Office of the Comptroller and Auditor General of India

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Press release

C&AG's Audit Report No. 8 of 2018 on Defence Services, Ordnance Factories tabled in Parliament today.

Comptroller and Auditor General of India's Audit Report No.8 of 2018 on Defence Services, Ordnance Factories has been tabled in Parliament.

This Report contains the results of audit of the transactions for the year ended March 2017 pertaining to Ordnance Factories Organisation under the Department of Defence Production, Ministry of Defence.

The significant audit findings as brought out in the Report are summarised as follow:

Performance of Ordnance Factory Board

The OFB received budgetary grant of ₹16,758 crore and ₹715 crore in 2016-17 to meet its revenue expenditure and capital expenditure against which ₹16,403 crore and ₹717 crore were spent respectively.

During 2016-17, the Cost of Production at these factories was ₹20,037 crore which showed 10 *per cent* increase over the last year. While Stores and Labour account for 56 *per cent* and 11 *per cent* of the Cost of Production, Overhead (Indirect Cost) contributed 31 *per cent* of the Cost of Production. Major elements of Overheads are supervision charges and indirect labour costs which together contributed 62 to 65 *per cent* of total overhead cost during 2012-13 to 2016-17.

In 2016-17, OFB supplied materials of ₹20,876 crore (12 *per cent* increase from the last year) to its different indentors. Indian Army is the major indentor for the products of Ordnance Factories, accounting for nearly 80 *per cent* of the total issues. However, the Factories achieved the targets only for 43 *per cent* of items in 2016-17.

OFB held inventory of ₹13,758 crore representing 69 *per cent* of the Cost of Production in 2016-17. Stores-in-hand of ₹7,113 crore as on 31 March 2017, which constituted 52 *per cent* of total inventory, included non-active stores of₹1,026 crore.

Work-in-Progress (unfinished items lying at the shop floor), constituting almost 30 *per cent* of the total inventory, is an area of concern in Ordnance Factories.

(Chapter I)

Quality Management in Ordnance Factories dealing with Ammunition and Explosives

Quality of the ordnance and ammunition is essential to ensure their reliability and accuracy in usage as well as safety and satisfaction of the Users. Quality management is ensured in a multi-tiered framework comprising Quality Control (QC) by Ordnance Factories and Quality Assurance (surveillance through samples and final inspection) by the Directorate General of Quality Assurance (DGQA) before issue to the Armed Forces.

Audit covered the performance of the Ordnance Factory Board (OFB), Controllerate of Quality Assurance (CQA) (Ammunition), Kirkee and five Ordnance Factories along with attached Senior Quality Assurance Establishments (SQAEs) for 2013-14 to 2016-17 in managing quality control and assurance activities for five large caliber ammunitions and their major components. Followings are the major audit findings-

- **Quality checks on Input Materials**

Against stipulated time of 15 days for inspection of input materials after their receipt in the Factory, only 36 *per cent* input materials were inspected within 15 days. Certain critical checks were not carried out or carried out not to the extent prescribed in respect of input materials. This had adverse impact on the quality of finished products leading to return for rectification (RFR) and rejection.

- **Quality Control and Quality Assurance of Manufacturing Process**

Inadequate compliance to the process schedule as well as inadequate documentation of the checks conducted resulted in recurrent return for rectification (RFR)/rejections. There were rejections worth ₹146 crore in respect of three out of five types of ammunitions selected in audit.

The Network Quality Database Management System was planned to be implemented by March 2012 for sharing of quality related data/documents among the stakeholders. Its implementation was far behind the schedule for varied reasons.

- **User's Feedback and other Structures for Quality Improvement**

There were abnormal delays in defect investigation of accidents/failure reported by Users. 65 *per cent* of the investigations,closed during 2013-17,took more than prescribed time of 210 days and, in one case, up to 3727 days for closure of the report.

Quarterly Review Meetings on defect investigation and other quality issues amongst DGQA, Army and OFB were not found effective because no accountability was fixed despite having recurrent delays.

In case of heavy rejection before issue to the user, Joint Investigation required to be carried out by the Factory and SQAE took on an average 616 days in completion and many cases remained inconclusive despite delays of three to 62 months.

Alteration Committee (AC) in the Factories, with representatives from DGQA, CQA, Factory, Users and DRDO was to identify areas for product improvement including changes identified after defect investigation. It was observed that functioning of the Committee was not effective as the matters referred to them did not find timely resolution.

- **Quality Policy**

No documented comprehensive quality policy has been laid down by the Ministry as of May 2017. Instead, piecemeal orders/instructions were issued by the Ministry and OFB. In the absence of an overarching quality policy, existing quality structure lacked coherence and did not establish synergy needed for optimum distribution of responsibility and authority among the stakeholders in Defence Production.

(Chapter II)

Production of Parachutes in Ordnance Factories

Ordnance Parachute Factory Kanpur (OPF) manufactures various parachutes for the Armed Forces. Users' requirement of parachutes is of significant importance because of their strategic use in man carrying, supply drop, emergency escape of pilots from aircraft, for aborted take-off and to reduce landing run length of aircraft, *etc.*

Audit was conducted at OPFand OFB for 2012-13 to 2016-17 on production of 11 selected parachutes for the Army and Air Force to ascertain whether OFB supplied quality parachutes to the Users in time and as per their requirements. The results of audit are briefed as under:

There were deficiencies in production planning likedelays in holding target fixation meetings, non-identification of item-wise production capacity and production constraints/capacity shortage not highlighted in the meetings for fixing realistic targets. The targets were routinely revised downwards mid-year due to OPF's inability to meet the target because of non-availability of quality metal components/fabrics and scarcity of vendors.

Out of 49 instances analysed, OPF achieved production target only in five instances during 2012-13 to 2016-17. The shortfall occurred mainly due to delayed procurement and receipt of input materials, limited vendor base and delay in resolving drawing/specification issues. As a result, there were significant outstanding orders for

nine parachute items as of March/April 2017. The Users' also had deficiencies of seven parachute items to the extent of 33 to 100 *per cent*.

Bulk production of two types of Heavy Drop (HD) parachutes, developed by Defence Research and Development Organisation (DRDO) in 2000 and 2009 for Army and Navy could not be commenced due to delayed receipt of drawing/specification,delayed supply of pilot lot by OPF for validation trial and production constraints at sister factory for HD platform system. Army's requirement of Combat Free Fall parachute, developed by DRDO in 2006, was not fulfilled due to life threatening defects observed by Army in validation trials and non-resolving the quality problems by OPF and DRDO.

(Paragraph 3.1)

Production of Pinaka Rockets in Ordnance Factories

Pinaka is a multi-barrel rocket launcher system developed by Armament Research & Development Establishment (ARDE), for the Indian Army with a range of 38 km. Production of Pinaka rockets by Ordnance Factories commenced in 2007-08.

Audit found that ARDE was yet to finalise the technical document of Pinaka Rocket and transfer the Authority Holding Sealed Particular (AHSP) role to Controllerate of Quality Assurance (Armament). Further, critical quality problems like excessive short-ranging, bursting of rockets, burning chunks of propellant, *etc*. were observed during proof firing of Pinaka rockets between March 2011 and July 2016. ARDE stopped production of Pinaka rockets from July 2016 and subsequently Failure Analysis Board (FAB) were constituted twice (July 2016 and April 2017). However, FABs, in their reports, failed to pinpoint the exact problem in manufacture of Pinaka rockets.

Thus, even after completion of ten years, production of the Pinaka rockets has not yet been fully stabilized. Due to stoppage of production and supply to Army, inventory valuing ₹478 crorewere lying at OF Chanda, as of July 2017. The fate of unused inventory relating to Pinaka is dependent on the further directives from ARDE.

(Paragraph 3.2)

Stores-in-Transit between Ordnance Factories

Stores-in-transit (SIT) arise due to stores received from sister factories but not taken on charge in the books of recipient factory. In OF Organisation, SIT increased from ₹682 crore (March 2013) to ₹944 crore (March 2017) which was 15 *per cent* of the cost of production of Inter Factory Demand (IFD) items.

Audit conducted at six factories having maximum SIT revealed that non-observance of stipulated norms and timeline for inspection and accounting of stores received from

sister factories resulted in accumulation of SIT. Main deficiencies leading to SIT were:

- Significant delays in/non-completion of inspection of stores received from sister factoriesand decision pending on stores rejected in inspection;
- Quantity short received or not properly covered in IFD;
- Non-linking of vouchers by the Accounts Office of the Consignee factories; and
- Fictitious holding of items under SIT due to error in linking/posting in the accounts.

Accumulation of SIT is one of the factors for shortfall in production against annual targets. There was no mechanism for periodical inter-factory reconciliation and physical verification of SIT.Monitoring at the factory level was not effective for time-bound clearance of SIT,with oldest SIT pending since 2005-06 in the selected factories.

(Paragraph 3.3)

Non-commissioning of Nitro Glycerine Plant at Ordnance Factory, Itarsi

Despite inordinate delay in commissioning of new Nitro Glycerine Plant by the contractor, Ordnance Factory Itarsi failed to reject the Plant and enforce the contractor to replace the plant at the cost of the contractor as per contractual provision. This had resulted in an idle investment of ₹34.43 crore and consequential loss of factory's production capability of Nitro Glycerine, more so when the existing NG Plant had already outlived its life and was facing acute shortage of spares.

(Paragraph 3.4)

Blocking of funds of ₹14.30 crore due to non-utilisation of Boiler House

Despite Ministry's decision, in June 2009, to put on hold the Bi-Modular Charge System (BMCS) plant and subsequent cancellation of contract with M/s Israel Military Industries (IMI) Israel, the Ordnance Factory Nalanda went ahead with construction of Boiler House, intended to generate steam for BMCS plant as per IMI specification. Construction was completed in November 2012 and since then the Boiler House remained idle, resulting in blocking of funds to the tune of ₹14.30 crore.

(Paragraph 3.5)