further, because of shortage of manpower of Army, Navy and Air Force these forces regret to spare their manpower to train the NCC Cadets. With these constraints, the goal of NCC i.e. to create a pool of organised, trained and motivated youth to serve the nation cannot be achieved. Therefore, the Committee desire the Ministry to augment the number of officers for NCC at the earliest.

Reply of the Government

During a recent review of NCC training methodologies, it emerged that the philosophy of NCC training may be relooked into to bring down the financial impact while retaining the objectives. It was suggested that existing facilities of Army/Navy and Air Force units can be explored for utilization as training areas. It is also being explored to make use of training facilities available with CAPFs as they also stand to gain significantly from NCC cadets as they form feeder cadre for them, as well.

Further with regard to NCC, the “Committee of Experts to Enhance Combat Capability and Rebalance Defence Expenditure of the Armed Forces (Shekatkar Committee)”, has recommended that appointments of Associate NCC Officers, Permanent Instructors (PI) presently manned by serving personnel be offered to re-employed officers and retiring JCOs / ORs on contractual basis. In pursuance of the above recommendation, feasibility of optimising of existing vacancies by employing ESM/civilian staff on contractual basis in a phased manner is being explored.

SELF FINANCING OF NCC UNITS

Recommendation(Para No.32)

During oral evidence of the representatives of the NCC and Ministry of Defence, the committee observed that to minimize the waiting list of NCC units in various schools and colleges, the NCC had started self financing scheme. At the initial time the junior wing of NCC were opened in schools and colleges who were ready to bear the 100 percent expenditure of the cadets. Now fully self-financing scheme for one lakh cadets in under consideration. The Committee welcome the

steps initiated by NCC for its expansion. The Committee hope that NCC will initiate many such measures in other schools and colleges including private schools & colleges in future. The progress made in this regard should be intimated to the committee in the action taken replies.

Reply of the Government

Sanction under Fully Self Financing Scheme has been accorded by MoD in December, 2019 for allotment of 1 Lakh additional Senior Division/Senior Wing cadets strength to private educational institutions.

GIRLS CADETS

Recommendation(Para No.33)

During oral evidence, the Committee came to know the Girl Cadets of NCC are 31.86% of the total strength of NCC. In this connection, the Committee would like to recommend that NCC shall endeavour to increase the number of Girl Cadets and appropriate infrastructure at camping sites and other places for inclusion of girls. The Committee wish to see increase in number of girl cadets in coming years.

Reply of the Government

Percentage of girl cadets has increased from 25.68% in 2014 to 33.72% in 2019. Details are as follows:

Year	Total Cadets Enrolled	Total Girls Enrolled	%age of girl cadets
2014	1131083	290422	25.68 %
2015	1271590	350196	27.54 %
2016	1281298	364048	28.41%
2017	1315401	398905	30.33%
2018	1329202	423464	31.86%
2019	1347436	454362	33.72%

2. Also, girl cadets have active participation in the visits under Youth Exchange Programme (YEP). This has increased from 40% in 2015-16 to 43% in 2019-20. Details are as follows:

S. No.	Year	Cadets participated in YEP			Percentage of girl cadets
		Male	Female	Total	
1.	2015-16	79	53	132	40 %
2.	2016-17	94	54	148	37 %
3.	2017-18	86	62	148	42 %
4.	2018-19	74	51	125	41 %
5.	2019-20	90	67	157	43 %
Total		423	287	710	

3. Further, it has been envisaged in the guidelines for YEP visits that in case there are lady cadets in the Delegation, at least one lady officer will mandatorily be a part of delegation.

(B) OBSERVATIONS/RECOMMENDATIONS WHICH HAVE BEEN ACCEPTED BY THE GOVERNMENT AND ARE COMMENTED UPON

BUDGETARY PROVISIONS

Recommendations(Para No. 1-3)

During the year 2019-20, Ordnance Factories received a net budget outlay of Rs.50.58 crore against Revenue Head. Total projection under this head at BE stage was Rs.17,050.38 crore while the approved budget estimates is Rs.15,653.09 crore. Rs.12,546.32 crore dedicate for defence issues and Rs.3,056.19 crore against other receipts and recoveries. Hence remaining Rs.50.58 crore is net revenue budget allocation.

Representatives of Ordnance Factory Board, submitted before the Committee, during oral evidence said that mid-term targets reduction by the Army after BE finalization has serious adverse effect on costing of Ordnance Factory Board products & budget. It was further intimated that only after receiving indents from Army, the procurement process commences in Ordnance Factories. Sometimes, the indents are withdrawn leading to accumulation of material. The Committee take note of the said hurdles in functioning of Ordnance Factories and recommend that Ministry of Defence shall endeavour to systematize coordination mechanism between Army and Ordnance Factory Board. Further it should be ensured that the requirements of Army and other Defence Forces are met without any compromise while at the same time order book position of Ordnance Factories is not left in lurch.

On this account, the Committee would also like to state that besides Indian Defence Forces, Ordnance Factory Board shall strive to explore more market for themselves so that their clientele is increased and the orders are received regularly. Various measures like product innovation, meeting delivery variables and cost effectiveness are some areas where Ordnance Factory Board shall focus with a view of improving market base.

Reply of the Government

According to established practice, a Joint Mechanism exists to finalize the item-wise-targets between Army and OFB for fixing BE targets for the next financial year for OFB. However, sometimes, item-wise targets are re-prioritized by Army to meet the operational requirements.

Further, OFB is making efforts to increase customer base in Non-Defence sectors viz. Central Armed Police Forces (CAPFs), State Police Forces (SPOs) and also in Civil Trade by developing and introducing new quality products, e.g. TAR (Israel Assault Rifle) and Joint Venture Protective Carbine (JVPC). Also, efforts are being made to increase exports too.

DELAY OF PROJECTS

Recommendations (Para No. 6-8)

The Committee raised issues regarding delay in delivery of products by Ordnance Factories. The Ministry of Defence agreeing to the concern of the Committee submitted that certain delays have been observed during implementation stage of some projects due to various reasons related to procurement process of Plant & Machinery(P&M) and execution of civil works. Problems are encountered at different stages like tendering, supply and erection of Plant & Machinery (P&M). The Committee suggests that Ordnance Factories shall envisage realistic timelines which can be adhered to. The timelines should be calculated only after due consideration to various factors involved in execution and final delivery of product.

Procedural delays must be avoided to the farthest possible extent as this creates a bad name for the organization in the market and at the same time puts extra burden on exchequer. Moreover, at times such delays had deprived the Defence Forces of critical capabilities. Therefore, necessary action should be taken to do away with slippages at all levels including revamping of procedural aspects so that delays do not take place for such reasons.

The Committee raised the specific case of inordinate delays in case of 'Dhanush' project. In this connection, the representatives of Ordnance Factory Board candidly admitted that there had been long slippage in it. The reasons for the same were given to the Committee which includes problems like delay in supply of machines & finalization of contract in Ordnance Factory Board's internal procedures. In some cases it was also due to delays in civil works done by Military Engineering Service (MES). The Committee urge upon the Ministry of Defence to take care of coordination between Ordnance Factory Board & Military Engineering Service so that the work of Ordnance Factories is not hampered due to any delay by Military Engineering Service (MES) or for that matter any other department.

Reply of the Government

Ordnance Factories put every effort to adhere to the timelines; however, there are few factors which are beyond control. The major reasons for deviation from the laid down timelines are appended below:

- a) Majority of the machines under various projects procured by OFB are Special Purpose Machines (SPMs), tooled up and are normally not available off the shelf. Hence, vendor base for this kind of Plant & Machineries is very limited.
- b) Technology like Forging Plants, Chemical Plants, Metallurgical Plants etc. are not available indigenously.
- c) Even special categories of Explosive Plants have a very limited Global source.
- d) Because of the financial crisis, major suppliers in Europe often fail to respond to our Tender Enquiry (TE) resulting in retendering of cases and also fail to execute the supply timely.
- e) Whenever Global Tender Enquiry (GTE) is floated, it is often observed that either there is no participation or a very limited participation by the vendors resulting in Re-tendering which delays the procurement process significantly.

In order to counter the problems mentioned above and to avoid procedural delays, OFB has taken the following steps in the last few years:

- Provision has been made in OFB Procurement Manual (OFBPM)-P&M-2013 for floating Expression of Interest (EOI) and Pre-bid Conference in technology intensive procurement cases, in order to frame broad based specifications, in line with the technologies available in the market.
- Efforts are being made to bring the technologies to the country by means of allowing consortium of Indian vendors with foreign collaborators/technology partners. Provision for the same has already been made in the above manual.
- In order to attract genuine bidders/suppliers, provision has been made in above manual for advance payment to the extent of 15% of the contract value for cost intensive/Turn Key plant and machinery duly safeguarding Government interest.
- To avoid delay in execution of Civil Works, regular interaction/Review with Military Engineering Services (MES) is being carried out at the factory level as well as OFB level. In addition to this, services of DRDO construction wing has also been taken to execute specialised, high value and time-bound Civil Works for Ordnance Factory, Nalanda as well as major civil works related to Pinaka project.
- It is pertinent to mention that OFB is always committed to supply all critical Arms, Ammunition & other Equipment in order to fulfill critical capabilities at

maximum extent. Following table represent the level of supply by OFB in last 5 years w.r.t requirement of Armed Forces:

(Rs. in Crore)

Year	Target (Army)	Value of Issue (Army)	% of supply
2014-15 RE	9901.70	9112.52	92.0%
2015-16 RE	10986.88	10551.03	96.0%
2016-17 RE	12935.12	11924.51	92.2%
2017-18 RE	11415.00	11447.32	100.3%
2018-19 RE	10289.33	9513.76	92.5%

Further, with regards to the delay in 'Dhanush' Project, this is mentioned that the Project 'Dhanush' was not an infrastructural project. 'Dhanush' is the first ever indigenous 155 mm x 45 caliber artillery gun. The project started with unique initiative from users who believed in self-reliance in Artillery capabilities. The visionary leadership of users and manufacturers started making a road map of indigenous gun development. With very few believers in the environment, this small team started taking big steps in gun development capabilities, with a mission to develop state-of-the-art weapon system using available knowledge and manufacturing capabilities of the nation.

'Dhanush' aims to give definite strategic and technical advantage to the Indian Army and to assure the country of its indigenous capability to design and produce modern artillery gun systems. The performance of 'Dhanush' has been evaluated under arduous conditions in several phases. The guns travelled extensively in towed/self-propelled mode in all terrains viz desert and high altitude with each gun clocking over 1600 km. The emphasis of user exploitation was on move and deployment as per tactical role of formation. This user exploitation was in addition to other evaluation viz Director General Quality Assurance (DGQA) evaluation, Maintenance Evaluation Trials (MET) and Confirmatory Trials etc. Such an extensive exercise was carried out by the user for the first time for any gun system under the process of induction.

BUDGETARY PROVISIONS

Recommendation (Para No. 12)

The Committee note that in the year 2017-18 the projection was Rs. 19,936 crore while allocation was Rs. 15,400 crore In the year 2018-19, the allocation was

Rs. 17,611 crore against a projection of Rs. 22,204 crore. The projection made by DRDO in BE 2019-20 is Rs. 22,953.95 Cr whereas the allocation is Rs. 19,021.02 crore. There is a shortfall of Rs. 3932.93 crore. The Committee are informed by the Ministry of Defence that the budget of DRDO has always been around 5-6% of the Defence Budget. After keeping aside expenses for Strategic Schemes & Cabinet Committee on Security (CCS) projects, pay & allowances and other non-salary revenues expenditure, each of which essentially keeps growing every year. The amount left for R&D activities remains very less. For the current year, the quantum of funds for projects is Rs. 3500 Cr. The Committee came to know that some of the projects for which, funds may be sought are Advanced Medium Combat aircraft (AMCA), Airborne Warning & Control System (India) (AWACS)), Unmanned Combat Aerial Vehicle (UCAV Ghatak), Next Generation Main Battle Tank (NGMBT), High Endurance Autonomous Underwater Vehicle (HEAUV), Marinised Engineering AIP Energy Module (MAAREEM) etc. It was further apprised that, DRDO needs budgetary support to take up projects in Futuristic areas also. DRDO is managing within the allocations by re-prioritising the project activities. Therefore, the Committee recommended appropriate and adequate funding for DRDO projects keeping in mind the essentialities of research based technological advancements across the globe and to enhance the indigenisation level in a true sense.

Reply of the Government

Details of FBE, Budget Allocations for the Deptt of Defence R&D at different Budgetary stages and actual expenditure w.e.f FY 2017-18 is as under.

(Rs in Crore)

Year	BE Proposed	BE Approved	RE Approved	MA Approved
2017-18	19935.60	14818.74	15463.25	15399.25
2018-19	22203.74	17861.19	17610.38	17121.99
2019-20	22953.95	19021.02	17730.78	---
2020-21	23457.40	19327.35		

The comparison of Defence (R&D) Expenditure and Defence expenditure w.e.f FY 2017-18 is as under

(Rs in crore)

Year	Defence Expenditure	Projection	Budget allocated to R&D (actuals)	%age of Defence Expenditure
2017-18 (BE)	274114.00	19935.60	14818.74	5.41
2018-19 (BE)	295511.41	22203.74	17861.19	6.04
2019-20 (BE)	318931.22	22953.95	19021.02	5.96
2020-21 (BE)\$	337553.00	23457.40	19327.35	5.73

Note : \$ indicated BE for the FY 2020-21

It may be noted that against the projection of Rs. 22953.95 Cr at BE stage during the FY 2019-20 Ministry has allocated an amount of Rs 19021.02 Cr. However, it is a fact that budgetary allocations are much less than the projections made by the Department of Defence Research & Development (R&D) but the Department is managing within the allocations by re-prioritising the project activities. Further, additional funds would be required to support various projects to be undertaken in futuristic areas.

Recommendations(Para No. 16-17)

As regards manpower, another point of concern in the opinion of the Committee is authorization of scientific manpower. It was brought to the knowledge of the Committee that since 2001, DRDO had been managing with same authorization in spite of more than 6 times increase in outlay from IX to XII plan. Indigenous research has also increased manifold owing to 'Make in India' directives in Defence. Therefore, the Committee desire that revision in authorization of scientific manpower in DRDO shall be taken up for consideration by the Ministry of Defence and additional posts may be created as per the present requirements.

In this connection, further, the Committee are apprised that current manpower is grossly insufficient for the committed R&D projects under progress in DRDO. Manpower Planning Board (MPB) in April 2010 recommended enhancement of manpower by 4966. Ministry of Finance (MoF) recommended 1316 posts (Phase I - 436 approved by Department of Expenditure (DoE). Case is pending with Cabinet

Committee on Security (CCS). The Committee recommend for speeding up the case of enhancement of manpower which is currently pending with Cabinet Committee on Security (CCS).

Reply of the Government

As per the direction of Cabinet Secretariat dated 23rd Sep, 2019, a revised and updated Cabinet Note for augmentation of manpower by 436 posts (Scientists 420, Work Cadre Officers-16) in first phase has been submitted to seek fresh inter-ministerial approval.

DELAY IN DEFENCE PROJECTS

(Recommendation(Para No. 18 -19)

The Committee observe that delay in completion of projects is a part and parcel of DRDO functioning. 20 Major projects of DRDO got delayed valued more than 15 Cr. Different reasons are attributed to such delay viz. technological complexities, technological denial, enhancement of project cost, change in configuration of missile, additional trials and involvement of decision of various stakeholder etc. The Committee are apprised that DRDO is putting stringent review mechanization to review the critical issues periodically with respect to progress of implementation and delays. However, despite the mechanism, inordinate delays are occurring. These delays not only place a burden of unnecessary cost implications but also deprive the Services of Critical capabilities.

Further, the Committee are not in agreement with viewpoint of DRDO that delay in DRDO project had not affected defence preparedness citing reasons such as Services can import the requisite product and even after delay, the product is contemporary and comparable to the best. In this regard the Committee feel that delay in timelines of project delivery definitely put unnecessary burden on financial outgo of exchequer. The money of taxpayers has to be judiciously and verily utilized by all departments. It is therefore recommended that all out efforts shall be made to complete projects within the stipulated time-frame. No stone shall be left unturned in ensuring that all the milestones, short-term and long-term are achieved for all projects.

Reply of the Government

The main reasons for delay in DRDO Projects are given below:

- a) Ab-initio development of state-of-the-art technologies
- b) Technological / technical complexities & setbacks
- c) Mid-term revision in Qualitative Requirements (QRs) & Additional technical requirements from Services during currency of projects
- d) Vast scope of the projects – including User Trials (extensive process)
- e) Extended and repeated trials, non-availability of platforms (Su-30, ALH, Ship) for trials

- f) Trial methodologies availability after prototype realisation – needs re-engineering
- g) Procedural & vendor related delays in procurement
- h) Delay in production of systems by designated production agencies
- i) Procedural delays in acquisition of land for Infrastructure projects

The steps taken/being taken by DRDO for strengthening the functioning of DRDO and expediting the completion of defence projects are:

- a) Mandatory focus on pre-project activities
- b) Increased frequency of Project reviews
- c) Increased involvement of Services & Production Partners during development process and reviews
- d) Synergy with stakeholders – Regular interactions
- e) Revision in Delegation of Financial Powers (Projects/ Procurements) –
 - i) Higher delegation to Lab Directors for
 - ii) Procurement / sanction of projects.
 - iii) Engaging academic institutes for increasing knowledge base and TRLs
- f) Implementation of EFP
- g) De-link User Trials from Project Scope of Work
- h) Introduction of Development cum Production Partner (DcPP) culture

- i) Project Monitoring i.e. milestone based review process and online progress update.
- j) New Policies & Procedures i.e. Transfer of Technology (ToT) Policy for industries, Patent Policy – Free access to industries and DRDO Industry Synergy Summit.

It is further submitted that design and development projects undertaken by DRDO are generally “first of its kind” in country. In many cases knowledge gap pertaining to a technology adds to uncertainty in development. This leads to multiple design iterations. The quantum of uncertainty would be difficult to be estimated at beginning of the projects, where capability building is also integral to it. All efforts will be made to minimize design iterations through multi - tiers of reviews and additional review by external experts in similar or related areas along with regular reviews.

QUALITY CHECK

Recommendation (Para No. 28)

The Committee in their earlier reports expressed concerned that despite quality check of products at DGQA, some ammunition or other equipment reaching out to Defence Services turns out to be faulty and not defect free. In this connection,

the Committee found that sample testing is carried out by DGQA and the whole lot of material may not be unflawed. Further, on this aspect the Committee found that DGQA mainly conducts process audit and product audit is very little. In this context, the Committee would like to recommend that DGQA carry out some random sample testing also so that the quality of products can be ensured to the maximum possible extent.

Reply of the Government

- (a) DGQA carries out Product audit and process audit. Product audit is carried out on sampling basis for ammunition, wherein few numbers are drawn from the batch and tested by way of static tests and dynamic proof firing. 100% testing of ammunition cannot be done and hence QA is carried out on sampling basis as laid down in IS and international standards. QA on sampling basis has an inherent risk both to the BUYER and SELLER based on the performance of the limited samples resulting in acceptance/rejection
- (b) Provision for revising the frequency of tests is exercised based on continued good performance in line with the governing specifications observed during QA checks.

NATIONAL CADET CORPS

Recommendation (Para No. 29)

The motto of NCC is Unity & Discipline. It aims at creating a pool of organised, trained and motivated youth with leadership quality in all walks of life and serve the nation, whether Armed Forces or Civilian sector. Further, today NCC is the largest uniformed youth organisation in the world. It has presence in 711 out of 718 districts of the country. As on date, 17374 educational institutions have been covered and 9064 institutions are in waiting list. The Committee observe that during the years 2018-19, against the projection of Rs. 1910.42 crore the allocation at BE Rs. 1584.21 crore and at RE it was reduced to Rs. 1551.58 crore. There is a reduction of Rs. 32.63 crore. Further against the allocations of Rs. 1551.58 crore, the actual expenditure is Rs. 1434.92 crore. The underutilisation is to the tune of Rs. 116.66 crore. During the year 2019-20 against the projection of Rs. 1939.96 crore the allocations is Rs. 308.04 crore. The gap is Rs. 308.04 crore. The Committee have been apprised that infrastructural, budgetary and manpower constraints affect the expansion of NCC. The expansion programme of NCC would require adequate Fund. The Committee are pained to note that on the one hand NCC needs more allocation and on the other hand, there have been under utilisation of the allocations given at the RE stage since the year 2015-16. Therefore, the Committee wish to recommend that NCC should make all out efforts to utilise the allocated money fully.

At the same time the Ministry of Defence should ensure judicious allocations to NCC at RE stage to meet the expansion programme and minimise the waitlisted institutions.

Reply of the Government

In RE 2019-20, Rs. 1,667.92 Crore (i.e. an increase of Rs. 36 Crore over BE 2019-20) has been allocated to NCC against projections of Rs. 1,692.23 Crore. The details of allocations and expenditure in respect of NCC from 2015-16 onwards is as under:-

Year	Budget Estimates (BE)	Expenditure
2015-16	1021.39	1114.89
2016-17	1189.38	1144.57
2017-18	1303.43	1378.08
2018-19	1584.21	1435.75

Year-wise reasons for less/ excess expenditure than the allocations given at RE stage from 2015-16 onwards are as under:-

- a) In FY 2015-16, excess expenditure was incurred due to bookings for committed liabilities towards procurement of Book Ankle, shoes, Uniforms (NC II). Also due to direct bookings by PCOA (Fcys) amounting to about Rs. 25 Crore.
- b) In FY 2016-17, less expenditure was mainly under Salary head due to part implementation of 7th CPC.
- c) In FY 2017-18, less expenditure was due to non-materialization of procurement cases such as Uniform Navy, DK Whaler, 91 Motor Cycles, 21 LCVs, Uniform cloth and also due to reduction in demand by DGDE and less booking under Salary head.
- d) In FY 2018-19, less expenditure was mainly due to non-materialization of procurement cases and delayed delivery schedule for Uniform Cloth Khaki, Uniform Navy, and Air Uniform. Further, the initial supply of DK Whaler & Uniform khaki commenced in Feb/March, 2019 only. Also, there was less booking under Salary head.

However, the Committee is assured that all efforts will be made to ensure optimum utilization of scarce resources and judicious allocations to NCC to meet their requirements.

GAINFUL UTILIZATION OF THE EXPERTISE OF THE 'C' CERTIFICATE HOLDERS OF NCC CADETS

Recommendation(Para No. 31)

The Committee observe that the matter regarding gainfully utilize the expertise of the 'C' Certificate holders of NCC Cadets in areas like civil defence, disaster management and public Awareness campaigns, is under examination with other Government agencies. The Committee are happy to note that about 7,500 NCC Cadets are joining Army and about 400 to 500 candidates are joining Navy & Air Force. In Short Service Commission the candidates are exempted to appear for the written examination. Other Cadets are going to Central Armed Police Forces.

At Present, Raksha Mantri/Rajya Raksha Mantri is going to write letters to the Armed Guard and Port authorities and Chief Ministers of the States to give concession to 'C' Certificate holders in jobs. The Committee welcome the steps taken by the Ministry of Defence to utilize the trained manpower of NCC with well developed personality and leadership skill for nation building and other activities related to national integration.

The Committee desire the Ministry to send the letters of Raksha Mantri/Rajya Raksha Mantri to all the concerned agencies and State Government at the earliest and regularly pursue this matter in order to materialize the noble intention and gainfully utilize the skills of NCC Cadets. In this way more students will be attracted to join NCC in the future also.

The Committee further learnt that number of Defence corridors are being started by the Government in different parts of the country. Because of the ambitious 'Make in India' projects of Government many private industries have joined the defence production sectors. Many multi National Companies/Investors are showing interest to invest in defence production sectors. In near future India will be a hub for defence production. In view of the possibilities of future expansion of defence production, there will be a strong need for dedicated trained and skilled human resources to man these organization. Therefore, the committee strongly feel that it is high time, NCC should feel the pulse of time and explore the possibilities to impart necessary technical training to the NCC Cadets by tie-up with the public and private defence production agencies.

In this way the training imparted to NCC Cadets can be fruitfully utilized in the field of defence production for which these Defence corridors are being prepared by the Government.

Further on imparting skill development, the committee observe that NCC on its own do not provide Skill Development training as it does not have trained

manpower to impart skill development programme. However, it is trying to be associated with State Government Skill Development Centres. It has started a pilot project in Bihar which is being regularly monitoring. While appreciating the initial steps taken in this direction, the committee desire that NCC should proactively pursue this matter with all the State Government and explore the feasibilities to associate the NCC Cadets with the skill development Centres so that they can gain the required skill and utilize it to get gainful employment in future. In this way more students will be attracted to join NCC in future.

Reply of the Government

Ministry of Defence has taken up with Ministry of Home Affairs, Ministry of Railways, Ministry of Surface Transport and Ministry of Civil Aviation the matter of introduction of incentives for NCC Cadets in security related jobs, CAPFs and State Police, similar to the incentives existing in armed forces.

Also, Skill Development and Personality Development has been taken up in a big way by NCC to enhance the employability of the NCC cadets. Services of NCC Exchange Participants Association of India (EXPA) has been suitably integrated in Training of the Cadets. NCC is working as facilitator to facilitate NCC cadets to optimise the Skill development training imparted by State Skill development agencies. Efforts are also being made through the State Governments to facilitate skill development of the cadets through Govt scheme like Pradhan Mantri KaushalVikasYojana (PMKVY),etc.

These measures are expected to help increasing employment avenues for NCC cadets in future.

CHAPTER III

**OBSERVATIONS/RECOMMENDATIONS WHICH THE COMMITTEE DO NOT
DESIRE TO PURSUE IN VIEW OF THE REPLIES RECEIVED FROM THE
GOVERNMENT:**

-NIL-

CHAPTER IV

**OBSERVATIONS/RECOMMENDATIONS IN RESPECT OF WHICH REPLIES OF
GOVERNMENT HAVE NOT BEEN ACCEPTED BY THE COMMITTEE
WHICH REQUIRE REITERATION AND TO BE COMMENTED UPON:**

-NIL-

CHAPTER V

**OBSERVATIONS/RECOMMENDATIONS IN RESPECT OF WHICH
GOVERNMENT HAVE FURNISHED INTERIM REPLIES:**

-NIL-

**New Delhi
09 February, 2021
20 Magha, 1942 (Saka)**

**Jual Oram
Chairperson,
Standing Committee on Defence**

APPENDIX I

STANDING COMMITTEE ON DEFENCE (2020-21)

MINUTES OF THE THIRD SITTING OF THE STANDING COMMITTEE ON DEFENCE (2020-21)

The Committee sat on Tuesday, the 9th February, 2021 from 1530 hrs. to 1600 hrs. in Committee Room No. 2, Block A, Extension to Parliament House Annexe (EPHA), New Delhi.

PRESENT

Shri Jual Oram - **Chairperson**

MEMBERS

Lok Sabha

2. Kunwar Danish Ali
3. Shri Ajay Bhatt
4. Shri Nitesh Ganga Deb
5. Shri Annasaheb Shankar Jolle
6. Choudhary Mehboob Ali Kaiser
7. Smt. (Dr.) Rajashree Mallick
8. Dr. T.R. Paarivendhar
9. Shri Kapil Moreshwar Patil
10. Shri Jugal Kishore Sharma
11. Shri Prathap Simha
12. Shri Brijendra Singh
13. Shri Durga Das Uikey

Rajya Sabha

14. Dr. Ashok Bajpai
15. Shri V. Lakshmikantha Rao
16. Shri Sanjay Raut
17. Shri Kamakhya Prasad Tasa
18. Dr. Sudhanshu Trivedi
19. Lt. Gen. Dr. D. P. Vats (Retd.)

SECRETARIAT

1. Smt. Kalpana Sharma - Additional Secretary
2. Dr. Sanjeev Sharma - Director
3. Shri Rahul Singh - Deputy Secretary

2. At the outset, the Chairperson welcomed the Members of the Committee and informed them about the agenda for the Sitting. The Committee then took up for consideration the following draft Action Taken Reports:-

- i. **Action Taken by the Government on the Observations/Recommendations contained in the Twenty-third Report (16th Lok Sabha) of the Standing Committee on Defence on the subject 'Proxy and Postal Voting by Defence Services Personnel in General Elections an Evaluation';**
- ii. **Action Taken by the Government on the Observations/Recommendations contained in the Fiftieth Report (16th Lok Sabha) of the Standing Committee on Defence on the subject 'Provision of all weather road connectivity under Border Roads Organisation (BRO) and other agencies up to International Borders as well as the strategic areas including approach roads-an appraisal';**
- iii. **Action Taken by the Government on the Observations/Recommendations contained in the First Report (17th Lok Sabha) on Demands for Grants of the Ministry of Defence for the year 2019-20 on 'General Defence Budget, Border Roads Organisation, Indian Coast Guard, Military Engineer Services, Directorate General Defence Estates, Defence Public Sector Undertakings, Canteen Stores Department, Welfare of Ex-Servicemen, Ex-Servicemen Contributory Health Scheme, Defence Pensions, Sainik Schools (Demand Nos. 18 and 21)';**
- iv. **Action Taken by the Government on the Observations/Recommendations contained in the Second Report (17th Lok Sabha) on Demands for Grants of the Ministry of Defence for the year 2019-20 on 'Army, Navy, Air Force and Joint Staff (Demand Nos. 19 and 20)';**
- v. **Action Taken by the Government on the Observations/Recommendations contained in the Fourth Report (17th Lok Sabha) on Demands for Grants of the Ministry of Defence for the year 2019-20 on 'Ordnance Factories, Defence Research and**

- Development Organisation, Directorate General of Quality Assurance and National Cadet Corps (Demand No. 19 and 20)';
- vi. **Action Taken by the Government on the Observations/Recommendations contained in the Fifth Report (17th Lok Sabha) on Demands for Grants of the Ministry of Defence for the year 2020-21 on 'General Defence Budget, Border Roads Organisation, Indian Coast Guard, Military Engineer Services, Directorate General Defence Estates, Defence Public Sector Undertakings, Canteen Stores Department, Welfare of Ex-Servicemen, Ex-Servicemen Contributory Health Scheme, Defence Pensions, Sainik Schools (Demand Nos. 18, 19, 20 and 21)';**
 - vii. **Action Taken by the Government on the Observations/Recommendations contained in the Sixth Report (17th Lok Sabha) on Demands for Grants of the Ministry of Defence for the year 2020-21 on 'Army, Navy, Air Force and Joint Staff (Demand Nos. 19 and 20)'; and**
 - viii. **Action Taken by the Government on the Observations/Recommendations contained in the Eighth Report (17th Lok Sabha) on Demands for Grants of the Ministry of Defence for the year 2020-21 on 'Ordnance Factories, Defence Research and Development Organisation, Directorate General of Quality Assurance and National Cadet Corps (Demand Nos. 19 and 20)'.**

3. After some deliberations, the Committee adopted the above reports without any modifications.
4. The Committee, then, authorized the Chairperson to finalise the above draft Reports and present the same to the House on a date convenient to him.
5. *****Does not pertain to the Reports*****

The Committee then adjourned.

APPENDIX II

ANALYSIS OF THE ACTION TAKEN BY THE GOVERNMENT ON THE OBSERVATIONS/ RECOMMENDATIONS CONTAINED IN THE FOURTH REPORT OF STANDING COMMITTEE ON DEFENCE (17TH LOK SABHA) ON 'DEMANDS FOR GRANTS OF THE MINISTRY OF DEFENCE FOR THE YEAR 2019-20 ON ORDNANCE FACTORIES, DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION, DIRECTORATE GENERAL OF QUALITY ASSURANCE (DGQA) AND NATIONAL CADET CORPS (NCC) (DEMAND NO. 20)'

- | | | |
|-----------|---|-----------------------|
| 1. | Total number of recommendations | 33 |
| 2. | Observations/Recommendations which have been accepted by the Government (please see Chapter II A): | |
| | Recommendation Nos. 4,5, 9,10,11, 13,14,15, 20,21,22,23,24,25,26, 27, 30, 32, & 33 | |
| | | Total : 19 |
| | | Percentage: % |
| 3. | Observations/Recommendations which have been accepted by the Government and are commented upon (please see Chapter II B): | |
| | Recommendation Nos. 1,2,3,6,7,8,12,16,17,18,19,28,29 & 31 | |
| | | Total : 14 |
| | | Percentage: % |
| 4. | Observations/Recommendations which the Committee do not desire to pursue in view of the replies received from the Government (please see Chapter III): | |
| | Recommendation No. –Nil- | |
| | | Total : 00 |
| | | Percentage: 00 |
| 5. | Observations/Recommendations in respect of which replies of Government have not been accepted by the Committee which require reiteration and to be commented upon (please see Chapter IV): | |
| | Recommendation Nos. –Nil- | |
| | | Total : 00 |
| | | Percentage: 00 |
| 6. | Observations / recommendations in respect of which Government have furnished interim replies (please see Chapter V): | |
| | Recommendation Nos. –Nil- | |
| | | Total : 00 |
| | | Percentage: 00 |