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**STANDING COMMITTEE ON DEFENCE  
(2019-20)**

**(SEVENTEENTH LOK SABHA)**

**MINISTRY OF DEFENCE**

**DEMANDS FOR GRANTS (2020-21)**

**ORDNANCE FACTORIES, DEFENCE RESEARCH AND DEVELOPMENT  
ORGANISATION, DIRECTORATE GENERAL OF QUALITY ASSURANCE AND  
NATIONAL CADET CORPS**

**(DEMAND NOS. 19 AND 20)**

**EIGHTH REPORT**



**LOK SABHA SECRETARIAT**

**NEW DELHI**

**March, 2020/Phalguna, 1941 (Saka)**

**EIGHTH REPORT**

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**(DEMAND NOS. 19 AND 20)**

*Presented to Lok Sabha on 13.03.2020*

*Laid in Rajya Sabha on 13.03.2020*



**LOK SABHA SECRETARIAT**

**NEW DELHI**

**March, 2020/Phalguna, 1941 (Saka)**

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**COMPOSITION OF THE STANDING COMMITTEE ON DEFENCE (2019-20)**

**Shri Jual Oram**

-

**Chairperson**

**Lok Sabha**

2. Shri Deepak Adhikari (Dev)
3. Shri Hanuman Beniwal
4. Shri Ajay Bhatt
5. Shri Devusinh J. Chauhan
6. Shri Nitesh Ganga Deb
7. Shri Rahul Gandhi
8. Shri Annasaheb Shankar Jolle
9. Prof (Dr.) Ram Shankar Katheria
10. Smt. (Dr.) Rajashree Mallick
11. Shri Pashupati Kumar Paras
12. Shri Kapil Moreshwar Patil
13. Shri Anumula Revanth Reddy
14. Shri Jugal Kishore Sharma
15. Dr. Shrikant Eknath Shinde
16. Shri Prathap Simha
17. Shri Brijendra Singh
18. Shri Mahabali Singh
19. Shri Kotagiri Sridhar
20. Shri Durga Das Uikey
21. Dr. Kalanidhi Veeraswamy

**Rajya Sabha**

22. Dr. Ashok Bajpai
23. Shri Prem Chand Gupta
24. Shri V. Lakshmikantha Rao
25. Shri Sanjay Raut
26. Dr. T. Subbarami Reddy
27. Smt. Vijila Sathyananth
28. Dr. Abhishek Manu Singhvi
29. Shri Kamakhya Prasad Tasa
30. Lt. Gen. Dr. D. P. Vats
31. Dr. Sudhanshu Trivedi

**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 (2019-20), having been authorised by the Committee, present this Eighth Report (Seventeenth 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)'.

2. The Demands for Grants of the Ministry of Defence were laid on 10 February, 2020 in Lok Sabha. The Committee took evidence of the representatives of the Ministry of Defence on 17, 18, 19, 20 and 21 February, 2020. The draft Report was considered and adopted by the Committee at their Sitting held on 12 March, 2020.

3. The Committee wish to express their thanks to the officers of the Ministry of Defence and representatives of the Services/Organisations for appearing before the Committee and furnishing the material and information which the Committee desired in connection with examination of the Demands for Grants.

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

**New Delhi;**  
**5 March, 2020**  
**15 Phalguna, 1941(Saka)**

**JUAL ORAM**  
**Chairperson**  
**Standing Committee on Defence**

## ABBREVIATIONS

Sl. No.	Abbreviation	Full form
1	ATS	Action Tracking System
2	ALWT	Advanced Light Weight Torpedo
3	AMCA	Advanced Medium Combat Aircraft
4	ATAGS	Advanced Towed Artillery Gun System
5	ATR	Aeronautical Test Range
6	ADAEC	Air Defence Artillery and Engineer Corps
7	AWACS (I)	Airborne Warning & Control System (India)
8	APAR	Annual Performance Appraisal Report
9	AS	Anti Ship
10	AFV	Armoured Fighting Vehicles
11	AHQ	Army Head Quarters
12	ASSOCHAM	Associated Chamber of Commerce and Industry of India
13	ACADA	Automatic Chemical Agent Detector & Alarm
14	BMP-II	Boyevaya Mashina Pekhoty, ( <u>Russian</u> )
15	BLT	Bridge Laying Tank
16	BE	Budget Estimates
17	CCS	Cabinet Committee on Security
18	CAPFs	Central Armed Police Forces
19	CPC	Central Pay Commission
20	CEM	Concurrent Engineering Model
21	CII	Confederation of Indian Industry
22	CM	Consortium Model
23	DIQA	Defence Institute of Quality Assurance
24	DPSUs	Defence Public Sector Undertakings
25	DRDO	Defence Research & Development Organization
26	DRDS	Defence Research Development Services
27	DoE	Department of Expenditure
28	DcPP	Development cum Production Partners
29	DP	Development Partner
30	DPM	Development Partner Model
31	DGQA	Directorate General Quality Assurance
32	FCS	Flexible Complementing Scheme
33	FMS	Full Mission Simulator
34	FICV	Futuristic Infantry Combat Vehicle
35	GSCR	Gear Spect Czech Republic
36	GOCO	Government Owned and Company Operated
37	GDP	Gross Domestic Product
38	GPRS	Guided Pinaka Rocket System
39	HEAUV	High Endurance Autonomous Underwater Vehicle
40	HARM	High Speed Anti Radiation Missile

41	HAG	Higher Administrative Grade
42	IPE	Individual Protective Equipment
43	ICM	International Collaboration Model
44	JDM	Joint Development Model
45	LA	Land Attack
46	LCW	Large Calibre Weapon
47	LAToT	Licensing Agreements for Transfer of Technology
48	LSP	Limited Series Production
49	LTIPP	Long Term Integrated Perspective Plan
50	LTOs	Long Term Orders
51	LTPPP	Long Term Technology Development Plan
52	M&E	Machines & Equipment
53	MPB	Manpower Planning Board
54	MGO	Master General of Ordnance
55	MALE	Medium Altitude Long Endurance
56	MRSAM	Medium Range Surface to Air Missile
57	MoU	Memorandum of Understanding
58	MES	Military Engineer Service
59	MV	Military Vehicles
60	MPV	Mine Protected Vehicles
61	MoEF	Ministry of Environment and Forest
62	MoF	Ministry of Finance
63	MHA	Ministry of Home Affairs
64	MPDS	Multi-Purpose Decontamination System
65	NCC	National Cadet Corps
66	NCAER	National Council for Applied Economic Research
67	NCSA	National Cyber Security Architecture
68	NRDC	National Research Development Corporation
69	NGS	Naval Gun System
70	NGMBT	Next Gen Main Battle Tank
71	NGTD	Next Generation Technology Demonstration
72	NBC	Nuclear, Biological And Chemical
73	OTE	Open Tender Enquiry
74	OF	Ordnance Factories
75	OFB	Ordnance Factory Board
76	OEM	Original Equipment Manufacturer
77	PDK	Personal Decontamination Kit
78	P&M	Plant & Machinery
79	PFFC	Pre Fragmented Fringing Cubes
80	PSQR	Preliminary Staff Quality Requirement
81	PPFM	Procedures for Project Formulation and Management
82	PDC	Project Delivery Capability
83	QRs	Qualitative Requirements
84	QA	Quality Assurance
85	QC	Quality Check



86	QRSAM	Quality Quick Reaction Surface to Air Missile Liaison Meet
87	RM	Rakshya Mantri
88	RRM	Rakshya Rajya Mantri
89	RR	Renewal and Replacement
90	R&D	Research & Development
91	RE	Revised Estimates
92	SSC	Short Service Commission
93	SFDR	Solid Fuel Ducted Rocket Ramjet Technology for Air Launched Tactical Missiles
94	SPMs	Special Purpose Machines
95	SLCM	Submarine launched Cruise Missile
96	TDF	Technology Development Fund
97	ToT	Transfer of Technology
98	UAV	Unmanned Aerial Vehicle
99	UCAV	Unmanned Combat Aerial Vehicle
100	UATT	User Assisted Technical Trial
101	Vol	Value of Issue
102	VEDA	Vehicle for Defence Applications
103	VL-SRSAM	Vertical Launch Short Range Surface to Air Missile based Weapon System

## **REPORT**

### **CHAPTER – I**

#### **ORDNANCE FACTORIES**

The Committee took note of the fact that Ordnance Factories are an integrated base for indigenous production of Defence equipment and ammunition and form the backbone of the country's Defence production. Defence production is a highly specialized sector, full of complexities and challenges where products have to be safe, reliable, consistent and capable of operating under varying terrains as well as climates and in extreme conditions. Accordingly, the technologies applied, which cover a wide spectrum of engineering, metallurgy, chemical, textile, leather, optical technologies etc. have to ensure high quality and productivity, apart from meeting the primary objective of self-reliance. Ordnance Factories also fulfill certain requirements of Paramilitary and Police Forces for arms, ammunition, clothing and equipment. Ordnance Factories endeavour to enhance their capacity utilization not only by securing orders from the Defence forces but also through sustained efforts in diversification to non-Defence customers and exports. However, priority of the Ordnance Factories is to supply quality arms, ammunition and equipments to Armed Forces.

1.2 They produce a wide range of arms and ammunitions for the Infantry, Armoured Corps, Artillery, Air Defence Artillery and Engineer Corps of the Army. Ordnance Factories produce ammunition for Navy and Air Force and have taken up indigenous development of Naval armaments. The factories produce military transport vehicles, infantry combat vehicles, armoured vehicles, optical and opto-electronic instruments, summer and winter uniforms, parachutes, miscellaneous leather goods and general stores. To summarize the role of Ordnance Factory Board include to provide a dedicated manufacturing base for military hardware, indigenization and Transfer of Technology(ToT) absorption, maintenance of 'War Reserve' capacity and 'Life Cycle' support to arms and ammunition supplied etc.

1.3 The Ordnance Factories Organization is a blend of old and state-of-the-art factories, with the first Ordnance Factory established in 1801 at Cossipore, near Kolkata, and two new

ordnance factories are coming up at Nalanda in Bihar and Korwa in UP. At present Ordnance Factories manage 41 manufacturing units and 32 other establishments. Ordnance Factories have been continuously upgrading their infrastructure, with induction of state-of-art technologies to meet futuristic requirements of users.

## **BUDGETARY PROVISIONS**

1.4 The details of the budgetary provisions of last five years of Ordnance Factory are as under:

	<b>(Rs. in Crore)</b>				
<b>2015-16</b>	Budget Estimates (BE) (Projection)	Budget Estimates (BE) (Allocation)	Revised Estimates (RE) (Allocation)	Modified Appropriation (MA) (Allocation)	Actual Expenditure
Total Revenue Expenditure	16,242.30	14,705.73	15,376.69	14749.92	14,133.38
Total Receipts/Recoveries	14,092.30	11,821.50	14,124.21	13500.87	13,711.52
Net Revenue Expenditure	<b>2,150.00</b>	<b>2,884.23</b>	<b>1,252.48</b>	<b>1249.05</b>	<b>421.86</b>
<b>2016-17</b>					
Total Revenue Expenditure	17,749.59	17,582.69	17,441.11	16758.11	16,403.34
Total Receipts/Recoveries	16365.07	16957.23	16577.09	15965.05	16082.69
Net Revenue Expenditure	<b>1384.52</b>	<b>625.46</b>	<b>864.02</b>	<b>793.06</b>	<b>320.65</b>
<b>2017-18</b>					
Total Revenue Expenditure	19699.01	19212.99	14792.74	14792.74	14562.83
Total Receipts/Recoveries	18496.84	18028.72	14716.20	14716.20	14709.41
Net Revenue Expenditure	<b>1202.17</b>	<b>1184.27</b>	<b>76.54</b>	<b>76.54</b>	<b>-146.58</b>
<b>2018-19</b>					
Total Revenue Expenditure	19236.00	15644.12	14856.00	14187.00	13689.92
Total Receipts/Recoveries	18046.84	14916.84	14383.18	13714.18	13370.66
Net Revenue Expenditure	<b>1189.16</b>	<b>727.28</b>	<b>472.82</b>	<b>472.82</b>	<b>319.26</b>

<b>2019-20</b>	Budget Estimates (BE) (Projection)	Budget Estimates (BE) (Allocation)	Revised Estimates (RE) (Allocation)	Modified Appropriation (MA) (Allocation)	Actual Expenditure
Total Revenue Expenditure	17050.38	15653.09	14295.35	-	-
Total Receipts/Recoveries	15602.50	15602.51	14099.52	-	-
Net Revenue Expenditure	<b>1447.88</b>	<b>50.58</b>	<b>195.83</b>	-	-
<b>2020-21</b>					
Total Revenue Expenditure	15687.00	15477.53	-	-	-
Total Receipts/Recoveries	14790.93	14790.93	-	-	-
Net Revenue Expenditure	<b>896.07</b>	<b>686.60</b>	-	-	-
Total Capital Outlay	<b>756.50</b>	<b>756.50</b>	-	-	-

1.5 On the allocation of funds to various Ordnance Factories and the methodology being adopted for distribution of funds, the Ministry intimated the Committee as under:-

'Funds are allocated for expenditure under various accounting heads to each Ordnance Factory under Ordnance Factory Board. Following basis is adopted for allocation of funds to factories:

- (i) Target of production and supplies
- (ii) Projections of factories
- (iii) Past trends and statutory obligations
- (iv) Planned investment on modernization

Following methodology adopted for distribution of fund:

- (i) Pay and Allowances and related expenditure based on manpower strength and production activities.
- (ii) Stores based on material estimates for the target of production, inventory status, committed liabilities and carry forwards liabilities.
- (iii) Other expenditure based on past trend, statutory obligation, production target as well as changed requirement time to time.
- (iv) Expenditure on Investment on Modernization based on planned requirement.

## **Order Book position**

1.6 On the issue of Order Book position in the Ordnance Factories for the next five years, the Ministry of Defence apprised the Committee as under:-

“OFB receives Order in the form of Five Years Roll on Indent from Army for Ammunition items to meet their war wastages as well as annual training requirement. In case of Armoured Vehicles, other stores and spares, fixed quantity indents are received from time to time. Considering all such indents, Order Book position as on 31.12.2019 was Rs. 58,165 Crore for supply of Ammunition, Weapons, Troops Comfort items and Armoured Vehicles.

However, year wise targets for all items are finalized by the services during annual target fixation meetings based on availability of budget with services, priority of the requirements and capacity of OFB. All the equipment including ammunition are supplied to Army as per mutually agreed annual targets. The supplies of items in order book are ultimately supplied as per annual targets, which may be less than the total order book.

Considering future assessment of requirements, a Vision 2024 document has been prepared. This document indicates four years' plan for annual Value of Issue (VOI). However, achievement of planned Vol would depend on the adequate budget availability with the services, mainly Army. Details of the planned Vol are appended below:

(Rs in Crore)

Year	2020-21	2021-22	2022-23	2023-24
Target Vol (Including GST)	17,870	19,600	21,500	23,600

1.7 In regard to the problems faced by the Ordnance Factories specially the order book position, Chairman, Ordnance Factory Board, stated:

“सर, एक बात बताना चाहूँगा कि जैसे हमारे पास बैटल टैंक्स के सफिशिएंट ऑर्डर्स हैं। अभी-अभी आर्मी ने हमें 464 टैंक्स का इनडेंट दिया है। हमारे पास अभी अगर ऑर्डर्स की कमी है, तो हाईकैलिबर एम्युनिशन, जो 155 कैलिबर एम्युनिशन है, 130 मिलिमीटर कैलिबर एम्युनिशन है, 105 कैलिबर एम्युनिशन है, हमारे पास इनके ऑर्डर्स की कमी हैं। उसका कारण यह है कि इसकी सफिशिएंट क्वांटिटी आर्मी के पास उपलब्ध है। आर्मी के पास इस वक्त थोड़ा साबजटरी कंस्ट्रेंट भी है। आर्मी के पास बजटरी कंस्ट्रेंट है, तो आर्मी प्रायरेटाइज करती है। आज की डेट में यह हाईकैलिबर एम्युनिशन है, वह उनके लिए प्रायरिटी नहीं है, क्योंकि उनके पास सफिशिएंट स्टॉक अवेलेबल है। उनके लिए दूसरे एम्युनिशन प्रायरिटी है। यही कारण है कि हमारे पास ऑर्डर्स कम हैं। हम लोग कोशिश कर रहे हैं कि अपनी निर्माणियों को सुचारू रूप से चलाते रहें और एक मिनिमम लेवल पर आर्मी ने ऑर्डर भी दिया है। एक सीमित एमाउंट में ऑर्डर भी दिया है।”

He further elaborated as under:

“सर, मैं एक ही बात कहना चाहूँगा कि यह नेशन का एक स्ट्रेटेजिक ऐसेट है। जो कैपेसिटी हम लोग, आयुध निर्माणियाँ में मैन्टेन कर रहे हैं, समय-समय पर उत्पादन करके आर्मी और रक्षा सेनाओं की आपूर्ति करना है। सबसे ज्यादा महत्वपूर्ण है कि इमरजेंसी में जब युद्ध छिड़ता है, उस वक्त ये निर्माणियाँ आपकी जरूरतों को पूरा कर पाएं। उसके लिए हम लोग आर्मी को हमेशा अलग-अलग स्तर पर, अलग-अलग फोरम पर यह बताते हैं कि अगर हमारी मैक्सिमम क्षमता 100 यूनिट्स की है, तो आपको इसकी जरूरत नहीं है, तो आप हमको कम से कम 10 यूनिट का ऑर्डर दे दीजिए, जिससे सारी मशीनें चालू रहेंगे और सारे लोगों का ज्ञान बरकरार रहेगा। जो लोग रिटायर हो जाएंगे, वे आने वाले लोगों को सिखाते रहेंगे, वह स्किल बना रहेगा। आर्मी से हमारी हमेशा यह रिक्वेस्ट रहती है कि हमको कैपेसिटी, स्किल को सस्टेन करने का एक मिनिमम ऑर्डर देते रहे, जो 10 से 20 पर सेंटत कभी हो सकता है और वे ऑर्डर्स हमको मिलते रहें। भले ही आर्मी की जरूरत न हो। आर्मी से हमें पूरा सहयोग मिलता है। वे इस दिशा में हमको किसी न किसी रूप में इनेबल कर देते हैं।”

## **Manpower**

1.8 As regard to the authorised and existing strength of manpower in all Ordnance Factories both technical and non-technical for the last five years and steps so taken by Ordnance Factory Board to overcome the shortage, the Ministry in its written note furnished to the Committee stated as under:-

“Government has decided sanctioned and operational strength for Ordnance Factories. Sanctioned strength of Ordnance Factories is intended towards catering to peak load requirements of Indian Armed Forces while existing strength is maintained for meeting the current load of the Armed Forces on annual basis. The flexibility is required to help Indian Ordnance Factories to augment the manpower at a very short notice in times of exigency and to cater the workload fluctuations from time to time.

The authorized strength and existing strength of OFB for last five years is as under:

	Authorised (Sanctioned) Strength	Existing Strength April 2016	Existing Strength April 2017	Existing Strength April 2018	Existing Strength April 2019	Existing Strength January 2020
Technical	1,23,142	73,955	72,739	71,051	68,481	67,321
Non - Technical	22,361	15,580	15,067	14,418	13,756	13,203
Total	1,45,503	89,535	87,806	85,469	82,237	80,524

Further, OFB has recently concluded the recruitment of 2668 Industrial Employees, 188 Group 'B' Officers and 121 Group 'A' Officers. Most of them have already joined the organization and others are in the process of completing joining formalities. OFB has also sanctioned the filling up of 378 Non Industrial employees and 692 Chargeman, for which recruitment is under process.

Considering the declaration of items as Non-Core and decline of orders from Indian Army, very limited recruitment of the vacant posts is being carried out.

1.9 During oral evidence, when the Committee asked about the problems faced by the Ordnance Factories due to shortage of manpower; Chairman, OFB apprised the Committee as under:

सर, हमारी सैंकशंड मैनपॉवर करीब 1,45,000 हजार की है। लेकिन आज की तारीख में वर्किंगमैन पॉवर करीब 80 हजार के आस-पास है। सर, हम लोग मैनपॉवर के बारे में इस तरह का प्रयास करते हैं कि जो हमारा अगले पांच वर्षों का वर्कलोड होता है, जिसका हम आंकलन कर सकते हैं, उसके आधार पर जितनी-जितनी डेफिशिएंसी होती है, हम उतना ही रिक्रूटमेंट करते हैं। आज की तारीख में हमारा जो मैनपॉवर है, वह कहीं भी, किसी भी निर्माणी में सरप्लस नहीं है, जो उस निर्माणी की क्षमता है, उसके अनुसार कहीं-कहीं मैनपॉवर की कमी हो सकती है, परंतु कहीं भी हमारे पास सरप्लस मैनपॉवर नहीं है। अगर हमारे पास किसी निर्माणी में वर्कलोड इतना है कि जो हमारे एग्जिस्टिंग लोग हैं, वे पूरे मिलकर डिस्चार्ज नहीं कर पाते हैं तो हम बहुत सारी पेरिफेरल एक्टिवटीज को थर्ड पार्टी मैनपॉवर इस्तेमाल कर, कुछ कैजुअल लेबर लेकर अपना काम पूरा कर लेते हैं और कभी-कभी हम एक शिफ्ट में काम करने की बजाय दो शिफ्ट में भी काम करने का प्रयास करते हैं। इस तरह से जो हमारी रक्षा सेनाओं की मांग है, वह समय से पूरी हो जाए तो हमारे यहां कोई भी सरप्लसमैन पॉवर नहीं है।

### **Budget for modernization**

1.10 The Committee wanted to know about the details of the outlay provided and spent by all Ordnance Factories along with complete details of each project/programme proposed, planned and implemented during the last five years on modernization, the Ministry submitted the following information through a written note :-

“Modernization in Ordnance Factories is a continuous process. To keep pace with the contemporary manufacturing technologies, OFB prepares a modernization plan for technological up-gradation as well as capacity enhancements. Modernisation plan in respect of capital investments are broadly divided in following categories:

- i) Renewal and Replacement (RR) of Plant & Machinery (P&M) which are beyond economical repairs
- ii) Acquisition of P&M under capacity creation/ Augmentation under New Capital
- iii) Development of Civil Works infrastructure.



Details of Fund utilization on Modernization during last five years (2014-15 to 2018-19)

(Rs. in Crore)

Expenditure Head	Financial Year	Capital Outlay Provided	Actual Expenditure
Machines & Equipment (M&E)	2014- 2015	489.00	485.74
	2015- 2016	305.00	312.30
	2016-2017	314.61	368.62
	2017-2018	472.58	488.93
	2018-2019	332.00	292.27
	<b>Total</b>	<b>1913.19</b>	<b>1947.86</b>
Works	2014- 2015	314.96	300.66
	2015- 2016	343.00	339.82
	2016-2017	339.67	337.84
	2017-2018	317.00	314.54
	2018-2019	293.00	289.8
	<b>Total</b>	<b>1607.63</b>	<b>1582.66</b>
Expenditure Head	Financial Year	OFB Target	Actual Expenditure
Renewal and Replacement (RR)	2014- 2015	500.00	441.87
	2015- 2016	400.00	385.73
	2016-2017	450.00	451.77
	2017-2018	460.00	422.80
	2018-2019	400.00	398.33
	<b>Total</b>	<b>2210.00</b>	<b>2100.50</b>

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

(Rs. in Crore)		
(i)	Renewal & Replacement (RR)	400.00
(ii)	New Capital (NC ) P&M	534.50
(iii)	Works (Civil)	333.50
	Total	1,268.00

## Details of Expenditure on Capital Investment from 2014 to 2019

(Rs. in Crore)

Sl No	Project	2014-15	2015-16	2016-17	2017-18	2018-19
1	T- 72 Variants	45.33	14.39	24.45	5.68	4.31
2	Augmentation of Engines - 750 Nos.	13.17	27.12	12.03	110.90	4.27
3	Augmentation of T-90 (100 to 140)	71.61	31.09	35.86	19.04	77.24
4	Spares for T-72 & T-90 OH	34.02	33.69	8.71	2.80	1.07
5	Mine Protected Vehicles (MPV)	1.66	0.16	0.00	0.00	0.00
6	Large Calibre Weapon	9.56	41.50	64.73	43.95	20.65
7	HMX Plant	29.29	12.26	1.33	0.78	1.05
8	Nitro Glycerin Plant	0.00	0.00	0.00	0.00	0.00
9	Akash Booster & Sustainer	3.65	2.37	6.87	2.61	7.50
10	CPE Itarsi	4.95	0.00	0.00	0.00	0.00
11	Pinaka @5000	18.66	36.41	66.72	75.83	85.91
12	Ordnance Factory Nalanda	0.47	2.78	0.30	1.35	1.80
13	Ordnance Factory Project Korwa	44.20	8.17	4.33	0.00	1.59
14	125mm FSAPDS (Mango)	79.99	23.47	15.52	126.18	0.00
15	Ammonium Perchlorate		2.96	16.31	1.01	1.16
16	General NC	20.91	25.46	65.52	96.75	95.71
	<b>Total of Projects</b>	<b>377.47</b>	<b>261.83</b>	<b>322.68</b>	<b>486.88</b>	<b>302.26</b>
	RR Capital	120.79	62.54	56.51	14.27	1.27
	Sale of P&M	-12.96	-12.07	-10.56	-12.50	-11.32
	<b>Total</b>	<b>485.30</b>	<b>312.30</b>	<b>368.63</b>	<b>488.65</b>	<b>292.21</b>

## **Delay in projects and supply to Armed Forces**

1.11 The Committee raised issues regarding delay in delivery of products by Ordnance Factories. In this regard, the Ministry of Defence 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).

1.12 On being asked about the reasons for delays of projects, the Ministry in its written reply has identified the following individual and collective reasons for delays:

Certain delays have been observed during implementation stage of these projects due to various reasons related to procurement processes of plant & machinery (P&M) and execution of civil works. Procurement of P&M is a long lead time process. Problems are encountered at different stages like tendering, supply and erection of P&M. Some of the main reasons are listed below:

### **Tendering Stage:**

- (i) Limited vendor base: Since majority of machines require customised special purpose/ tooled up solutions, few offers are received and process gets prolonged to ensure healthy competition.
- (ii) Non-availability of indigenous sources for technologies like, Forging Plant, Chemical Plants, Metallurgical Plants leads to processing through longer global procurement route.
- (iii) Explosive manufacturing plants have very limited global manufacturers.
- (iv) Due to financial crisis in Europe during this period, some of the European suppliers failed to respond to tender enquiries leading to retendering the cases.
- (v) The P&M Procurement Manual, prior to the current edition of OFBPM- P&M 2013, had no provision for advance payment. Hence, many suppliers of certain cost intensive machines did not participate in tenders.

- a. **Supply Stage:**
- (ii) Being customised Special Purpose Machines (SPMs)/tooled up machines, delivery periods are long and delays occurred on the part of P&M supplier in design, manufacture & supply of the machine.
  - (iii) M/s HMT is a major supplier of machine tools to Ordnance Factories. Because of financial crisis, HMT has not been able to supply all machines to OFB within stipulated delivery schedule.
  - (iv) During the period from 2014 – 2018, some of the European suppliers failed to execute the supply timely due to financial constraints at their end.

### **Erection & Commissioning Stage:**

Availability of Building and Services was at times delayed due to delayed execution of civil works by MES, resulting in longer time taken for erection and commissioning of some of the machines.

1.13 On the issue of steps taken by Ordnance Factories to envisage realistic timelines which can be adhered to and action to do away with slippages, the Ministry in its written replies stated as under:

“When Detailed Project Report (DPR) for a project is prepared, all the aspects are taken into consideration to set a realistic timeline for the completion of the project. Further, review meetings are held regularly. Although the Ordnance Factories put every effort to adhere to the timelines, there are few factors which are beyond control. In order to counter the problems mentioned above and to avoid procedural delays, OFB has taken a number of steps in the last few years in this direction. These are as follows:

- (i) In order to frame broad based specifications, in line with the technologies available in the market, provisions have been made in OFB Procurement Manual (OFBPM)-P&M-2013 for floating Expression of Interest (EOI) and Pre-bid conference for technology intensive procurement cases.

- (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 Govt. 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 Nalanda as well as major civil works related to Pinaka project”.

1.14 During the oral evidence, on the issue of slippage in inventory supplied to Army, Chairman, OFB replied:

“आर्मी से हमारा आपस में रेग्युलर इंटरैक्शन होता है और हमारी हर महीने बोर्ड मीटिंग होती है, उसमें हमारे एन जी ओ या डी जी ओ उपस्थित रहते हैं। जैसे-जैसे आर्मी की प्रायोरिटी होती है, उसके पर हम कार्य करते हैं। उन्होंने एक फिगर क्वोट किया है, उस फिगर की एनालिसिस में इस समय प्रस्तुत नहीं कर पाऊँगा, परन्तु हम लोग अपनी तरफ से पूरा प्रयास करते हैं कि आर्मी की जो माँग है, वह जल्दी से जल्दी पूरी हो जाए।

सर, उत्पादन होता है, उत्पादन में कभी-कभी ऐसी कठिनाइयाँ आ जाती हैं, जैसे अभी हमारे बीएलटी टैंक बन कर तैयार हैं। हमको 20 टैंक्स बना कर देने हैं। अब पूरा टैंक बनकर तैयार है। एक पुर्चे के अंदर समस्या आ गई है। उस पुर्चे की समस्या के लिए पूरा महकमा, हमारी हेवी वेहिकल्स फैक्ट्री, आवडी, डीजीक्यूए, एलएंडटी सारे लोग मिलकर दिन-रात काम कर रहे हैं और यह प्रयास है कि हम उस पुर्चे का समाधान हफ्ते दस दिन के अंदर कर लें और बीस के बीस टैंक हम आर्मी को दे पाएं। इस तरह जो बड़े-बड़े प्रोडक्ट है, उसमें कभी कोई अवरोध आ जाता है, तो अवरोध की वजह से पूरी सप्लाय निर्माणी में ही रहती है। जो फिगर आप बता रहे हैं कि जो सामान हमने आर्मी के लिए प्रोड्यूस कर दिया या हमारे यहाँ से डिस्पैच हो गया, ट्रेवल करके आर्मी को पहुँच गया और उनको मिल गया। आप वह फिगर बता रहे हैं और मैं उस फिगर को कान्ट्रेस्ट नहीं कर रहा हूँ, जो फिगर बता

रहे हैं, एक दम सही फिगर बता रहे हैं। उत्पादन प्रक्रिया में समस्याएँ रहती हैं और उन समस्याओं का हम लोग समय-समय पर सब लोग मिलकर निदान करते हैं। रक्षा मंत्रालय में अलग-अलग लेवल पर रिव्यू है। आर्मी का अलग-अलग लेवल पर रिव्यू है। आर्मी से अलग-अलग लेवल पर इंटरैक्शन है। आर्मी हमारे मेजर कस्टमर है और हम आर्मी को समय-समय पर पूरी सप्लाई देने के लिए कटिबद्ध है।“

He also stated:

“सर, स्लिपेज को अवाँइड करने के लिए और फ्यूचर में न होने के लिए हम सारे लोग हमेशा प्रयासरत रहते हैं।“

1.15 On the issue of any delay in supply of items to the Forces, details of the products delayed, the system in place to bring accountability in case of such delay and how it affected the Defence preparedness of the country, the Ministry in its written reply stated as under:

“OFB supply the items to the Services based on mutually agreed targets fixed on yearly basis in consultation with Services. Supply is restricted within available budget with Services. Value of Issue of the Ordnance Factories has improved over the years. Year wise value of Issue of OFB as a whole during last five years is furnished in table below with percentage achievement with respect to the target.

Performance of OFB in terms of value of issue during the last five years is as below:

(Rs. in Crore excluding Taxes)

<b>Year</b>	<b>Target</b>	<b>Value of Issue</b>	<b>% Achievement</b>
2014-15 RE	12,120	11,391	94.0%
2015-16 RE	13,552	13,111	96.7%
2016-17 RE	15,393	14,825	96.3%
2017-18 RE	14,115	14,127	100.1%
2018-19 RE	13,757	12,766	92.8%

OFB supplies items to the Armed Forces based on consultation by mutually agreed targets fixed on yearly basis. In this regard, OFB has achieved 97% of Value of Issue (VOI) against their targets.

Further, regular review is being done in the Ministry with the Ammunition Group along with MGO and DGQA to resolve quality issues and timely supply issue of ammunition to Army. Interaction of OFB officers with the Depot Heads for the purpose of getting first hand feedback has resulted in addressing the deficiencies in Supply of quality ammunition immediately. Thus, there is no delay in supplying items by OFB, which may affect the Defence preparedness”.

1.16 On the issue of total value of products supplied to the three Services, Ministry in its written replies stated:

“Supplies made to the three Services during the last three years are appended below:

Value in Crore (Excluding taxes)			
Year	2016-17	2017-18	2018-19
<b>Army</b>	11,867.45	11,412.48	9,478.39*
<b>Navy</b>	294.34	241.20	397.57
<b>Air Force</b>	528.20	619.83	664.36
<b>Total :</b>	<b>12,689.99</b>	<b>12,273.51</b>	<b>10,540.32</b>

\*Reduction due to budgetary constraints and resultant ceiling imposed by Indian Army.

1.17 The written information supplied by Ministry shows that approximately 100% targets are achieved. However, during the oral evidence, on the issue, Chairman, OFB, apprised the Committee as under:

इस प्रश्न का मैं केवल इसी रूप में जवाब दे सकता हूँ कि आर्मी की जितनी मांग आज की तरीख में हम पूरी कर रहे हैं और आर्मी को कभी भीकोई इमर्जेंट सप्लाई की जरूरत होगी, हम उसको पूरा करेंगे।

1.18 Further, on the issue, a representative of the Army apprised the Committee about non-availability of ammunition as under:

“However, the point with regard to the Ordnance Factory that you have mentioned, I would like to inform you that of the Budget Estimate that was predicted for the current financial year, which is finishing in March, only 49 per cent has been booked by the Ordnance Factory, which is a cause of concern to us. This needs to be addressed at the highest level because in the next one month, 49 per cent cannot become 100 per cent.

.....Similarly, we had the slippage last year. What the Ordnance Factory is doing about the slippage is something which they would have to answer to the Committee because it does not meet our requirement. Though we have raised it at the highest level, but the answers to that have not been given to us because there are issues which are intrinsic to the Ordnance Factory over which the MGO or the Army has no control.

### **Export of Ordnance Factories Products**

1.19 The Ministry was asked to whether Government proposes to export arms, ammunition and weaponry systems produced by OFs to developing and under-developed countries and steps being taken to increase the exports of arms and ammunitions, the Ministry in written note submitted as under:—

‘Ministry has provided procedural enablement in March 2019 related to pricing of OFB products which is assisting in boosting export. Also, Standard Operating Procedure (SOP) for export of Defence stores against Line of Credit to foreign friendly countries has been issued by the Ministry.

In this regard, OFB is continuously trying to increase its export turnover of arms, ammunition and weaponry systems through supplies to developing and under developed countries. Various steps taken in this regard are as follows:

- i) A separate post of Member/Export & Marketing has been created at OFB for achieving boost in export orders and implementation of various measures for enhancing export.



- ii) OFB has implemented procedural enablement related to pricing of OFB products and operating instructions for boost in export through channel partners.
- iii) OFB is participating in various international exhibitions to promote its products in foreign countries.
- iv) Indian Defence Attaché posted abroad are being contacted for assistance in boosting export. OFB has been included in the itinerary of pre posting exposure of the newly appointed Defence Attachés to various countries.
- v) 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.
- vi) OFB has identified major target countries and country specific analysis is being done for offering exportable products as per the target country's existing and futuristic requirements.
- vii) For targeted countries, OFB has also started preparing Bilingual product catalogues in English & country's local language.
- viii) Available comparative international prices are being referred to at the time of making offers.
- ix) OFB has also started working on export potential against offset requirements.
- x) OFB has invited various delegations from OEM and foreign countries for technical discussions to explore export potential.
- xi) OFB has started customization of products as per user requirements.
- xii) OFB is certifying products & packing as per International standards accepted by international buyers'.

During the oral evidence, Chairman, OFB, informed the Committee as under:

“सर, सबसे पहले मैं बताना चाहूंगा कि हम लोग अलग-अलग देशों में एक्सपोर्ट कर रहे हैं। यूएई में हम 155 मिमी एम्युनिशन एक्सपोर्ट कर रहे हैं और हमारा एम्युनिशन उनको क्वालिटी और कॉस्ट के टर्म्स में इतना पसंद आया है, इसलिए हमको उसका रिपीट ऑर्डर मिला है और रिपीट ऑर्डर की सप्लाय का सेकेंड कंसाइनमेंट अभी इसी महीने जा रहा है। तीसरा कंसाइनमेंट भी पूरा तैयार हो गया है। उसको भी हम जल्दी से भेजेंगे। सर, जितने भी एम्युनिशंस होते हैं, उनमें एक मुख्य विस्फोटक टीएनटी होता है, इसकी निर्माणी पुणे में है और हमारे पास उसकी अच्छी-खासी क्षमता है। हम टीएनटी यूएसए को एक्सपोर्ट कर रहे हैं, नॉर्वे को एक्सपोर्ट कर रहे हैं और स्वीडन को एक्सपोर्ट कर

रहे हैं। सर, स्वीडन में बोफोर्स काटेस्टिंग सेंटर है। बोफोर्स ने जब धनुष की सफलता का आंकलन किया, तो उनको हमारी 155 मिमी की बैरल मेकिंग कैपेसिटी के ऊपर इतना ज्यादा कॉन्फिडेंस आ गया कि उन्होंने हमसे बैरल्स बनवाई हैं। 155 मिमी, 45 कैलिबर और 52 कैलिबर। जो बैरल धनुष में लगी हुई है, उससे और ज्यादा क्षमता, ज्यादा लंबाई की बैरल हमने बनाई है और उस बैरल को बोफोर्सटेस्ट सेंटर ने लिया है और उनको इतना कॉन्फिडेंस है कि उस बैरल को वे लोग अपने खुद के आर एण्ड डी के लिए इस्तेमाल कर रहे हैं”।

Further, he elaborated:

“मैं इसके साथ ही बताना चाहूंगा कि जितना भी हम एक्सपोर्ट कर रहे हैं और जितना सिविल सेक्टर में बेच रहे हैं, सब में प्रॉफिट है। वह प्रॉफिट हमको हर साल मिलता है और भारत सरकार के अकाउंट में जमा हो जाता है।”

He further stated:

“.....हम अभी हाई कैलिबर एम्युनिशन एक्सपोर्ट कर रहे हैं। एक्सपोर्ट करने से हम अपनी निर्माणियों की कैपेसिटी का उपयोग भी कर पा रहे हैं और उनको सुचारू रख भी रहे हैं”।

1.20 On the question of share of import content in spares and components produced by Ordnance Factories and steps taken to bring down import content, the Ministry in its written replies stated:

“At present, import content of OFB items is approximately 10% only in which spares and components are also included. Efforts are being made to reduce import content further through source development Open Tender Enquiry (OTE), Make-II procedure and “Long Term Orders (LTOs)”etc”.

### **Expenditure on Research & Development:**

1.21 The Committee enquired about the in-house Research and Development conducted in Ordnance Factories for development of new products and the percentage of expenditure in Research and Development to the overall allocations during each of the last five years, the Ministry in its reply submitted as under:

“Yes, OFB takes up in-house Research & Development projects for design & development of new product of armament, ammunition and equipment. OFB has

developed 124 armament & ammunition items so far, out of which 61 items have been designed and developed by Ordnance Factories on their own in-house R&D.

41 Ordnance Development Centers (ODCs) are working in specific technological areas in each of the Ordnance Factories to carryout Research & Development. Ordnance Factories also take up collaborative R&D projects in association with Govt. Academic Institutions, Govt. Owned Laboratories and with other Indigenous Private Manufacturers.

Approximately **24.57%** of the output value of OFB is from items **developed through in-house R&D** by OFB, R&D under foreign ToT and R&D with DRDO”.

The Committee were informed about the Percentage of expenditure in Research and Development during each of the last five years is as follows:

Expenditure Component	2014-15	2015-16	2016-17	2017-18	2018-19
R&D Expenditure (Rs. in Crore)	55.82	87.97	59.86	69.72	90.81
Overall allocation (Rs. in Crore)	11354	13047	14806	14121	12766
R&D Expenditure to overall allocation to OFB as percentage	0.50%	0.67%	0.40%	0.49%	0.71%

1.22 On the question of new products/projects being formulated/launched to keep pace with changing technology in order to manufacture and supply quality products to Armed Forces and also on outsourcing of Research and Development work, the Ministry submitted as under:

“In order to keep pace with changing technology, OFB has developed following major new products/projects through in-house R&D:

- (i) 155 mm x 45 Calibre Artillery Gun System ‘Dhanush’ – Launched
- (ii) Upgunning of 130mm Gun to 155mm – Launched
- (iii) Commander’s Thermal Imaging Sight cum Laser Range Finder for T-90 Tank – Launched
- (iv) Armament upgrade of BMP-II with Missile Firing & Tracking capability
- (v) Modernized Mine Protected Vehicle
- (vi) Assault Rifle

- (vii) Air Defence Gun
- (viii) Mounted Gun System

Ordnance Factories take up collaborative R&D projects, seeking assistance in design and prototype development, from the Govt. Academic Institutions, Govt. Owned Laboratories and Private Indian Manufacturers (e.g. development of Turbo Charger & Fuel Injection Pump for T-90 tank, Engineering Plastic Components of High Resolution Binocular, Metal Injection Moulding Component etc.).

Further, the new products which are under development by in-house R&D of Ordnance Factories are as follows:

- (i) Armament upgrade of BMP-II with Missile Firing & Tracking capability
- (ii) Modernized Mine Protected Vehicle
- (iii) Assault Rifle 7.62x51mm
- (iv) Futuristic Infantry Combat Vehicle (FICV)
- (v) Air Defence Gun
- (vi) Self-Propelled 155 x39 Calibre Gun
- (vii) 155 x 52 Calibre Towed Gun
- (viii) 155x 52 Calibre Mounted Gun System
- (ix) Electronic Fuze for Artillery Ammunition

1.23 On projection and allocation for Twelfth Plan and Thirteenth Plan in respect of Research and Development and if any decline, reasons for decline in the allocation the Ministry in its written note has stated as under:

“The projection and allocation for Twelfth Plan and internal plan of OFB for Thirteenth Plan Period in respect of Research & Development is as follows:

Projection / Allocation	<b>12<sup>th</sup> Plan</b> (April 2012 to March 2017)	<b>13<sup>th</sup> Plan</b> (April 2017 to March 2022)
Projection of R&D (Rs. in Crore)	360.00	615.00
Allocation to R&D (Rs. in Crore)	352.12	282.00* (for 2017-18, 2018-19 & 2019-20 only)

\*Allocation for remaining years of 13<sup>th</sup> Plan will be made by MOD at appropriate stage.

Projection made by OFB for in-house R&D has been allocated by MOD over successive years.

The expenditure in Research and Development during the last five years is as under:

(Rs. in Crore)

Financial Year	2014-15	2015-16	2016-17	2017-18	2018-19
R&D Expenditure	55.82	87.97	59.86	69.72	90.81

From the above, it is seen that since last three years, there has been no decline of expenditure made on Research and Development in OFB.

## CHAPTER - II

### DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION

The Committee understand that Defence Research & Development Organization has come a long way since its modest beginning in 1958. Starting with only 10 laboratories, DRDO has grown multi-dimensionally and has evolved to be a core research organization with a vast network of 52 laboratories and establishments spread across the country. With a vision to empower India with cutting-edge technologies and equip our Services with internationally competitive systems, DRDO has proven its competence to produce state-of-the-art strategic and tactical military hardware and related technologies in diverse disciplines such as Aeronautics, Armaments, Combat Vehicles, Combat Engineering, Electronics, Missiles, Life Sciences, Materials and Naval Systems. At the core of this technological strength of DRDO is its expertise in system design, system integration, testing and evaluation and project management built over the last five decades, which has enabled it in developing indigenous capabilities in weapons and their delivery systems. DRDO also plays significant roles to provide scientific and technological advice on aspects of weapons, platforms surveillance to the Ministry of Defence in support of Defence policy to support National Cyber Security Architecture – testing capabilities, security solutions, testing hardware, indigenous NW systems, Defence tools, support operations. The Organization also advises the Government to make technical assessments of international security threats and the military capabilities of both current and potential adversaries.

## **BUDGETARY PROVISIONS**

2.2 Detailed data as given to the Committee with regard to Budget Estimates (Projection and allocation) and Revised Estimates (allocation) in respect of Department of Defence Research and Development for the last five years and Budget Estimate for the year 2020-21 are given in the following table:

**(Rs. in Cr)**

<b>Year</b>	<b>BE Proposed</b>	<b>BE Approved</b>	<b>RE Approved</b>	<b>MA Approved</b>
<b>2015 - 16</b>	19641.56	14358.49	12491.21	13540.11
<b>2016 - 17</b>	18782.86	13593.78	13454.54	13501.00
<b>2017 - 18</b>	19935.60	14818.74	15463.25	15399.25
<b>2018 - 19</b>	22203.74	17861.19	17610.38	17121.99
<b>2019 - 20</b>	22953.95	19021.02	17730.78	-
<b>2020 - 21</b>	23457.40	19327.35		

On being asked about whether the budget provided is sufficient for the plans as envisaged by DRDO, the Ministry in written reply submitted as under:-

“The budget of DD (R&D) has always been around 5-6% of the Defence Budget. Keeping aside expenses for Strategic schemes & CCS projects, pay & allowances and other non-salary revenue expenditure, each of which essentially keeps growing every year, the amount left for R&D activities is very less. For the current year, the quantum of funds for projects is ~Rs 3500 Cr (excluding strategic schemes). DRDO needs additional funds to take up projects in futuristic technology areas. Some of the projects for which funds may be sought are: Advanced Medium Combat Air Craft (AMCA), Airborne Warning & Control System (India) (AWACS (I)), Unmanned Combat Aerial Vehicle (UCAV Ghatak), Next Gen Main Battle Tank (NGMBT), Marinised Engineered AIP Energy Module (MAAREEM) etc.

It can be seen from the above table that against the projection of Rs. 23457.40 crore at Forecast stage during the FY 2020-21, Ministry has allocated an amount of Rs. 19327.35 Cr only. However, it is a fact that budgetary allocations are much less than the projections made by the DD(R&D). However, the Department is managing within the allocations by re-prioritizing the project activities”.

## **EXPENDITURE ON RESEARCH & DEVELOPMENT**

2.3 The Ministry was asked to furnish the details regarding percentage of expenditure on Research and Development to the overall Gross Domestic Product(GDP) during each of the last five years and how does this percentage compare with that of the developed countries, the Ministry supplied the following information:

(Rs. in Crore)

<b>TOTAL GDP Vs R &amp; D EXPENDITURE</b>			
<b>YEAR</b>	<b>TOTAL GDP</b>	<b>D R &amp; D EXPENDITURE</b>	<b>DR&amp;D EXPDR AS % OF TOTAL GDP</b>
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
2020-21(AE)	20442233.00	17730.78	0.086

In comparison to Defence funding in countries such as the US, Russia, and China, our Defence (R&D) spending is very less. As per published data, India is funding 6% on Defence R&D of the Defence Budget whilst, USA and China are spending approximately 12% and 20%, respectively on Defence (R&D) as compared to their Defence Budget. Vibrant economy is possible only when both saving and spending go hand in hand. Spending the tax payers' money wisely is as important as saving if not more for the stimulation of growth in Defence (R&D) capability.

2.4 The Ministry was requested to furnish the details of the projection and allocation for Thirteenth Plan in respect of Research and Development, the Ministry supplied the following information:

The projections for XIII Plan vs. allocation are presented in the Table below:

(Rs. in Crore)

<b>Year</b>	<b>R&amp;D Projections</b>	<b>R&amp;D Allocations</b>
2017-18	19936	15400
2018-19	22204	17611
2019-20	22954	19021
2020-21	29816	19327
2021-22	33949	-



2.5 When asked to furnish the reasons for decline, if any, in the allocation made on Research and Development to the total Defence Budget during the Thirteenth Plan period and projects which have suffered due to reduced allocation, if any, the Ministry supplied the following information:

“Reasons for decline in allocations as compared to projections may be due to constraints in the overall Defence budget. The budget of DRDO has always been around 5-6% of the Defence Budget. Keeping aside expenses for Strategic schemes & CCS projects, pay & allowances and other non-salary revenue expenditure, each of which essentially keeps growing every year, the amount left for R&D activities is very less. For the current year, the quantum of funds for projects is ~Rs 3500 Cr (excluding strategic schemes), which would be consumed to meet the already committed project expenses. DRDO needs additional funds to take up new projects in futuristic areas, significant/high-cost projects. Some of the projects for which funds may be sought are: AMCA, AWACS (I), UCAV Ghatak, NGMBT, MAAREEM etc.”

### **DEVELOPMENT OF NEW TECHNOLOGIES**

2.6 On the issue of DRDO that the country was still lagging behind in three Crucial technologies viz. propulsion, material & chip, budget spend on Research activities, the Ministry in its written reply stated as under::

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

R&D activities in Propulsion:

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

#### R&D activities in Materials:

- (i) DRDO laboratories are carrying out Research & Development activities on materials as well as indigenisation of existing materials required for defence applications.
- (ii) 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.
- (iii) The research on materials in DRDO laboratories is actively supported by academia through projects funded via ARDB, NRB, ARB and ER&IPR.
- (iv) 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:

- (i) 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.
  - (ii) The research on chip design is also supported by academia through ER&IPR projects to various academic institutes like IISc, IITs & Universities.
  - (iii) The fund allocated for the above R&D efforts in progress is worth over Rs 250 Cr (approx).
- b) 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.
- c) 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%.”

2.7 During the oral evidence, the Secretary, DDR&D apprised the Committee on future R&D technologies as under:

“सर, टेक्नोलॉजी के फ्रंट में हम नेबर्स के साथ कई एरियाज़ में ऐटपार हैं। अभी हमने आपको बताया था कि मिसाइल के क्षेत्र में, रडार के क्षेत्र में, टारपीडो के क्षेत्र में, गन के क्षेत्र में, अवाक्स के क्षेत्र में, आदि में उन से टेक्नोलॉजिकली कम नहीं है। मैं नंबर की बात नहीं करता हूं, क्योंकि वह सर्विसेज़ का विषय है कि कितनी क्वांटिटी में होना है।

दूसरा, जो अभी नए-नए एरियाज़ आ रहे हैं, उनमें भी हम उनके लेवल पर आने की बहुत कोशिश कर रहे हैं। नयी-नयी टेक्नोलॉजी, साफ्टवेयर डिफाईंड, रेडियोज, अंडर वाटर सिस्टम है, सोनार ऑलरेडी बन चुका है।

हमने बैलेस्टिक मिसाइल डिफेंस की डैवलपमेंट की है। नेबरहुड मिसाइल अगर हमारे देश की तरफ आएगी तो उसे एयर में ही ध्वंस कर सकते हैं। ऐसी बहुत तकनीक हैं।

हम आर्टिफिशियल इंटेली जेंस, क्वांटमटेक्नोलॉजीस, कॉगनिटिवटेक्नोलॉजीस, एसिमेट्रिक वारफेयर, लेजर टेक्नोलॉजी आदि में बहुत काम कर रहे हैं। एमका एयरक्राफ्ट बन चुका है। देश को 5.5 जनरेशन का एयरक्रॉफ्ट मिलेगा। यह आधुनिक एयरक्रॉफ्ट होगा। हमने बराबरी पर आने के लिए आने वाले पांच सालों में टेक्नोलॉजी फ्रंट पर प्लान किया है”।

## **MANPOWER**

2.8 As regard to the authorised and existing strength of Scientists in DRDO, the Ministry in a written note furnished to the Committee stated:

“The present authorized strength of DRDS scientists in DRDO is 7353. The existing held strength of DRDS (as of Jan 2020) is 7068 (excluding encadred units). The percentage of Scientists in DRDO is 30% of total strength of DRDO.

2.9 The Committee also desired to know about the number of scientists who have left DRDO during the last five years with reasons, the Ministry in its written reply stated:

“131 Scientists have left DRDO during last five years on personal grounds (2015-2019)”.

2.10 On the issue of augmentation of Scientific Manpower, the Ministry in its written reply stated:

“Since 2001, DRDO has been managing with same authorization inspite of more than 6 times increase in outlay from the IX plan to XIII plan

	IX (1997-2002)	X (2002-2007)	XI (2007-2012)	XII (2012-2017)	XIII (2017-2022)
Budget allotted	13866	21055	42733	60165	95000
No. of scientist	7255	7255	7255	7255	7255

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 pending with CCS”

2.11 On the steps being taken by DRDO to put a check on brain drain, if any, from DRDO and to make a career for scientists in DRDO an attractive one, the Ministry in its written reply stated:

“In order to arrest the brain drain and make the career of Scientists in DRDO more lucrative the following incentives are given to Scientists in DRDO:

a) Financial Incentives

- i) Professional Update Allowance: Scientist ‘B’, ‘C’ & ‘D’ are granted Rs. 22, 500 p.a., Scientists ‘E’ & ‘F’ Rs. 45,000 p.a. and Scientists ‘G’ & above Rs. 67, 500 p.a. as Professional Update Allowance.
- ii) Additional Increments: There was a provision of two additional increments for the Scientists C, D, E & F at Level 11, 12, 13 & 13A respectively in the Pay Matrix in 7<sup>th</sup> Central Pay Commission (CPC) terms. However, as of now the same has been stopped by PCDA. A case has been taken up by this HQ with CGDA to resume the payment of two additional increments.
- iii) Variable Increments: Up to six increments are granted to deserving Scientists at the time of promotion under Flexible Complementing Scheme (FCS) based promotion Scheme on the basis of the Performance of the Scientists in Assessment Board.

- iv) Special Pay: A special pay of Rs. 2000 (5<sup>th</sup> CPC)/ Rs. 4000 (6<sup>th</sup> CPC) was granted to Scientists 'G' in lieu of higher pay scale through cabinet sanction. The grant of Special Pay has been discontinued in 7<sup>th</sup> CPC as part of list of allowances recommended for abolition.

b) Career Growth related Incentives:

DRDO follows the Merit Based Flexible Complementing Scheme (FCS) for Defence Research Development Services (DRDS) Cadre, where promotions are based purely on merit without any linkage to availability of vacancies or seniority. The merit is assessed by the duly constituted Assessment Board for the purpose. Under the FCS, Scientist recruited at the level of Sc 'B' in the feeder Grade of Gp 'A' can move up to the level of Scientist 'H' in Level 15 i.e. Higher Administrative Grade (HAG) scale and thereafter, the level of Distinguished Scientist in the Level 16 (HAG+ scale), which is achievable on personal up-gradation basis".

On this issue, he further added that:

“सर, अभी हमारे यहां रिक्रूटमेंट जल्दी से जल्दी हो रहा है। हमारे कुल सैंकशंड पोस्ट 7500 हैं। इनमें से अभी हमारे पास 7255 वैज्ञानिक हैं। बाकी जो 245 हैं, प्रत्येक साल रिटायरमेंट होते रहते हैं और हम प्रत्येक साल रिक्रूटमेंट भी करते रहते हैं। हम छः महीने के अंदर एडवर्टाइजमेंट, इन्टरव्यू, अपाइमेंट्स आदि सब कुछ पूरा कर लेते हैं। मैं आपको बताना चाहता हूं कि पिछले 15 सालों में हमारा बजट बहुत बढ़ गया है। अभी 20,000 करोड़ तक आ गया है। हम बहुत सारे प्रोडक्ट्स डेवलप कर रहे हैं। ऐसा कोई क्षेत्र नहीं जिसमें हम काम नहीं कर रहे हैं। लाइफ साइंसेज से लेकर, एयरक्राफ्ट, मिसाइल, अंडरवाटर, सब-मैरिन, कम्यूनिकेशन, इलेक्ट्रॉनिक वारफेयर, गन, साइकोलॉजी एस्पेक्ट्स, फूड रिसर्च एस्पेक्ट्स, मेनवियर एस्पेक्ट्स, स्मॉल आर्म्स आदि सभी चीजों पर काम कर रहे हैं। इतनी सारी चीजों के लिए 7500 की संख्या इंटरनेशनल स्टैंडर्ड के हिसाब से बहुत कम है। इसलिए हमें ज्यादा चाहिए।”

During the oral evidence, on the issue of DRDO losing a lot of successful scientists to some foreign countries for better salary and for better future scope, Secretary, DDR&D apprised the Committee:

सर, यह पुरानी बात है, अभी नहीं है। अभी हमारे एट्रिशन रेट बहुत कम हैं। लोग जाना चाहते हैं, लेकिन हमारे पास पोस्ट नहीं है।

## **ROLE OF DRDO IN SELECTION PROCESS OF OFFICERS**

2.12 During the deliberations, on the issue of recruitment of officers in the Armed Forces, the Committee were apprised that the Armed Forces are short of 10000 officers and selection rate is 5 to 10 percent per annum. As the warfare changed, the selection procedure for recruitment of officers should also be modified. The Secretary, DDR&D apprised the Committee on the issue:

“In the last meeting also, Sir, I think, we discussed the same point. We have energised our laboratories. The laboratories discussing with the Armed forces to work out new mechanism and philosophy of inducting the people into the Armed Forces. My feeling is that we should be able to work out the new mechanisms this year. Extensive discussions are happening. I will be able to update you in about two months’ time what is the out of it and what is the direction that we are taking. Primarily, we have one laboratory which is seriously working on these aspects of it like qualifications, requirements, tests to be done and all that. As you said, yes, based on the stringent requirements, the Armed Forces have to go through because the Indian conditions, as you know, you have extreme conditions whether it is the low temperature or high temperature, hilly region and desert region and all that, that is how the requirements have been made based on those conditions. As you said, as the warfare is more machine-oriented, based on that we are working out. We are talking to them. I will personally update you in about two months’ time on this”.

## **COORDINATION IN RESEARCH AND DEVELOPMENT WITH PRIVATE SECTOR**

2.13 On being asked to furnish a list of the laboratories and projects in which private sectors are involved and technologies developed by DRDO have been transferred, if any, to Private Sector, the Ministry in its written reply stated:

‘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:

- 1) DRDO has promulgated new Transfer of Technology(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 Government Department. Nil Transfer of Technology(ToT) fee and royalty will reduce the financial burden on Indian industries and Indian Armed Forces. Only 5% Transfer of Technology(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. This will enhance capabilities and competitiveness of Indian industries in global market.
- 2) To facilitate Transfer of Technology(ToT) for category A (Military Technologies) and category B (Spin off/ Commercial use Technologies), a user friendly portal has also been launched for more transparency and clarity for the industry entrepreneurs.
- 3) 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.
- 4) 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 were interacted at various cities in India to apprise them 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.
- 5) DRDO has promulgated the SoP for export for DRDO developed products that will facilitate Indian industries and DRDO labs to provide necessary technical support to industries for responding of export RFI before necessary approval form MoD is obtained by industry. This SoP will facilitate industry and Labs to provide necessary support to industry on preparation of specification for RFI as well as customization of products to cater the needs of export. This will boost up the export potential of DRDO developed products by Indian industries.

- 6) DRDO has promulgated new patent policy to facilitate Indian industries to get fee access of DRDO patents. This will provide an access to Indian industries to the innovations carried out by DRDO to further boost up their R&D and develop new technologies. It will enhance the self reliance in Indian industries and global competitiveness.
- 7) Several world class test facilities have now been opened for industries in DRDO labs. The industries are using these test facilities for testing and qualification of the defence products developed by them. The Indian industries have been adequately groomed by DRDO in aspects like design, simulation, prototype manufacturing, testing, quality control, performance evaluation, technical and user trials.
- 8) DRDO has launched Technology Development Fund (TDF) which provides financial support to the Indian industries for the design development of innovative defence products. This encourages the R&D culture in industries and also leads to more self reliance in defence technologies.

During last three years (i.e. from Jan 2017 to Dec 2019), DRDO has entered into 322 Nos of Licensing Agreement for Transfer of Technology (LATOT) with industries’.

2.14 During the oral evidence, On coordination with private industry, Secretary, DDR&D apprised the Committee that :

“पहले मैं इंडस्ट्रीज़ के मामले में बताना चाहूंगा। आज हमारे साथ 1800 इंडस्ट्रीज़ काम कर रहे हैं। हमने उनको डेवलप किया है। हम उनको बिल्ट टू प्रिंट से बिल्ट टू स्पेशिफिकेशन तक लेकर आए हैं। हम उनको पूरी तरह से मदद कर रहे हैं। हमने 850 इंडस्ट्रीज़ को 900 से ज्यादा टेक्नोलॉजिज़ ट्रांसफर किया है। पिछले साल हमने 114 टेक्नोलॉजी ट्रांसफर एग्रीमेंट इंडस्ट्रीज़ के साथ किया है। अभी टेक्नोलॉजी ट्रांसफर फीस को जीरो किया गया है। हमारी जो पेटेंट है, उसको भी वे यूज कर सकते हैं और वह बिल्कुल फ्री है। हमारे डेवलपमेंट में वे पार्टनर जैसा काम करेंगे। अभी बड़े-बड़े सिस्टम केवल पब्लिक सेक्टर के साथ ही नहीं है, बल्कि प्राइवेट इंडस्ट्रीज़ के साथ भी काम करेंगे।

“तमिलनाडु तथा उत्तर प्रदेश में जो डिफेंस इंडस्ट्रियल कॉरिडोर है, इन दोनों के साथ हमने एमओयू किया है। हम तीन चीजों के लिए उनको सपोर्ट कर रहे हैं। पहला स्किल डेवलपमेंट के बारे में है। इस प्रकार के इंडस्ट्रीज़ को जो मैनपावर चाहिए, हम लोकल एकेडमिक इंस्टीट्यूट के साथ जोड़कर उनको ट्रेनिंग देंगे, so that manpower is available. यह फर्स्ट है।



दूसरा, जो इंडस्ट्रीज आ रही हैं, उनके लिए जो टेक्नोलॉजिकल सपोर्ट चाहिए, वह हम दे देंगे। जितने भी लैब्स हैं, उनको लैब्स के साथ भेज कर हैंड होल्डिंग करेंगे।

हमारी जो टेस्ट फेसलिटीज़ हैं, वह भी हम उनको देंगे। इसके अलावा भी हम सोच रहे हैं कि जब इंडस्ट्रियल कॉरिडोर आएंगे, आगे बढ़ेंगे तो हम दोनों कॉरिडोर में एक-एक आरएंडडी सेंटर खोलेंगे। हम उनको लोकल सपोर्ट करेंगे, वहां साइंटिस्ट को पोस्ट करेंगे और जो आरएंडडी सपोर्ट चाहिए, वह भी उधर देंगे। हम दोनों कॉरिडोर में सपोर्ट करने के लिए तैयार हैं।

2.15 On the issue of revenue generation through sale of technology developed by DRDO, Secretary, DDR&D apprised the Committee as under:

रेवेन्यू जेनरेशन में हमारी दो चीजें हैं। पहला, हम उनको टेस्ट फैसिलिटी और इंफ्रास्ट्रक्चर देंगे। इसके बदले में हमारे पास थोड़ा पैसा आएगा। दूसरा, टेक्नोलॉजी ट्रांसफर की वजह से भी कुछ पैसा आएगा। अभी हमने बताया था कि अगर आप आर्म्ड फोर्स को दे रहे हैं तो हम उनसे टेक्नोलॉजी ट्रांसफर फीस नहीं लेंगे। अभी केवल कमर्शियल यूज के लिए जो जा रहा है, उस पर हम उनसे टेक्नोलॉजी ट्रांसफर फीस ले रहे हैं। हम इंडस्ट्रीज के बारे में जो डेवलपमेंट कर रहे हैं, उसे बारे में यह जानकारी है।

Secretary, Finance further elaborate on this issue:

I just wanted to add that डी.आर.डी.ओ. प्रोडक्शन एजेंसी नहीं है, बल्कि यह सिर्फ डेवलप करके प्रोटोटाइप बनाता है, जो सर्विसेज टेस्टिंग करते हैं। फिर इनके जो पार्टनर एजेंसी से लेक्ट करते हैं, वे प्रोडक्शन करते हैं। इनका रेवेन्यू जेनरेशन नहीं होता है, क्योंकि अब इन्होंने आर्म्ड फोर्स के लिए टीओटी फ्री कर दिया है। छोटे-मोटे चीजों के लिए रेवेन्यू जेनरेशन हो जाता है, परंतु उस प्रकार से नहीं कर सकते हैं।

## **BASIC RESEARCH IN ACADEMIA**

2.16 The Committee desired to know the steps been taken by DRDO to provide thrust to basic research/ applied in academia during the last three years, the Ministry in its written reply stated:

“Steps taken to provide thrust to basic research in academia during last three years are given below:

1. Establishment of centres of excellence

- a) JC Bose Centre for Advance Technology (JCBCAT) at Jadavpur University
  - b) Bio-nodal Centre of Propulsian Technology (CoPT) at IIT -Bombay and IIT Madras
  - c) DRDO-UT Delhi, Joint Advanced Technology Centre (JATC) at IIT Delhi
  - d) Kalam Centre for Science & Technology (KOCST) at Jammu University
  - e) Norrth East Science & Technology Centre (NESTC) at Mizoram University.
2. DRDO Scholarship scheme: Under ihe DRDO Scholarship scheme to attract meritorious students, 10 numbers Post Graduate and 20 numbers Graduate scholarships is being awarded, from 2019-2020, exclusively for girls pursuing MBM Tech/MSc(Engineering.) (full 2 years degree course) & B.E/B. Tech (Engineer full-- time 4 years degree course respectively in Aerospace/Aeronautical Engg/Space Engg & Rocketry/Avionics/Aircraft Engineering Per year at premier Indian academic institutions (Govt./autonomous/UGC or AICTE approved).
3. Financial support organize conferences/seminars/workshops in niche areas of technology of interest to DRDO at various academic institutions. More than 200 conferences/seminars/workshops were sponsored in last three years.
- (i) As per DRDO policy, Basic research Projects (TRL level 2-3) being pursued in academia and other research institutes.
  - (ii) Technological gap for the products needed by the Services in next 15 years have been identified and research projects given to academia through opening of new centres. Research Centres (IIT Madras, IIT Bombay, IIT Delhi, Jadavpur University & Bhartiya University) have been recently established to meet the research needs.
  - (iii) In addition, new niche areas of research such as Nanotechnology, Tera Hertz Technology, High Purity Materials, Explosive materials, Cyber Security, Communications and Radars, Robotics and projects are being pursued in academic institutes in these areas
  - (iv) DRDO encourages academia to conduct symposia, workshops & conferences to generate interest in the areas of Defence Research. DRDO also sponsors conferences, which brings academia and research institutions on common platform to interact and share their knowledge and experience which may be used for basic research.

- (v) DRDO also organizes Lecture series at various academic institutes and encourage participation in exhibition etc.
- (vi) 'DRDO Scholarship Scheme for Under Graduate and Post Graduate Level Girls Students related to Aerospace and Aeronautical Engineering, Space Engg., & Rocketry/Avionics/Aircraft Engg.: 2019'."

2.17 On the issue of details of the research programmes being sponsored through universities by the DRDO during 12<sup>th</sup>Plan and 13<sup>th</sup>Plan hitherto as well as the benefit accrued to DRDO and defence services. It has been stated that DRDO has established five centres of excellence at various institutions/Universities for creating strong academic links. When and where these centres have been established and what have been the results so far, the Ministry in its written reply stated:

"680 research projects costing Rs 490 Cr (approx.) were sponsored to various universities and academic institutions during 12<sup>th</sup>Five year plan.

417 research projects have been sponsored in the 13<sup>th</sup>Five year plan w.e.f. Apr 2017 - till date.

DRDO is sponsoring the projects to academia/universities through Extramural Research &Intellectual Property Rights (ER&IPR),Futuristic Technology Management (FTM) and various research boards namely Aeronautics Research & Development Board (AR&DB), Armament Research Board (ARMREB), Life Sciences Research Board (LSRB), Naval Research Board (NRB). The details of some of research projects sponsored to various universities by DRDO are as follows:

SI.No.	Board	No. of Projects	Cost(Rs. In crore
1.	Aeronautics Research & Development Board	127	53.3781
2.	Armament Research Board	29	12.0242823
3.	Naval Research Board	75	22.0962
4.	Life Sciences Research Board	32	18.3019007
5.	ER&IPR	249	342.5835
6.	Futuristic Technology Management(FTM)	103	358.97278
	Total	615	807.356763

(The list contains some ongoing projects of XII plan and New sanction of XIII plan.)

DRDO has established two new centres namely, Kalam Centre for Science & Technology (KCST) at university of Jammu and North East Science &Technology

Centre (NESTC) at Mizoram university besides already operational 6 centers of excellence; 1.Center of Propulsion Technology at IIT Bombay (CoPT), 2.Joint Advanced Technology Center at IIT Delhi (JATC), 3.Jagdish Chandra Bose Center for Advanced Technology (JCBCAT) at Jadavpur University, Kolkata, 4.Research Innovation Center (RIC) IIT Madras, 5.Advanced Center for Research in High Energy Materials (ACRHEM), University of Hyderabad and 6.DRDO-BU Center of Life Sciences at Bharatiyar University”.

Budgetary provision given to the Universities, their actual allocation and system of monitoring thereon.

“The budgetary provision given to the Universities are as under:

Budget Allocation F.Y. 2019-20	:	Rs 250.00 Cr
Expenditure as on date	:	Rs. 211.90 Cr.
Additional Likely Expenditure till Mar 2018:	Rs.	39.10 Cr.

Monitoring System:

DRDO has a well drawn monitoring system to monitor the progress of projects awarded to Universities. The salient features are mentioned below:

- (i) There is a SoP for monitoring the progress of the projects and release the funds thereon. Funds of the next year are disbursed only upon the receipt of expenditure statements, utilization certificates and interest accrues in Savings Bank accounts. Audited statements are submitted by Project Investigator on closure of projects.
- (ii) Projects are reviewed periodically by the experts from academia, DRDO & other R&D Organizations through Research Boards (NRB, RAMREB, LSRB & AR&DB), Apex Boards, Research Advisory Boards, General Councils & mentoring and monitoring committee”.

2.18 During the oral evidence, on outreach to the campus and to attract new generation in Research and Development, Secretary, DDR&D, stated that:

“Firstly, we are working with all the academic institutes in a big way in the country. We have presented to you that we have established eight Centres of Excellence in advanced areas wherein professors and students in those academic institutes like IIT Delhi, IIT Mumbai, IIT Chennai, we have few in Kolkata, Jammu, Hyderabad, Coimbatore, in Mizoram, are working with us. Our scientists and students joined together and work there so that they are attracted towards the new technologies and they are well made aware of the defence technologies.

Over and above this, we are working with more than about 110 academic institutes in the country and giving small projects. We do not have Centres of Excellence there but we give projects on various advanced technologies. There again, the professors and students work together. So, this is one mode of attracting the students and taking them. They are working with us.

Now, we have moved a file with MHRD wherein we are going to take 500 Ph. D. students to work with us on our problems. So, there will be about 500 students, the MHRD is going to give us on this.

We are also working out on a plan how we can support the start-ups which are there in the academic institutes. We will support them in R&D by funding and also handholding. So, this is how we are trying to attract the young talent in the country and trying to make them work with us”.

### **Products developed by DRDO (Coordination between DRDO and Service Users)**

2.19 On being asked about the process of consultation of Service Users starting from the Project conception till completion of the project, the Ministry in its written reply stated:

“DRDO actively involves the users right from the conceptualization of the project through peer reviews, design reviews, and a 3 tier project monitoring mechanism as per DRDO procedure for all Mission Mode projects under-taken by DRDO.

Such projects are normally initiated based on the user requirements (LTIPP, Collegiate meetings, IN-DRDO Synergy etc.) with the request of the concerned user Service.

In addition, users participate in review meetings like QIMs with IA, QPRs with IAF, Synergy meeting with IN and Apex level reviews by Chiefs, Vice Chiefs and Deputy Chiefs of the Services during the execution of the projects. In addition, specific Project Management Teams having User rep as a part of the project team are also constituted for specific projects”.

2.20 Break-up of the total value of items supplied by the Production agencies based on the Research and development done by DRDO to the three Services during the last Five Years.

“Total value of products/ Systems, where Acceptance of Necessity(AoN) has been accorded for induction into services during the last five years is worth Rs. 1.24 lakh Cr (approx)”.

2.21 On the issue of quality check conducted by DRDO or any other independent agency for the products developed by DRDO and Whether these projects are of state-of-the-art technology, the Ministry in its written reply stated:

“DRDO develops products based on Qualitative Requirements (QRs) issued by the Services. Latest technologies are adopted in development of these systems by DRDO. These systems are developed as per state of the art technologies and normally at par with international standards.

DRDO Labs have an internal R&QA group for checking reliability and quality during the development phase itself. In Post development Phase, DRDO has a mechanism of “Internal Evaluation” in which all systems are subjected to quality checks prior to offering the same for user evaluation.

However, the quality check is conducted for the products developed by DRDO by the following Government QA agencies:-

S. No.	Details	QA Agency
(a)	Indigenous Missile System	Missile System Quality Assurance Agency, Hyderabad (MSQAA)
(b)	Products for Indian Army	Directorate General of Quality Assurance (DGQA).
(c)	Products for Indian Air Force	Directorate General of Aeronautical Quality Assurance (DGAQA).
(d)	Products for Indian Navy	(i) Armament – Directorate General of Naval Armament Inspection (DGNAI)  (ii) Others (Equipments/Systems) – Directorate of Quality Assurance (Warship Projects [DQA(WP)] & Directorate of Quality Assurance (Naval) [DQA(N)])
(e)	Strategic Systems	Strategic System Quality Assurance Group (SSQAG)

2.22 During the oral evidence, on the issue of rejection of few products Army and achieving self-reliance, Secretary, DDR&D apprised the Committee as under:

“महोदय, जैसा आपने कहा है, कई प्रोडक्ट में ऐसा हुआ है। उदाहरण के लिए व्हील्ड आर्म्ड प्लेट फार्म बनाया था, लेकिन इसकी रिक्वायरमेंट खत्म हो गई थी। उनके साथ बातचीत चल रही है। आर्म्ड फोर्सिस की रिक्वायरमेंट को मोडिफाई करके लेंगे। कई प्रोडक्ट में ऐसा हुआ है, बातचीत चल रही है। इनको मोडिफाई करके देने की कोशिश हो रही है। 10-15 परसेंट प्रोडक्ट ऐसे हैं, जो डैवलप हुए लेकिन नहीं लिए गए।

आपके दूसरे प्रश्न के बारे में मैंने अभी बताया था की इस क्षेत्र में सैल्फ रिलायंट हैं। हमारे पास पूरी टेक्नोलॉजी हैं। इंटेलीजेंस और इलैक्ट्रानिक वारफेयर सिस्टम हर देश को खुद बनाना पड़ता है, अगर बाहर से लेते हैं तो इंटेलीजेंस चली जाती है। इसे देश में बनाया है, आर्मी, एयरफोर्स और नेवी को दे चुके हैं। हम बाकी देशों की तुलना में कम नहीं हैं।”

On the issue of bottlenecks faced by the DRDO in developing the final Products, the Ministry in its written reply stated:

- i) Identifying the production agency;
- ii) changes in QR;
- iii) late availability of trial methodologies;
- iv) delayed availability of platforms etc.

### **CLOSED PROJECTS**

2.23 The Ministry was asked to furnish the details of closed projects and the money spent on these closed projects, specific reasons for closed projects/dropped projects and the system in place to bring accountability in case of such closed projects, the Ministry in written reply stated as under:-

“All the DRDO projects on attainment of the desired objectives are closed after due audit and issue of closure letter. These are the category of projects which can also be termed as “Successfully completed”/closed. During the last three years (01 Jan 2017 to 31 Dec 2019), 113 projects at a total cost of Rs 13468.25 Cr have been closed.

A sanctioned DRDO project may be closed before its PDC or without achieving its objective under the following conditions:

- **Cancelled Project:** The project has been approved and project no. allotted but where the work on the project has not commenced and no expenditure has been incurred.
- **Short Closed Project:** Where the work on a project has already commenced and certain amount of expenditure has been incurred but for certain reasons (to be specified) it is decided to short close the project.
- **Stage Closed Project:** Pre-mature closure of project is where considerable effort and funds have been spent yet no concrete results have been achieved. Stage closing of a project is only resorted into extra-ordinary circumstances.

During the last three years, No project has been short closed/stage closed/cancelled by the DRDO”.



## **CHAPTER – III**

### **DIRECTORATE GENERAL QUALITY ASSURANCE**

#### **Function of the Organisation**

The Committee learnt that the DGQA is almost 100 years organization and the role of DGQA Organization is to ensure that the entire range of armaments, store and equipments used by the Army and those stores of the Navy and Air Force for which DGQA is responsible, are of the specified quality with a view to enhance the combat efficiency of the Armed Forces. The DGQA is performing a wide spectrum of tenders. The major function are enumerated below:-

- (a) Directorate General of Quality Assurance (DGQA) is an Inter Services Organization responsible for Quality Assurance of all Defence Equipment and weapon systems like tanks, Artillery, Ammunitions & missile Systems, communication system, Radars,. Electronic Warfare System, Stores, Special clothing and Equipment for high Altitude & common user items for the Army, (except naval Armament Stores) and the Air force, both of import and indigenous origin. DGQA also assures the quality of Stores and equipment manufactured by Ordnance Factories, Defence Public Sector Undertakings(DPSUs) and private sector stores/equipment quality audited and the values during 2017-18 which was Rs. 34,408 Crores. Besides, it is constantly engaged in improvement of the products & processes of Ordnance factories through up gradation :of quality management system (QMS), Quality Assurance (QA) practices, process audits & alteration committees constituted by Ministry of Defence (MoD) for Product development/improvement.
- (b) DGQA is also responsible for technical documents of all equipment and Stores and is a repository for sealed particulars such as technical specifications, manufacturing drawings, proof & test schedules etc. DGQA also provides technical assistance to the services on defence equipment and stores. DGQA is a member of the Empowered Committees, constituted by MoD, and renders advice to these committees by way of specifying Quality Assurance (QA), evaluation parameters in the acquisition processes of the state of the art Equipment.
- (c) DGQA is an integral component of procurement committees at Services Headquarter(HQ) and CODs and renders advice to these committees in acquiring state of the art items, equipment and weapon systems. DGQA advises the army on issues like quality of stores, alternate use of stocks and inventory, indigenous specifications equivalent to Original Equipment Manufacturer(OEM) specifications: DGQA gives technical advice and QA cover to items procured by CPOs, PMF, DG NCC and some state police forces. DGQA formulates Departmental technical specifications for unique Defence

applications, assists in formulation & updating of JSGs and JSSs and participates in technical committees for formulation of National standards by Bureau of Indian Standards.

- (d) DGQA Organization has also been assigned the responsibility of enhancing Intellectual Property Rights (IPR) cases in defence production through intellectual property facilitation cell for infrastructure requirement, hands on training from creation to utilization and preparing IPR policies. The responsibilities of registration of TPI agencies, training, rate contract, performance evaluation, renewal of registration etc have also been bestowed to DGQA Organization.
- (e) DGQA Organization is also actively involved in implementation of Green Channel Policy for procurement of specific defence products, issue compendium of green channel Firms/ items along with Certificate no & its validity and updation periodically etc.

### **Budget**

3.2 The Committee found that Projected Amount, Budget Estimates (BE), Revised Estimates (RE) and actual allocations in respect of DGQA for the last five years along with the Projections and Budget Estimate allocation for the year 2018-2019 are as follows:

### **BUDGET ESTIMATES**

(Value in crores)

Year	Head	Projected	Budget Estimates	Revised Estimates	Modified appropriations	Expenditure
2015-16	Revenue	1008.3	876.04	932.91	931.91	867.73
	Capital	12.00	7.12	7.12	11.12	10.57
	<b>Total</b>	<b>1020.30</b>	<b>883.16</b>	<b>940.03</b>	<b>943.03</b>	<b>878.30</b>
	Difference between allocation & expenditure	<b>65</b>				
	Percentage surrender	<b>7%</b>				
Year	Head	Projected	Budget Estimates	Revised Estimates	Modified appropriations	Expenditure
2016-17	Revenue	1090.99	1068.10	1077.97	1139.72	1075.30
	Capital	9.00	7.27	9.00	9.00	8.83
	<b>Total</b>	<b>1099.99</b>	<b>1075.37</b>	<b>1086.97</b>	<b>1148.72</b>	<b>1084.13</b>
	Difference between allocation & expenditure	<b>65</b>				
	Percentage surrender	<b>6%</b>				

Year	Head	Projected	Budget Estimates	Revised Estimates	Modified appropriations	Expenditure
2017-18	Revenue	1292.14	1163.54	1086.03	1030.86	1001.67
	Capital	15.00	7.97	7.97	7.97	7.35
	<b>Total</b>	<b>1307.14</b>	<b>1171.51</b>	<b>1094.00</b>	<b>1038.83</b>	<b>1009.02</b>
	Difference between allocation & expenditure	30				
	Percentage surrender	3%				
Year	Head	Projected	Budget Estimates	Revised Estimates	Modified appropriations	Expenditure
2018-19	Revenue	1310.81	1137.02	1179.83	1179.45	1104.43
	Capital	12.00	9.96	19.96	19.96	12.24
	<b>Total</b>	<b>1322.81</b>	<b>1146.98</b>	<b>1199.79</b>	<b>1199.41</b>	<b>1116.67</b>
	Difference between allocation & expenditure	83				
	Percentage surrender	7%				
Year	Head	Projected	Budget Estimates	Revised Estimates	Modified appropriations	Expenditure till Dec. 19
2019-20 (till Dec 19)	Revenue	1211.18	1202.70	1286.70	To be allotted	758.85
	Capital	30.00	10.96	<u>15.96</u>	To be allotted	7.79
	<b>Total</b>	<b>1241.18</b>	<b>1213.66</b>	<b>1302.66</b>	To be allotted	<b>766.64</b>
	Difference between allocation & expenditure					
	Percentage surrender					
Year	Head	Projected	Budget Estimates	Revised Estimates	Modified appropriations	Expenditure
2020-21	Revenue	1297.70	1254.63	to be projected	To be allotted	To be expended
	Capital	20.00	12.06	to be projected	To be allotted	To be expended
	<b>Total</b>	<b>1317.70</b>	<b>1266.69</b>	to be projected	To be allotted	To be expended
	Difference between allocation & expenditure					
	Percentage surrender					

### **Manpower and training**

3.3. In regard to manpower, during oral evidence, specifically on the issue of sufficient technical manpower and their training, a representative, apprised the Committee:

“सर, हम अपने मैनुपावर को लगातार प्रशिक्षित करते रहते हैं। We keep upgrading the skills”.

3.4 On the issue of personnel working in DGQA in India and abroad (more than 02 months) during the last five years, the Ministry in its written reply stated as under:

- “(i) Technical personnel, 4448 in number, of DGQA are involved in QA activity for defence stores manufactured by OFB/ DPSUs, procured ex private industry or ex import.
- (ii) Staff of DGQA are deputed for Pre-Dispatch Inspection (PDI) at Vendor's Premises in foreign country only for the particular contract usually for period of 3-4 days depending on the conditions of the contracts. No staff of DGQA is detailed for PDI abroad for more than 02 months.

On the question of how many inspections are done per month by DGQA, the Ministry in its written reply stated as under:

““DGQA organization carries out inspection of Defence stores supplied by Ordnance Factories. DPSUs, Trade Firms and ex-import. These inspections are done at various stages of manufacture and at Final Acceptance stage. On an average, DGQA organization carries out 19,000 inspections per month”.

### **Quality Assurance**

3.5 During the oral evidence, on the issue of quality assurance of imported items, the representative, DGQA, apprised the Committee as under:

“जितने भी टेक्नोलॉजी ट्रांसफर वाले केसेज हैं, उनमें तो हमें पूरी ड्रॉइंग और स्पेसिफिकेशंस मिल जाते हैं। We do a joint acceptance test procedure along with the vendor. उसके साथ हम बैठ कर इसे तय करते हैं और यह अन्तर्राष्ट्रीय नियमों के तहत होता है। We use

international specifications and our specifications are being aligned to international norms to carry out the quality check”.

3.6 On the issue of DGQA to carry out a defect test before the product goes to the user, , especially in major equipments and whether DGQA had found any defect, and black listing of vendor, the Ministry in its written reply submitted as under:-

“Before any product goes to the user, DGQA carry out various test as per Quality Assurance Plan at different stages of manufacturing. Non conformities / defects are observed by DGQA during the testing. In such cases, DGQA either issues rejection inspection note or return the stores for rectification (RFR) depending upon the nature of equipment and defect. Advisory Note is also issued to the manufacturer to take corrective action. In case of Ordnance Factories and Defence PSUs the issue is raised during Quality Liaison Meet (QLM). No vendor has been black listed for this reason. Rendering advise to Ordnance Factories on corrective action is an ongoing process”.

## CHAPTER – IV

### NATIONAL CADET CORPS

The Committee are aware that National Cadet Corps (NCC) was established under the NCC Act, 1948. NCC aims at developing character, comradeship, discipline, a secular outlook, the spirit of adventure and ideals of selfless service amongst young citizens. Further, it aims at creating a pool of organized, trained and motivated youth with leadership qualities in all walks of life, so that they become useful citizens and serve the Nation with all their might regardless of the career they choose. Needless to say, the NCC also provides an environment conducive to motivating young Indians to join the armed forces. The motto of NCC is 'Unity and Discipline'.

4.2 NCC has a dual funding pattern where both the Central and State Governments meet the expenditure on NCC activities in a properly specified manner. The idea behind sharing of expenditure by the State Governments is to ensure that they too have a sense of participation and belonging in the various activities undertaken by the NCC cadets towards nation building. The Central Government bears expenditure on the following items:-

- (a) Pay & Allowances of Services and Civilian personnel
- (b) Transport expenses
- (c) Expenditure on office accommodation and contingencies in Directorate General, NCC, State NCC Directorates and Training Academies
- (d) Expenditure on equipment, vehicles and clothing
- (e) 75% expenditure on Camp training in all States (except J&K and NER – Sikkim, where it is 100%).

The State Government bears expenditure on:

- (a) Pay & Allowances of State Government Civilian employees posted to NCC
- (b) Office accommodation and Contingencies in NCC group Hqrs and Units
- (c) Allowance for NCC cadets and Associated NCC Officers(ANOs)
- (f) Institutional training in all states (except J&K and NER - Sikkim)
- (g) 25% of camp expenditure in all States (except J&K, NER and Sikkim).

4.3 Today, NCC is largest uniformed youth organisation in the world. It has presence in 711 out of 718 districts of the country with enrolled cadet strength of 13.48 lakhs cadets. As on date 17644 educational institutions(both schools and colleges) have been covered. 58% are Urban/Semi-Urban and 42% are Rural. Girl Cadets are 33.72% of the total strength of NCC. One lakh cadets sanctioned under Fully self Financed Scheme(FSFS) for senior division/wing.

### **Budget**

4.4 Details regarding the projections and allocations made to NCC by the Ministry and expenditure incurred during the last five years including 2020-21:

Year	Projections: RE			Allocations: RE			Actual Expenditure		
	Revenue	Capital	Total	Revenue	Capital	Total	Revenue	Capital	Total
2014-15	1010.86	2.10	1012.96	953.10	1.00	954.10	965.47	0.37	965.84
2015-16	1217.32	3.10	1220.42	1083.27	1.10	1084.37	1112.59	1.17	1113.76
2016-17	1305.90	22.85	1328.75	1200.80	11.00	1211.80	1136.75	7.80	1144.55
2017-18	1554.89	29.96	1584.85	1436.23	13.40	1449.63	1362.82	24.39	1377.21
2018-19	1561.31	53.05	1614.36	1529.18	22.40	1551.58	1414.53	20.39	1434.92
2019-20	1618.28	49.95	1668.23	1618.28	49.64	1667.92	1256.19	19.11	1275.30
2020-21	1968.20	55.00	2023.20	1661.50	27.10	1688.60			

### **Expansion of NCC and self-financing scheme**

4.5 On the issue of waitlisted institutions, expansion of NCC and self-financing scheme, the Ministry in its written replies stated as under:

“5862 schools and 3040 colleges are currently in the waiting list for allotment of NCC. NCC conducts performance audit to evaluate performance of NCC units in schools/colleges. During such audits, when NCC is withdrawn from an instate for below par performance, it is allotted to senior most institute in the waiting list.

Recently, the Government has introduced Fully Self Financing System(FSFS) under which an Educational institution willing to bear the cost of running NCC training under the guidance of nearest NCC unit can apply for NCC under this scheme. The FSFS implies 'No Cost to Government'. Recently One lakh vacancies have been approved for SD/SW cadets by Ministry of Defence for allotment to private colleges under FSFS".

4.6 On the issue of taking advantage of CSR policy of PSUs for NCC for its sustainability and expansion, the DG, NCC replied:

"The direction given by the Defence Secretary is that we should take CSR funding from undertakings. The CSR Policy is under finalization. I think within this month it will be out and even the Defence Minister has told that he would give the requisite impetus towards the CSR Policy".

4.7 During the oral evidence, on the issue of Fully Self Financing System(FSFS), system to hire the Ex-servicemen by private schools, kind of permission required from NCC and role of NCC in this regard, the DG NCC replied:

"Sir, they will have to hire them. I do not have the manpower"

Sir, they can hire the ex-servicemen. We have already spoken to the agencies. Whoever wants to hire them can do so by paying nominal fees of Rs. 25,000 to Rs. 30,000".

But I want a certificate. Quality control will be with me. They can hire from anywhere as long as they meet the qualitative requirements".

### **Selection of NCC Cadets in Jobs**

4.8 On the issue of Measures to enhance employability of Cadets, the Ministry through power-point presentation submitted as under:

- I) Capacity enhancement by new raisings & expansion
- II) Efforts to reduce waiting list



- III) Increase in cert courses in adventure & sports – mountaineering, sailing, riding & scuba diving etc.
- IV) Training through NDRF, Red Cross, EXPA etc.
- V) Increased focus on personality development, leadership, communication skills
- VI) Increase in all camp and special courses vacancies by approx 20%
- VII) Training/coaching for SSB through experts. Result 80%
- VIII) Certification course to Yoga through Ministry of Ayush.
- IX) Enhanced attachment with services units & Military Hospitals – 30%
- X) Incentives in CAPFs, Aviation, shipping, Railways and Forest like Defence Services
- XI) Facilities & monitor training of cadets through skill India initiatives.

### Skill Development

4.9 On the issue of skill development, the Ministry in its written replies stated:

“The following pilot courses/capsules towards skill development have been undertaken by the NCC Cadets of Bihar & Jharkhand Departments:

- (a) 25 Jan to 05 Aug 19: Food processing course attended by 8 (senior Wing) Girls Cadets)
- (b) 31 Jul to 14 Sept 19: Electrical gadgets repairing course, attended by 06 Boys Cadets
- (c) Four months diploma course (IRCTC) 01 Aug to 30 Nov 19: Tool and dye Course, attended by 09 Cadet boys.
- (d) Courses on entrepreneurship specially designed for NCC: 03 – 16 Dec 19. Attended by 25 Cadets.

No other courses are planned in this training year.

All other State NCC departments have been directed to initiate similar correspondence with State Governments to explore avenue of training of Cadets in Skill Development Centres”.

4.10 On the issue of selection and jobs in Armed forces for trained NCC candidates, the DG, NCC apprised the Committee as under:

“Sir, as per the data with me, every year, 5,000 to 6,000 cadets get selected in the Other Ranks category. That is about 8 to 10 per cent of the enrolment strength of Army, Navy and Air Force. We have got about 160 vacancies reserved for ‘C’ Certificate holders in the Defence Forces on officers. With my push, today, we have reached 70 per cent. We were below 50 per cent. That is the available data available with us. However, this data is not comprehensive. The complete enrolment details are held with DG, Recruitment. I am happy to tell this Committee that today only, we have registered on NIC. The first pilot project is successful. Once we have the data, we will get into it. But to my mind, a good percentage of the cadets, through NCC, are getting into the Officer Cadre, not only in the Army, Navy and Air Force but also in the CAPF. I had a discussion with the Home Secretary. They have said that there is a lot of potential in these cadets, and they are doing a lot of work in nation building. So, they are considering very favourably to give the same incentives to the cadets in any security related service.

Sir, we have reached up to 70 per cent. For girls, there are less vacancies. However, 100% vacancies reserved for girls ‘C’ certificate category are filled up by girl cadets in officer cadre”.

During the oral evidence, the DG, NCC further submitted that:

“That is what I am saying. I have also introduced the Super 30 concept at various levels, and I am getting them trained not through myself but through the expert academies. I assure the Committee that we will cross the barrier of the allotted vacancies, and go much ahead of it”.

4.11 On the issue of any reservation for NCC students in higher education, and employment in State and Centre, the DG, NCC stated as under:

“Sir, the reservation in education is a State subject. All States have a different quota under different categories. The reservation, in particular, is only in the Defence Services, that is, Army, Navy, and Air Force. Now, the efforts, through the MoD, are there to get it in all security related services. I have had a meeting with the Home Secretary, and also with the Aviation Department, Shipping Department, etc. The Home Secretary has assured that he will push through this case in the Police Services also”.

## OBSERVATIONS / RECOMMENDATIONS

### ORDNANCE FACTORIES

#### BUDGETARY PROVISIONS

1. The budgetary projection for Ordnance Factories in BE 2020-21 was Rs. 15,687 crore and the allocation is Rs. 15,477.53 crore. After deduction of net receipts, the remaining Revenue budget of Ordnance Factory Board(OFB) is Rs. 686.60 crore. The Capital Allocation is Rs. 756.50 crore. Thus gross allocation including Revenue and Capital is Rs. 1443.10 crore. The Revenue allocation is short of projections by Rs. 210.47 crore. The Committee are happy to note that In case of Capital segment, there is no shortfall and the projection is fully provided.

#### ORDER BOOK

2. The Committee, during deliberations on Demands for Grants 2020-21, found that Order Book position of Ordnance Factory Board(OFB) as on 31.12.2019 was Rs. 58,165 crore for supply of ammunition weapons, troops etc. This position is in form of Five years Roll on indent mainly from Army and the order is subject to annual renewal depending upon availability of funds with the Service.

3. The Committee are of the view that Ordnance Factories are designed and dedicated for special purpose of fulfilling requirements of Indian Defence Forces especially Army. On receiving of indent, the process of procurement of raw material and manufacturing procedures are commenced. However, after annual renewal, if there is withdrawal of order, the position of the Ordnance Factories become miserable. Therefore, the Committee desire that the Ministry of Defence should look for all alternative options so that reconciliation between Army and Ordnance Factories is established intending for mutual benefit of both the organizations which is also in the defence interests of the country *per se*.

4. The Committee also understand that the need of Ordnance Factories is of paramount importance during war-time scenario. It is for this reason Ordnance

Factories have historically been keeping a surplus in terms of manpower and infrastructure. Hence, they recommend that sufficient orders are assured from time to time so that the manufacturing skills of OFs are retained and their capacity is fully utilized. The Committee also feel that Ministry of Defence is now in a gainful situation than before due to establishment of the new Department and new Chief of the Defence Staff. If all-out synchronized efforts are undertaken, then Ordnance Factories would continue to contribute to the defence needs of the country.

### **MANPOWER**

5. From the information provided to the Committee, they find that the sanctioned strength of Ordnance Factories is 1,45,503 while the held strength has been declining and in January 2020, it come down to 80,524. Out of this, the Technical strength is 67,321 against a sanctioning of 1,23,142 while Non-Technical strength is 13,203 against sanctioned post of 22,361.

6. The Committee observe that the existing strength is almost only half of the sanctioned strength. They were apprised that Ordnance Factory Board had recently concluded recruitment of 2668 Industrial employees. Moreover, recruitment of 378 Non-industrial employees and 692 Charge-man is under process. In this respect, the Committee were further apprised that considering decline of orders from Army owing to declaration of non-core items, very limited recruitment is in process.

7. In light of the facts stated here, the Committee recommend that a revision of sanctioned strength must be conducted in Ordnance Factories reflecting a realistic scenario of requirement of manpower in various factories and offices of Ordnance Factory Board(OFB). Based on the outcome of such revision and keeping in view the issue of future exports, which is discussed in the succeeding paragraph, optimal manpower strength should be determined and inducted consequently. Besides, the trained existing manpower of Ordnance Factory Board(OFB) must be fully and optimally utilized in various activities of Ordnance Factories(OFs) to ensure that they achieve self-reliance model at the earliest.

## **BUDGET FOR MODERNISATION**

8. The Committee were given to understand that modernization of OFs is a continuous process. The outlay provided in respect of modernization is divided into three parts viz. Machine & equipment, Renewal and Replacement (RR) of Plant & Machinery (P&M) which are beyond economical repairs, Acquisition of P&M under capacity creation/ Augmentation under New Capital and Development of Civil Works infrastructure.

9. The Committee note that allocation during last five years was Rs. 1913.19 crore while actual allocation was Rs. 1947.186 crore. The Committee also find that in case of works the allocation was Rs. 1607.63 crore while expenditure Rs. 1582.66 crore. There was an under spending of Rs. 24.97 crore. In case of R&R the allocation was Rs. 2210.00 crore and expenditure Rs. 2100.50 crore. The Committee note when the Capital allocation for 2020-21 is to the tune of Rs. 1268 crore, a surrender of Rs. 109.50 crore is not a negligible amount over a period of five years.

10. In this respect, the Committee recommend that necessary corrections are to be carried out and expenditure on modernization by Ordnance Factory Board(OFB) should exhibit seriousness.

## **DELAY IN PROJECTS**

11. The Committee were informed in the written replies about the various reasons for delay at the tendering, supply and erection and commissioning stages. They were further informed that when Detailed Project Report is prepared, a realistic timeline for the completion of the project is taken, taking all these aspects into consideration. Also regular review meetings are held to monitor progress. The Committee while recognizing that a few of these factors are beyond the control of the Ordnance Factories, observe that delays have been quite a part & parcel of Ordnance Factories projects which has also affected their pace of production. The Committee can infer that there is lot of slippage in the supply by Ordnance Factories to the Army, their

main client, which have put extra burden on the exchequer also. The inordinate delays also adversely impact not only Indian supply but the export potential.

12. The Committee note with concern that only 49 per cent of the Budget Estimates that was predicted for the current financial year have been booked by the Ordnance Factories. The Committee recommend that this shortfall may be taken up at the highest level to take it to 100 percent and a time frame for achieving the same fixed under intimation to the Committee. The Committee is deeply concerned about the decreasing supply of products to the Army and the inability of the Ordnance Factories to meet their demands.

13. The Committee desire that instead of giving reasons for delays, Ordnance Factories should strive to adhere to realistic time frame and timely delivery of products. The Ordnance Factory Board(OFB) need to function more professionally in this new competitive atmosphere and develop a target oriented approach. The Committee also recommend enhanced regular interactions between the Armed Forces and Ordnance Factories to resolve all issues amicably amongst themselves. The Committee would like to be apprised of the steps initiated and implemented in this regard at the time of furnishing of the Action Taken Replies to them.

### **QUALITY ASSURANCE**

14. In course of deliberations on Demands for Grants 2020-21, the Committee found that there have been certain issues with regard to cost and quality of the products developed by Ordnance Factories. The Committee wish that Ordnance Factory Board(OFB) shall endeavor to instill cost-effective measures in production processes and strive for developing products with 100% consumer satisfaction. The measures taken in this direction shall be brought to the knowledge of the Committee.

### **EXPORT OF ORDNANCE FACTORIES PRODUCTS**

15. During the examination of the General Defence Budget, the Committee were intimated that earlier the policy of the Government was to manufacture and import the arms but would not export them because they were thought to be weapons of

destruction. However, the policy has since changed and the emphasis is now on the export promotion and the targets for the next three years are high. Various initiatives taken by the Government and as discussed in other Chapters, especially on Procurement Policy, are of paramount importance for Ordnance Factories. The Committee are not oblivious of the fact that Ministry are also contemplating to convert OFs as PSUs. Whatever legal title is given to them, it would be in the best interests for the OFs to explore export markets and develop their capabilities correspondingly.

16. The Committee are happy to note that Ordnance Factories have exported goods worth Rs. 330 crore in the financial year 2019-20. They see it as a humble beginning but would like to see a surge in this figure in the coming years. It is very pertinent to mention here that the value of products stood at 10540.32 crore in the year 2018-19 and in comparison to that value, the figures of exports are not very encouraging. With as many as 52 factories operating under the purview of Ordnance Factory Board(OFB), there lies enormous export potential. The Committee recommend that ample steps are taken toward exploring markets for export of products manufactured by Ordnance Factory Board(OFB). At the same time, every measure shall be taken to ensure quality of goods and customer satisfaction. The Committee also desire that import percentage of Ordnance Factory products should also come down from present 10 percent.

17. The Committee in this entire context desire and recommend that they be apprised of the initiation taken by OFs and the benefits accrued to them from Ministry's Export Promotion Cell, Defence Investor Cell and Make in India initiative of the Government. They can foresee that based on the principles of self-sufficiency, transparency, competitiveness and self-dependence a time may come where OFs might have to compete in an open-market situation.

#### **EXPENDITURE ON RESEARCH & DEVELOPMENT**

18. The Committee learn that approximately 24.57% of output value of Ordnance Factory Board is developed through in-house Research & Development(R&D) by Ordnance Factory Board(OFB), R&D under Foreign Transfer of Technology (ToT) and

Research & Development(R&D) with DRDO. Also, there had been a consistent increase in Research & Development(R&D) expenditure by Ordnance Factory Board during last year. In 2014-15 Rs. 55.32 crore were spent on Research and Development(R&D) which increased to Rs. 90.81 crore in 2018-19. The Committee applaud the initiatives taken by Ordnance Factory Board towards Research and Development(R&D) and almost doubling the expenditure in last five years. The Committee also found that Ordnance Factories had been taking up collaboration with Government Academic Institutions for design & prototype development which is a positive initiative and would help in long run in development of new products.

19. The Committee recommend that efforts should also be made toward ensuring patent rights for the designs and prototype developed internally by Ordnance Factories. This will be beneficial in enhancing value of Ordnance Factory Board(OFB) and also boost the revenue generation.

## DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION

### BUDGET

20. The Committee find that during the financial year 2020-21, the proposed BE allocation of DRDO was Rs. 23,457.40 crore and the approved allocation is Rs. 19,327.35 crore. There is a shortfall of Rs. 4,130.00 crore. With regard to the budgetary requirements, the DRDO stated that keeping aside mandatory expenses for strategic schemes & pay & allowances, the amount left for R&D activities is meagre. However, the Department manages within allocations by prioritizing project activities.

21. During the course of examination of Demands for Grants 2020-21, the Committee found that in 2019-20, the approved BE allocation for DRDO was Rs. 19,021.02 crore while the approved RE allocation was Rs. 17,730.78 crore. The Committee note that the RE allocation is even lesser than the BE allocation by Rs. 1,280.22 crore.



Further, in respect of the Budgetary grants, the Committee on glancing through the papers submitted by the Ministry of Defence, found that DRDO expenditure as percentage of total GDP has also plummeted over past years. In 2015-16, it was 0.098% which came down to 0.086% in 2020-21.

22. After taking into account the details stated above, the Committee observe that Defence R&D is imminent component of progress in country's Defence & also boost indigenisation efforts of the Government. In addition, it also enhances export potential of the country. Therefore, adequate funding for R&D is essential, which is not being reflected in the status of budgetary grants as highlighted in above paras. More importantly, deduction in RE grant after allocating an amount in BE grant is not a healthy budgeting phenomena as it would lead to certain last minute prioritization and ad-hocism. It is a known fact that advanced countries spend substantial amount on Research and Development, therefore, the Committee are of the view that the percentage of defence R&D spending to total GDP shall, if not, at par with other leading countries of the world, be at least adequate for our future needs. The Committee, therefore, recommend that in light of the case presented here, Government should ensure provision of adequate funds to DRDO in additional/supplementary grants stages.

### **DEVELOPMENT OF NEW TECHNOLOGIES**

23. The Committee are happy to note that DRDO is making all possible efforts towards R&D activities in three crucial technologies *i.e.* propulsion, material & Chip design and fabrication. The Committee also note that as stated during the oral evidence, in several areas like missiles, radar, torpedo, guns, ballistic missiles etc. technological excellence has been achieved, which is at par with other countries and efforts are also being made to achieve high standards in many new areas *i.e.* artificial intelligence, quantum technologies, asymmetric warfare, laser technology and 5.5 generation Aircraft which is appreciable.

24. The Committee seek to emphasize the importance of attaining self-reliance in the three crucial technologies where a lot of work still need to be done and recommend that all out efforts are initiated in this regard. The Committee would like to be apprised of the R&D activities being undertaken towards this end.

### **MANPOWER**

25. Presently authorized strength of scientists in DRDO is 7,353 while existing strength is 7,068. The percentage of scientist in DRDO is 30% of total strength of DRDO. Further, the Committee were apprised that since 2001, DRDO has been managing with same authorization inspite of more than 6 fold increase in outlay from IX to XIII plan. The Committee note that the current manpower is grossly insufficient for committed R&D projects. In 2010, Manpower Planning Board(MPB) had recommended for increasing manpower by 4966. Ministry of Finance(MoF) recommended 1316 posts. However, the case is pending with Cabinet Committee on Security(CCS). After a lapse of 10 years since MPB recommended sanctioning of posts in 2010, there had been no addition in sanctioned strength, therefore, the Committee urge that Ministry of Defence shall make efforts to cadre review and revision of sanctioning of strength of scientists in DRDO, commensurate with increased number of projects/work. Also, the case of 436 posts already approved by Ministry of Finance(MoF) in phase – I and pending with CCS shall be expedited. The initiation done in this regard along with the probable date of induction be communicated to the Committee at the earliest.

### **ROLE OF DRDO IN SELECTION PROCESS OF OFFICERS**

26. From the oral evidence, the Committee note that the Armed Forces were short of 10000 officers and the Ministry still relied on old selection procedure for recruitment of officers despite the changes taking place in warfare strategies. The Committee, in this regard, recommend that recruitment process should be revamped in consonance with the changing requirements and it should be ensured that the entire exercise is

completed within a fixed time frame under intimation to the Committee. The Committee also feel that any change in the recruitment procedure should also protect the interests of the existing officers in the Armed Forces.

### **COORDINATION IN RESEARCH AND DEVELOPMENT WITH PRIVATE SECTOR**

27. The Committee note that DRDO has made rapid progress with the infusion of private sector involvement in the research related activities of DRDO. The Committee appreciate the large number of steps taken in this direction like opening of world class test facilities, MOUs with leading industry chambers, help rendered to the private Industry by transfer to technology, providing patent to the private Industry free of cost and launching of Technology Development Fund (TDF). The Committee are of the considered view that active private sector participation is the way forward and can act as a major impetus for the improvement in research related activities.

28. The Committee recommend that efforts may be intensified to ensure better collaboration between the public and private sector for improved results and given the sensitive nature of this work, due monitoring mechanism need to be developed to ensure that no leakage of data takes place regarding products being developed. The Committee also recommend that a regular impact assessment mechanism should be developed to assess the overall impact of the enhanced involvement of private sector in the research related activities of DRDO.

### **BASIC RESEARCH IN ACADEMIA**

29. The Committee took note of various collaboration efforts that DRDO is making with academic institutions at various levels and its role in encouraging younger generation towards R&D. The Committee recommend that these measures and activities shall be supported by appropriate incentivization so as to ensure continued interest of the fresh talent. Necessary budgetary support in this regard shall be provided by government for the purpose.

30. The Committee are pleased to note that DRDO has established eight Centres of Excellence in advanced areas wherein professors and students from academic institutes like IIT Delhi, IIT Mumbai, IIT Chennai etc. are working in unison. It is also appreciable that DRDO has started scholarship schemes, financial support to organize conferences/seminars/workshops in niche areas of technology of interest to DRDO at various academic institutions.

31. The Committee while putting on record its admiration for these initiatives by DRDO, recommend that DRDO should endeavour to open more such Centres of Excellence in various parts of the country as well as increase the number of financial assistance schemes which can play a major role in attracting the best talent for recruitment in DRDO to the benefit of the country.

#### **PRODUCTS DEVELOPED BY DRDO (COORDINATION BETWEEN DRDO AND SERVICE USERS)**

32. The Committee observe from the written replies that DRDO has a robust mechanism of consultation with service users starting from the project conception till completion of the project. The Committee feel that coordination with service users is a very important area and recommend that the involvement of service users need to be further enhanced which can act as a deterrent to the early closure and failure of these projects and ensure quality check of the product at every stage of its development. The Committee also recommend that the coordination with service users at various levels should be in consonance with their technical competence and knowledge in that particular area and due care may be taken in this regard.

33. The Committee also recommend that a multi-level quality control mechanism involving the end-user need to be developed to be implemented at every stage of the project which can lead to fixation of accountability in case of the user not suggesting corrective measures as also the product not being developed as per the General Staff

Qualitative Requirement (GSQR) stipulations leading to wastage of money and human resources. However, they also desire that users should not change their GSQRs frequently and once they are finalized, there should no change be allowed and GSQRs should be frozen.

#### **SKILL DEVELOPMENT TRAINING**

34. The Committee during oral evidence were apprised about the move of the Government to establish two Defence industrial corridors to serve as an engine of economic development and growth of Defence industrial base in the country. They span across Chennai, Hosur, Coimbatore, Salem and Tiruchirappalli in Tamil Nadu and spanning across Aligarh, Agra, Jhansi, Kanpur, Chitrakoot and Lucknow in Uttar Pradesh (UP).

35. The Committee recommend that skill development training should be imparted to local youths to increase their employability in the above corridors.

#### **CLOSED PROJECTS**

36. The Committee noted with concern that during the last three years, 113 projects at a total cost of Rs 13468.25 crore were closed. DRDO have also given some reasons for the closing of these projects which depicts the possibility of closure of such projects in light of the research activity being an open-ended programme. However, the Committee feel that these closing of projects on which a huge expenditure have been incurred is a colossal waste of public funds and need to be severely discouraged but for exceptional circumstances.

37. The Committee recommend that the projects should be stringently evaluated in regard to their feasibility at the very inception to prevent such wasteful expenditure. All mandatory and precautionary scientific, technical and concurrent audit of every ongoing project preferably by an independent agency need to be meticulously planned out in the beginning of the project itself. DRDO need to exercise great caution and care in undertaking research oriented programmes and no project should be closed without a well-laid out re-evaluation procedure involving domain experts.

The Committee recommend to be apprised on the steps taken by DRDO on this very important issue.

## DIRECTORATE GENERAL QUALITY ASSURANCE

### BUDGET

38. After gleaning through all the information submitted to the Committee in regard to Directorate General of Quality Assurance, the Committee found that though the Budgetary allocation of DGQA is relatively meagre in comparison to the entire Defence Budget which stands at Rs. 4,71,378.00 crore, yet it has been assigned with very arduous task of ensuring the quality of the products manufactured/imported and supplied to the Forces. It is also a matter of satisfaction for the Committee to note that the estimates of DGQA under revenue segment remains more or less constant during the last five years which is not the case for other Heads of the Defence Budget, which has already been brought out in the First Report on General Defence Budget 2020-21.

39. The Committee find that in BE 2020-21, a total budgetary projection made by DGQA was Rs. 1,317.70 crore whereas the allocation was Rs. 1,266.70 crore for both Revenue & Capital Heads. The projection under Revenue Head was Rs. 1,297.70 crore and the allocation Rs. 1,254.63 crore. In case of Capital Head, the allocation is Rs. 12.06 crore against a projection of Rs. 20.00 crore. Since the allocation for the Capital Head is short by almost Rs. 8 crore, the Committee would like to know the reasons for the same and also whether at the stage of Revised Estimates, the same would be adjusted in order to enable DGQA to undertake works of capital nature. Such capital works build the backbone of the organization to support it in dispensing its functions effectively in the long run.

40. The Capital allocation is only about 60 per cent of the projection. The Capital allocation reflects inclination towards modernisation and upgradation of assets for carrying out inspection. The Committee observe that being a technical service,

constant upgradation of technological advancements taking place globally has to be regularly included in the training curriculum of DGQA also. The role of DGQA is also expanding as it has been assigned with enhancing Intellectual Property Rights(IPR) cases in defence production and Green Channel Policy. The Committee desire that adequate allocations to DGQA shall be made keeping in mind the huge responsibility it has for inspections of stores where criticality it holds for performance of all defence contributors/stakeholders depend.

### **MANPOWER AND TRAINING**

41. The Committee, during examination Demands for Grants 2020-21 found that around 4448 number of technical personnel are involved in Quality Assurance activity for defence stores manufactured by Ordnance Factory Board/Defence Public Sector Undertakings, private industry or import. Further, the Committee also came to know that around 19,000 quality check inspections are undertaken by the officials of DGQA in a month time, which comes to approximately 5 inspections per technical person in one day.

42. The Committee are happy to learn that regular training is provided by DGQA to its technical manpower, which is essential to achieve fool proof mechanism of inspection. While noting this fact, the Committee would like to know whether these numbers are sufficient for operations of DGQA or they need extra manpower especially keeping in view the growing future role of Defence manufacturing sector in the times yet to come. In the opinion of the Committee, the 'Make in India Policy' and manufacturing under 'Defence Corridors' would definitely add to the responsibilities of DGQA. These policies are brought out in other parts of the Report pertaining to procurements.

## **QUALITY CHECK**

43. The Committee note that DGQA is responsible for quality assurance of all defence equipments and weapon systems such as arms, ammunition clothing etc. In this regard, the Committee recommend that while carrying out inspection at various stages of production it should be ensured that inventory which reaches in hands of user should be zero defect so they can believe in the armament being used. The DGQA should also consolidate its role in ensuring zero-effect on the environment. The methodologies involved in production stages and transportations shall be scrutinized ensuring minimal affect on the environment. It shall also ensure that the industries/manufacturing units adopt best available practices/guidelines for production activities and waste disposal by putting in place state-of-the art waste disposal system. It is needless to say that old methodologies should be replaced with the new ones in due course of time.

44. The Committee learn that although no vendor has been black-listed due to the issues relating to quality, yet they would like to be apprised in no uncertain words of the nature of defects noted and raised by DGQA during each of the last three years and consequently rectified by the manufacturers. They would also like to know about the cases, if any, whether after such rectification, the loss still occurred to the Forces due to non-performance or failure of the assets during actual use.

## **NATIONAL CADET CORPS**

### **BUDGET**

45. The Committee take note of the fact that, in Budget Estimate 2020-21, the total projection is Rs. 2023.20 crore against which there is an allocation of Rs. 1688.60 core thereby registering a shortfall of Rs. 334.60 crore. Out of the total budget projection Revenue budget was Rs. 1968.20 crore and allocation Rs. 1661.50 crore, whereas in case of Capital budget, the projection was Rs. 55.00 crore and allocation Rs. 27.10



crore. There is a deficit of Rs. 306.70 crore and Rs. 27.90 crore in Revenue and Capital budgets respectively. The Committee are of the view that no Revenue Expenditure includes Pay and allowances of Personnel and Capital Expenditure for the procurement of durable assets, any cut in the Budget would slow down the activities of NCC. Also keeping in mind the vast network of NCC across the length & breadth of the Country, the Committee urge that Ministry of Defence should lays down appropriate financial provisions for NCC in future allocations, especially at the Supplementary stage.

46. While recommending for additional allocations for NCC, the Committee would also like to highlight that during the year 2019, the actual expenditure of NCC was lower than the revised allocations. The Committee would like to know the reasons for the same and also in unequivocal terms state that in this current fiscal, NCC should leave no stone unturned to utilize the final allocations made for them with an equal pace of expenditure throughout the year.

#### **EXPANSION OF NCC AND FULLY SELF FINANCING SYSTEM (FSFS)**

47. The Committee note that at present 5862 schools & 3040 colleges are there in the waiting list and the Government has introduced Fully Self Financing System (FSFS) under which an Educational institution willing to bear the cost of running NCC training under the guidance of nearest NCC unit can apply for NCC under this Scheme. The Committee also understand that about one lakh vacancies have been approved for Senior Division/Senior Wing cadets by Ministry of Defence for allotment to private colleges under FSFS. During the Oral Evidence, the hiring of Ex-servicemen as instructors by private schools also figured. In this regard, the Committee desire that while granting the permission to do so, quality of training be strictly maintained and proper monitoring mechanism to oversee the training process should be done by the nearest NCC Unit.

48. For this initiative, the Committee will like to put on record their appreciation and believe that this programme can help in minimizing the waiting period in schools and colleges and provide a disciplined youth to the Nation.

## **CSR POLICY FOR NCC PROGRAMMES**

49. During the deliberations before that Committee, the issue of taking advantage of CSR policy of PSUs for NCC for its sustainability and expansion came up and it came to the notice of the Committee that the said policy is under examination. The Committee desire that CSR policy for NCC programmes including participation of NCC cadets in international games should be expedited and the steps initiated/taken in this regard be intimated to the Committee within three months of the presentation of this Report.

## **SKILL DEVELOPMENT AND EMPLOYABILITY OF CADETS**

50. The Committee note that every year about 5000 to 6000 cadets get selected in other ranks and about 8 to 10 percent as direct entry as Officers in Armed Forces.

51. The Committee appreciate the initiatives taken by the Ministry and introduction of certificate courses in adventure & sports – mountaineering, sailing, riding & scuba diving etc., training through National Disaster Response Force (NDRF), Red Cross, NCC Exchange Participants Association of India(EXPA) etc., increased focus on personality development, leadership, communication skills, training/coaching for Service Selection Board(SSB) through experts, Certification Course for Yoga through Ministry of Ayush, enhanced attachment with services units & Military Hospitals, Central Armed Police Forces(CAPFs), Aviation, Shipping, Railways and Forest like Defence Services and training of cadets through Skill India initiatives.

52. The Committee are happy that the potential of these cadets is being recognized and there is a favourable consideration to give them the same incentives as in any other security related service. However, the Committee recommend that efforts should be made to provide jobs to all the trained NCC candidates and to increase employability. Further, Non Governmental Organizations like EXPA which are giving training to the NCC cadets should be suitably rewarded monetarily.

**53. The Committee also note that NCC has initiated pilot courses/capsules towards skill development in two State Departments, namely, Bihar & Jharkhand Departments. While appreciating this initiative by NCC, the Committee desire that such innovative courses towards skill development may also be undertaken in other State Departments. In this regard, State NCC departments may also explore all avenues of training of Cadets in Skill Development Centres.**

**54. The Committee learn that two Defence corridors have been started by the Government in Uttar Pradesh and Tamil Nadu. The Defence Production Sector have seen growth in interest from the private industries including multinational companies and investors helped by the ambitious 'Make in India' project of the Government opening up possibilities for India to be a leading country in Defence production. This in turn will create the need for suitable trained and skilled manpower. The Committee feel that this opens up a great opportunity for the NCC Cadets, especially those Cadets failing to make it to the armed forces, who can be imparted suitable technical training towards this end to serve the Defence Production Sector both in public and private defence production organizations. The Committee recommend that all efforts may be made to provide suitable technical training to NCC Cadets in the field of Defence Production Sector which can open up possibilities for their gainful employment in this sector. In this way, more students will be attracted to join NCC in future.**

## **STANDING COMMITTEE ON DEFENCE**

### **MINUTES OF THE SIXTH SITTING OF THE STANDING COMMITTEE ON DEFENCE (2019-20)**

The Committee sat on Monday, the 17 February, 2020 from 1400 hrs. to 1800 hrs. in Committee Room No. 62, Parliament House, New Delhi.

#### **PRESENT**

**SHRI JUAL ORAM**

-

**CHAIRPERSON**

#### **Lok Sabha**

2. Shri Ajay Bhatt
3. Shri Kapil Moreshwar Patil
4. Shri Jugal Kishore Sharma
5. Shri Brijendra Singh
6. Shri Kotagiri Sridhar
7. Dr. Kalanidhi Veeraswamy

#### **Rajya Sabha**

8. Dr. Ashok Bajpai
9. Shri Prem Chand Gupta
10. Shri V. Lakshmikantha Rao
11. Lt. Gen. Dr. D. P. Vats
12. Dr. Sudhanshu Trivedi

## SECRETARIAT

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

## LIST OF WITNESSES

### MINISTRY OF DEFENCE

<b>Sl. No.</b>	<b>Name &amp; Designation</b>
1.	Gen. Bipin Rawat, CDS & Secy. DMA
2.	Dr Ajay Kumar, Defence Secretary
3.	Smt. Gargi Kaul, Secy. Def. Fin.
4.	Smt. Sanjeevane Kuttu, Secy. (ESW)
5.	Shri Raj Kumar, Secy. DDP
6.	Shri Jiwesh Nandan, Additional Secretary
7.	Smt. Deepa Bajwa, DGDE
8.	DG K Natarajan, DGICG
9.	Ms. Mala Dutt, AS & FA
10.	Dr. Chitra Rajagopal, DG(R&M) & DS
11.	Lt. Gen SK Saini, VCOAS
12.	Lt. Gen Gopal R, QMG
13.	Lt Gen SS Hasabnis, DCOAS(P&S)
14.	Lt. Gen SK Upadhya, MGO
15.	Lt. Gen Raj Shukla, DG PP
16.	Lt. Gen TK Chawla, DG FP
17.	Lt. Gen Sanjay Verma, DGWE
18.	Lt. Gen RK Anand, DG LW&E
19.	Lt. Gen Arvind Dutta, Adjutant General
20.	Lt. Gen Manoj C Pande, DG (DC&W)

21.	Shri Pudi Hari Prasad, JS(ESW)
22.	Smt. Nazli J. Shayin, JS(L&W)
23.	Shri Subir Mallick, Addl. FA & JS
24.	Shri Alok Gupta, Sr. Addl. DG
25.	Shri Ravi Shankar, Addl. DG
26.	Smt. Sonam Yangdol, Addl. DG (Cantt.)
27.	Shri Rakesh Mittal, Addl, DG (Adm/Coord/ IT)
28.	Shri Rajesh Sharma, Addl. FA & JS
29.	Shri AN Das, Addl FA & JS
30.	Shri RK Karna, Addl. FA & JS
31.	Shri Ashwini Kumar, Addl FA & JS
32.	Shri Vedveer Arya, FM(MS)
33.	Shri Ghayas Uddin Ahmed, FM(LS)
34.	Shri Puneet Agarwal, FM(Air)
35.	Maj Gen H Dharmarajan, ADG FP
36.	Maj Gen AK Channan, ADG PP 'B'
37.	Maj Gen JV Prasad, MD ECHS
38.	Maj Gen MK Sagoch, DG(Res.)
39.	IG KR Suresh, DDG (Ops & CS)
40.	Cmde SK Chauhan, PD DGR
41.	Air Cmde Sreeji, Director (Trg)
42.	Brig Mrigendra Kumar, Secy., KSB
43.	Brig SBK Singh, Dy MD ECHS
44.	DIG SC Gupta, PD(P&B)
45.	DIG Yoginder Dhaka, D(Plans)
46.	Shri Purusottam Bej, Director, Budget, Finance & Material Management
47.	Shri K.C. Gupta, DDG
48.	Shri Harendra Singh, DDG
49.	Shri Madhukar Naik, DDG(Lands-I)
50.	Smt. Shalini Pandey, DDG(Cantt)

51.	Smt. Sharmistha Maitra, DDG(Adm/Coord)
52.	Dr. Ravindra Singh, Director
53.	Shri Pankaj Srivastava, Director (Lands)
54.	Gp Capt Regi Sukumaran, Director (P&FC) ECHS
55.	Shri Ambarish Barman, Director (Budget)
56.	Shri Pankaj Srivastava, Director (Lands)
57.	Dr. PP Sharma OSD(Res.II)
58.	Brig UK Ojha, Brig FP(B)
59.	Brig Tarun Agrawal, Brig FP(A)
60.	Brig Hardev Singh Sohi, Brig DIAV
61.	Brig Vikramjit Singh Gill, MA to VCOAS
62.	Brig Sukriti S Dahiya, Brig Budget
63.	Brig SB Singh, Brig P&M
64.	Brig Yogesh Chaudhary, Brig P&M
65.	Brig Gurpreet Singh, Brig PP (Plans)

2. At the outset, the Chairperson welcomed the Members of the Committee and informed them of the agenda for the Sitting i.e. oral evidence of the representatives of Ministry of Defence in connection with examination of Demands for Grants for the year 2020-21 on the subjects 'General Defence Budget, Ministry of Defence (Civil), Directorate General Defence Estates (DGDE), Ex-Servicemen Welfare, Ex-Servicemen Contributory Health Scheme (ECHS) and Coast Guard Organization'. He also welcomed Dr. Sudhanshu Trivedi, a new Member to the Committee. The Committee then invited the representatives of the Ministry of Defence and the Services/Organisations. The Chairperson welcomed the representatives to the Sitting of the Standing Committee on Defence and drew their attention to Direction 55(1) of the Directions by the Speaker, Lok Sabha regarding confidentiality of the proceedings. He further emphasized that the Ministry should vet the draft Reports from security view-point within the prescribed timeline, i.e., two days.

3. Thereafter, the Chairperson requested the representatives of the Ministry of Defence to brief the Committee on various issues included in the agenda for the day. The Defence Secretary initiated the discussion by touching upon Defence Services Estimates and other Demands for Grants of the Ministry of Defence.

4. Then, a Power Point Presentation on General Defence Budget was made before the Committee. This was followed by detailed deliberations on the following issues:

- i. Difference between projection and allocation of funds;
- ii. Reforms initiated by the Ministry of Defence to streamline expenditure and mobilize additional resources;
- iii. Challenges faced due to increasing Defence pension liabilities and steps taken/contemplated to address it;
- iv. Responsibilities of the Chief of Defence Staff;
- v. Bringing about jointness and integration amongst the three Services;
- vi. Initiatives to promote Research and Development in Defence sector;
- vii. Modernization of the Forces;
- viii. Revenue generation by commercialization of suitable Defence lands;
- ix. Steps taken to promote Defence exports
- x. Technology used for countering infiltration;
- xi. Safe storage of arms and ammunition in Ammunition Depots;
- xii. Rescue of jawans hit/trapped by avalanches; and
- xiii. Mechanisms to eliminate suicide cases amongst the Forces .

5. Thereafter, a Power Point Presentation by the representatives of the Directorate General Defence Estates (DGDE) was made. This was followed by extensive discussion on the following points:

- i. Need for amendment of Cantonment Board Act, 2006;
- ii. Proposal to convert civil areas of Cantonments into municipalities;
- iii. Commercial use of leased properties in Cantonment areas;
- iv. Feasibility of extension of lease period for residential purposes in Cantonment Areas and steps being taken for a permanent lease policy;



- v. Commercial use of suitable Defence Lands; and
- vi. Issues related to convenience of the civilian population residing in the Cantonment areas.

6. Next, a Power Point Presentation was made by the representatives of the Department of Ex-Servicemen Welfare. This was followed by detailed deliberations on following issues:

- i. Difference between projection and allocation of funds;
- ii. Issues related to welfare of Ex-Servicemen such as toll tax exemption, construction of Sainik Rest Houses, payment of ex-gratia to the dependents of martyrs;
- iii. Anomalies in allowance to personnel posted in North-Eastern parts;
- iv. Rationalization of manpower in Army; and
- v. Modernisation.

7. Consequently, a Power Point Presentation was made by the representatives of the Ex-Servicemen Contributory Health Scheme (ECHS), which was followed by discussion on following issues:

- i. Issue of pendency of payments of bills of hospitals empanelled under ECHS;
- ii. Authorised and actual manpower for ECHS Polyclinics;
- iii. Merger of Military hospitals with existing ECHS Polyclinics; and
- iv. Major achievements of ECHS.

8. Thereafter, the Chairperson invited representatives of the Coast Guard Organisation. The representatives of the Coast Guard Organisation commenced their briefing through a Power Point presentation. This was followed by discussion on following issues:

- i. Budgetary provisions for Indian Coast Guard; and
- ii. Steps taken to address challenges and constraints faced by the Indian Coast Guard.

9. The Chairperson directed the representatives of the Ministry to furnish written replies/information on the points raised by the Members at the earliest.

**The Committee then adjourned.**

A copy of verbatim record of the proceedings has been kept.

**STANDING COMMITTEE ON DEFENCE (2019-20)**

**MINUTES OF THE SEVENTH SITTING OF THE STANDING COMMITTEE ON  
DEFENCE (2019-20)**

The Committee sat on Tuesday, the 18 February, 2020 from 1400 hrs. to 1800 hrs. in Committee Room No. 62, Parliament House, New Delhi.

**PRESENT**

**SHRI JUAL ORAM**

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**CHAIRPERSON**

**MEMBERS**

**LOK SABHA**

2. Shri Ajay Bhatt
3. Shri Nitesh Ganga Deb
4. Shri Annasaheb Shankar Jolle
5. Shri Kapil Moreshwar Patil
6. Shri Anumula Revanth Reddy
7. Dr. Shrikant Eknath Shinde,
8. Shri Brijendra Singh
9. Shri Mahabali Singh
10. Shri Kotagiri Sridhar
11. Dr. Kalanidhi Veeraswamy

**RAJYA SABHA**

12. Dr. Ashok Bajpai
13. Shri Prem Chand Gupta
14. Shri V. Lakshmikantha Rao
15. Dr. T. Subbarami Reddy
16. Lt. Gen. Dr. D.P. Vats
17. Dr. Sudhanshu Trivedi

## **SECRETARIAT**

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

### **LIST OF WITNESSES**

### **MINISTRY OF DEFENCE**

<b>Sl. No.</b>	<b>Name &amp; Designation</b>
1.	Gen. Bipin Rawat, CDS & Secy. DMA
2.	Dr Ajay Kumar, Defence Secretary
3.	Smt. Gargi Kaul, Secy. Def. Fin.
4.	Ms. Mala Dutt, AS & FA
5.	Shri Jiwesh Nandan, Additional Secretary
6.	Shri VL Kantha Rao, Addl. Secy. (DP)
7.	Lt. Gen TK Chawla, DG FP
8.	Lt. Gen SK Upadhyaya, MGO
9.	Lt. Gen Sanjay Chauhan, DGQA
10.	Lt. Gen Paramjit Singh, DGMO
11.	Lt. Gen SK Shrivastava, E-in-C
12.	Lt. Gen Sanjay Verma, DGWE
13.	Lt. Gen SK Saini, VCOAS
14.	Lt Gen SS Hasabnis, DCOAS(P&S)
15.	Lt. Gen Raj Shukla, DG PP
16.	Lt Gen Rajeev Chopra, DGNCC
17.	Lt. Gen Harpal Singh, DGBR
18.	Ms. Nazli Shayin, Joint Secy. (Trg.)
19.	Shri Rajeev Singh Thakur, JS(E,L&V)
20.	Shri Shantanu, JS(Works & PA)
21.	Ms. Richa Misra, JS(BR)
22.	Shri AN Das, Addl FA & JS

23.	Shri RK Karna, Addl. FA & JS
24.	Shri Ashwini Kumar, Addl FA & JS
25.	Shri Subir Mallick, Addl. FA & JS
26.	Shri Rajesh Sharma, Addl. FA & JS
27.	Shri Vedveer Arya, FM(MS)
28.	Shri Ghayas Uddin Ahmed, FM(LS)
29.	Shri Puneet Agarwal, FM(Air)
30.	Maj Gen H Dharmarajan, ADG FP
31.	Maj Gen RK Malhotra, ADGQA(A)
32.	Maj Gen SK Khanna, DG Works
33.	Maj Gen Virendra Singh
34.	Maj Gen AK Channan, ADG PP 'B'
35.	Shri Rajeev Ranjan, ADG(Adm)
36.	Shri AK Agarwal, DDG(West)
37.	Brig J James
38.	Brig UK Ojha, Brig FP(B)
39.	Brig Tarun Agarwal, Brig FP(A)
40.	Brig Mohit Nautiyal, DDGW(PPC&Est)
41.	Brig Vinayak Saini
42.	Brig Vikramjit Singh Gill, MA to VCOAS
43.	Brig Sukriti S Dahiya, Brig Budget
44.	Brig SB Singh, Brig P&M
45.	Brig Yogesh Chaudhary, Brig P&M
46.	Brig Gurpreet Singh, Brig PP (Plans)
47.	Cmde G. Rambabu
48.	Shri AK Jain, SE(Civil)

2. At the outset, the Chairperson welcomed the Members of the Committee and informed them of the agenda for the Sitting i.e. deliberation on the subjects 'Army, Border Roads Organization (BRO), Military Engineer Services (MES), Directorate General of Quality

Assurance (DGQA), National Cadet Corps (NCC) and Sainik Schools' in connection with examination of Demands for Grants 2020-21. The Committee then invited the representatives of the Ministry of Defence and the Services/Organisations.

3. The Vice Chief of Army Staff commenced the briefing by giving an overview on Army to the Committee and thereafter, a Power Point presentation was made. This was followed by detailed deliberations on following issues:

- i. Budgetary allocation to Army;
- ii. Maintaining ideal ratio between Revenue and Capital Budget;
- iii. Modernization of Army;
- iv. Indigenization efforts of Army;
- v. Clothing in difficult areas;
- vi. Optimization of manpower;
- vii. Protection of troops from Corona virus; and
- viii. Exhibitions in various constituencies.

4. Thereafter, a Power Point presentation on Border Roads Organization (BRO) was made. This was followed by extensive discussion on the following points:

- i. Manpower strength;
- ii. Feasibility of levying toll tax on commercial vehicles to generate revenue; and
- iii. Environmental/forest clearances to BRO.

5. Thereafter, a Power Point presentation was made by the representatives of Military Engineer Services (MES) covering following issues:

- i. Budgetary provisions for MES; and
- ii. Initiatives in MES.

6. Thereafter, the Chairperson invited representatives of Directorate General of Quality Assurance (DGQA). The representatives of DGQA commenced their briefing through a Power Point presentation which was followed by discussion on following issues:

- i. Complete utilisation of budget;
- ii. Manpower strength;
- iii. Quality check of imports; and
- iv. Testing of ammunition.

7. Thereafter, the Chairperson invited representatives of the National Cadet Corps (NCC). They made a Power Point presentation before the Committee which was followed by discussion on following issues:

- i. Intake of NCC students in the Armed Forces;
- ii. Percentage of selection of 'C' certificate holders in SSB;
- iii. Reservation for NCC students in higher education or employment in State and Centre;
- iv. CSR funds from the PSUs; and
- v. Employment opportunities for NCC trained youth in Defence Production corridors.

8. Thereafter, the Chairperson invited representatives of the Sainik Schools. The representatives of the Sainik Schools commenced their briefing through a Power Point presentation which was followed by discussion on following issues:

- i. Defence Scholarships;
- ii. Role of the State Government;
- iii. Intake of Sainik School students in NDA and Naval Academy;
- iv. Difference between projection and allocation in budget;

- v. Exploration of CSR funding;
- vi. Earmarking separate head of 'Grant-in-aid' for Sainik Schools;
- vii. Budgetary provisions for Sainik Schools;

9. The Chairperson directed the representatives of the Ministry to furnish written replies/information on the points raised by the Members at the earliest.

**The Committee then adjourned.**

A copy of verbatim record of the proceedings has been kept.



**STANDING COMMITTEE ON DEFENCE (2019-20)**

**MINUTES OF THE EIGHTH SITTING OF THE STANDING COMMITTEE ON  
DEFENCE (2019-20)**

The Committee sat on Wednesday, the 19 February, 2020 from 1400 hrs. to 1700 hrs. in Committee Room No. 53, Parliament House, New Delhi.

**PRESENT**

**SHRI JUAL ORAM**

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**CHAIRPERSON**

**MEMBERS**

**LOK SABHA**

2. Shri Ajay Bhatt
3. Shri Annasaheb Shankar Jolle
4. Shri Kapil Moreshwar Patil
5. Shri Anumula Revanth Reddy
6. Shri Jugal Kishore Sharma
7. Shri Brijendra Singh
8. Shri Kotagiri Sridhar
9. Dr. Kalanidhi Veeraswamy

**RAJYA SABHA**

10. Dr. Ashok Bajpai
11. Shri Prem Chand Gupta
12. Shri V. Lakshmikantha Rao
13. Lt. Gen. Dr. D.P. Vats
14. Dr. Sudhanshu Trivedi

## **SECRETARIAT**

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

### **LIST OF WITNESSES**

#### **MINISTRY OF DEFENCE**

<b>Sl. No.</b>	<b>Name &amp; Designation</b>
1.	Gen. Bipin Rawat, CDS & Secy. DMA
2.	Dr Ajay Kumar, Defence Secretary
3.	Smt. Gargi Kaul, Secy. Def. Fin.
4.	Ms. Mala Dutt, AS & FA
5.	Shri Jiwesh Nandan, Additional Secretary
6.	Shri VL Kantha Rao, Addl. Secy. (DP)
7.	Air Mshl HS Arora, VCAS
8.	Air Mshl Sandeep Singh, DCAS
9.	Air Mshl BR Krishna, DG Air (Ops)
10.	Air Mshl Rajeev Sachdeva, DCIDS(PP&FD)
11.	VAdm G Ashok Kumar, VCNS
12.	VAdm R Hari Kumar, CISC
13.	Lt. Gen Gopal R, QMG
14.	Lt. Gen SK Upadhya, MGO
15.	Lt. Gen TK Chawla, DG FP
16.	Lt. Gen Sanjay Verma, DGWE
17.	Lt. Gen SK Saini, VCOAS
18.	Lt Gen SS Hasabnis, DCOAS(P&S)
19.	Lt. Gen Raj Shukla, DG PP
20.	Shri Vishal Gagan, Joint Secretary (Coord)

21.	Shri AN Das, Addl FA & JS
22.	Shri RK Karna, Addl. FA & JS
23.	Shri Ashwini Kumar, Addl FA & JS
24.	Shri Subir Mallick, Addl. FA & JS
25.	Shri Rajesh Sharma, Addl. FA & JS
26.	Shri Vedveer Arya, FM(MS)
27.	Shri Ghayas Uddin Ahmed, FM(LS)
28.	Shri Puneet Agarwal, FM(Air)
29.	Maj Gen H Dharmarajan, ADG FP
30.	Maj Gen RV Singh, ACIDS(FP)
31.	Maj Gen AK Channan, ADG PP 'B'
32.	RAdm Sameer Saxena, ACNS(P&P)
33.	RAdm Kapil Mohan Dhir, JS(Navy)
34.	AVM J Mishra, ACAS (Proj)
35.	AVM SK Jha, JS(Air)
36.	Air Cmde VN Srinivas, Fin P
37.	Brig UK Ojha, Brig FP(B)
38.	Brig Tarun Agarwal, Brig FP(A)
39.	Brig Vikramjit Singh Gill, MA to VCOAS
40.	Brig Sukriti S Dahiya, Brig Budget
41.	Brig SB Singh, Brig P&M
42.	Brig Yogesh Chaudhary, Brig P&M
43.	Brig Gurpreet Singh, Brig PP (Plans)
44.	Cmde Joginder Chandna, Cmde (Budget)
45.	Shri Ambarish Barman, Dir. (Budget)

2. At the outset, the Chairperson welcomed the Members of the Committee and informed them of the agenda for the Sitting. The Committee then invited the representatives of the Ministry of Defence and the Defence Services. The Chairperson welcomed the representatives to the sitting of the Standing Committee on Defence and requested them to

brief the Committee on various issues included in the agenda for the day. He also drew their attention to Direction 55(1) of the Directions by the Speaker, Lok Sabha.

3. The representatives of the Ministry of Defence commenced their briefing through a Power Point presentation on Navy. This was followed by detailed deliberations on the following issues:

- (i) shortfall in demand and allocation of budget,
- (ii) planning projects on self financing model,
- (iii) manpower and training,
- (iv) depletion in fleet strength,
- (v) obsolescence,
- (vi) delay in delivery of vessels by Shipyards,
- (vii) modernization of naval airfields,
- (viii) international maritime cooperation,
- (ix) implementation of safety measures,
- (x) challenges in Indian Ocean Region and preparedness of Navy, etc.

4. Thereafter, a presentation on Joint Staff was made which was followed by discussion on following points:

- (i) role and responsibilities of Joint Staff,
- (ii) intelligence gathering and dissemination, etc.

5. Subsequent to a briefing by the Vice Chief of the Air Staff regarding overview on modernization plan of Indian Air Force (IAF), a Power Point presentation was made. This was followed by detailed deliberations on following issues:

- i. aircraft maintenance issues by Hindustan Aeronautics Limited (HAL);
- ii. squadron strength and geo-political challenges in the region;
- iii. proposal for IAF pilots travelling to space;
- iv. shortfall in budget;

- v. decline in percentage of budget;
- vi. increasing use of Unmanned Air Vehicles and drones;
- vii. use of missiles in air defence ;
- viii. Difference between projection and allocation of funds and effect on Air defence preparedness, etc.

6. Thereafter, a presentation was given by Canteen Stores Department and followed by discussion on following points:

- (i) Commencement of online shopping facilities,
- (ii) Manpower Strength,
- (iii) Budgetary Provisions,
- (iv) Qualitative requirements of opening Unit Run Canteens in an area,
- (v) Use of Technology in Central Warehousing System in CSD, etc.

7. The Chairperson directed the representatives of the Ministry to furnish written replies/information on the points raised by the Members at the earliest.

**The Committee then adjourned.**

A copy of verbatim record of the proceedings has been kept.

**STANDING COMMITTEE ON DEFENCE (2019-20)**

**MINUTES OF THE NINTH SITTING OF THE STANDING COMMITTEE ON  
DEFENCE (2019-20)**

The Committee sat on Thursday, the 20 February, 2020 from 1400 hrs. to 1630 hrs. in Committee Room 'C', Parliament House Annexe, New Delhi.

**PRESENT**

**SHRI JUAL ORAM**

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**CHAIRPERSON**

**MEMBERS**

**LOK SABHA**

2. Shri Ajay Bhatt
3. Shri Annasaheb Shankar Jolle
4. Shri Pashupati Kumar Paras
5. Shri Kapil Moreshwar Patil
6. Shri Anumula Revanth Reddy
7. Shri Jugal Kishore Sharma
8. Shri Brijendra Singh
9. Shri Kotagiri Sridhar

**RAJYA SABHA**

10. Dr. Ashok Bajpai
11. Shri Prem Chand Gupta
12. Shri V. Lakshmikantha Rao
13. Shri Sanjay Raut
14. Lt. Gen. Dr. D.P. Vats

## SECRETARIAT

1. Smt. Kalpana Sharma - Additional Secretary
2. Shri Rahul Singh - Deputy Secretary

### **LIST OF WITNESSES** **MINISTRY OF DEFENCE**

Sl. No.	Name	Designation
1.	Gen. Bipin Rawat	CDS & Secy. DMA
2.	Dr Ajay Kumar	Defence Secretary
3.	Smt. Sanjeevanee Kutty	Secy. (ESW)
4.	Smt. Gargi Kaul	Secy. Def. Fin.
5.	Shri Sanjiv Mittal	CGDA
6.	Mrs. Mala Dutt	Addl. Secy. & FA (Acq)
7.	Shri Jiwesh Nandan	Additional Secretary
8.	Shri VL Kantha Rao	Addl. Secy. (DP)
9.	Shri Apurva Chandra	DG(Acq)
10.	VAdm G Ashok Kumar	VCNS
11.	Lt. Gen TK Chawla	DG FP
12.	Lt. Gen SK Upadhya	MGO
13.	Lt. Gen RK Anand	DG LW&E
14.	Lt. Gen Sanjay Verma	DGWE
15.	Lt. Gen SK Shrivastava	E-in-C
16.	Lt. Gen Arvind Dutta	Adjutant General
17.	Lt. Gen Manoj C Pande	DG (DC&W)
18.	Lt. Gen SK Saini	VCOAS
19.	Lt Gen SS Hasabnis	DCOAS(P&S)
20.	Lt. Gen Raj Shukla	DG PP
21.	Lt. Gen Gopal R	QMG
22.	Air Mshl HS Arora	VCAS
23.	Air Mshl Sandeep Singh	DCAS
24.	Air Mshl Rajeev Sachdeva	DCIDS(PP&FD)
25.	Air Mshl BR Krishna,	DG Air (Ops)
26.	Dr. Md Nazumuddin	Eco Adv & JS (DOMW)
27.	Shri Vishal Gagan	Joint Secretary (Coord)
28.	Shri Pudi Hari Prasad	JS(ESW)
29.	Shri Sanjai Singh	JS&AM(MS)
30.	Shri Shantanu	JS(Works & PA)
31.	Smt. Dipti Mohil Chawla	JS&AM(LS)
32.	Shri Sanjai Singh	JS&AM(Air)
33.	Shri AN Das	Addl FA & JS

34.	Shri RK Karna	Addl. FA & JS
35.	Shri Ashwini Kumar	Addl FA & JS
36.	Shri Subir Mallick	Addl. FA & JS
37.	Shri Rajesh Sharma	Addl. FA & JS
38.	Shri Vedveer Arya	FM(MS)
39.	Shri Ghayas Uddin Ahmed	FM(LS)
40.	Shri Puneet Agarwal	FM(Air)
41.	Ms. Anuradha Mitra	Addl. CGDA
42.	Shri Vishvajit Sahay	PCDA(Pension)
43.	RAdm Sameer Saxena	ACNS(P&P)
44.	RAdm Kapil Mohan Dhir	JS(Navy)
45.	Maj Gen H Dharmarajan	ADG FP
46.	Maj Gen Jagdeep Singh Ishar	DG MAP
47.	Maj Gen AK Channan	ADG PP 'B'
48.	AVM J Mishra	ACAS (Proj)
49.	IG TP Sadanandan	DDG(M&M)
50.	Shri Kanwaldeep Singh	Jt CGDA (Pen &PD)
51.	Smt. Vinakshi Gupta	Jt. CGDA
52.	Shri Virender Kumar Adhana	Dir. (Acq)
53.	Brig Paritosh Shah	
54.	Brig UK Ojha	Brig FP(B)
55.	Brig Tarun Agrawal	Brig FP(A)
56.	Brig Vikramjit Singh Gill	MA to VCOAS
57.	Brig Sukriti S Dahiya	Brig Budget
58.	Brig SB Singh	Brig P&M
59.	Brig Yogesh Chaudhary	Brig P&M
60.	Brig Gurpreet Singh	Brig PP (Plans)
61.	Dr. PP Sharma	OSD(Res.II)
62.	Shri Jitender Kumar	DS(Res.I)
63.	Shri Ajay Kumar Agarwal	DS(Pen/P)
64.	Air Cmde VN Srinivas	Fin P
65.	Shri T.D. Diwivedi	Director (Air-II)
66.	Shri Ambarish Barman	Dir. (Budget)

2. At the outset, the Chairperson welcomed the Members of the Committee and informed them of the agenda for the Sitting. The Committee then invited the representatives of the Ministry of Defence. The Chairperson welcomed the representatives to the sitting of the Standing Committee on Defence and requested the representatives of the Ministry of Defence to brief the Committee on various issues included in the agenda for the day and drew their attention to Direction 55(1) of the Directions by the Speaker, Lok Sabha.



3. The representative of the Ministry then gave power point presentation on Married Accommodation Project. This was followed by detailed discussions on the subjects and Members asked questions on the following issues:

- (i) Budgetary allocations for MAP,
- (ii) NBCC model for MAP,
- (ii) requirement of equal value infrastructure,
- (ii) review of satisfaction level of the Forces,
- (iii) early completion of MAP,
- (iv) use of latest technologies in construction of MAP.

4. Thereafter, a Power Point presentation by representative of Ministry of Defence on Defence Procurement Policy was made. This was followed by extensive discussion on the following points:

- i. Ensuring quality of products manufactured under 'Make in India'
- ii. Servicing of equipment provided by new indigenous companies and their sustainability;
- iii. Efforts to encourage indigenization in Defence Sector to reduce dependence on imports;
- iv. Value of contracts in terms of amount being awarded to foreign vendors; and
- v. Steps taken to achieve timely, effective and efficient procurement;

5. Thereafter, a Power Point presentation on Ministry of Defence (Pension) was made by representative of Ministry of Defence. This was followed by extensive discussion on the following points:

- (i) Review of financial implications of Defence Pensions,
- (ii) Broad banding of soldiers and officers.
- (iii) Issues related to One Rank One Pension (OROP)
- (iv) Income Tax provisions for battle casualties i.e. service personnel who were invalidated from active services

6. The Chairperson directed the representatives of the Ministry of Defence and other organisations to furnish written replies to all the queries at the earliest.

A copy of verbatim record of the proceedings has been kept.

**The Committee then adjourned.**

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**STANDING COMMITTEE ON DEFENCE (2019-20)**

**MINUTES OF THE TENTH SITTING OF THE STANDING COMMITTEE ON  
DEFENCE (2019-20)**

The Committee sat on Friday, the 21 February, 2020 from 1100 hrs. to 1700 hrs. in Committee Room 'C', Parliament House Annexe, New Delhi.

**PRESENT**

**SHRI JUAL ORAM**

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**CHAIRPERSON**

**MEMBERS**

**LOK SABHA**

2. Shri Ajay Bhatt
3. Shri Nitesh Ganga Deb
4. Shri Annasaheb Shankar Jolle
5. Shri Pashupati Kumar Paras
6. Shri Jugal Kishore Sharma
7. Shri Brijendra Singh
8. Shri Mahabali Singh

**RAJYA SABHA**

9. Dr. Ashok Bajpai
10. Shri Prem Chand Gupta
11. Shri V. Lakshmikantha Rao
12. Shri Sanjay Raut
13. Lt. Gen. Dr. D.P. Vats
14. Dr. Sudhanshu Trivedi

## **SECRETARIAT**

1. Smt. Kalpana Sharma - Additional Secretary
2. Shri Rahul Singh - Deputy Secretary

### **LIST OF WITNESSES**

#### **MINISTRY OF DEFENCE**

<b>Sl. No.</b>	<b>Name &amp; Designation</b>
1.	Shri Raj Kumar, Secretary(DP)
2.	Dr. G Satheesh Reddy, Secy. DR&D
3.	Smt. Gargi Kaul, Secy. Def. Fin.
4.	Shri Hari Mohan, DGOFF & Chairman/OFB
5.	Shri Jiwesh Nandan, Additional Secretary
6.	Shri CS Vishwakarma, AV (OFB)
7.	Ms. Mala Dutt, AS & FA
8.	Dr. MSR Prasad, DS&DG(MSS)
9.	Dr. Sudhir Kumar Mishra, DS&DG(BrahMos)
10.	Ms. J. Manjula, DS&DG(ECS)
11.	Dr. Guru Prasad, DS&DG (PC&SI)
12.	Dr. Chitra Rajagopal, DS&DG(R&M)
13.	Dr. Samir V Kamat, DS&DG(NS&M)
14.	Dr. Tessy Thomas, DS&DG(Aero)
15.	Shri Pravin K Mehta, DS&DG(ACE)
16.	Shri Sudhir Gupta, OS&DG(TM)
17.	Shri KS Varaprasad, DS&DG(HR)
18.	Dr. AK Singh, DS&DG(LS)
19.	Dr. Sudhir Kamath, OS&DG(MED & CoS)
20.	Ms. Nabanita R Krishnan, OS&DG(SAM)
21.	Lt. Gen SK Saini, VCOAS
22.	Shri Vishal Gagan, Joint Secretary (Coord)
23.	Dr. Amit Sahai, JS(P&C)
24.	Shri Puneet Agarwal, JS(LS)
25.	Dr. Md. Nazmuddin, Eco Advisor
26.	Shri RK Karna, Addl. FA & JS
27.	Shri Ashwini Kumar, Addl FA & JS
28.	Shri Subir Mallick, Addl. FA & JS
29.	Shri Rajesh Sharma, Addl. FA & JS
30.	Shri Vedveer Arya, FM(MS)

31.	Shri Ghayas Uddin Ahmed, FM(LS)
32.	Shri Puneet Agarwal, FM(Air)
33.	Shri Prateek Kishore, OS & Dir., P&C
34.	Shri Atul D Rane, OS & Dir, DIC
35.	Shri Purusottam Bej, OS & Dir, Budget, Finance & Material Management
36.	Dr. Chandrika Kaushik, OS& Dir, DISB
37.	Dr. Ravindra Singh, Dir., Parl. Affairs
38.	Shri VM Rao, DDG/Coord, OFBNDO
39.	Shri Vijay Mittal, DDG/OFBNDO
40.	Shri Vivek C Verma, Secretary, OFB
41.	Shri PK Dash, DDG/P&P, OFB
42.	Shri N.I. Laskar, DDG/Bud, OFB
43.	Shri B Krishnamoorthy, Director/OFBNDO
44.	Ms. Mala Dutt, AS & FA
45.	Shri VL Kantha Rao, Addl. Secy. (DP)
46.	Lt. Gen SK Upadhya, MGO
47.	Lt. Gen Sanjay Verma, DGWE
48.	Lt. Gen TK Chawla, DG FP
49.	Lt Gen SS Hasabnis, DCOAS(P&S)
50.	Lt. Gen Raj Shukla, DG PP
51.	Lt. Gen Gopal R, QMG
52.	Cmde Siddharth Mishra (Retd), CMD BDL
53.	Shri R. Madhavan, CMD HAL
54.	Shri D.K Hota, CMD BEML
55.	Cmde B. B Nagpal, NM, CMD GSL
56.	Dr. D.K Likhi, CMD MIDHANI
57.	RAdm V K Saxena (Retd), CMD GRSE
58.	VAdm Narayan Prasad, IN(Retd), CMD MDL
59.	Shri Chandraker Bharti, JS(Aero)
60.	Shri Sanjay Jaju, JS(DIP)
61.	Shri Shrish kumar, OSD(SK)
62.	Maj Gen H Dharmarajan, ADG FP
63.	Maj Gen AK Channan, ADG PP 'B'
64.	Maj Gen Surender Pavamani, ADG EM
65.	Mrs. Anandi Ramalingam, Dir. (Marketing) BEL
66.	Cdr JP Gupta, Dir (CP&P), HSL
67.	Brig UK Ojha, Brig FP(B)
68.	Brig Tarun Agrawal, Brig FP(A)
69.	Brig Vikramjit Singh Gill, MA to VCOAS
70.	Brig Sukriti S Dahiya, Brig Budget
71.	Brig SB Singh, Brig P&M
72.	Brig Yogesh Chaudhary, Brig P&M
73.	Brig Gurpreet Singh, Brig PP (Plans)
74.	Shri Ambarish Barman, Dir. (Budget)

2. At the outset, the Chairperson welcomed the Members of the Committee and informed them of the agenda for the Sitting. The Committee then invited the representatives of the Ministry of Defence. The Chairperson welcomed the representatives to the sitting of the Standing Committee on Defence and requested them to brief the Committee on various issues included in the agenda for the day. He also drew their attention to Direction 55(1) of the Directions by the Speaker, Lok Sabha.

3. The representatives of the Ministry of Defence commenced their briefing through a Power Point presentation on Defence Public Sector Undertakings. This was followed by detailed deliberations on the following issues:

- 1) Use of CSR funds of DPSUs for Sainik Schools.
- 2) To make efforts to achieve 90% of Indian made technique, knowledge and skill in Defence Production by DPSUs.
- 3) Inadequate capacity utilization due to low order book of DPSUs which leads to higher cost of production.
- 4) Efforts being made by Department of Defence Production to minimize the imported items.
- 5) Modification of Defence Procurement Procedure, 2016 and giving preference to 'Buy Indian' which means Indian designing, developing and manufacturing.
- 6) Efforts of Defence PSUs to indigenise, import substitution, patent filing etc.
- 7) Overhauling of imported Aircraft engines in the country.
- 8) Limitation of exports due to sensitive nature of items
- 9) Issue of Orders from Middle-East for guns and tanks etc.
- 10) Need to release money and improve reserve position of HAL.
- 11) Quality of Radars manufactures by BEL.
- 12) Development of long-range radars by DRDO and BEL.
- 13) Decline in production of DPSUs.
- 14) Measures to be taken to increase Defence Exports by DPSUs.

4. Thereafter, a Power Point presentation was given by the representatives of the Ordnance Factory Board (OFB), which was followed by discussion on the following points:

- 1) Use of ammunition for practice by Armed Forces
- 2) Present status of MBT Arjun
- 3) Exporting of Ordnance Factories' products to other countries
- 4) Upgradation of technology used by Ordnance Factories
- 5) Shortage of manpower
- 6) Supply of products on 'No profit No loss' to Armed Forces
- 7) Procurement of ammunition by Army through Ordnance Factories
- 8) Ordnance factories interaction with Army for development of products
- 9) Late receipt of indents from Army
- 10) Lack of orders from Army
- 11) Export of High caliber ammunition
- 12) Socks, shoes and Uniform to be declared non-core items.

5. Thereafter, a Power Point presentation was given on Defence Research and Development which was followed by discussion on the following points:

- 1) Requirement of additional funds to take up futuristic projects,
- 2) Development of new technologies
- 3) Manpower requirement in DRDO
- 4) Role of DRDO in selection process of officers
- 5) Coordination in Research and Development with private Sector
- 6) Basic Research in Academia
- 7) Coordination between DRDO and Service Users
- 8) Opening of eight centres of excellence in advanced areas
- 9) Self-reliance in technology
- 10) Free of cost Technology transfer to private industries
- 11) Skill development and training by DRDO to local youths of two Defence Industrial Corridors-Tamil Nadu and Uttar Pradesh.

6. The Chairperson then directed the representatives of the Ministry of Defence to furnish written replies to all the queries which remain unanswered at the earliest.

A copy of verbatim record of the proceedings has been kept.

**The Committee then adjourned.**



## **STANDING COMMITTEE ON DEFENCE**

### **MINUTES OF THE ELEVENTH SITTING OF THE STANDING COMMITTEE ON DEFENCE (2019-20)**

The Committee sat on Thursday, the 12 March 2020 from 1000 hrs. to 1030 hrs. in Committee Room 'C', Parliament House Annexe, New Delhi.

#### **PRESENT**

**SHRI JUAL ORAM**

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**CHAIRPERSON**

#### **LOK SABHA**

- 2 Shri Hanuman Beniwal
- 3 Shri Ajay Bhatt
- 4 Shri Devusinh J. Chauhan
- 5 Shri Annasaheb Shankar Jolle
- 6 Prof (Dr.) Ram Shankar Katheria
- 7 Shri Kapil Moreshwar Patil
- 8 Shri Jugal Kishore Sharma
- 9 Dr. Shrikant Eknath Shinde
- 10 Shri Brijendra Singh
- 11 Shri Kotagiri Sridhar
- 12 Dr. Kalanidhi Veeraswamy

#### **RAJYA SABHA**

- 13 Dr. Ashok Bajpai
- 14 Shri V. Lakshmikantha Rao
- 15 Smt. Vijila Sathyananth
- 16 Shri Kamakhya Prasad Tasa
- 17 Lt. Gen. Dr. D. P. Vats

## 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 Reports:-

1. Fifth Report of the Standing Committee on Defence (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 and Sainik Schools (Demand Nos. 18, 19, 20 and 21)';
2. Sixth Report of the Standing Committee on Defence (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)';
3. Seventh Report of the Standing Committee on Defence(17th Lok Sabha) on `Demands for Grants of the Ministry of Defence for the year 2020-21 on Capital Outlay on Defence Services, Procurement Policy, Defence Planning and Married Accommodations Project (Demand No. 19 and 20)'; and
4. Eighth Report of the Standing Committee on Defence(17th Lok Sabha) on 'Demands for Grants of the Ministry of Defence for the year 2020-21 pertaining to 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. Hon'ble Chairperson also informed the Members that in case they have any suggestion to make in the draft reports, they may do so by giving it writing.

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.

**The Committee then adjourned.**

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