

ANNEXURE-I*(Referred to in Paragraph 1.9)***Position of outstanding ATNs****Ministry of Defence - excluding Ordnance Factory Board****(i) Pending for more than ten years**

Sl.No.	Report No. and Year	Para No.	Subject
1.	No. 2 of 1989	11**	Purchase and licence production of 155mm towed gun system and ammunition
2.	No.12 of 1990	9**	Contract with Bofors for (a) purchase and licence production of 155mm gun system and (b) Counter Trade
3.	No.8 of 1991	10*	Procurement of stores in excess of requirement.
4.		13*	Central Ordnance Depot, Agra.
5.	No.8 of 1992	20**	Procurement of sub-standard goods in an Ordnance Depot.
6.		28**	Avoidable payment of maintenance charges for Defence tracks not in use.
7.		29*	Import of mountaineering equipment and sports items
8.		31*	Avoidable payment of detention charges
9.	No. 7 of 1997	18**	Management of Defence Land
10.		23**	Avoidable expenditure on Demurrage charges
11.		27**	Non-realisation of claims from the Railways.
12.	No. 7 of 1998	32*	Infructuous expenditure on procurement of substandard cylinders
13.		36**	Procurement of batteries at higher rates

Sl.No.	Report No. and Year	Para No.	Subject
14.	No. 7 of 2001	15**	Procurement of an incomplete equipment
15.		32**	Wrongful credit of sale proceeds of usufructs to regimental fund
16.	No.7A of 2001	@Entire Report (ATN for 8 out of 42 paras yet to be received even for the 1 st time)	Review of Procurement for OP VIJAY(Army)
17.	No. 6 of 2003	2**	Exploitation of Defence lands
18.		14*	Irregular recruitment of personnel
(ii) Pending more than 5 years upto 10 years			
19.	No. 6 of 2004	3.2*	Recoveries/Savings at the instance of Audit.
20.	No. 6 of 2005	3.2*	Recoveries/savings at the instance of Audit
21.	Report No. 4 of 2007	3.3**	Unauthorized use of Defence assets and public fund for running educational institutes
22.		3.5*	Recoveries/savings at the instance of Audit
23.		6.2**	Irregular payment of counter insurgency allowance
24.	Report No. PA 4 of 2008 (Performance Audit)	Chapter I**	Supply Chain Management of General Stores and Clothing in the Army
25.	Report No. CA 17 of 2008-09	2.7*	Non-renewal of lease of land occupied by Army Golf Club
26.		3.4*	Unauthorized use of A-1 Defence land by Army Welfare Education Society
27.		3.5*	Utilisation of Government assets for non-governmental purposes
28.		3.10*	Recoveries and savings at the instance of Audit
29.		4.1**	Irregular diversion of savings of a project for execution of new works

Sl.No.	Report No. and Year	Para No.	Subject
(iii) Pending more than 3 years upto 5 years			
30.	Report No. 12 of 2010-11	2.1**	Defective import of SMERCH Multi Barrel Rocket Launcher System
31.		3.2**	Irregular procurement of Punched Tape Concertina Coil
32.		3.6*	Recoveries and savings at the instance of Audit
33.		4.1**	Irregular sanction and construction of accommodation for a Golf Club
34.		4.3**	Additional expenditure on execution of a work due to indecision by the users
35.	Report No. 6 of 2010-11 (Performance Audit)	Standalone Report***	Supply Chain Management of Rations in Indian Army
36.	Report No. 14 of 2010-11 (Performance Audit)	Standalone Report****	Canteen Stores Department
37.	Report No. 35 of 2010-11 (Performance Audit)	Standalone Report*	Defence Estates Management
(iv) Pending upto 3 years			
38.	Report No. 11 of 2011-12 (Performance Audit)	Entire Report*	Special report on Adarsh Co-operative Housing Society, Mumbai
39.	Report No. 24 of 2011-12	2.5*	Deficient pre-despatch inspection
40.		3.1**	Extra expenditure due to acceptance of higher rates
41.		3.4**	Irregular de-hiring of house constructed on leased land
42.		3.8*	Avoidable expenditure due to rejection of a valid tender
43.		3.10**	Injudicious procurement of Tippers
44.		3.11**	Irregular payment to Civil Hired Transport Contractors
45.		3.13**	Procurement of defective spares from foreign vendor

Sl.No.	Report No. and Year	Para No.	Subject
46.		3.14*	Recoveries and savings at the instance of Audit
47.		5.2**	Non-completion of bridge after twelve years of sanction
48.	Report No.16 of 2012-13	2.1*	Loss of revenue on renewal of lease of Government land
49.		2.3*	Loss due to non-levy of licence fee on vehicles entering Cantonment Board Ahmednagar
50.		3.1*	Unauthorised use of defence assets and manpower for the benefit of Army Welfare Education Society
51.		3.3**	Failure of HQ Southern Command to Safeguard Defence land from commercial exploitation
52.		3.6*	Extra expenditure due to non-acceptance of reasonable L1 rates
53.		4.1*	Overpayment of water charges by Garrison Engineer Kamptee
54.		4.3**	Construction of sub standard bunkers
55.		4.4*	Extra payment to a contractor
56.	Report No. 18 of 2012-13	Entire Report*	Performance Audit of the Medical Establishments in Defence Services
57.	Report No. 30 of 2013	2.1*	Improper management of Defence land
58.		2.2***	Non-recovery of service charges from Railways
59.		2.3***	Non introduction of Air Conditioners in Tanks
60.		2.4***	Non synchronization of payments without corresponding progress of work
61.		2.5***	Absence of effective controls resulting in non recovery of outstanding dues
62.		3.1***	Acceptance of sub-standard stores without prior technical inspection from an unregistered and inexperienced firm
63.		3.2***	Holding of X-ray generators in stock for nine years

Sl.No.	Report No. and Year	Para No.	Subject
64.		3.3***	Loss due to non-maintenance of batteries
65.		3.4***	Avoidable expenditure on re-transportation of stores
66.		3.5*	Extra expenditure on account of provision of unauthorised strengthening measures in buildings
67.		3.6***	Unauthorised use of Defence accommodation
68.		3.7*	Recoveries, savings and adjustment in accounts at the instance of Audit
69.		4.1*	Avoidable extra expenditure of ₹1.03 crore due to acceptance of conditional contract
70.		4.2*	Poor planning resulting in suspension of work and damage to the Government property
71.		4.4*	Inadmissible payment of escalation charges to the contractors

* Action Taken Notes examined by Audit but yet to be finalised by the Ministry in the light of Audit remarks – 32

** ATNs vetted by Audit but copy of the finalised ATNs awaited from Ministry – 27

*** Action Taken Notes not received even for the first time - 11

@ Part ATN received – 01

ANNEXURE-II

(Referred to in Paragraph 2.1)

Year wise target and actual achievement towards indigenization of TATRA vehicles

Year	No. of vehicles to be produced	Supply Orders placed on BEML (for No of vehicle)	No. of Vehicles actually produced	Cumulative percentage of indigenisation to be achieved	Cumulative percentage of indigenisation actually achieved
1986-87	80	0	-	10	Nil
1987-88	200	80	86	20	5.06
1988-89	250	130	142	40	15.14 ¹
1989-90	250	190	191	61	23.07
1990-91	250	100	104	86	29.35
1991-92		26	1		29.35
1992-93		22	7		31.35
1993-94		119	7		
1994-95		24	146		
1995-96		121	55		
1996-97		138	143		
1997-98		48	128		
1998-99		304	159		40.00
1999-2000		699	326		
2000-01		729	509		
2001-02		1864	606		
2002-03		296	1082		
2003-04		163	900		
2004-05		285	289		
2005-06		1125	257		

¹ The percentage of small items not indicated separately but included in cumulative *per cent*.

Year	No. of vehicles to be produced	Supply Orders placed on BEML (for No of vehicle)	No. of Vehicles actually produced	Cumulative percentage of indigenisation to be achieved	Cumulative percentage of indigenisation actually achieved
2006-07		103	181		33.00
2007-08		33	754		33.00
2008-09		83	409		44.00
2009-10		843	438		47.50
2010-11		243	541		62.50
2011-12		427	223		62.50
2012-13		Nil	208		62.50
2013-14		Nil	50		
Total		8195	7942		

ANNEXURE-III

(Referred to in Paragraph 2.5)

Statement showing the details of excess payment of rent to the land owners for land falling under Poonch Municipal Council

Sl. No.	Period	Payment made (₹)	Payment due (₹)	Excess payment (₹)
1.	16.2.2008 to 31.3.2008 (45 days)	5,70,632	2,10,665	3,59,967
2.	01.04.2008 to 30.09.2008	1,39,82,624	69,91,320	69,91,304
3.	01.10.2008 to 31.03.2009	1,39,82,624	69,91,320	69,91,304
4.	01.04.2009 to 30.09.2009	1,39,82,624	69,91,320	69,91,304
5.	01.10.2009 to 31.03.2010	1,39,82,624	69,91,320	69,91,304
	Total	5,65,01,128	2,81,75,945	2,83,25,183

ANNEXURE-IV

(Referred to in paragraph 6.1)

Number and Cost of projects undertaken by VRDE and CVRDE during the period from 1st April 1998 to 31st March 2013 including projects in hand as on 1st April 1998

Name of the Lab	Total Projects Sanctioned			Projects closed			Ongoing projects					
	Staff projects	Sanctioned Cost	TD/R&D Projects	Sanctioned Cost	Exp incurred	Staff projects	TD/R&D Projects	Exp incurred	Staff projects	Sanctioned Cost	TD/R&D Projects	Sanctioned Cost
VRDE	12	46.51	41	279.04	22.45	09	36	100.23	03	20.82	05	168.03
CVRDE	5	116.33	29	458.34	7.28	02	20	171.96	03	106.58	09	267.29
Total	17	162.84	70	737.38	29.73	11	56	272.19	06	127.40	14	435.32

(₹ in crore)

Source: Compiled from Project Sanctions and data furnished by VRDE and CVRDE.

ANNEXURE-V

(Referred to in paragraph 6.2)

Details of Closed Staff and TD / R&D Projects at VRDE Ahmednagar and CVRDE, Avadi from April 1998 to 31st March 2013

Sl. No.	Project No. & Nomenclature	Remarks
1	Development of Surface to Surface Multi Barrel Rocket System(MBRS) – (SL-PX-87/VRD-W9.08)	VRDE
2	Development of variants on BMP-2 – (SL-PX-90/VRD-F15.01)	VRDE
3	Development of Two-Stroke light weight engine for Remotely Piloted Vehicle - (SL-PX-93/VRD.04 (ADE 176.06))	VRDE
4	Dev of Bridge Assault Mech. Launched - (SL-PX-93/ VRD.03)(RDE-378.01)	VRDE
5	Development of Vehicles and Shelters for CSD Entities of Programme – “Samyukta” – (SL-PX-94/DLR-190/V)	VRDE
6	Development of Undercarriage System - SL-PX-2k/VRD-40(ARD 1148.02)	VRDE
7	DRDO-Army Biodiesel Programme. Performance Evaluation of Bio-Diesel in Defence Vehicles – (SL-P1-07/DAR-71)	VRDE
8	Loader Cum Replenishment (LCR) vehicle for Project PINAKA – (MM-2010/VRD-01(V))	VRDE
9	Development of BMP Urban Survival Kit(BUSK) – (MM-2011/VRD-02(V))	VRDE
10	Development of 155mm SP Gun System (BHIM T6) - (SL-PX-98/VRD-212)	CVRDE
11	Development of Carrier Command Post Tracked on BMP-II (CCPT) - (SL-PX-05/CVR-228)	CVRDE
12	Design & Development of Extra long multi Axled transporter – (RD-P1-92/VRD-02)	VRDE
13	Trials & Evaluations of Vehicles & Systems – (RD-P1-93/VRD-05)	VRDE
14	Development of Advanced Instrumentation for Vehicle & Engine Testing – (RD-P1-94/VRD.11)	VRDE
15	Design & Development of Articulated Extra Long Transporter.- (RD-P1-95/VRD.13)	VRDE
16	Technology Development of Petrol Vehicles to Operate on CNG. – (RD-PX-97/VRD.21)	VRDE
17	Technology Development of Electronic Controller for Battery Powered Vehicle Application – (RD-P1-97/VRD-22)	VRDE
18	Technology Development of Traction Motor for Battery Powered Vehicle Application – (RD-P1-97/VRD-23)	VRDE
19	Technology Development of Battery Charger for Battery Powered Vehicle Application – (RD-P1-97/VRD-24)	VRDE
20	Development of Vehicular Technology for High Altitude Turbo-charging of Engine & Cab Heating Demisting Device & Winterisation Kit - (RD-PX-97/ VRD-26)	VRDE
21	Technology Development of Under Carriage for 30 mm Towed Light AD Gun – (RD-P1-97/VRD-27)	VRDE
22	Development of High Speed Crankshaft for High Specific Power Engine – (RD-P1-97/VRD-29)	VRDE
23	Design & Development of Under Carriage for 30mm , light, towed, Air Defence Gun - (RDS-PX-97/ARD-1080.01(VRD-28)	VRDE
24	Preparation of Full Scale Mock-up of Futuristic ICV – (RD-PX-97/VRD-30)	VRDE
25	Technology Development of Light Weight Bullet Proof Vehicle – (RD-PX-98/VRD-31)	VRDE
26	Development of Hybrid Electric Vehicle – (RD-PX-98/ VRD-32)	VRDE
27	Development of Futuristic Infantry Combat Vehicle - (RDS-P1-98/ VRD.34)	VRDE
28	Up-gradation of Existing Mobile Decontaminating System. - (RD-P1-98/ VRD-36)	VRDE
29	Preparation of Documents of Mobile Decontaminating System & Launcher Trailer for CLMC(V) - (RD-P1-98/ VRD-37)	VRDE
30	Integrated Transfer of Technology - (RD-P1-99/ VRD-39)	VRDE
31	Feasibility Study of Unmanned Ground Vehicle – (RD-P3-01/VRD-41)	VRDE
32	Design, Development & Fabrication of Two numbers of bullet Proof Vehicles(BPV) – (RDR-PX-02/VRDE-42(PXE-1156))	VRDE
33	Development of Trailer Mounted Container for LASER Interferometer - (RDR-PX-02/ VRD-1135.01)	VRDE

34	Development of Rotary Engine – (RDR-PX-02/VRD-43)	VRDE
35	Development of Technologies for Combat Vehicle Systems - (RD-P1-02/ VRD-44)	VRDE
36	To Provide Collapsible Tarpaulin System on Vehicles as well as Digitalisation of Drawing & Documents - (RDS-PX-03/ ARD-1176.01 - (VRD-45)	VRDE
37	Development of Unmanned Ground Vehicle (UGV) - (RDR-P1-04/ VRD-46)	VRDE
38	Bullet Proof Light Vehicles – (S&T-PX-06/VRD-47)	VRDE
39	Electronic Fuel Injection System (EFIS) for two stroke engines – (TD-P1-06/VRD-49)	VRDE
40	Development of Mobile Trailer Platform & Vibration Isolation System for Laser Beam Director System, (Aditya) – (LASTEC-CDC-3(253)- 07/VRDE)	VRDE
41	Design & Development of Mobile Shelter for B/C contamination Analysis station – (RD-P1-08/Sub.Proj-DRDE-187/02)	VRDE
42	Design of Operator Control Unit - (TD-08/RDE-405.01)	VRDE
43	Development of Enabling Technologies for Futuristic Infantry Combat Vehicle(GSQR 1053) – (TD-08/VRD – 50)	VRDE
44	Development of Advanced Hydraulic and Allied systems for improved dozing and floatation capabilities in BMP-2 class vehicles. – (TD-10/VRD – 53)	VRDE
45	Design and Development of Anti Terrorist Vehicle. – (TD-10/VRD – 54)	VRDE
46	Study & Experimentation on Micro Unmanned Aerial Vehicle (MUAV) for Deployment in high altitude – (TD-2010/VRDE-LIC - 11)	VRDE
47	Development of Mine Protected Vehicle (MPV) – “KAVACH” - (TD-2010/ VRDE-LIC-14)	VRDE
48	Preparation of Production drawings for Combat Improved Ajeya tank - (RDS-PX-96/VRD-205)	CVRDE
49	Technology Transfer for productionisation BMP II variants - (RDS-PX-96/VRD-206)	CVRDE
50	Improvements to system MBT Arjun - (RDS-PX-1997/VRD-208)	CVRDE
51	Documentation, preparation to assist productionisation of MBT-Arjun - (RDS-PX-1997/VRD-209)	CVRDE
52	Manufacture and integration of power booster conversion kits on T-72 base engine and vehicle trials - (RDS-PX-1997/VRD-211)	CVRDE
53	Development of Electro Hydraulic Gun Control Systems(GCS) - (RDS-PX-07/CVR-213)	CVRDE
54	Design and development of Arjun derivative chassis automotive system for basic launching vehicles for bridge laying system Arjun based side launch - (RDS-PX-99/RDE/85/VRD-214)	CVRDE
55	Gunnery Arjun Part Task Training Simulator - (RDS-PX-2000/VRD-215)	CVRDE
56	Integrated Future Combat System(IFCoS) development programme-Definition phase - (RDS-PX-2000/VRD-216)	CVRDE
57	Development of Core Technology for Armoured Fighting Vehicles(AFVs) - (RDS-PX-2000/VRD-217)	CVRDE
58	Indigenisation of sub-systems for AFVs - (RDS-PX-2000/VRD-219)	CVRDE
59	Sealing of Production drawings for Carrier Mortar Tracked (RDS-PX-2000/VRD-221)	CVRDE
60	Demonstration of Missile firing capability for MBT-Arjun - (RDS-PX-2002/VRD-223)	CVRDE
61	Development of air craft bearings - (RDS-PX-2002/VRD-224)	CVRDE
62	Armoured Fighting Vehicles Technology transfer from DRDO to OFB/PSUs/DGQA/EME and users - (RDS-PX-2003/VRD-225)	CVRDE
63	Development of Experimental Tank - (RDS-PX-2003/VRD-226)	CVRDE
64	Development of Integrated Arjun Simulator - (RD-PX-2004/CVR-227)	CVRDE
65	Development of Defensive Aid System for AFVs - (RD-PX-05/CVR-229)	CVRDE
66	Development of Arjun Recovery & Maintenance System (ARMS-WZT-3) - (RDS-PX/07/CVR-230)	CVRDE
67	Development of advanced chassis and automotive system - (TD-10/CVR-236)	CVRDE

ANNEXURE-VI

(Referred to in paragraph 7.2.1)

(i) Comparison of Rules & Guidelines for Defence Grants-in-Aid Scheme of DER&IPR and Research Boards

Subject Matter	Directorate of ER&IPR	Life Sciences Research Board	Armament Research Board	Aeronautics Research Board	Naval Research Board
Year of Formation	Formed in May 2000	Formed in March 1998	Formed in March 1997	Formed in February 1971	Formed in August 1996
Scrutiny of project proposals, recommending the project for sanction, review of progress and evaluation of closure report and recommending project closure	Project proposals are scrutinized and recommended by the labs Specialized in the particular field. Only high value project costing more than ₹ 50 lakhs is evaluated by the committee created for it	Project proposals are scrutinized and recommended by the Panel	Project proposals are scrutinized and recommended by the Panel	Project proposals are scrutinized and recommended by the Panel	Project proposals are scrutinized and recommended by the Panel
Overhead Charges provided in the project sanction	Not mentioned	Not mentioned	15 % of the total cost of project subject to maximum of ₹ 5.00 lakhs	10% of the total cost of project subject to maximum of ₹ 1.00 lakh	Up to 20% of total cost of project subject to maximum of ₹ 5.00 lakh
Date of commencement Of the project	Date of receipt of first installment of the grant	Date of sanction of the project	Date of receipt of first installment of the grant	Date of receipt of first installment of the grant	Date of receipt of first installment of the grant

Time schedule for submission of project closure report	Within 60 days from the date of completion of project	Within 3 months from date of completion of project	Within 60 days from the date of completion of project	Within 60 days from the date of completion of project	Within 90 days from date of completion of project
Preparation of Compendium of the completed projects	The compendium of the completed projects is prepared.	The compendium of the completed projects is prepared.	The compendium of the completed projects is not prepared.	The compendium of the completed projects is prepared in the form of Annual Report.	The compendium of the completed projects is not prepared.

(ii) Comparison of procedure for sanctioning of projects adopted by DER&IPR and Research Boards

Subject matter	Directorate of ER&IPR	Life Sciences Research Board	Armament Research Board	Aeronautics Research Board	Naval Research Board
Data-base of the project proposals received during the year	Formed in May 2000 No data-base is maintained	Formed in March 1998 The data-base of project proposals received during the year is maintained	Formed in March 1997 No data-base is maintained	Formed in February 1971 No data-base is maintained	Formed in August 1996 No data-base is maintained
Sanctioning of projects	Based on the recommendations of the lab(s), the project is sanctioned by the CFA in DER&IPR / DRDO HQ.	Based on the recommendations of the Panel, the project is sanctioned by the CFA in LSRB / DRDO HQ.	Based on the recommendations of the Panel, the project is sanctioned by the CFA in ARMREB / DRDO HQ.	Based on the recommendations of the Panel, the project is sanctioned by the CFA in AR&DB / DRDO HQ.	Based on the recommendations of the Panel, the project is sanctioned by the CFA in NRB / DRDO HQ.

(iii) Comparison of procedure for budget formulation adopted by DER&IPR and Research Boards

(Major Head 2080, Minor Head 004-Research/R&D)

Subject matter	Directorate of ER&IPR (Code Head 852/06)	Life Sciences Research Board (Code Head 852/05)	Armament Research Board (Code Head 852/04)	Aeronautics Research Board (Code Head 852/02)	Naval Research Board (Code Head 852/03)
Budget formulation and forecasting	The budget is formulated and based on ongoing projects and projected for next year with an estimated 10-15% revision	Initially the budget was predetermined as ₹ 1.00 crore. Over a period of time, keeping in view the number of projects received and fund requirement for ongoing projects, the budget was gradually enhanced	The budget formulation/forecast depends upon previous commitments under sanctioned projects, project proposals considered as well as potential project proposals likely to be recommended by the Panels	The budget forecast is formulated by taking into account already sanctioned & running projects and project proposals under consideration of Specialist Panels	The budget is formulated based on current ongoing projects and projected for next year with an approximate 10-15% revision
Whether budget forecast is related to thrust areas of research	The budget projection is related to the thrust areas of research	The budget is not projected as related to Annual Plan, however, projects are considered keeping in view the thrust areas of research	The budget projection is related to the thrust areas of research	The budget forecast factors the expected outgo for thrust areas of research	The budget projection is related to the thrust areas of research

ANNEXURE-VII

(Referred to in paragraph 7.2.2)

Showing details of increase/decrease in projection/allotments of funds over that of previous year(s)

(₹ in crore)

Sl No	Name of the Board / Dte	2007-08			2008-09			2009-10			2010-11			2011-12			2012-13		
		Allot	Exp	% Increase / decrease over previous year's allotment	Allot	Exp	% Increase / decrease over previous year's allotment	Allot	Exp	% Increase / decrease over previous year's allotment	Allot	Exp	% Increase / decrease over previous year's allotment	Allot	Exp	% Increase / decrease over previous year's allotment	Allot	Exp	% Increase / decrease over previous year's allotment
1	AR&DB	6.50	6.23	7.50	7.50	7.50	15	9.55	7.96	27	18.36	18.37	92	40.78	36.51	122	19.27	18.01	(-)53
2	NRB	10.00	9.78	10.00	9.78	7.70	0	7.70	7.51	(-) 23	3.90	3.88	(-)49	11.00	10.98	182	11.66	11.57	06
3	ARMREB	1.10	1.03	2.00	1.43	3.50	82	3.50	3.01	75	4.04	3.88	15	3.25	2.37	(-)20	2.80	2.35	(-)14
4	LSRB	4.00	4.36	10.00	9.45	11.00	150	11.00	10.35	10	11.35	11.00	03	7.00	6.78	(-)38	2.94	3.45	(-)58
5	ER&IPR	32.90	32.50	30.00	29.81	25.00	(-) 9	25.00	23.99	(-)17	36.50	36.48	46	46.00	44.10	26	50.00	49.83	9
	Total	54.50	53.90	59.50	57.97	56.75		56.75	52.82		74.15	73.61		108.03	100.74		86.67	85.21	

Source: Data/details provided by DRDO

ANNEXURE-VIII

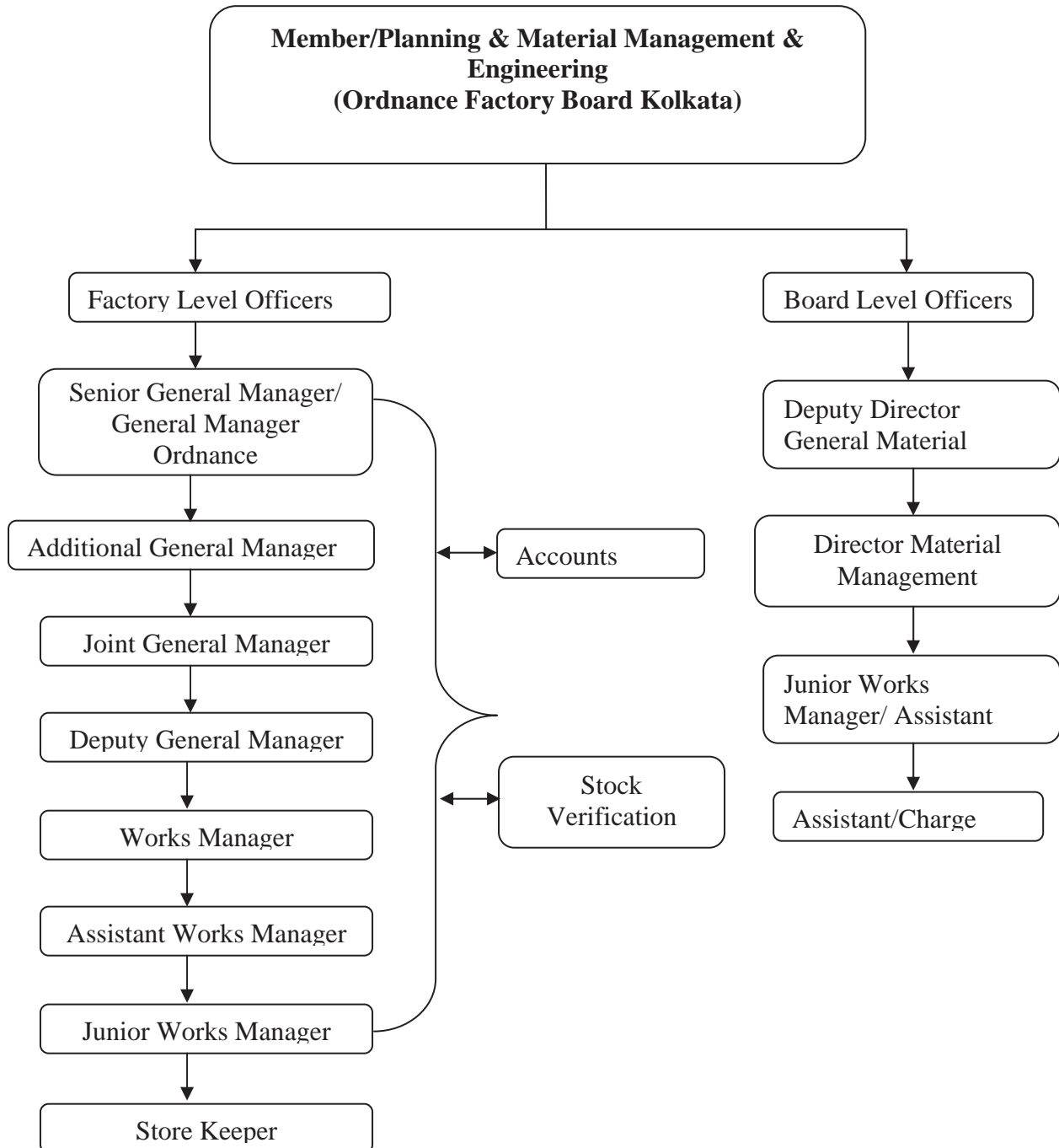
(Referred to in paragraph 7.3)

Details of creation of DRDO Chairs and DRDO Fellowships

Name of the Chairperson (Chair / Lab)	Date of Sanction	Amount Released (₹ in lakh)	Area of research given to the Chairperson	Audit remarks
Dr. Kota Harinarayana (Dr. D.S.Kothari Chair/ADA, Bangalore)	December 2010	March, 2011 (₹27.69 lakh) March 2012 (₹24.43 lakh) March 2013 (₹23.55 lakh)	a) Advisor on technology development b) Review of new projects on unmanned vehicles, new generation regional aircraft, product improvements for LCA variants and indigenisation program, etc. c) Participate along with DRDO labs' team in development of system engineering studies, and integrated vehicle health management technology, etc.	i) Dr. Kota Harinarayana, Vice Chancellor of University of Hyderabad was awarded chair at ADA, Bangalore. ii) The chairperson had furnished unaudited Annual Accounts and Utilization Certificate. iii) The interest earned on the funds had not been reflected in the Annual Accounts. iv) No income tax has been deducted while making payment of honorarium to the chairperson.
Dr. S.K.Salwan (Dr. B. D. Nagchaudhari Chair/SPIC, Delhi)	January 2011	May, 2011 (₹27.69 lakh)	a) Advisor for threat assessment and analysis, technology forecasting and matching and evolving war doctrines. b) Review of Design and Development of Artillery Gun and Gun system of Pinaka variants, futuristic tank gun and ammunition and other indigenization gun & ammunition programme. c) Research in (i) forecasting and evolving development of strategy for technologies needed for defence of country in next two decades (ii) technology needs for development of weapon system and its integration in futuristic war scenarios (iii) futuristic warhead technologies for missiles/anti-missile applications.	i) Dr. S.K.Salwan was the Chairman of Armament Research Board of DRDO and he was also offered a Chair at SPIC which indicates conflict of interest. ii) Out of Grant of ₹ 27.69 lakh, an expenditure of ₹ 21.43 lakh was incurred which included ₹ 21.05 lakh on honorarium and travel of the Chairperson. iii) No Research scholars were appointed during the currency of project. iv) The project was short closed one year before expiry of PDC of project i.e. May 2014. v) The interest accrued on the funds had not been reflected in the Accounts. vi) The income tax had not been deducted and remitted to Income Tax Department while making payment of honorarium to the Chairperson.
Dr. P.S.Goel (Prof. M G K Menon Chair/RCI, Hyderabad)	March 2012	June 2012 (₹27.68 lakh)	a) Mentor Kautilya (ELINT) program and to build capacity to develop satellite technology base at RCI, payloads at DLRL, etc. b) Mentor satellite on demand capability in DRDO including building satellite and payload at RCI and other labs. c) Mentor space security directorate (to be created at DRDO HQ) for addressing issues like Satellite Based Surveillance Program and Communication for Defence, etc. d) In addition, SA to RM may utilize his expertise from time to time in other areas relevant to DRDO.	i) Unaudited Annual Accounts / Utilisation Certificate were furnished by the Chairperson which resulted in non-release of second installment to chairperson. ii) Though one year of project had been completed but no project report or project review had been carried out so far.

ANNEXURE-IX

(Referred to in paragraph 8.2.1)



ANNEXURE-X

(Referred to in paragraph 8.2.9.1)

Statement showing budget estimate vis a vis actual expenditure on stores

(₹ in crore)

Factory	2010-11				2011-12				2012-13			
	<u>BE</u>	<u>Actual Expenditure</u>	<u>Variation (AE-BE)</u>	<u>Percentage of variation</u>	<u>BE</u>	<u>Actual Expenditure</u>	<u>Variation (AE-BE)</u>	<u>Percentage of variation</u>	<u>BE</u>	<u>Actual Expenditure</u>	<u>Variation (AE-BE)</u>	<u>Percentage of variation</u>
OKAT	60.10	41.21	- 18.89	-31.43	130.20	159.33	29.13	22.37	143.22	134.31	-8.91	-6.22
MSF	63.78	64.85	1.07	1.68	72.20	92.78	20.58	28.50	71.04	111.70	40.66	57.24
MTPF	29.89	16.03	-13.86	-46.37	32.34	34.35	2.01	6.22	45.33	30.95	-14.38	-31.72
OFAJ	261.18	266.46	5.28	2.02	334.10	288.99	-45.11	-13.50	311.53	252.00	-59.53	-19.10
GSF	147.15	74.10	-73.05	-49.64	206.40	157.36	-49.04	-23.76	199.95	156.97	-42.98	-21.50
HVF	2140.32	1594.92	-545.40	-25.48	707.98	862.97	154.99	21.89	945.86	703.70	-242.16	-25.60
OFMK	282.61	270.70	-11.91	-4.21	307.10	382.50	75.4	24.55	323.18	342.85	19.67	6.08
OLFD	618.15	168.64	-449.5	-72.72	288.62	379.39	90.77	31.45	155.76	291.10	135.34	86.89
OFD	28.38	17.7	-10.68	-37.63	22.08	14.04	-8.04	-36.41	26.25	32.22	5.97	22.74
Total	3631.56	2514.61			2101.02	2371.71			2222.12	2055.80		

ANNEXURE-XI

(Referred to in paragraph 8.2 9.1)

Statement showing rush of expenditure in the last quarter/last month

Factory	2010-11			2011-12			2012-13		
	AE (₹ in crore)	Last quarter Expenditure (in per cent)	Last month Expenditure (in per cent)	AE (₹ in crore)	Last quarter Expenditure (in per cent)	Last month Expenditure (in per cent)	AE (₹ in crore)	Last quarter Expenditure (in per cent)	Last month Expenditure (in per cent)
OFKAT	41.21	47.74	14.30	159.33	29.22	14.82	134.31	32.07	11.88
MSF	64.85	31.98	14.65	92.78	30.81	8.06	111.70	18.93	7.73
MTPF	16.83	31.26	35.06	34.35	32.67	15.23	31.19	33.32	8.87
OFAJ	266.46	30.50	10.60	288.99	28.63	7.26	252.00	24.36	7.51
GSF	74.10	34.43	10.09	157.61	54.39	10.02	156.97	26.13	11.28
HVF	1594.92	53.91	17.65	862.97	57.40	21.10	703.70	37.02	9.66
OFMK	270.70	49.69	31.08	382.50	47.53	29.27	342.85	20.30	8.21
OLF	168.64	42.71	20.06	379.39	67.42	29.98	291.10	30.24	21.25
OFD	17.70	61.41	42.21	14.04	43.03	26.79	32.22	56.38	41.92

ANNEXURE-XII

(Referred to in paragraph 8.2.9.4)

Stores in excess of authorised limit

Factory	Stores in hand as of 31 st March 2013 * (₹ in crore)	Consumption of stores during the year * (₹ in crore)	Monthly consumption of stores during the year ¹ (₹ in crore)	Norms for holding	Holding in terms of number of months	Excess holding in terms of months	Value of excess holding. (₹ in crore)
1	2	3	4	5	6 (2/4)	7 (6-5)	8 (7*4)
OKAT	103.52	184.47	15.37	4.0	6.7	2.7	42.00
MSF	62.85	111.78	9.32	4.0	6.7	2.7	25.60
MTPF	21.70	50.01	4.17	4.0	5.2	1.2	5.00
OFAJ	253.24	379.88	31.66	4.0	8.0	4.0	126.60
GSF	195.95	237.07	19.76	4.0	9.9	5.9	116.90
Total: A	637.26	936.21	80.28				316.10
HVF	1,197.53	1,648.00	137.33	6.0	8.7	2.7	373.50
OFMK	374.56	456.16	38.01	6.0	9.9	3.9	146.50
OLFD	193.33	391.07	32.59	6.0	5.9	-0.1	-2.20
OFD	22.57	30.26	2.52	6.0	9.0	3.0	7.40
Total: B	1,868.27	2,525.49	210.45				525.20
Grand total: (A+B)	2,425.25	3,488.70	290.73				841.30

* Source: Printed Annual Accounts for the year 2012-13.

¹ Consumption of stores during the year (column 3) / 12 months

ANNEXURE-XIII

(Referred to in paragraph 8.2.9.5)

Cases of excess holding of Stores-in-hand

Sl. No	Reason for holding	Factory	Brief of the case
1	Cancellation or short-closure of orders mainly due to slippages in production	HVF	<p>Army's order for supply of 1380 tanks was scheduled to be completed by 2002. However, the production schedule got delayed by five years to 2007. Army foreclosed the indent due to slippages in production as well as poor quality of the product by HVF. This resulted in holding 8530 original equipment (OE) items valuing ₹ 161.28 crore since 2007. Board stated (September 2014) that Army foreclosed the Indent due to their operational requirement to induct State of the Art technology Tanks. Further, 8530 Original Equipment (OE) items valuing ₹ 161.28 crore pertain to T-72 Tank, which are not obsolete. The same would be drawn and consumed during production of Bridge Layer Tank and Trawl Tanks.</p> <p>Reply is not acceptable because efflux of time by five years from 2002 to 2007 was a factor leading to changed operational requirement and consequent foreclosure of order by Army. Further, even after non-utilization of 8530 nos. of T-72 OE items during last seven years, the management could not indicate a time bound programme for utilization of the same.</p>
2		MTPF	<p>In order to meet an order under Inter-Factory Demand from OFMK, 2504 numbers of forging for track shoe valuing ₹ 0.19 crore was procured between October 2005 and May 2006 and were lying in MTPF since then. It was seen that the IFD on MTPF had been short closed.</p> <p>Board stated (September 2014) that track shoe forgings would be utilised in the production of Infantry Combat Vehicle (BMP) at OFMK during 2014-15.</p>
3			<p>MTPF procured 132.70 Kgs of loctite between February 2010 and August 2011 valuing ₹ 0.13 crore. The store was required for manufacture of 84 mm Tracer Path Target (TPT). Since the pilot sample of 84 mm TPT was not confirmed in the trials, the manufacture of the item was suspended. It was seen that the stock of earlier procurement had expired its shelf-life in January 2012 and the fresh procurement made in the year 2011-12 had since also expired its shelf life and lying in the factory stock awaiting disposal thereon.</p> <p>Board stated (September 2014) that the store could not be utilized before the expiry date due to non-receipt of Bulk Production Clearance of 84 mm TPT; however is being utilized for maintenance, carpentry shop and Bar Mill section.</p> <p>The reply of the Board is contradictory as the store had already expired its shelf life and the utilisation of the store is questionable.</p>
4			<p>105 numbers of band forging valuing ₹ 0.21 crore were procured for manufacture of hydraulic coupling. As Machine Tool Prototype Factory (MTPF) failed to manufacture the item, the store was lying in stock without any use. The failure of MTPF to complete production targets contributed to the holding of band forging valuing ₹ 0.21 crore. Board stated (September 2014) that disposal action had been initiated for the store as a serviceable surplus.</p>

5			<p>163 numbers of electro magnet valuing ₹ 0.32 crore, 64 numbers of synchro resolver valuing ₹ 0.31 crore and 50 numbers of electro motor valuing ₹ 0.58 crore required for code 94 assembly (tank item) was procured between February 2008 and June 2009, October 2007 and May 2010 and May 2008 and July 2009 respectively. Code 94 was yet to be supplied by MTPF.</p> <p>Board stated (September 2014) that the factory is consuming the item in part quantities for manufacture and supply of the sub-assemblies as per HVF's production plan.</p> <p>Board, however, did not specify any reason for non-utilization of the item for the last four years along with reasons for part utilization.</p>
6		MTPF	<p>During January 1997 - March 1999, 6097 sheets of stainless steel maraging strip valuing ₹ 1.71 crore procured for manufacture of Cluster Bomb were lying for more than a decade.</p> <p>Board stated (September 2014) that the orders were suspended by the consignee factories and items were offered under Mutual Aid Scheme (MAS) but no positive response was observed. Finally item had been cleared for disposal under surplus.</p> <p>Storage of materials without any tangible results from MAS indicates lack of inventory control and disposal of store.</p>
7		MSF	<p>Mention was made in Audit Para 7.2 under Audit Report No6 of 2004 regarding production of 9638 MT of different types of steel blooms and billets at a total cost of ₹ 22.66 crore over a period of time at the Bar Mill section. But the items could not be utilized due to mismatch between the stock and outturn orders and also due to gradual shortage of load. These items were stored in the open yard and exposed to the vagaries of nature over the years due to which they became rusted and lost their identity. These were converted as steel scrap mixed billets and blooms of 7252.91 MT and taken on charge at a value of ₹ 18.95 crore and accounted for against a new folio (bin card) in November 2012. However, store was lying unutilized as of March 2013. Response of the Board was awaited (September 2014).</p>
8	Excess stores due to quality problems	GSF	<p>Steel Sheet is required for manufacture of various parts of 81mm Base Plate Assembly. GSF placed a supply order in March 2012 on M/s MIDHANI Ltd. Hyderabad for supply of 14,884 Kgs steel sheets at a cost of ₹ 2.76 crore. GSF received 14,884 Kgs of steel sheet between July 2012 and Sept 2012. During quality checking by GSF, it was observed that thickness variation in various sheets apart from low thickness than a specified one (thickness variation had been observed from 2.46 mm to 2.91 mm). Subsequently, SQAE stated (March 2013) that they had observed low thickness of 2.77 mm +/- 0.22 mm. Although GSF communicated the matter to M/s MIDHANI in March/April 2013, but no response from them was received. The Controller of Quality Assurance (Weapons) Jabalpur [CQA(W)] during his visit on 01 March 2013 had directed that GSF should identify new suppliers in the country who can supply correct raw materials plates of uniform thickness in order to ensure smooth production of the critical assembly in future. Only 2990.862 Kg of steel sheet was drawn by shop during 2012-13. Thus, GSF accepted 14,884 kg of defective store, 2991 kg was drawn by the shop during 2012-13 and 11,893 kg defective steel sheet valuing ₹ 2.07 crore was lying in stock as of March 2013.</p> <p>Board stated (September 2014) that the store supplied by the firm with minor deviations which was earlier rejected by the inspector was, however, accepted. Some parts of stores have since been utilized and the balance stores would be utilized during 2014-15.</p>

			Reply of the Board was not acceptable because instead of claiming for replacement, GSF had accepted a defective item from the supplier. Moreover, violation of directive of DGQA for stringent vigilance before accepting raw materials for critical assemblies was indicative of compromising with quality of final product.
9		MTPF	For manufacture of 84 mm TPT projectile for the first time, MTPF procured all stores required prior to bulk production clearance. As the stores procured did not meet the inspection standards' the production of 84 mm TPT was suspended resulting in stores valuing ₹ 0.56 crore procured for the item became surplus, till the BPC was issued. Factory management stated (December 2013) that the materials supplied by the firm were accepted based on the detailed inspection at the time of receipt in MTPF. Board (September 2014) stated that the material would be utilized in 2014-15 after establishing the product.
10		GSF	The factory had placed an IFD (October 2010) on Ordnance Factory, Ambajhari (OFAJ) for supply of 59,000 kg Aluminium Alloy Rod 35 dia for manufacture of body of empty fuze percussion DA5A. OFAJ offered (October 2010) Aluminium Alloy rod of 36 mm dia as against the IFD requirement of 35 dia. GSF, accordingly, cancelled the IFD for 35 mm dia. Aluminium Alloy Rod (December 2010) at nil quantity and placed two IFDs (December 2010 and March 2012) on OFAJ for Aluminium Alloy Rod 36 mm for 30,000 kg and 42,000 kg respectively. GSF received 72,000 kg of Aluminium Alloy Rod 36 mm dia valuing ₹ 2.70 crore during September 2011 and August 2013. The balance stood at 71,700 kg as of October 2013 after drawing meager quantity of 300 kg in January 2012. Thus, due to procurement of 36 mm dia rods instead of 35 mm dia rods 71,700 kgs of Aluminium Alloy Rod valuing ₹ 2.70 crore were lying unutilised as of March 2013. Board stated (September 2014) that as difficulties were faced in provisioning of Aluminium alloy rod of 34 mm dia from trade, so it was planned for procurement through IFD from OFAJ for Al alloy rod 36 mm dia. Board also stated that surplus stock of 36 mm dia would be consumed during 2014-15 and 2015-16 and no procurement action for the item was taken during 2014-15 and 2015-16. Reply of Board is not acceptable as the factory had been regularly procuring Al alloy rod of 34 mm dia from trade sources even during 2012-13 and used the same in production of the end store (84 mm TPT) during 2012-13. Unsuitability of the material for the production of the end store was the main reason for non utilization.
11		MSF	During the year 2009-10, 342 MT out of 382 MT of Steel flat valuing ₹ 3.41 crore for manufacture of 23mm schilka cartg case were lying for more than three years. Board stated (September 2014) that the production of 23 mm Schilka ammunition had been suspended based on the decision of the Indian Army. The existing inventory would be utilized after resolving technical problems and resumption of production.
12			During the year 1986-87, 4584 numbers of Finished cavity body valuing ₹ 0.32 crore were procured for manufacture of 81mm Bomb against GSF's IFD of November 1985. This item, after production (October 1986 and November 1986), was issued to GSF. However, GSF back loaded the same due to discrepancy on quality front, which was taken on charge by MSF and were lying in stock for the last 26 years. Board stated (September 2014) that the production of store had been discontinued for last several years and instructions would be issued to regularize the loss by raising loss statement.

13			During 2006-07, 9418 Nos of Cartridge Case valuing ₹ 1.71 crore issued to Ordnance Factory Badmal for manufacture of 30mm BMP-II were back loaded to the Metal and Steel Factory Ishapore (MSF) in August 2006. These items were lying in stock since its receipt at MSF. Board stated (September 2014) that regularization action will be taken by raising loss statement as per procedure.
14	Reduction of target	OFAJ	Copper Tube is required for production of 105 mm IFG shell. The factory was having 44,948 kg Copper Tube valuing ₹ 1.91 crore as of March 2014. Withdrawal of target by the Board for the year 2012-13 and 2013-14 resulted in overstocking of the material. Factory while admitting the fact stated (May 2014) the matter had been taken with Board/sister factory for allotment of target and utilization. Response of the Board was awaited as of September 2014.
15			Parted steel is required for production of 105 mm IFG HE. The factory was having 14478 nos of material valuing ₹ 1.81 crore as of March 2014. Withdrawal of target by the board for the year 2012-13 and 2013-14 resulted in overstocking of the material. Factory while admitting the fact stated (May 2014) the matter had been taken with Board/sister factory for allotment of target and utilization. Response of the Board was awaited as of September 2014.
16			Nose adopter is required for production of 125 mm shell HE1A. The factory was having 84254 Nose adopter valuing ₹ 34.45 crore as in August 2014. Withdrawal of target by the Board for the year 2012-13 and 2013-14 resulted in overstocking of the material. Factory while admitting the fact stated (May 2014) that the material would be utilized in subsequent years against which targets are available. Reply of the Board was awaited as of September 2014.
17	Supply chain problems	HVF	19 types of armour plates were imported (July 2007) from M/s Rosoboronexport under a Supplementary Agreement (SA). The armour plates were meant for production of T-90 Tanks. Out of 19 types of armour plates, two types <i>i.e.</i> Armour steel 60 (611.95 tonne) and 85 grade (215 tonne) valuing ₹ 18.99 crore were received in 2009. Due to non availability of thermo pressing facility by M/s BHEL, the armour plates could not be utilized and had thus become surplus. HVF, however, utilized 276.776 ton of the items between November 2009 and October 2012 and balance quantity of 550.174 ton valuing ₹ 15.25 crore were lying unutilized. Board stated (September 2014) that in-house manufacture of hull assembly could not be undertaken due to the fact that thermo pressing facility at BHEL, the only indigenous source, was under breakdown. The stock of armour plates would be gainfully utilized for manufacture of Hulls for BLT and Trawl. Reply itself indicates that lack of procurement activities of thermo pressing plates and import action of fully formed Hulls led to non-utilization of armour plates for the last seven years.
19		OFD	Buckle toothed is required for production of Goggles GS MK-II NIV. The factory held a stock of 24110 Nos as of March 2011 and the stock remained unutilized up to March 2012. A supply order was placed (August 2012) against which 2,52,700 Buckle toothed were procured in August 2012 from a trade firm thereby increasing the stock level to 276810 as of March 2013. As there was no utilisation of the store during the year 2012-13, the whole material valuing ₹ 0.21 crore remained surplus. Factory management stated that CA Sheet was also required for manufacture of Goggles GS MK-II NIV which was difficult item to procure and the same could not be procured. This rendered above material stocked and unutilized as of March 2013. Thus, procurement of a material without ensuring availability of

			matching item rendered avoidable procurement of buckled toothed valuing ₹ 0.21 crore. Response of the Board was awaited as of September 2014.
20	Improper planning	HVF	In HVF, 5491 items valuing ₹ 0.84 crore received from 1950 to 1987 were not drawn at all and 3723 vintage items valuing ₹ 0.72 crore were last drawn between September 1963 and December 1987. The items valuing ₹ 1.56 crore were held in the factory and categorized as Non-moving. Factory had not taken any effective action to liquidate the non-moving stock for the last 27 years. Board stated (September 2014) that the non-moving stock consists of Vijayanta tank tools and other items against which disposal/liquidation action was under consideration.
21		OFMK	75,832 kg of T 160 CR12 Plates valuing ₹ 0.45 crore purchased in February 1990 were not utilized till date. Board stated (September 2014) that all stores of exclusive items are meant for BMP-II which had been inducted in 2012-13. The store items would be consumed in 2014-15. Board could not justify the reasons for procurement of a store in 1990 against production of an item which had been inducted in 2012-13.
22	Over provisioning of stores	MSF	Material Requirement Planning and Forecasting modules (MRP) in the Production Planning and Control (PPC) software package is used in calculating the net requirement of stores for provisioning did not have the provision to consider the quantity of stores held in the Shop (as a part of WIP) while working out the net requirement of stores for procurement. Absence of such provision in the module had resulted in over provisioning of stores valuing ₹ 6.16 crore. Board, while accepting (September 2014) the programming error in the calculation of dues, stated that the programming error affected only those cases where material was received and rejected later. The contention of the Board is not acceptable as programming for calculation of dues has universal applicability to all the cases of assessment for requirement and cannot be used as a tool for post mortem exercise for isolated cases for analysis of rejections.
23		GSF	Based on the production target of 2010-11, 2011-12 and 2012-13, GSF placed two IFDs (January & September 2010) on OF Katni for supply of 87,106 and 1,73,306 numbers of die casting safety cap for Fuze DA5A. GSF received the ordered quantity by March 2013. Considering 25% material provision of 15705 caps for production target of 2013-14 at 60000 fuzes, we noticed that there was over provisioning of 1,25,243 caps valuing ₹ 0.86 crore as of 31 March 2013. Factory stated (February 2014) that it is expected that the material would be consumed in the year 2014-15 and 2015-16. Response of the Board was awaited as of September 2014.
24			Against a target for manufacture of 12000 nos. pistol for the year 2012-13, GSF voluntarily enhanced the target to 15000 nos for the year and assessed the net requirement of receiver in finished condition at 4000 nos for manufacture of pistol. They could however, achieve production of 10840 nos during the year by utilizing the available stock and dues in hand some part of fresh procurement. Accordingly a stock of 2796 nos of receiver valuing ₹ 0.75 crore was held in excess of authorized holding. Response of the Board was awaited as of September 2014.

25			<p>Factory placed an IFD (June 2010) on MSF for procurement of 41883 nos of Brass Stamping Body for production of 62500 nos of Fuze Percussion DA 117 during 2010-11. Quantity held in stock was 25617 nos as of April 2010. MSF supplied 15985 nos of the item between December, 2010 and July 2011. The factory however did not produce Fuze Percussion DA 117 during the year 2010-11 to 2012-13. Last material was drawn in January 2006 for 450 nos. and subsequently, 20533 nos in August 2010, out of which 16000 nos were returned to store in September 2013 and bin stock quantity became 37069 no valuing ₹ 2.68 crore as of March 2014.</p> <p>It was also observed that there had been no target for this item since the year 2009-10. Placement of IFD on MSF without production target resulted in avoidable procurement.</p> <p>Response of the Board was awaited as of September 2014.</p>
26		OFAJ	<p>Parted steel Billets was required for production of shell 155 mm M-107 HE. For the requirement of 2012-13, OFAJ placed a Supply Order in March 2012 for 27741 Nos. Subsequently, considering the requirement of 2013-14 also, 100 <i>per cent</i> option clause was operated and quantity of the above Supply Order was raised to 55482 numbers. The firm had supplied 58569 numbers, of which OFAJ accepted 55177 numbers as of March 2013. The target of 2013-14 was reduced by the Board from 46000 to 6000 numbers. Hence, requirement of above material was 6908 only for 2013-14. Thus, 28,342 parted steel billets valuing ₹ 6.83 crore was held in stock in excess of requirement.</p> <p>Board stated (September 2014) that the inventory will be gainfully utilized to meet the production target for the year 2014-15.</p>
27		OFD	<p>Gls. EDF is required for production of lenses used in Day Sight Telescope 5.56 MM RIFLE. Factory placed a supply order (July 2012) for 1000 Kg of the said material and received in March 2013. It is noticed that there was an excess holding of the material valuing ₹ 0.23 crore as of March 2013.</p> <p>Factory management stated (May 2014) that store was procured for production of lenses in factory; however, lenses required for Day Sight Telescope were outsourced. Consequently the store procured remained unutilized.</p> <p>Thus, outsourcing of material despite its availability resulted in excess holding of procured material.</p> <p>Response of the Board was awaited as of September 2014.</p>

ANNEXURE-XIV

(Referred to in paragraph 8.2.9.9)

Cases of old outstanding WIP

Sl. No	Reasons for non-clearance	Factory	Brief of the case
1	Rejected stores lying in WIP	MSF	Nine T- 72 tank barrels valuing ₹ 0.90 crore manufactured against warrant 5272/0 (March 2006) were rejected and lying as WIP since 2005-06. Board stated (September 2014) that action plan has been made and the WIP will be liquidated by 2016-17 after converting the same into alternative stores like Breech block etc.
2			13,514 numbers of 23 mm schilka cartridge case valuing ₹ 0.76 crore was manufactured in warrant 7187/0 (August 2010) with CED coating done through trade. The entire quantity was lying as WIP since 2010-11. Board stated (September 2014) that the exiting two lots will be regularized by raising loss statement and the warrants will be closed.
3		OKAT	1000 rejected cartridge cases valuing ₹ 0.34 crore were transferred from warrant 0541/0 to 1468/0 during 2011-12, but the warrant number 1468/0 was kept open. Board stated that (September 2014) the store manufactured under the warrant was rejected by proof establishment and the process of reproof of rejected lot would take a long time. As such the store manufactured under the warrant had been transferred to new warrant. The reply violates its own order of July 1998 which stipulates that rejected items against any warrant should be regularized against the same instead of transfer to another warrant.
4			Rejection of 4.80 tonne of Brass cup NATO valuing ₹ 0.22 crore was transferred from warrant 0354/0 to another warrant during 2010-11. Board stated (September 2014) that the material has been re inspected and passed by DGQA. The warrant is under closure. Reply is silent about violation of its own order of 1998 which prohibited the transfer of rejected item from one warrant to another.
5		MTPF	Primer percussion cartridge cases valuing ₹ 0.65 crore manufactured against two warrants of 2002-03 and five warrants of 2003-04 were rejected and lying as WIP. Board stated (September 2014) that the store manufactured under warrant was rejected in filled proof. Detailed investigation was carried out and the revised loss statement as per Board of Enquiry's recommendation is under consideration.
6			30 numbers of 64 Teeth Gear wheel valuing ₹ 0.25 crore was manufactured during the period from 1999-2000 to 2002-03 against two warrants. This product was misplaced and could not be issued to the Chittaranjan Locomotive works (CLW). MTPF conducted repeated enquiries on the loss of stores without any results. The same was being shown as WIP. Factory management stated (November 2013) that the BOE has been approved by GM and the matter was transferred to Disciplinary Section for further action of loss statement. After approval/ recommendation of loss statement, warrant would be closed and removed from WIP. Response of the Board was awaited as of September 2014.

7			<p>Three warrants valuing ₹ 0.76 crore for manufacture of 84 mm TPT were operated during 2011-12. The items were lying as WIP due to failure in proof trial of 1st lot.</p> <p>Factory management stated in November 2013 that the item was not confirmed at proof trials in the first lot and the production would resume by re-establishing the process in 2014-15.</p> <p>Response of the Board was awaited as of September 2014.</p>
8		GSF	<p>10 nos. of warrants valuing ₹ 72.83 crore relating to the years from 2005 to 2012 were lying outstanding due to rejections in manufacture/failure in proof.</p> <p>Reply of the Board was awaited as of September 2014.</p>
9	Non availability of matching item	MSF	<p>One WIP on 30 mm Ghasha cartg cases valuing ₹ 2.61 crore (warrant 7043/0 dated 22.05.2010) was lying since 2010-11 due to non availability of propellants.</p> <p>Board stated (September 2014) that complete quantity of 30 MM Ghasa cartridge case have since been used during 2013-14 and there was no WIP as on date.</p> <p>Reports produced by the management did not, however, authenticate the acceptance of store by the inspectorate.</p>
10		GSF	<p>The factory manufactured firing pin for 84 mm RL valuing ₹ 1.70 crore against one warrant of March 2011.</p> <p>Management stated (May 2014) that the warrant was yet to be closed because of linking problem with the main warrant.</p> <p>Response of the Board was awaited as of September 2014.</p>
11	Production without specific demand	MSF	<p>One WIP of Steel flat strips (300 MT) valuing ₹ 2.52 crore manufactured in 2004-05 in anticipation of IFD was kept as WIP since then.</p> <p>Board stated (September 2014) that the warrant quantity was amended from 300 MT to 100 MT. Out of 100 MT, 58 MT has since been utilized for manufacture of 30 mm Cartridge Case and balance 42 Mt will be consumed during 2014-15 and warrant will be closed in 2014-15.</p> <p>Reply failed to indicate the reasons for manufacture of steel strip in anticipation of IFD and non-utilization for a period of seven years.</p>
12	Non completion work	HVF	<p>12 WIPs relating to the period from 2008-09 to 2011-12 valuing ₹ 128.28 crore lying due to non-completion of work of MBT Arjun.</p> <p>Board stated (September 2014) that after modification works of MBT Arjun Tanks, those warrants will be closed.</p>

ANNEXURE-XV

(Referred to in paragraph 8.2.9.11)

Statement showing cases of SIT lying outstanding due to losses etc.

Reasons for non-clearance	Factory	Brief of the case
Rejected stores lying in SIT	MSF	<p>OFAJ had placed an IFD on MSF for supply of 12,000 Nos. of Brass Blanks required for 105mm IFG cartg. cases. In turn, MSF had manufactured and issued 11,998 numbers the Brass Blanks to OFAJ between December 2004 and January 2006. During trial run, samples developed rupture after drawing process due to higher hardness than specified. Subsequently, OFAJ intimated MSF in December 2006 and the Board in this regard. Due to discrepancies in drawing and specification of above stores, OFAJ had not accepted the material. Even though OFAJ had taken up the matter with MSF and some samples were annealed and tried out by OFAJ, the result was not satisfactory. Since no further communication was received from MSF and no improvement in the blanks case was carried out, OFAJ decided to backload the entire quantity to MSF.</p> <p>Between April and June 2008, OFAJ back loaded 11,177 brass blanks valuing ₹ 1.66 crore to MSF. These blanks were lying at MSF without any corrective measures.</p> <p>Factory management (December 2013) that on receipt of brass blanks, samples were drawn tested and found conforming to specification. MSF further stated there is no Board's guideline available for regularisation of backload store by the consignor. In September 2009, OFAJ were requested to re-examine the case and settle the complaint but there was no response from OFAJ.</p> <p>Response of the factory is not satisfactory as they failed to bring the matter to the notice of the Board for necessary solution.</p>
	GSF	<p>Various types of rejected back loaded stores valuing ₹ 9.58 crore were received by GSF between 1988-89 and 2010-11 and were lying without rectification as of 31 March 2013. Out of the total back loaded stores valuing ₹ 9.58 crore as of March 2013, the major part was in respect one item viz, Fuze A-670M of quantity 60,103 numbers valuing ₹ 3.79 crore rejected and back loaded by Ordnance Factory Badmal. Other fuze and shell items valuing ₹ 5.67 crore consisted of rejected items, back loaded by Ordnance Factory Ambajhari, Ordnance Factory Chanda and Ordnance Factory Khamaria. Further scrutiny revealed that 60,103 numbers of Fuze A670M consisting of 11 lots were produced and issued by GSF to OFBL between August 2001 and March 2005. These items were again back loaded by OFBL between December 2002 and March 2005. Out of above numbers, GSF re-issued 45,000 numbers of fuzeA-670M to OFBL in March 2009. OFBL again back loaded the same item between August 2010 and September 2010.</p> <p>Thus, rejected items valuing ₹ 9.58 crore were lying as SIT as of 31 March 2013.</p>

		GSF, instead of repair/rectification of rejected store, prepared Certified Receipt Vouchers/Certified Issue Vouchers in respect of Fuze DA5A valuing ₹ 0.32 crore, to regularize the SIT items for the year 2010-11.
Non existant/ fictitious SIT	GSF	<p>Cases of issue of fictitious Certified Issue Vouchers (CIVs) during the year 2008-09 of similar store valuing ₹ 4.71 crore were also noticed which was lying in SIT.</p> <p>Management stated (May 2010) those CRVs/ CIVs were prepared to regularize the SIT. GSF further stated that the loss statement was being prepared by the consignee factory and GSF would dispose of the scrap and credit scrap value to the consignee. Further AFK stated that they had regularized the rejected stores.</p> <p>GSF, however, failed in their reply to furnish the scrap value credited to AFK after disposal of the same.</p>
		70 general production items valuing ₹ 6.95 crore were lying under SIT as on 31 March 2013 which were received by GSF between 1999-2000 and 2012-13 <i>i.e.</i> store were outstanding for one to 12 years due to non preparation of receipt vouchers.
	OFAJ	<p>117 numbers of stabilizer assembly valuing ₹ 4.33 crore ex-Ordnance Factory Kanpur was received at OFAJ in March 2011. While the factory prepared the material inward slip on 18 March 2011, the receipt voucher was not prepared as a fire accident took place and the whole quantity damaged. The item continued to appear under SIT.</p> <p>Factory management stated in December 2013 that findings of Board of Enquiry (BOE) were awaited.</p> <p>The factory reply is, however, silent about reasons for delay in finalisation of the findings of BOE.</p>
		<p>4156 numbers of Primer GUV-7 valuing ₹ 0.29 crore was received from O.F Chanda for rectification in 1998. The same was not traceable at OFAJ. Even after lapse of more than 15 years the item continued to appear under SIT.</p> <p>Factory management stated in December 2013 that findings of BOE are awaited.</p> <p>The reply is however, silent about reasons for delay in finalisation of the findings of BOE.</p>

ANNEXURE-XVI

(Referred to in paragraph 8.2.10.1)

Deficiencies in functioning of stock verification group

Factory	Audit findings	Replies of the factories																								
OKAT	<p>1. Test check of 58 bin cards revealed that stock verification was not carried out in respect of items included in 56 bin cards. In 56 bin cards, entries were stated to have been made on verbal orders viz; 'ordered verbally by DGM/WM in heavy pressure', 'verbally pressured by DGM/WM', 'as per orders of JT GM/ QSS', 'verbally ordered by DGM/JWM' etc.</p> <p>2. Adjustment entries had been made in three bin cards on the basis of online balance without any recorded reason. These adjustments had resulted in reduction in the running balance of stock but the same was not effected after issuing Material Demand Notes, as required under Para 13(a) of the Factory Accounting Rules.</p> <p>3. Stores valuing ₹ 0.59 crore had been issued on loan i.e. without material demand notes.</p> <p>4. 32000 Kg Copper cathode valuing ₹ 1.70 crore were issued in November 2012 to production shop without any reference of inward gate pass (IGP), MIS, and authorisation of quality assurance wing (stores inspection).</p>	<p>Stock verification was not carried out in 2012-13 due to poor strength of Stock Verification group.</p> <p>The on-line adjustment will not be treated as physical balance.</p> <p>Reply was awaited (September 2014).</p> <p>Reply was awaited (September 2014).</p>																								
MSF	<p>1. Nine instances were noticed where physical balances in the bin cards ought to have been lesser due to quantity issued on loan but the same was not noticed by stock verification group.</p> <p>2. Population of stock items shown in the Annual report by Stock Verification Group did not tally with the population of stock items of data base (Item Stock Master) maintained by Accounts Office. Details are as under:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th rowspan="2" style="text-align: center;">Year</th> <th colspan="2" style="text-align: center;">As per Stock verification report</th> <th colspan="2" style="text-align: center;">As per Database of MSF</th> </tr> <tr> <th style="text-align: center;">Total Stock</th> <th style="text-align: center;">Items with 'Nil' Balance</th> <th style="text-align: center;">Total Stock</th> <th style="text-align: center;">Items with 'Nil' Balance</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2010-11</td> <td style="text-align: center;">12467</td> <td style="text-align: center;">8166</td> <td style="text-align: center;">6076</td> <td style="text-align: center;">3866</td> </tr> <tr> <td style="text-align: center;">2011-12</td> <td style="text-align: center;">12425</td> <td style="text-align: center;">8166</td> <td style="text-align: center;">5825</td> <td style="text-align: center;">3845</td> </tr> <tr> <td style="text-align: center;">2012-13</td> <td style="text-align: center;">12699</td> <td style="text-align: center;">8166</td> <td style="text-align: center;">6573</td> <td style="text-align: center;">4779</td> </tr> </tbody> </table>	Year	As per Stock verification report		As per Database of MSF		Total Stock	Items with 'Nil' Balance	Total Stock	Items with 'Nil' Balance	2010-11	12467	8166	6076	3866	2011-12	12425	8166	5825	3845	2012-13	12699	8166	6573	4779	<p>Factory stated that loan issues had since been stopped.</p> <p>Reply was awaited (September 2014)</p>
Year	As per Stock verification report		As per Database of MSF																							
	Total Stock	Items with 'Nil' Balance	Total Stock	Items with 'Nil' Balance																						
2010-11	12467	8166	6076	3866																						
2011-12	12425	8166	5825	3845																						
2012-13	12699	8166	6573	4779																						

	3. Stock verification not done as per time schedule i.e. twice in a year for 'A' category items and once in a year for 'B' and 'C' category items.	Reply was awaited (September 2014)												
MTPF	1. The store officer was holding the charge of stock verification officer. 2. Verification of 'A' category items were not carried out twice a year.	Factory Management accepted the audit findings. Reply was awaited (September 2014).												
OFAJ	As per para 13 (a) of Factory Accounting Rule, Stores holder will not issue any material for use in the factory without a material demand note. We observed cases of loan issues which were not entered in 71 bin cards and consequently, the stock verification did not detect the discrepancies in stock.	Factory stated that there was no discrepancy.												
GSF	1. Rule 13 of Factory Accounting Rules stipulates that material can be drawn by the production shop from store against demand note for production activities. It is noticed that in contravention of the above procedure, production shop had drawn material valuing ` 1.54 crore from store on loan basis during the year 2012-13. As these loan issues were not entered in the bin cards, there was mismatch between ground balance and bin card balance which was not detected by the stock verification group during stock verification. This indicates the ineffectiveness of stock verification group. 2. Stock verification of 11 'A' category stores was not carried out for past one to eight years.	Due to exigency of requirement loan issues were made. Reply was awaited (September 2014).												
OFMK	The number of items verified by SV group during the three years were less than the number of items reflected in factory records ⁽²¹³⁾ as shown below: <table border="1" data-bbox="477 1319 951 1594"> <thead> <tr> <th>Year</th> <th>Items verified by SV group</th> <th>Items as per factory records</th> </tr> </thead> <tbody> <tr> <td>2010-11</td> <td>18,000</td> <td>19,901</td> </tr> <tr> <td>2011-12</td> <td>16,625</td> <td>19,677</td> </tr> <tr> <td>2012-13</td> <td>16,625</td> <td>19,871</td> </tr> </tbody> </table>	Year	Items verified by SV group	Items as per factory records	2010-11	18,000	19,901	2011-12	16,625	19,677	2012-13	16,625	19,871	Reply was awaited (September 2014).
Year	Items verified by SV group	Items as per factory records												
2010-11	18,000	19,901												
2011-12	16,625	19,677												
2012-13	16,625	19,871												
OLFD	Number of stock item to be physically verified remained static during the last three years.	Factory accepted that the number of items to be verified was not updated. Reply was silent on action taken to increase the number of stock items for verification.												

ANNEXURE-XVII

(Referred to in paragraph 8.2.10.3)

Unresolved accounting discrepancies

Sl. No.	Nature of discrepancies	Name of factory involved	Value of difference (in crore)	Impact
1.	Difference in Price Production Ledger (PPL) items	MSF	4.68	Under/over valuation of PPL items
2.	Mismatch between online bin card and manual bin card in respect of seven items. The factory stated (December 2013) that three out of seven items had been reconciled and the reconciliation in respect of four items was in progress	MSF	0.19	Erroneous reflection of stock position
3.	Difference in consumption of store items between Factory and Accounts records	OKAT	4.47	Under valuation of stores utilised in production
4.	Difference in surplus stock between Accounts and Factory records	OKAT	0.05	Over valuation of stores holding
5.	Difference in stock of stores between Priced Stores Ledger and Bin Cards	OKAT and GSF	4.62	Under/over valuation of stores in hand
6.	Difference between Accounts and factory figures with respect to WIP quantity as on March 2013	OKAT	0.26	Non reflection of true and fair view in accounts
7	Difference in inventory holding between accounts and factory records	OFMK	164.93	Under/over valuation of stores in hand
		OLFD	18.92	
		OFD	3.41	
8.	Difference in factory and accounts figures with respect to finished components	MTPF	12.68	Over valuation of closing stock
Total			214.21	

ANNEXURE-XVIII

(Referred to in Paragraph 8.3.1.2)

Responsibility and agencies involved

Responsibility	Agencies involved	
	MBT Arjun	T-90 tank
Development	Combat Vehicles Research and Development Establishment (CVRDE), an organization of DRDO	Licensed production based on ToT from M/s Rosoboronexport Russia
Production		
Hull and Turret	Ordnance Factory Medak (OFMK)	Heavy Vehicles Factory Avadi (HVF)
Engine	Perennial import from Germany	Engine Factory Avadi (EFA)
Main assemblies and sub-assemblies	Bharat Electronics Limited Bharat Heavy Electricals Limited Bharat Earth Movers Limited Private firms	GCF Jabalpur, OLF Dehradun, OFMK, OF Kanpur, FGF Kanpur, M/s BEL and foreign firms (for certain items)
Final assembly of tank and issue to Army	HVF	HVF
Joint Receipt Inspection	Army, CVRDE, HVF and Director General of Quality Assurance (DGQA) (July 2007 onwards)	Army, HVF and DGQA

ANNEXURE-XIX

(Referred to in Paragraph 8.3.2.7)

Comparison of benchmarks for evaluation of MBT Arjun vis-à-vis T-90 tank

Activity	Benchmark for MBT Arjun	Benchmark for T-90 tank	Audit Remarks
Run in terrain	Running of tank in medium and heavy dunal terrain at MFFR ² which imposed running in low gear due to gradient and rolling resistance	Running of tank (automotive trials) at Chaba only.	Desert condition at MFFR was tougher than that existed at Chaba.
Scientific stress model technique	Firing of 25 EFC ³ after each mobility cycle of 250 km	Firing after completion of automotive trials	Relaxed parameter for T-90 tank
Effect of oil temperature on operational speed	(i) Running in first gear until temperature comes down which imposed limitation of speed. (ii) Provision of software for automatic engagement of first gear to bring down the temperature of transmission oil.	(i) Lowering of gear was effected to bring down the temperature of transmission oil (ii) No such provision	(i) Operational constraints due to reduced speed are equally applicable to both the tanks. (ii) Relaxed parameter for change of gear in case of T-90 tank.
Check of lubricants/oils	i) Validation of oil properties after every 250 km run ii) Examination of oil from engine after every 25 hours of engine run	No such checks prescribed	Relaxed parameter for T-90 tank
Obstacle performance	Gradient 35 ⁰	Gradient 30 ⁰	Relaxed parameter for T-90 tank
System reliability	Facility for pull-back of gun and strip examination of Recoil system at every five years	No such conditions prescribed	Relaxed parameter for T-90 tank
Laser range finder	i) Facility for multiple target discrimination ii) Accuracy of range + / - 10 metre iii) Duty cycle 12 ranging in 2 minutes followed by 4 ranging in 8 minutes	No such facility + / - 25 metre No such condition	Relaxed parameter for T-90 tank
Firing of armour piercing ammunition	Speed of tank and target was 20 km per hour in opposite direction	Speed of the target tested was 10 km per hour	Relaxed parameter for T-90 tank
Medium Fording	Zero level water ingress	2.5 litre⁴ water ingress	Relaxed parameter for T-90 tank

² Mahajan Field Firing Range

³ Equivalent Full Charge

⁴ Permissible limit of water ingress for medium fording was derived with reference to acceptable limit of 5 litre of water ingress for full-dip fording as mentioned in the trial directive for T-90 tank.

ANNEXURE-XX

(Referred to in Paragraph 8.3.3.3)

Details of Factory/item-wise status of indigenization

Reasons for delayed/non-indigenisation	Impact
Heavy Vehicles Factory Avadi (HVF)	
Hull and Turret: Non-availability of thermo-pressed plates indigenously for hull and ToT for 130mm Armour plate for turret from M/s ROE.	Import of 150 hulls, 100 turrets and thermo-pressed plates from four firms ⁵ at a total cost of ₹499.18 crore between January 2007 and September 2012.
Tracks: Non-development of the item by sister factory (OF Muradnagar) and poor supplies from indigenously trade source.	Import of 191 tracks from M/s ROE and M/s UVZ, Russia between November 2007 and March 2011 at a total cost of ₹79.28 crore.
PKTM Gun (7.62 mm): Non-indigenisation of the gun due to low volume of production despite receipt of ToT in May 2003.	Import of 450 guns valuing ₹13.01 crore between October 2008 and July 2012.
Tadiron Radio set: Efforts for indigenisation were not taken by HVF. Alternative radio set developed by M/s BEL was yet to be accepted by the Army.	Import of 1083 radio sets from M/s Elbit Systems, Israel between May 2007 and April 2010 at total cost of ₹130.39 crore.
Rubber Components: Quality problems in indigenously developed rubber components.	Import of various rubber components valuing ₹12.32 crore in March 2011 and June 2012 from M/s ROE.
Lubrication System: Inability of sister factory (OFMK) to supply the required components/assemblies due to increased workload. The system was under development through trade as of May 2014.	Import of 150 sets of the lubrication system from M/s ROE at a total cost of ₹11.54 crore against orders of April and August 2011
Engine Factory Avadi (EFA)	
Engine: Slow progress in absorption of ToT leading to 95 per cent import contents in manufacture of engines during 2007-08.	Import of 92 engines (22 FF, 20 SKD and 50 CKD) at a total cost of ₹51.27 crore between December 2005 and June 2007.
Turbocharger: Non development of indigenously source despite availability of ToT.	Import of 457 turbochargers from ROE at a cost of ₹92.28 crore between January 2007 and January 2013.
Opto Electronics Factory Dehradun (OLF)	
TI-ESSA: Non-availability of ToT as it was not part of the ToT contract of February 2001.	a) Import of 200 sights (FF) and arrangement of co-production of 100 sights against contract of March 2007 with M/s Beltechexport, Belarus at a cost of ₹351.11 crore. b) Achievement of 24 per cent indigenization till February 2014 and delayed supply of 290 sets between 2007-08 and 2012-13 against HVF's IFD (May 2006).

⁵ M/s ROE and M/s UVZ Russia, M/s Bumar and M/s BBT Poland

Reasons for delayed/non-indigenisation	Impact
Fire control system: Non-availability of indigenous source for critical components resulted in slow progress of indigenization (78 per cent as of June 2013).	Various sub-assemblies/components of the system were imported from ROE between January 2007 and November 2012 at a total cost of ₹630.41 crore.
Commander's sight (PNK-4S): Indigenous development was not undertaken as it required additional investment of ₹14.95 crore for test equipment and alternative sight was being developed indigenously.	a) 303 sets valuing ₹159.04 crore were imported (March 2007 – August 2011) from RoE with obsolete technology <i>i.e.</i> old vintage Image Converter (IC) tubes instead of Image Intensifier (II) tubes. Hence, the system was found deficient in night operation. b) Delayed supply of 287 sets to HVF between February 2008 and July 2013.
Seven items⁶ for optical sighting equipment: Change of internal design required design approval, functional/firing trial involving long time in indigenization through Indian trade firms. The prototypes were under advanced stage of evaluation as of June 2013.	a) Import of the items in fully formed/component level from ROE at a total cost of ₹164.54 crore between June 2006 and November 2012. b) Belated supplies of 240 to 278 sets to HVF between February 2008 and July 2013.
Gun Carriage Factory Jabalpur (GCF)	
125mm Smooth Bore Gun: Non-parting of material specification of the gun barrel in ToT by ROE was main hurdle in indigenization.	a) Import of 175 Guns at a cost of ₹118.83 crore between May 2007 and June 2012 from ROE. b) Manufacture of 125 guns based on imported barrel supplied by OFC and FGK. c) Belated supply of guns to HVF between December 2008 and December 2013 against original supply schedule of September 2006 – December 2009.
Ordnance Factory Kanpur (OFC) and Field Gun Factory Kanpur (FGK)	
Barrel of T-90 Tank Guns: a) Absence of material specification of gun barrel b) Delayed trials of indigenous barrel/gun based on modified chemistry ⁷ and approval of modified chemistry by CQA(AVA) in November 2010 for production of barrels for T-90 tank gun despite decision taken (September 2006) by all the stakeholders (Army, OFB, DGQA, DRDO, etc.) to use modified chemistry for the barrel after successful trial evaluation.	a) OFC imported 200 sets ordnance (tube, casing, breaching <i>etc.</i>) from the ROE at a total cost of ₹58.94 crore in piecemeal against four purchase orders placed between September 2007 and March 2010. b) Delayed decision for import coupled with piecemeal procurement led to avoidable extra expenditure of ₹2.18 crore on import of 100 sets of tube and casing against the orders of March 2010 as GCF's IFDs (January 2005) on OFC and FGK stipulated staggered delivery of 300 ordnance between 2005-06 and 2008-09. c) Belated supplies of 145 ordnances to GCF up to July 2013.

⁶ BPV 29, voltage converter, BG 29, wind sensor, tilt sensor, BV 29 and automatic control unit.

⁷ Material of new chemistry introduced in 2000 for manufacture of T-72 tank barrels is known as modified chemistry. T-72 and T-90 tank are having similar gun barrel.

ANNEXURE-XXI

(Referred to in Paragraph 8.3.5)

Implementation of decisions taken in Steering Committee meetings for MBT Arjun and Institutionalised Interaction/ Special Board/Board meetings in respect of T-90 tanks

Issue discussed	Decision taken	Actual implementation
MBT Arjun		
<u>First meeting (December 2002)</u> Production facilities	Completion of civil works and commissioning of plant and machinery by December 2004	Major works were completed/ taken over in June 2006 and March 2008. Commissioning of machines was completed in March 2008.
Production of 124 MBT Arjun	Completion of production of 124 MBT by 2006-07	Only 53 tanks were manufactured and only 5 tanks issued to Army till March 2007.
<u>Second meeting (April 2005)</u> Revision of production schedule	Completion of production of 124 MBT by 2007-08	71 MBT produced till 2007-08.
Placement of further indent by Army	By March 2006 but after completion of AUCRT.	No further indent for MBT MK-II placed by Army till May 2014.
<u>Third meeting (July 2005)</u> Modification and reissue of five MBT (Limited Series Production)	By 20 October 2005 with the improvements of the defects observed in user trials (June 2005).	After modification the same were returned to Army in October 2007.
<u>Fourth meeting (July 2006)</u> Rescheduling of meeting	Holding of meeting at least once in three months	Not implemented as next meeting was held in March 2007
Design of MBT	Freezing of design documents by the design agency.	Amendments to specifications/design continued up to 2010 against the claim of freezing of design in September 2004.
<u>Fifth Meeting (March 2007)</u> Production schedule	Production schedule for 124 tanks further deferred to 2008-09.	Only 101 MBT produced up to 2008-09
Rectification of defects	All defects observed in user trials to be rectified within next three months.	Not implemented within the stipulated time of three months.
<u>Sixth Meeting (May 2007)</u> Joint Receipt Inspection for 15 MBT (15 th to 29 th)	From August 2007	These tanks were issued in 2008-09.
<u>Seventh Meeting (May 2008)</u> Holding of Steering Committee meeting	To be held every quarter.	Not implemented as next three meetings were held in November 2008, July 2009 and July 2010.
<u>Eighth Meeting (November 2008)</u> Issue of 124 tanks	By December 2009 with modifications implemented.	Only 69 tanks were issued to Army up to March 2010.
Comparative trials of MBT and T-90 tank	To be conducted in June 2009.	Actually conducted in February/March 2010.
<u>Ninth Meeting (July 2009)</u> Issue of 124 tanks to Army	By 2009-10.	69 tanks issued up to 2009-10.
<u>Tenth Meeting (July 2010)</u> Placement of further indent by Army	Placement of indent for 62 Arjun MK-II with six major improvements and balance 62 with 13 major improvements.	No indent for Arjun MK-II was placed by Army as this version was still under validation trials as of May 2014.

Issue discussed	Decision taken	Actual implementation
T-90 tank		
A) Institutionalised Interaction Meeting		
<u>Meeting dated 22 Sept. 2011.</u> Roadmap of indigenization	To be discussed in 39 th special board meeting for November 2011.	No specific issue on T-90 tank was discussed in 39 th Special Board Meeting (9.8.2012).
<u>Meeting dated 6 March 2012.</u> a) OFB's repeated revision of target impacted planning and execution at the operational level.	OFB to ensure production of 100 tanks per year.	Actual production ranged from 24 to 90 tanks during 2009-2013.
b) Shortage of requisite command tanks in Army.	Backlog of command tanks to be made up during 2012-14.	Against requirements of 42 command tanks HVF manufactured 18 in 2012-2013 and issued 7 tanks to Army between December 2012 and May 2013
c) High incidence of defects in T-90 tanks	Working group to be formed to monitor defects and ensure rectification.	No working group was formed except Failure Review Board(FRB) to investigate defects.
<u>Meeting dated 26 Sept. 2012.</u> a) Defects relating to auto and electrical portions of indigenous T-90 tanks reported by Army	OFB to immediately address the problems	FRB meeting was held in September 2013 to discuss the major failures/defects. Out of 25 defects reports (except engine) received during 2013, 5 defects were still under investigation as of February 2014.
b) Setting up of own rubber production facility	Plan to be finalized.	Plan was not finalised till January 2014.
<u>Meeting with DGOS dated 30 May 2013.</u> a) Deficient quality of Indian rubber items	Import of rubber items and to obtain ToT from Russia.	OFB authorised GM, OFMK to prepare DPR for rubber manufacturing unit in consultation with Indian Rubber Manufacturers Research Association (IRMRA) as of February 2014.
B) Special Board Meeting		
<u>34th meeting held on 6.6.2008</u> Hold up in production of T-90 tank due to non-availability of product support	To make required product supports as part of main contract along with suitable price escalation formula to bind OEM for uninterrupted supply of product supports.	Yet to be implemented.
<u>35th Meeting dated 16.10.2008</u> Indigenous production of T-90 gun barrel	Quality Assurance to be provided by DGQA for production of 20 guns using indigenous developed metallurgy	Modified chemistry for production of indigenous barrel was approved by CQA(AVA) only in November 2010. Requirement was met by import of 200 sets of Ordnance by OFC.
<u>36th Meeting dated 27.01.2009</u> Slippage in production	Special Board noted shortfall in supply to Army due to delayed receipt of product support. No decision taken.	Slippages in production of indigenous T-90 tank continued till 2012-13.

Issue discussed	Decision taken	Actual implementation
37th Meeting dated 8.3.2011 a) Roadmap for indigenization	Additional DG/AV to organize the same in May 2011.	Roadmap presented by GM/HVF in July 2011 (38 th Special Board Meeting). It was planned to achieve 80 <i>per cent</i> in 2011-12.
b) Fresh indent from Army to continue the production line	To form Indent monitoring committee between OFB and Army so as to liquidate old indent.	OFB constituted a team from all operating division. Officers from Army were yet to be nominated.
38th Meeting dated 8.07.2011 Status of indigenization of T-90 tank (66% achieved as stated by GM/HVF)	To closely monitor the progress for early completion of indigenization.	Envisaged indigenization (85 <i>per cent</i>) was yet to be completed as of May 2014.
39th Meeting dated 9.8.2012 No specific issue on T-90 tank discussed	No decision taken.	Not applicable.
C) Monthly Board Meetings of Ordnance Factory Board		
8th (2010) Meeting dated 31.8.2010 Augmentation of production capacity of T-90 tank	Recommendation to the Ministry for capacity augmentation from 100 to 140 tanks per annum.	Ministry sanctioned the augmentation project (₹971 crore) in September 2011 with planned completion by March 2014. Only ₹17 crore was spent till March 2014 indicating slow progress.
2nd and 4th (2012) Meetings dated 27.2.2012 and 30.4.2012 Manufacture of Track Link Assembly for T-90 tank and other armoured vehicles at OF Muradnagar	To recommend to the Ministry for approval of the Detailed Project Report for manufacture of Track Link Assembly	The project was yet to be sanctioned by the Ministry as of March 2014.
10th (2012) Meeting dated 31.10.2012 In-house R&D project for development of Track Assembly for T-90 tank at OF Muradnagar	Board noted completion of the R&D project.	Bulk production was yet to commence as of March 2014.
11th (2013) Meeting dated 30.12.2013 Review of status of augmentation of production capacity of T-90 tanks from 100 to 140 tanks per annum.	To progress the project with probable date of completion as December 2016 and also to make budgetary provisions accordingly.	Against sanctioned amount of ₹971 crore, only ₹17 crore was spent on the project till March 2014 indicating tardy progress.

ANNEXURE-XXII

(Referred to in Paragraph 8.4.4.2)

Factory-wise details of delayed receipt of machinery

<u>Name of machine</u> <u>Value of machine</u> (₹ in crore)	<u>Date of purchase order</u>	<u>Delivery Period as per order</u>	<u>Date of receipt</u>	<u>Reason for delay</u>
Ordnance Factory Khamaria (OFK)				
<u>Booster complete line</u> 2.04	7.11.2007	30.6.2008	24.1.2009	Delay in Board's approval for waiver of Pre-despatch inspection and delay in transit
<u>CNC lathe machine (3 axis)</u> 0.73	30.5.2008	30.11.2008	31.3.2009	Poor performance of the supplier in delivery
<u>Progressive Power Press</u> 7.39	30.6.2008	31.12.2009	15.04.2012	Delay on the part of the supplier despite extension of delivery period eight times
<u>Semi automatic spot welding machine</u> 0.28	26.7.2008	30.11.2008	7.10.2009	Poor performance of the supplier in delivery despite extension of delivery period
<u>War head body filling line</u> 2.14	2.6.2008	30.6.2009	24.8.2009	Delayed shipment by the supplier and time taken in transit
<u>Outdoor type oil immersed power transformer</u> 0.77	26.7.2010	30.11.2010	25.1.2011	Delay in approval of drawing and pre-despatch inspection by the factory
Gun Carriage Factory Jabalpur (GCF)				
<u>CNC Vertical Machining Centre</u> 1.78	17.2.2011	30.8.2011	29.10.2011	Delay in sending proper trial components for pre-despatch inspection
<u>CNC Hydraulic Brake Press</u> 0.66	27.3.2008	30.9.2008	24.12.2008	Poor performance of the supplier in delivery
<u>CNC Vertical Machining Centre</u> 0.47	17.1.2011	30.6.2011	28.3.2012	Poor performance of the supplier in delivery
Heavy Vehicles Factory Avadi (HVF)				
<u>Double column gantry type milling machine (2 nos.)</u> 22.09	12.11.2007	31.8.2009 31.10.2009	10.12.2009 4.5.2010	<ul style="list-style-type: none"> • Delayed delivery by the supplier due to frequent power cut, belated receipt of bought out items • Delay in deputing pre-despatch inspection team by the factory • Delay in pre-despatch inspection due to delayed/non-arrangement of required tools
<u>CNC Gear Hobbing machine</u> 2.46	1.11.2007	30.11.2008	March 2010	
<u>Horizontal Broaching machine</u> 1.48	5.11.2007	15.2.2009	April 2009	
<u>CNC Vertical Machining Centre</u> 0.50	30.5.2011	31.10.2011	February 2012	
<u>Surface Grinding machine</u> 0.37	18.6.2007	31.12.2007	December 2008	
Ordnance Factory Kanpur (OFC)				
<u>Autofrettage Plant</u> 13.28	19.7.2007	29.5.2008	23.5.2009	Delay in transit

Name of machine Value of machine (₹ in crore)	Date of purchase order	Delivery Period as per order	Date of receipt	Reason for delay
Ordnance Factory Kanpur (OFC)				
Vertical Slot Milling <u>machine</u> 1.85	23.8.2007	22.8.2008	7.10.2008	Delay in pre-despatch inspection and transportation of the machine by the supplier
Overlay welding <u>machine</u> 2.91	24.9.2007	23.4.2008	23.8.2008	Poor performance of the supplier in delivery
Power Transformer (4 nos) 1.43	5.2.2010	31.3.2010	12.5.2010	Amendment of the supply order by the factory after one month of placing order
VCB Panel 11 KV 0.24	22.5.2007	8.9.2007	21.12.2007	Delay in manufacture of the machine by the supplier and delay in pre-despatch inspection by the factory
Field Gun Factory Kanpur (FGK)				
Horizontal Honing <u>machine</u> 4.36	20.10.2008	30.10.2009	February 2010	<ul style="list-style-type: none"> • Delay in sending pre-despatch inspection team by the factory • Time taken in placing trial components by the factory • Delay in transit
Deep Hole Boring <u>machine</u> 8.96	28.10.2010	28.1.2012	25.5.2012	
Ammunition Factory Kirkee (AFK)				
Horizontal Transfer <u>Press</u> 6.74	4.3.2009	31.5.2010	4.8.2010	Delay in pre-despatch inspection by the factory and delay in transit
Rifle Factory Ishapore (RFI)				
Vacuum Heat Treatment <u>Furnace</u> 4.32	19.4.2006	28.2.2007	31.7.2007	Delay in readiness of the machine by the supplier and consequent delay in pre-despatch inspection
Small Arms Factory Kanpur (SAF)				
Phosphating Plant <u>Automatic</u> 1.25	10.7.2007	25.1.2008	19.2.2008	Delay in arrangement of the machine and transportation by the supplier
Direct Reading <u>Spectrometer</u> 0.46	24.7.2008	10.12.2008	20.2.2009	Delayed delivery by the supplier

ANNEXURE-XXIII

(Referred to in Paragraphs 8.4.4.5, 8.4.4.6, 8.4.5.3 and 8.4.5.4)

Cases of inadequate pre-despatch inspection and delayed commissioning/ non-commissioning of machines

Gist of case
<p>1. Ordnance Factory Kanpur (OFC)</p> <p>PDI was carried out partially in respect of 17 orders (24 machines valuing ₹49.57 crore). Even the PDI report did not indicate any data relating to result of trial of the machines carried out at the firm's premises, as required under the supply orders.</p> <p>Capacity of the machine was not proved in tooled up condition for two orders. For instance, factory received four machines (₹17.82 crore) - (i) without inspection of one major part of one machine, (ii) without verifying cooling capacity and proving one component of one machine, (iii) without proving cycle time of one machine and (iv) despite repeated failure of one machine in PDI. Subsequently, three machines were under frequent break-downs after commissioning, while one machine was yet to be proved and commissioned as of October 2012. The management did not frame any time schedule by which the machine would be put into operation nor did it take remedial action to ensure the trouble free operation of three machines.</p>
<p>2. Heavy Vehicles Factory, Avadi (HVF)</p> <p>(a) The PDI team could not carry out full-fledged testing of gear box in the gear box test stand (₹0.55 crore) due to power fluctuation and persistent leakages. Despite this, the team issued inspection note (March 2009) stating that the test would be carried out during commissioning at HVF. However, the machine received in March 2009 was not commissioned as of March 2013 due to certain fundamental and manufacturing defects.</p> <p>(b) PDI team cleared (March 2009) the despatch of one horizontal broaching machine (₹1.43 crore) from the HMT premises despite proving only four out of six components required, as per terms of the order, as HMT failed to arrange the required number of broaches (tools). The machine was received (April 2009) at HVF without complete PDI. However, the machine was commissioned only in January 2011 after a lapse of 21 months due to deficiency of broach holders and breakage of broachers in commissioning trials.</p> <p>(c) PDI team cleared (August 2007) despatch of one imported CNC turret punch press (₹1.49 crore) despite lot of deviations in technical features against supply order terms. Besides, surface finish of four components out of nine offered for inspection was not as per the drawing. The machine received in December 2007 revealed various defects attributable to tool breakage during trial run and was finally commissioned in December 2010.</p> <p>(d) One imported CNC Double Column Plano Miller machine valuing ₹37.26 crore was received in September 2008. The machine was commissioned in March 2011 i.e. after two and a half years of its receipt due to delay in obtaining Government sanction for deputing PDI team and improper selection of site for foundation work leading to delay in completion of civil works.</p> <p>(e) Two imported CNC Double Column Gantry Type Milling Machine costing ₹22.09 crore were received in December 2009 and May 2010. These machines were belatedly commissioned in March 2013 due to improper planning and delay in completion of foundation, non-inclusion of specific time frame for erection and commissioning of the machine in the supply order and slow progress on the part of the foreign firm in commissioning the machines though the matter had been repeatedly taken up by HVF with the foreign firm.</p>
<p>3. Ordnance Factory, Khamaria (OFK)</p> <p>(a) Based on HMT's request, factory gave relaxation (March 2009) in PDI of one 3-axis CNC lathe machine (₹0.73 crore) by way of conducting trial of one component against five stipulated in the order considering the supplier as PSU and closure of the financial year. The machine received in March 2009 was commissioned in September 2010.</p> <p>(b) Warhead filling line valuing ₹2.14 crore received in August 2009 was commissioned in November 2010. The delay was due to non-achievement of the desired density in filling of Warhead of 84 mm ammunition</p>

(HEAT-551). Delayed commissioning of the machine led to import of 32525 filled warheads in December 2009 and July 2011 at a total cost of ₹103.09 crore.

4. Ammunition Factory, Kirkee (AFK)

(a) PDI team conducted proving trial of one horizontal transfer press (₹6.74 crore) for only one component against seven required as per PDI clause of the order of March 2009. The machine was received in August 2010 and commissioned in November 2010.

5. Gun Carriage Factory, Jabalpur (GCF)

(a) PDI was due to be carried out in May 2011 in respect of two vertical machining centre (₹1.77 crore). However, PDI was delayed by three months due to factory's failure to supply accurate sized trial components to the supplier and ultimately, the same had to be corrected to the required size by the supplier at their end which delayed the entire process of PDI. The machine was finally received in October 2011, after slippages of two months.

(b) Three machines (CNC Vertical Machining Centre) valuing ₹7.44 crore were received in January and March 2005. However, the machines were commissioned in February 2009, after delay of 41 to 43 months. The delays were due to recurring defects observed in various parts during commissioning trial run.

6. Gun and Shell Factory, Cossipore (GSF)

The factory placed an order (October 2003) for procurement of one CNC Internal Grinding machine at a cost of ₹0.47 crore for 84 mm Rocket Launcher. Factory's Inspection Team could not complete the PDI of the machine as the supplier (M/s HMT) failed to arrange the required accessories or spares. However, the supplier was allowed by the factory to despatch the machine in March 2004 without complete PDI ostensibly on the ground of urgency to meet the enhanced target of 84mm Rocket Launcher (RL) MK-II barrel as well as to avoid the lapse of funds allotted. The machine was received in March 2004 and finally commissioned in June 2008 by compromising the quality viz. acceptance of higher cycle time of nine hours against 27 minutes stipulated in the order. Incomplete PDI due to inadequate accessories or spares also contributed to considerable delays in final commissioning trials.

7. Ordnance Factory Ambajhari (OFAJ)

(a) One Flow-forming machine valuing ₹12.89 crore, was imported and received in November 2011 against original delivery period of 28 February 2009 for production of Pinaka Rockets. Despite final payment of ₹12.27 crore after deduction of LD and other charges, the machine was yet to be commissioned (as of September 2012) as the supplier, M/s HESS Engineering Inc., USA became bankrupt and was not in a position to commission the machine.

(b) An AC plant procured at a cost of ₹85.10 lakh, received in August 2011, was belatedly commissioned in March 2014. The delay in commissioning was due to poor performance of the supplier.

8. Rifle Factory, Ishapore (RFI)

The factory placed an order in April 2006 for procurement of one vacuum hardening plant at a cost of ₹4.32 crore. The plant was received in July 2007 and commissioned in March 2009 after 20 months due to inordinate delay in execution of civil works by RFI and delay in procurement of auxiliary equipments required for commissioning for which both RFI and supplier trade firms were responsible.

ANNEXURE-XXIV

(Referred to in Paragraph 8.4.5.6)

Acceptance of machines without adequate trial runs

<u>Description of machine</u> <u>Value</u>	<u>Date of</u> <u>commissioning</u>	<u>Nature of deficiencies in commissioning trial run</u>
Gun Carriage Factory, Jabalpur & Ordnance Factory, Kanpur <u>21 machines</u> ₹50.92 crore	June 2008 to July 2012	Factories accepted the machines without recording data on proving of cycle time in the commissioning certificate signed by the supplier and factory managements.
Ordnance Factory, Kanpur <u>Vertical slotting machine</u> ₹1.85 crore	December 2008	Against the requirement of proving two items (Shell 130 mm and 155 mm cargo), the machine was actually proved for one item (130 mm cargo). Despite this, factory accepted the machine.
Heavy Vehicles Factory, Avadi <u>Horizontal broaching machine</u> ₹1.43 crore	January 2011	Out of six components only four could be proved in PDI.
<u>CNC turret punch press</u> ₹1.49 crore	December 2010	Acceptance of machine with deviations in PDI
Gun & Shell Factory, Cossipore <u>2 CNC Vertical Machining Centre</u> ₹1.05 crore	December 2007 January 2008	Factory management accepted both the machines without ensuring sufficient performance trial/ guarantee run by the supplier. Later on, deficiencies were noticed in some parts of the machines when they were put into operations for production of breech block and sear safety. Consequently, machines were not used for production of above mentioned items, but for manufacturing of slide.
<u>Laser engraving machine</u> ₹0.26 crore	July 2007	The machine did not show the reference point and software did not deliver the definite size of the characters in pre-determined manner during commissioning trial run (March-June 2007). However, under the direction of AGM, machine was accepted and considered as commissioned in Gun-C Section. Subsequently, it was shifted and commissioned (July 2008) to Gun-D section where it developed problems. Despite repair, the machine could not be put into operation.
<u>5 CNC machines (Drill Tap Centre)</u> ₹1.68 crore	September 2009	Factory management accepted these machines from HMT and considered as commissioned with cycle time much higher by 94 to 186 per cent than the cycle time prescribed in the supply order.

ANNEXURE-XXV

(Referred to in Paragraph 8.4.6.1)

Factory-wise percentage of utilisation of machines

Factory	No. of machines examined	2009-10			2010-11			2011-12			2012-13		
		Range of percentage of utilisation			Range of percentage of utilisation			Range of percentage of utilisation			Range of percentage of utilisation		
		0 to 30	31 to 65	above 65	0 to 30	31 to 65	above 65	0 to 30	31 to 65	above 65	0 to 30	31 to 65	above 65
Ordnance Factory Ambajhari	110	2	1	107	3	1	106	4	1	105	6	11	93
Ordnance Factory Kanpur	55	40	13	2	36	15	4	36	14	5	40	11	4
Heavy Vehicles Factory Avadi	35	0	0	35	1	1	33	0	1	34	1	1	33
Ordnance Factory Khamaria	81	21	27	33	16	20	45	19	21	41	21	24	36
Small Arms Factory Kanpur	23	13	10	0	14	9	0	15	8	0	12	11	0
Gun Carriage Factory Jabalpur	36	0	27	9	0	25	11	0	20	16	0	7	27*
Ammunition Factory Kirkee													
Rifle Factory Ishapore													
Gun & Shell Factory Cossipore													
Field Gun Factory Kanpur													
Total	340	76	78	186	70	71	199	74	65	201	80	65	193

(Source: Factory's report on utilization of machines furnished to OFB and data furnished by the factory management to Audit)

* Utilisation figure of two machines (Regd. No. 10231 and 10241) out of total 36 examined were not furnished by Gun Carriage Factory Jabalpur

ANNEXURE-XXVI

(Referred to in Paragraph 8.4.6.3)

Illustrative cases of under/non-utilisation of machinery

Gist of the cases	Factory's reply
<p>1. Ordnance Factory, Khamaria</p> <ul style="list-style-type: none"> • Two semi-automatic profile machines (Regd No 10090 and 10091) valuing ₹1.12 crore taken on charge in January 2004, required for machining of primer and manufacturing tools, could not be utilised since April 2009 and January 2009 respectively mainly due to non-providing spares and non attending to the problems of break-down by the supplier sister factory (MTPF). • Four equipment viz. Test Instrument for Electric System (Regd No 10006), Arming Time Checking Equipment (Regd No10007), Test Instrument for Electric System (Regd No.10008) and Low Speed Spinning Machine (Regd No 9763) valuing ₹1.36 crore could not be utilised in 2010-11 and 2011-12 due to non allotment of production targets for fuze of 84 mm HEAT ammunition for which the machines were required. • HMT six Spindle Auto (Regd No10082), Case Trimming Machine (Regd No10146) and Oil Hydraulic Press (Regd No. 10089) valuing ₹1.88 crore required for 30 mm cartg. case were received between October 2003 and August 2004 but had not been utilised since 2008-09 due to want of production target. • Arming Device Assembly Line (Regd No 10424) valuing ₹1.78 crore was utilised for only six months since its commissioning (January 2009) due to delay in indigenization of the fuze of 84 mm HEAT ammunition. 	<p>No jobs were done as the machines were designed for limited profile on non-ferrous material.</p> <p>The machines could not be utilised as there was no production programme.</p> <p>Efforts were being made to use the machines for alternative purpose.</p> <p>The planned date for indigenization of Arming Device was re-scheduled to March 2013.</p>
<p>2. Ordnance Factory, Ambajhari</p> <p>As per cost benefit analysis of Scanning Electron Microscope valuing ₹1.02 crore, the utilisation was proposed for three to four samples per day. The cost was to be recovered within a span of five - six years, but OFAJ was utilising the Microscope for only four to six samples per month.</p>	<p>Samples received from various sections were analysed regularly.</p>
<p>3. Ordnance Factory, Kanpur</p> <ul style="list-style-type: none"> • Two machines worth ₹4.76 crore procured and commissioned in December 2008 and February 2009 for production of shell body of 130mm and 155 mm Cargo ammunition could not be utilised due to suspension of production of these ammunition. • Hydraulic Autofrettage plant valuing ₹18.51 crore for autofrettage operation on barrel, commissioned in September 2009, remained under-utilised to the extent of 37.34 to 74.67 per cent during the period 2009-12. • OFC procured one Shot blasting machine valuing ₹0.50 crore for shot blasting operation. The machine commissioned in January 2009 remained under-utilised to the extent of 84.61 to 95.20 per cent during the period 2009-12. • Four machines valuing ₹1.42 crore procured for manufacture of 81 mm Mortar and Tail Unit 2A were not utilised for the intended purpose during the period 2009-12. • Twelve machines valuing ₹7.07 crore procured for manufacture of 120mm Warhead RDMS, 100Lbs Air Bomb, Rifle Grenade, Shell 30 mm BMP-II, 30mm GHASA, 23mm GHASA and various tools were not utilised for the intended purpose during the period 2009-12. 	<p>These special purpose machines would be used only after receipt of production target for the ammunition from OFB.</p> <p>Underutilisation of the plant was due to its requirement for strategic purpose.</p> <p>This being a special purpose machine and of strategic nature could not be utilised fully.</p> <p>The workload of 81 mm Mortar was transferred from OFC. These machines were being utilised for manufacture of other components.</p> <p>The machines were utilised for production of other items and not for the intended purpose.</p>

Gist of the cases	Factory's reply
<ul style="list-style-type: none"> Four CNC machines valuing ₹2.99 crore procured for machining of stabilizer assembly of Pinaka Rocket were grossly under-utilised during the period 2009-12. 	<p>The machines were utilised for Shell 130mm and 155mm apart from achieving targets for pinaka components.</p> <p>We found that OFC failed to meet the target of Pinaka stabiliser assembly as it issued only 1219 sets against target of 3646 sets during 2009-12.</p>
<p>4. Heavy Vehicles Factory, Avadi One CNC Turret Punch Press valuing ₹1.49 crore tooled up for cutting nine components up to 6 mm thickness by Completing Articles (CA) shop, was received in December 2007. But the press was shifted to Sheet Metal (SM) shop in February 2008 as the facilities available in CA shop were found inadequate to fabricate the said components. As the firm failed to restore the machine as ordered, HVF after analyzing various deviations in specification, tools breakage, failure of the firms to commission the machine <i>etc.</i>, finally decided not to use aluminum sheets but to use the machine only for cutting mild steel sheets with thickness up to 3 mm by SM shop.</p>	<p>Tooling was the problem area and some more tools were developed/ manufactured with the special materials in addition to the tools supplied by the firm to use in SM shop.</p> <p>Since the machine was originally tooled up for CA shop, shifting it to SM shop on the pretext of available Laser cutting machine in CA shop resulted in underutilisation of the machine even in SM shop.</p>
<p>5. Ammunition Factory, Kirkee The factory imported (March 2009) a Horizontal Transfer Press valuing ₹6.74 crore and commissioned it (November 2010) to produce 19.20 million rounds of aluminium tubes required for various detonator. After commissioning, the factory produced two million tubes during 2011-12, thereby utilising only 10 <i>per cent</i> of its capacity. AFK initially justified in their demand that the spare capacity would be utilised for civil trade and export.</p>	<p>Detonator cannot be sold for civil trade and export. This led to underutilisation.</p>
<p>6. Gun and Shell Factory, Cossipore The Factory procured one Twin Spindle Vertical Honing machine at a cost of ₹1.28 crore in April 2002 for manufacture of three components (Pistol barrel, 30 mm AGL barrel and 9 mm sub-caliber adopter barrel.) Out of three components, GSF manufactured only one component <i>viz.</i> Pistol barrel during the years 2009-10 to 2011-12 and utilisation was to the extent of 5.66 to 17.12 <i>per cent</i> during the said period.</p>	<p>In the past, factory had manufactured 30 mm AGL barrel and 9 mm SCA barrel. As the project of 30 mm AGL barrel was closed, no AGL barrel was being manufactured at present. However, the machine was capable to meet up the enhanced target of 0.32" pistol.</p>
<p>7. Rifle Factory, Ishapore</p> <ul style="list-style-type: none"> One vacuum hardening plant (furnace) costing ₹4.32 crore was commissioned in March 2009 for heat treatment of components like cover, housing body, pin firing and cylinder gas of 5.56 mm rifle. The machine could be utilised to the extent of only 1.53 <i>per cent</i> in 2009-10 to 16.92 <i>per cent</i> in 2011-12. One cold swaging machine valuing ₹5.02 crore for manufacture of barrels of 5.56 mm rifle, 0.315" and 0.22" sporting rifle (SPR) barrel was commissioned in June 2004 with cycle time of 3.1 minute for 5.56 mm barrel and 3.8 minute for SPR barrel. Thus the average cycle time was 3.5 minute per barrel. Against the capacity of 65828 barrels, RFI manufactured 6555, 12665 and 23972 barrels during 2009-10 to 2011-12 resulting in underutilisation to the extent of 63.58 <i>per cent</i> to 90.04 <i>per cent</i> during that period. 	<p>Due to substantial reduction in workload full utilisation of the furnace could not be achieved. Efforts were being made to shift the furnace to other sister factories.</p> <p>Average cycle time was 4.5 minute instead of 3.5 minute. Further, break down hours were not considered by Audit. But Audit considered all the factors during assessment of the capacity of the machine.</p>

Gist of the cases	Factory's reply
<ul style="list-style-type: none"> • There was gross underutilisation of capacity in respect of seven CNC machines installed in barrel section ranging between 45 and 95 <i>per cent</i> during 2009-12. • The factory held 35 CNC machines in CNC-I & CNC-II Shop for production of 5.56 mm rifle components <i>viz.</i> bracket, breach block, piston extension and hammer. All these machines ran for three shifts daily. The machines were underutilized to the extent of 42.70 <i>per cent</i> to 85.05 <i>per cent</i> during 2008-09 to 2011-12. • The factory procured (February 2010) one tooled up CNC 3 axis vertical machining center at a cost of ₹0.76 crore for manufacture of Slide Retracting of 5.56 mm rifle. The machine received in October 2010 was commissioned in February 2011. But the same was diverted for milling operations of magazine pocket and dovetail of Sporting Rifle (Body). • The factory procured five CNC HMC machines in December 2006 at a cost of ₹5.43 crore for manufacture of bracket for 5.56 mm Rifle. The machines were received in March 2008 and commissioned between August and December 2008. Out of the five machines, three machines (Regd. No. 12936, 12937 and 12941) valuing ₹3.26 crore were diverted for production of piston extension (5.56 mm) and pistol (9 mm). • The factory placed an order in September 2006 for procurement of five CNC HMC machines at a cost of ₹5.35 crore for production of block breach for 5.56 mm rifle. The machines were commissioned between December 2008 and February 2010. Out of five machines, two machines valuing ₹2.14 crore were diverted for production of bracket, block rear and piston extension, resulting in nonutilisation for the intended item. 	<p>Less utilisation of CNC machines was not due to inefficiency but due to less annual target allotted to the factory.</p> <p>The machines were engaged for components produced as per target and surplus capacity were utilised for other components.</p> <p>The machine was initially utilised for production of Slide Retracting. Later due to non-availability of input material, production was stopped. Subsequently, the machine was utilised for making body of Sporting Rifle and 12 bore Gun.</p> <p>As the production of piston extension was carried out in age old machines, diversion of two machines was necessitated for piston extension.</p> <p>Six old machines with higher cycle time were already engaged for manufacture of breach block and maximum nine machines could be used for the said component.</p>

ANNEXURE-XXVII

(Referred to in paragraph 8.15)

(Statement showing the details of recoveries effected by Ordnance Factories at the instance of Audit)

Case No	Nature of irregularities	Amount objected (₹ in lakh)	Amount accepted (₹ in lakh)	Amount recovered (₹ in lakh)
1	Hyderabad Metropolitan Water Supply and Sewerage Board revised water charges with effect from December 2011. But, Ordnance Factory Medak did not recover the revised water charges from the occupants of their estates up to January 2013.	37.14	38.19	37.82
2	The water charges were fixed by the Public Health and Engineering Division, Bolangir, Government of Orissa from time to time for consumption of domestic consumption of water. Ordnance Factory Bolangir did not recover the water charges as per the rate fixed by the Government of Orissa during May 1990 to December 2011	175.00	11.63	11.63
3	Cordite Factory Aruvankadu (Factory) entered into a contract with M/s Engineers Project India Limited Kolkata (EPIL) in October 2006 for procurement, erection and commissioning Sulphuric Acid Concentration Plant. The soil and survey investigation charges were to be borne by EPIL. But, the Factory reimbursed soil and survey investigation charges to the EPIL while releasing payment in June 2007.	13.00	13.00	13.00
4	Ordnance Factory Itarsi (OFI) against supply order of January 2011 received 15 lakh litres of furnace oil from Indian Oil Corporation against payment on the basis of "rate per kg" instead of "rate per litre" as well as reimbursing transportation charges like octroi, entry tax and other levies despite having provided exemption certificate to that effect.	164.69	61.49	61.49
5	Ammunition Factory Kirkee remitted service charges to the Kirkee Cantonment Board for possession of 1146.97 acres of land although they were in actual possession of 865.684 acres of land in the Kirkee Cantonment Area resulting in excess payment of service charges.	85.56	62.92	62.92
6	The Ministry of Defence enhanced the rates of licence fee, in April 2011, to be recovered from the occupants of factory's estates retrospectively from July 2010. Ordnance Equipment Factory Kanpur and Ordnance Factory Muradnagar did not recover the licence fee at the enhanced rates from the occupants of their estates from July 2010 to January 2012.	40.56	40.56	31.39
	Grand Total	515.95	227.79	218.25

ANNEXURE-XXVIII

(Referred to Para 9.1.3.4 and 9.1.5.6)

Statement showing Receipt of Documents pertaining to Repair and Overhaul at various Divisions of HAL

Major Milestones	Duration as per Government Sanction	Current Status			
		Nashik	Lucknow	Hyderabad	Korwa
Date of Signing Contract	T ₀ (August 2009)	13 August 2009	August 2009	13 August 2009	August 2010
Supply of RTD & DDTEM by Russian side	T ₀ + 15 months (November 2010)	All documents received by December 2012	All documents received.	All documents received	All documents received by December 2012
Supply of Technical equipment & tooling from Russian side	To+18 months (February 2011)	Partial supply received. Expected by December 2013	Supply of all Technical equipment and tooling received	All NSE tooling received. Commissioning under progress.	All NSE tooling received by January 2013.
Supply of spares for ROH	To+24 months (August 2011)	SAs for Spares signed in April 2013. Spares for 35 lines received. Balance was expected (Sept. 2013).	SAs for Spares signed in March 2013. Group sets of spares are expected by December 2013.	Material in respect of 11 sets received. The balance is expected by March 2014.	SAs for Spares signed in March 2013. Partial supply received. Balance was expected by December 2013.
Readiness for undertaking overhaul	To+30 months (February 2012)	-Facilities for Dismantling & Structural repair of Airframe available. -Complete facility expected by December 2013. -ROH for airframe and aggregates commenced.	ROH tasks of 70 LRUs already accepted. For the remaining 17 LRUs have been planned from 2013-14 onwards		Existing manufacturing facility is being utilized for common items.

ANNEXURE-XXIX

(Referred Para 9.1.5.1)

Division wise break up for capital investment of ₹ 762.70 crore

I. Civil Works

Division	Main areas	Value (₹ in crore)
Nasik	1) Flight Hangar complex including main hangar, Non-Echo Chamber, Fuel hangar, Engine ground run hangar etc. 2) Functional Test Lab for the new equipment and new Looms Manufacturing shop 3) Extension / modification in Sub assembly complex. 4) Extension to NC shop Complex.	62.90
Koraput	1) A new Complex including NC Shop, Sheet metal Shops, Machine shops and Assembly shop with associated facilities 2) New Foundry for the blade castings and titanium castings 3) Extension to the Forge shop for forgings 4) Test beds for engine & modules testing	85.00
Lucknow	1) New Assembly & Testing Blocks for fuel, Hydraulic Aggregates 2) Extension of Machine Shop & Process Shop.	21.47
Hyderabad	New Assembly & Testing Block for new units	22.86
Korwa	New Assembly & Testing Block for OLS and Navigation Systems.	12.43
		204.66

II. Number of machines and equipment identified division-wise

Division	No of machines	Total Cost	Foreign Exchange Component
		(₹ in crore)	
Nasik	205	116.20	91.61
Koraput	1330	274.62	149.25
Lucknow	423	58.34	40.80
Hyderabad	199	64.08	54.58
Korwa	275	44.80	25.54
Total	2432	558.04	361.88

Source : Detailed Project Report

ANNEXURE-XXX*(Referred Para 9.1.5.6)***Statement showing Sanction and Expenditure for Repair and Overhaul at various Divisions of HAL**

A. Allocation of Sanctioned amount				
<i>(₹ in crore)</i>				
Capital expenditure				
	Nashik	Lucknow	Hyderabad	Korwa
At 2008 level sanctioned	283.35	29.20	55.14	33.88
Incurrence level	311.44	31.76	60.31	34.99
Deferred Revenue Expenditure				
At 2008 level sanctioned	816.19	165.50	250.58	159.90
Incurrence level	923.79	188.38	282.81	179.84
Expenditure as of September 2013				
Capital expenditure	95.47	16.88	16.54	4.71
Deferred Revenue Expenditure	465.23	121.57	200.32	124.81