P.A.C. No. 54

PUBLIC ACCOUNTS COMMITTEE (1977-78)

(SIXTH LOK SABHA)

THIRD REPORT

DEFENCE SERVICES

(MINISTRY OF DEFENCE)

[Paragraphs 11 and 43 of the Report of the Comptroller & Auditor General of India for the year 1974-75, Union Government (Defence Services)]

Presented in Lok Sabha on 12 DEC 1977
Laid in Rajya Sabha on 12 DEC 1977

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Page	Para	Line	For	Read
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72	2.47	9	irrepairable	irreparable

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Minutes of the sittings of the Public Accounts Committee held on 29 July, 1976, 13 October, 1976 and 15 October, 1977.

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PUBLIC ACCOUNTS COMMITTEE
(1977-78)

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Shri Bipin Behari—*Senior Financial Committee Officer*

*Ceased to be a Member of the Committee on his appointment as Minister of State *w.e.f.* 14-8-1977.

INTRODUCTION

I, the Chairman of the Public Accounts Committee, as authorised by the Committee, do present on their behalf this Third Report of the Public Accounts Committee (Sixth Lok Sabha) on paragraphs 11 and 43 of the Report of the Comptroller and Auditor General of India for the year 1974-75, Union Government (Defence Services).

2. The Report of the Comptroller and Auditor General of India for the year 1974-75, Union Government (Defence Services) was laid on the Table of the House on 6 May, 1976. The Public Accounts Committee (1976-77) examined Paragraphs 11 and 43 of the said Audit Report at their sittings held on 13 October, 1976 and 29 July, 1976 respectively but could not finalise the Report on account of dissolution of the Lok Sabha on 18 January, 1977. The Public Accounts Committee (1977-78) considered and finalised this Report at their sitting held on 15 October, 1977, based on the evidence taken and the further written information furnished by the Ministry of Defence. The Minutes of these sittings form Part II* of the Report.

3. A statement containing conclusions/recommendations of the Committee is appended to this Report (Appendix). For facility of reference these have been printed in thick type in the body of the Report.

4. The Committee place on record their appreciation of the commendable work done by the Chairman and the Members of the Public Accounts Committee (1976-77) in taking evidence and obtaining information for this Report.

5. The Committee also place on record their appreciation of the assistance rendered to them in the examination of these paragraphs by the Comptroller and Auditor General of India.

6. The Committee would also like to express their thanks to the Ministry of Defence and the Department of Defence Production for the cooperation extended by them in giving information to the Committee.

C. M. STEPHEN,
Chairman,
Public Accounts Committee.

NEW DELHI;
October 28, 1977.
Kartika 6, 1899 (*Saka*).

*Not printed. One cyclostyled copy laid on the Table of the House and five copies placed in Parliament Library.

1

MANUFACTURE OF AN AMMUNITION

Audit Paragraph

1.1. In 1962-63 it was decided to create capacity for new ammunition 'X' in replacement of ammunition'Y' partly by switch over from 'Y' to 'X' ammunition in two factories 'A' and 'B' and partly by setting up a new factory 'C'. Production of the ammunition commenced in factories 'A' and 'B' in 1962-63. In April 1963, Government sanctioned Rs. 51.58 lakhs for conversion of the existing facilities in factory 'B' to suit production of the new ammunition and to achieve the target production of 84 units per annum in two shifts of 10 hours each. Out of 160 items of plant and machinery indented, 155 were received and erected by December 1966 and 4 by September 1968; the remaining one (received during July 1971 to March 1972) was awaiting erection (February 1976) pending rectification by the supplier.

1.2. The new factory 'C' was to have a production capacity of 600 units per annum. It was planned that

> out of 600 units, 60 units would be of a different variety; and an additional capacity would be created in the new factory for augmentation of production of another ammunition 'Z' under manufacture in factory 'B' by 6 units per annum in view of certain common production facilities required by two types of ammunition 'X' and 'Z'.

1.3. Building and services were accordingly planned for the new factory under two broad headings;

> Head I—to include buildings and services which were common to both types of ammunition and which on economic and design consideration, could not be split up.
>
> Head II—to include buildings and services which were required specially for ammunition 'Z'.

1.4. On the basis of the above planning 3,036 acres of land were acquired for the new factory keeping a cushion for future expansion.

1.5. The processes and layout for manufacture of ammunition 'X' were planned to a large extent according to the plant offered from a foreign country. This plant was stated to be capable of producing 432 units of

the ammunition per annum in 2 shifts of 10 hours each. Accordingly, the capacity decided to be set up for the ammunition in the new factory was limited to 432 units per annum as against 600 units originally planned. The plant for production of ammunition 'Z' was also decided to be considered separately. But as action had already been taken to plan the factory on the basis of capacity to produce 600 units of ammunition 'X' and 6 units of ammunition 'Z' per annum, the pruning of the factory's capacity led to excess capital investment in land, buildings, services etc.

1.6. The plant obtained from abroad for manufacture of the new ammunition did not include certain essential production facilities. It was, therefore, decided to procure the necessary equipment and create necessary facilities under indigenous arrangements. The cost of the project was estimated as Rs. 16.17 crores for production of 432 units of ammunition per annum and this was sanctioned by the Government in January 1964

1.7. Civil works were sanctioned between August, 1963 and March, 1968. Industrial buildings were completed and taken over between July, 1964 and January, 1967. Non-industrial buildings, after completion, were taken over during May, 1965 to January, 1967.

1.8. The main plant was received from abroad by May, 1964. A sum of Rs. 142.87 lakhs (including Rs. 46.47 lakhs in foreign exchange) had to be spent by Government on account of renovation and modification of the plant to make it suitable for manufacture of the new ammunition, transportation cost and installation charges. The balancing plant and machinery which were sanctioned between February, 1964 and February, 1968 were received from 1968 to 1971. The production of the ammunition commenced in Factory 'C' from September, 1965 with imported tools and other components which were not available indigenously. Thus the production of the new ammunition commenced in factories 'A' and 'B' from 1962-63 and in factory 'C' from 1965-66.

1.9. During 1965-66 to 1973-74 (9 years), the three factories taken together produced, on an average, 158 units—factory 'A' contributing 63 units, factory 'B' 28 units and factory 'C' 67 units. The highest annual production achieved by factories 'A', 'B' and 'C' was 103 units (1966-67), 40 units (1971-72) and 119 units (1972-73) respectively. The maximum annual out-turn given by the three factories taken together was 229 units in 1971-72. As the total production fell short of actual requirements, ammunition worth Rs. 13.43 crores had to be imported to meet the minimum requirements of the Services. In the year 1974-75, however, factories 'A', 'B' and 'C' were allotted a production programme for only 40, 20 and 80 units respectively. The low production programme was stated to be due to lack of demand.

1.10. The reasons for unsatisfactory performance in each factory were as follows:—

Factory 'A'.—The production of the new ammunition was stated to have been affected due to use of old and worn out machines which gave not only reduced out-turn but also led to heavy rejections and failures. The Director General of Inspection pointed out that most of the lots produced by this factory were accepted on the basis of a number of concessions and subject to restrictions as regards shelf life. In addition to considerable rejections of one or more components, a number of defect reports were received from the user units. Detailed technical investigations established that the root cause of these was the old and unreliable machines and inadequate tooling. In April 1971, Government sanctioned Rs. 6.05 crores for replacement of essential plant and machinery in the factory out of which 4.9 crores were earmarked for raising the production capacity of this ammunition to 120 units per annum. The Ministry intimated (February 1976) that all the machines ordered on this project had been received and were being commissioned.

1.11. In the Appropriation Accounts for the year 1972-73 (*vide* para 11 of Annexure II to Para 15), the Controller General of Defence Accounts reported that the progress of manufacture of this ammunition in factory 'A' continued to be unsatisfactory and as on 31st March, 1973, 57.53 units of ammunition in respect of which labour payments for final operations had already been made, were awaiting clearance by the Inspectorate. Similarly, in respect of the old ammunition 'Y', 23.52 units for which labour payments for final operations had already been made were awaiting clearance by the Inspectorate as on 31st March, 1973; in the manufacture of both the varieties of ammunition, there had been certain irregularities of a serious nature like booking of labour on the warrant being disproportionately higher than the quantities of the components actually drawn for manufacture, non-accountal of rejection warrant-wise and completion of warrants by transferring to earlier warrants production against the subsequent warrants.

Factory 'B'.—The Factory stated in November 1968 that with the tightening of the standard for acceptance at proof to meet the rigid requirements of the Services, there had been failure in proof of both filled and empty components on account of which the production of this ammunition suffered a serious setback. Besides, when the factory switched over to the use of indigenous explosive manufactured by another ordnance factory, certain difficulties were encountered which also contributed to low production. The defects as noticed in the product of factory 'A' were also noticed

by the Director General of Inspection in the ammunition manufactured by this factory. The Ministry further explained (December 1969) that the expenditure sanctioned for this factory for production of this ammunition was mostly for augmentation of tool room capacity, it being assumed that the available capacity for manufacture of empty components of old ammunition could be translated straightaway for production of components of the new ammunition. But when the new ammunition was taken up for production, only a certain percentage of the production equipment was found suitable for undertaking operations on the new ammunition and the machine really suitable for production of this ammunition could give only a capacity not exceeding 36 units a year in 2 shifts of 10 hours each.

Factory 'C'.—The Ministry stated in December 1969 that the failure of the factory to produce this ammunition to the required level was due to insufficiency of tools and components for which heavy reliance was placed on imports. It was stated that the understanding was that until and unless the tool room and the section for manufacturing the components were fully commissioned, these would be supplied by the foreign country but this expectation did not materialise and this affected production in the factory.

1.12. The sanction for the civil works for the tool room building was issued in March 1965 and the building completed at a cost of Rs. 23.40 lakhs was taken over in December 1966. Sanction for the purchase and installation of the equipment in the tool room was issued by Government in February 1964 at an estimated cost of Rs. 175.92 lakhs. These equipment were received during 1964-65 and installed during 1965—69.

1.13. Due to shortfall in factory's production, tools and gauges worth Rs. 69.19 lakhs were imported during 1965-66 to 1972-73. The Ministry stated (December 1969) that the reasons for the unsatisfactory level of production in the tool room were mainly (i) paucity of adequate trained staff and labour and (ii) that the quality and finish of the tools required for production of this ammunition were very much of a higher standard than the standards adopted at the other two factories ('A' and 'B').

1.14. The plant at factory 'C' was estimated to produce 432 units per annum in 2 shifts of 10 hours each. But it was actually worked on a single shift of 8 hours with overtime as it was not considered advisable to run the plant in two shifts, the plant being old. The actual production of the factory, however, fell short of even the achievable output in a single shift of 8 hours, *viz.* 168 units per annum. The maximum production of the factory after working systematic overtime, was 119 units only in the year 1972-73. The overtime bonus paid to the workers had been steadily increasing since 1967-68 (when it was Rs. 1.83 lakhs) and in 1972-73, it stood at Rs. 21.25 lakhs.

1.15. Some of the interesting features concerning production of the ammunition in factory 'C' and its issue to the Services were as follows:

1.16. The factory placed a demand on another factory in October 1966 for the development of a propellant required for the ammunition. Although this factory was able to produce the propellant required for the ammunition produced at factories 'A' and 'B', the same required for the ammunition manufactured at factory 'C' (the design of the ammunition being different) could not be established (August 1975). The factory, therefore, had to rely primarily on imports for this propellant and the cost of propellant imported amounted to Rs. 2.45 crores (January 1976).

1.17. A sum of Rs. 28.13 lakhs had been sanctioned for a gas production unit to supply gas to this plant as well as to the plant intended to be procured for manufacture of ammunition 'Z'. A contract was entered into with a private firm by the Director General of Supplies and Disposals in March 1964 for supply and erection of this plant and to ensure supply of gas by 1st August 1964. There was delay in commissioning the plant resulting purchase of gas from the market; this was mentioned in para 6 of Audit Report, Defence Services, 1968. Preliminary trials with the plant brought to light defects which the firm was asked to rectify. The Public Accounts Committee was informed that the dispute between the Government and the firm had been referred for arbitration (vide para 1.49 of Public Accounts Committee's 99th Report, 4th Lok Sabha). Although the case was referred to arbitration in September 1970, the arbitration award was awaited (August 1975). In the meantime, the plant had been lying idle and gas worth Rs. 22.33 lakhs had been purchased from trade (March 1975).

1.18. Unavoidable rejections which are inherent in the process of manufacture, were included in the standard estimates of the factory for production of this ammunition. For three assembly components namely 'P', 'Q' and 'R', the percentage provided in 1964 was 8, 7 and 10 respectively. These rejection percentages held good till 1973-74 but were revised upwards once in March 1974 giving retrospective effect from January 1973, and again in January 1975 giving retrospective effect from December 1973. The revisions made were as follows:

	1964-1972	January 1973 to November 1973	December 1973 onwards
'P'	8	11	15
'Q'	7	10·5	14·5
'R'	10	10·5	14·5

1.19. The reasons adduced for the revisions were heavy wear and tear of machines and equipments, deterioration of accuracy of machines due to long and intensive use, supply of defective/sub-standard materials by other factories, rigid inspection etc.

1.20. For effective use of the ammunition, it is necessary to supply it in a ready-to-use condition by adopting either of two methods of packing. Two machines received along with the main plant for one method of packing could not be put to use as certain parts of these machines were found to be deficient. In July 1968, action was initiated to procure two new machines. An order was placed on a firm by Director General, Supplies and Disposals, in July 1970 for supplying them at a cost of about Rs. 4 lakhs. These machines were received in the factory in September 1972 and put to use in March 1973. Meanwhile, this method of packing was done by manual process but as this involved considerable time, the bulk of the ammunition which required this packing before issue to the Services was issued without this packing.

1.21. For the other method of packing, two components were necessary. One of these components was planned to be procured from trade. But trade supplies did not materialise and the requirement was met partly by repairing the old ones and partly by import. The value of such imports amounted to Rs. 5.74 lakhs. The requirement of the other component was being met by factory 'D'. In August 1970, a demand was, however, placed on factory 'E' for the supply of 0.5 unit of this component. Factory 'E' issued about 25 per cent of this quantity to factory 'C' after these were passed by the local Inspectorate. In August 1971, after testing the control samples, Controller of Inspection (Ammunition) Kirkee, however, reported that the material used in manufacturing this component contained a chemical in excess. According to him, the excess chemical would corrode the ammunition. As a result, components worth Rs. 3.44 lakhs which were in complete/semi-manufactured condition were lying in factory 'E' unaccepted. As further production of this component was not taken up, materials worth Rs. 2.73 lakhs procured by the factory for the manufacture of the component were also lying unutilised.

[Para 11 of the Report of the Comptroller and Auditor General of India for the year 1974-75, Union Government (Defence Service)].

Introduction

1.22. It was decided to induct in the Army a new weapon for which a new ammunition 'X' was required. The Ministry of Defence requested the DGOF on 27 May, 1960 to go ahead with the manufacture of the weapon and connected ammunition. The DGOF advised a factory on

1 June, 1960 to proceed with the design of equipment/operational layout to undertake production of the equipment as soon as the orders were received. Simultaneously DGOF also advised factory 'A' separately on 1 June, 1960 to obtain immediately drawings for this ammunition from the Chief Inspector of Armaments. On 25 January, 1961, DGOF issued instruction to factory 'A' to proceed with establishment of manufacture of the ammunition and to treat this communication as the authority for this work.

1.23. At a meeting held in the Ministry of Defence on 9 June, 1961 to discuss measures to set up production, a decision was taken that DGOF should take steps to plan the production of the weapon and the connected ammunition 'X'. According to Audit Para, in 1962-63 it was decided to create capacity for new ammunition 'X' in replacement of ammunition 'Y' partly by switch over from 'Y' to 'X' ammunition in two factories 'A' and 'B' and partly by setting up a new factory 'C'.

1.24. On 30 September 1961, DGOF informed the Ministry of Defence that production of the ammunition would be established in about six months time i.e., by March 1962 and bulk production would take about 4 to 5 months thereafter. By 22 October, 1962 orders were placed on DGOF for the supply of 17 units of the new ammunition. By 1962-63, the factory issued 7.44 units of ammunition to the Army.

1.25. During evidence, the representative of the Ministry of Defence stated that the reason for replacement of ammunition 'Y' by ammunition 'X' was that ammunition 'Y' was designed in early 1900 and its manufacture was based on a technology available at that time and that it "could not give the fire power or rate of fire required to meet mass attack tactics" whereas ammunition 'X' was more accurate and capable of meeting requirements of modern weapons. It was also stated that manufacture of ammunition 'X' was not taken up before 1964 because the weapon for its use was inducted in the Army only in 1964-65 without which the production of this ammunition would have been irrelevant. Production of the new ammunition commenced in factory 'A' and 'B' from 1962-63 and in factory 'C' from 1965-66.

1.26. The Committee learnt from Audit that year-wise production of ammunition 'X' in factories 'A', 'B' and 'C' since 1965-66 was as under:—

Year	Factory 'A'	Factory 'B'	Factory 'C'	Total
1	2	3	4	5
	(in units)			
1965-66	84.44	32.70	20·27	137·41
1966-67	3·08	22·27	25·59	150·94
1967-68	84·05	12·01	46·70	142·76

1	2	5	4	3
1968-69	12·17	17·93	55·55	85·65
1969-70	33·86	32·43	67·91	134·20
1970-71	52·75	30·69	78·55	161·99
1971-72	83·42	40·34	105·53	229·29
1972-73	70·88	36·02	119·15	226·05
1973-74	43·80	25·06	82·72	151·58
Total	568·45	249·45	601·97	1419·87
Average	63·16	27·72	66·88	157·76

1.27. During the 9 years for which the production figures have been shown above, the three factories taken together produced, on an average 158 units of ammunition 'X'—factory 'A' contributing 63 units, factory 'B' 28 units and factory 'C' 67 units. The annual maximum out-turn given by these factories taken together comes to 229 units in 1971-72. As the total production fell short of the requirements/targets fixed for each factory *viz.* 'A', 'B' and 'C', ammunition worth Rs. 13.43 crores had to be imported.

1.28. Audit para has highlighted reasons for unsatisfactory performance in each factory. The same are dealt with factory-wise in subsequent paragraphs.

Factory 'A'

1.29. It would be seen from the figures given in paragraph 126 that the production of ammunition 'X' in factory 'A' started deteriorating after 1966-67 when it manufactured 103.08 units of ammunition which is also the highest figure for any year for this factory. The Audit para points out that the production of the new ammunition was stated to have been affected due to use of old and worn out machines which gave not only reduced out-turn but also led to heavy rejections and failures.

1.30. Government were asked to indicate whether any technical investigation of malfunctioning of the factory was made. In reply it has been stated that a technical investigation into the defective ammunition produced by the factory during 1964—67 was carried out by the Director General of Inspection's Organisation in 1969. The investigation report pointed out that the factory had "started manufacture of ammunition 'X' on the old machines used for the manufacture of ammunition 'Y' by suitably modifying them and all those old machines were to be replaced in phases."

1.31. It is maintained that "with the introduction of two new weapons .....in 1968, the Factory 'A' started having production difficulties as the inspection requirements for the new type of weapons were much more rigid than before. In as much as the factory had succeeded in its challenge in utilising its old equipment for a new type of ammunition and had supplied substantial quantities of it (283 units between April 1965 and March 1968), it will not be correct to conclude that Factory 'A' had prematurely taken up production without investigating all aspects." As a result of the investigation of 1969 it was decided that the plant and machinery in the factory should be replaced with a view to ensure quality production of this ammunition. The modernisation scheme was later sanctioned in 1971.

1.32. The Audit Paragraph points out that an amount of Rs. 6.05 crores was sanctioned by Government in April 1971 for the replacement of the plant and machinery in the factory out of which Rs. 4.9 crores were earmarked for raising the production capacity of ammunition 'X' to 120 units per annum. The Committee desired to know the reasons for replacement of essential plant and machinery only in 1971 when the factory had admittedly been facing difficulties in producing the ammunition satisfactorily from the very beginning *i.e.*, 1962-63. In a written note furnished in this regard, the Ministry have stated that production was commenced with the existing machine tools available and the ammunition to suit the requirements of weapons in service at that time was being produced but with the introduction of two new weapons into the service in 1968, the ammunition under production was not found to satisfy the requirements of these new weapons. By that time (1969), the old plant of the factory lost its capability resulting in heavy rejection and unreliable production. Further, the Inspectorate had procured new gauging and inspection machines which could assist in weeding the defective ammunition whilst the plant and machinery in the factory remained old and unserviceable. It was, therefore, felt necessary to modernise the production plant in the factory to match the inspection requirements specified. Admitting that the idea of replacing the old machines was there in 1963 but the same could not materialise, the Ministry have, in a note, stated:

> "Incidentally, Factory 'A' had, in fact, proposed in 1963 to convert the then existing factory by procurement of new machines for production of ammunition 'X' but this could not be accepted due to financial reasons, possibly because factory 'C' was then being planned."

1.33. The Ministry had informed Audit in June 1971 that the DGOF had been authorised to place direct orders for the procurement of plant and machinery required for this project and that these were expected to

be in position in three years time. It is further learnt that the DGOF had informed Audit in May 1976 that 159 machines ordered for this project against indents placed during September 1972 were received between January 1974 and September 1975, out of which 154 machines were commissioned between January 1975 and April 1976 and that 5 machines were yet to be commissioned.

1.34. According to Audit para, in the Appropriation Accounts for year 1972-73, the Controller General of Defence Accounts had reported about the continued unsatisfactory progress of manufacture of ammunition 'X' in factory 'A'. He had also stated that as on 31 March, 1973 huge quantities of ammunition (57.53 units of ammunition 'X' and 23.52 units of ammunition 'Y') in respect of which labour payments for final operations had already been made were awaiting clearance by the Inspectorate. It was also pointed out by the Controller General of Defence Accounts that in the manufacture of both the varieties of ammunition, there had been certain irregularities of a serious nature like "booking of labour on the warrants being disproportionately higher than the quantities of the components actually drawn for manufacture. non-accountal of rejections warrant-wise and completion of warrants by transferring to earlier warrants production against the subsequent warrants."

1.35. The Committee desired to know the reasons for huge quantities of ammunition awaiting clearance by the Inspectorate and whether these have since passed inspection. The Ministry have in a note stated:

> ".....As the production had to be continuted during the process of establishment and ammunition not coming to standard kept aside it had resulted in an accumulation of the same."

1.36. In reply to another question whether any investigation into the serious irregularities in the production of both the varieties of ammunition commented upon in the Audit para, was carried out and remedial measures taken, the Ministry of Defence have in note stated:

> "In 1974 the DGOF issued certain instructions to overcome this problem, but it appears that due to practical difficulties these instructions have not been fully implemented although certain preliminary steps in this direction have been taken. It has now been decided to set-up a Committee consisting of representatives of the Department of Defence Production, DGOF, CGDA and the DGI to go into this problem in depth and to make recommendations, on the basis of which a final course of action can be decided and implemented."

1.37. In this connection, the Secretary, Defence Production has stated during evidence (October 1976) as under :

> "The DGOF passed certain orders three years ago that they would have to put a stop to the practice. Unfortunately, the practice

seems to have continued in some manner. We wanted to get at the bottom for the factory observing this peculiar procedure. The Committee was set up very recently. The report will come in about 2 months time. We have fixed 15th December 1976 as the target date."

1.38. Subsequently, the Ministry in a note intimated (May 1977) that the Committee appointed for the purpose had still not completed its deliberations and its report was expected shortly. This report would deal with all aspects of the matter and suggest actions to be taken in respect of the irregularities.

1.39. The Committee find that factory 'A' commenced production in 1962-63 and the low out-turn and heavy rejections were a regular feature right from the very beginning. In 1963, i.e. nearly a year before the new weapon was inducted into the army the factory had proposed its modernisation by procurement of new machines for production of ammunition 'X' but this could not be accepted due to financial reasons "possibly because factory 'C' was then being planned." It was only in 1968 when the old plant of the factory "lost its capability resulting in heavy rejections and unreliable production" that a technical investigation was carried out in 1969 by the Directorate General of Inspection. The report of this investigation confirmed that the root-cause of unsatisfactory performance was "old and unreliable machines and inadequate tooling". Following the findings of the Directorate General of Inspection, a scheme for modernisation of the factory was approved by Government in April, 1971 and the DGOF was authorised to place direct orders for the procurement of plant and machinery. These new machines were expected to be in position in three years' time, i.e., by 1974. The indents for 159 machines were placed during September 1972 and these were received between January 1974 and September 1975. Out of these, 154 machines were commissioned between January 1975 and April 1976 and 5 machines were not commissioned by May 1976 when the information was furnished by DGOF to Audit. The Committee are surprised that no action was taken to equip factory 'A' for production of ammunition 'X' until 1971 even though right from 1962-63 when the factory commenced production it was showing low out-turn and sub-standard production leading to heavy rejections. The Committee desire that the causes for this inaction for a period of 9 years from 1962 to 1971 should be gone into and the responsibility therefor fixed. Even when DGOF was given a green signal in early 1971 to procure the plant and equipment needed for modernising the factory, it took as much as 4 to 5 years for the new plant and machinery to be commissioned. The Committee would like Government to examine as to what extent the time taken in procurement, installation and commissioning of the new machinery could have been reduced by rationalising and streamlining the procurement procedures.

1.40. The Committee are distressed at the accumulation of rejected ammunition in factory 'A'. The increase in rejections is attributed to the Inspectorate having "procured new gauging and inspection machines which could assist in weeding the defective ammunition." It is maintained that "as the production had to be continued....ammunition not coming to standard was kept aside (and) it had resulted in accumulation." The Committee consider that it was not desirable to continue production of sub-standard ammunition by the factory just for the reason that "the production had to be continued" as it was a wasteful consumption of labour and scarce raw materials and components some of which were imported.

1.41. The Committee cannot too strongly emphasise the need for extreme care and caution being exercised by the Inspection Organisation at all times in the discharge of their responsibilities so as to ensure that sub-standard weapons and ammunition do not find their way in the defence stores. The Committee desire that the Government should closely examine the Inspection machinery and procedures with a view to bring about such improvements as may be necessary to make it more efficient and effective and fully conscious of its important responsibilities.

The Committee would like the inspection machinery within the Ordnance Factories also to be revamped and made more effective so that quality checks are properly exercised at the production stage itself.

1.42. The Committee note that CGDA had pointed out certain irregularities of a serious nature in this factory, like booking of labour on warrants being disproportionately higher than the quantities of components drawn for manufacture, non-accountal of rejections warrant-wise and completion of warrants by transferring to earlier warrants, production against the subsequent warrants. It is stated that since certain instructions issued by DGOF in 1974 to overcome this problem did not bear fruit, a committee was set up to go into this problem in depth and make recommendations. Although the Committee was to report by the 15 December, 1976, its report had not been received until May 1977. The Committee would like the Ministry to ensure that report of the Committee is made available without further delay. The Committee would like to be informed about the follow-up action on the recommendations of this committee.

FACTORY 'B'

1.43. Performance of this factory also was not satisfactory as would be seen from the year-wise production chart of the three factories (Para 1.26). In this connection the Audit Para points out that the Government had explained (December 1969) that the expenditure sanctioned for this factory for production of this ammunition was mostly for augmentation of tool room

capacity, it being assumed that the available capacity for manufacture of empty components of old ammunition could be translated straightaway for production of components of the new ammunition. But when the new ammunition was taken up for production, only a certain percentage of the production equipment was found suitable for undertaking operations on the new ammunition, and the machines really suitable for production of this ammunition could turn out, against the target production of 84 units per annum in 2 shifts of 10 hours each, a production not exceeding 36 units per annum in 2 shifts of 10 hours each.

1.44. Asked to state the basis for this assumption which later proved to be incorrect, the Ministry of Defence, have in a note stated:

> "Factory 'B' was producing ..... ammunition which is only a slight variant of ammunition 'X'. It was, therefore, then assumed that the change-over from one ammunition to another should be possible by resorting to better tooling. For this reason, the additional plant and machinery that Army sought to be inducted into Factory 'B' was restricted to some tooling equipment only, assuming that the old plant could be utilised effectively. It was only realised later that the production equipment at Factory 'B' was out-dated and could not help to ensure production of 7 units per month instead of 3 units."

1.45. It is seen from the Audit para that Government sanction for the conversion of the existing facilities in this factory to suit production of the new ammunitions (cost : Rs. 51.58 lakhs) had been issued in April 1963. Out of 160 items of plant and machinery indented, 155 were received and erected by December 1966 and 4 by September 1968. The remaining one was received only during July 1971 to March 1972, after a lapse of nearly 9 years and was awaiting erection (February, 1976) pending rectification by the suppliers. The Committee desired to know the reasons for the delayed supplies and the action taken to expedite these supplies. The Ministry of Defence have stated:

> ".....Even though there has been delay in the receipt of these machines, this had not in any way stood in the way of increasing production of ammunition 'X' in factory 'B'. Even if there had been no delay in the receipt of these machines, it would not have improved matters as the original equipment itself, which was relied upon for increasing production from three units to 7 units was not found capable of yielding such increased production."

1.46. As regards the item (65 KW Electric Rotary Drum type furnace) which was awaiting erection, the Committee were informed that A/T was

placed on M/s. Associated Electricals Industries India Ltd. (AEI) on 26-9-1968. The item was received by the factory in March 1972.

1.47. The furnace was put to inspection in May 1974 after erection i.e. two years after receipt of the same in the factory. There was breakdown in January 1975, which required repair. Defects were pointed out to the supplier immediately thereafter. The firm took back drum assembly for repairs in September 1975 and returned the same in May, 1976. Assembly was completed in August 1976 and the firm was regularly expedited to send their commissioning engineers. However, the firm did not send the commissioning engineers. The Ministry summed up the history of procurement and erection of this item of machinery, as under:

> "In a nut-shell, in our effort to obtain the furnace from indigenous sources we lost two years in revising the specifications three years in concluding the A/T, two years for getting the deficient parts and completing the installation for inspection, within 7 months break down occurs, firm takes back the parts 8 months thereafter and returns the same after about 8 months time."

1.48. On the Committee enquiring whether all the defects have since been removed and the plant commissioned, the Ministry in a note furnished to the Committee in April 1977 have stated that 'the defects had been rectified and a separate communication will follow in regard to the commissioning of the plant' but in a subsequent note furnished in this regard hardly a month thereafter (May 1977) it has been mentioned that 'the rectification of the defects in the furnace is still in hand by the suppliers.'

1.49. Asked what action was taken against the supplier for defective supply, the Ministry have stated that after the rectifications are over, DGOF would be advised to take up the matter with the DGS&D to proceed against the supplier for delayed/defective supply of the equipment.

1.50. Another reason attributed by the factory for the low production is the tightening up of the inspection standards to meet the rigid requirements of the services. The Committee desired to know how the factory could justify large scale rejections and low production on the ground that the inspection standard had been tightened. The Ministry have, in a note, clarified :

> "As mentioned in the case of factory (A), similar difficulties were experienced in factory 'B' also when the new weapons, namely, ...were introduced. As these called for greater control on the quality of production, the inspection standards had to be tightened leading to greater control in the process and corres-

pondingly leading to higher rejections and lower level of production. This was entirely attributable to the old plant in Factory 'B'."

1.51. Since it was stated in evidence that certain proposals for ensuring continued work-load for the factory were under Government's consideration the Committee desired to know whether any final decision has since been taken in this regard. The Ministry have stated:

"The present manufacture of ammunition 'X' is distributed between Factories 'A', 'B' and 'C'. With the reduced requirements of Services the corresponding production targets of all the three factories had been lowered. To keep the production techniques alive, work-load in Factory 'B' is also being continued for the present."

1.52. The production of factory 'B' during the years 1971-72, 1972-73 and 1973-74 was 40, 36 and 25 units respectively. The production programme for subsequent years has been indicated as follows:

1974-75	20 Units
1975-76	10 Units
1976-77	16 Units
1977-78	16 Units.

1.53. The Committee note that although indents for 160 items of plant and machinery for Factory 'B' were placed in 1963, it took more than five years to procure and erect 4 of the items. One item received during July 1971—March 1972 i.e. after 9 years, was awaiting erection till May 1977. The Committee are informed that the machine was put up for inspection in May 1974 when some defects were noticed which were immediately pointed out to the suppliers. The suppliers were, however, able to complete the repairs only in August 1976 and since then the factory was awaiting the arrival of firm's engineers to commission the machinery. As regards action against the suppliers for defective supply and delay in rectification and commissioning, the Ministry have stated that 'after the rectifications are over, DGOF would be advised to take up the matter with the DGS&D to proceed against the supplier for delayed/defective supply of the equipment.'

1.54. The Committee have no doubt that Government would be making an all out effort to have the remaining plant commissioned at the earliest possible time. They would, however, like that the causes for the unconcionable delay in procurement and commissioning of this plant should be investigated and if any part of it is attributed to the supplier firm, stern action should be taken against them in terms of the agreement.

1.55. From the facts placed before the Committee, they infer that production capability of this factory had not been properly investigated before planning production. This is evident from the fact that production of ammunition 'X' was started in this factory on the assumption that the available capacity for manufacture of empty components of the old ammunition could be straightaway translated for production of components of new ammunition, which, however, did not materialise due to the out-dated equipment. When the production of the new ammunition was taken up the result was the same as in Factory 'A' viz. only a certain percentage of equipment was found suitable for producing the new ammunition. The rate of annual production during the period 1965-66 to 1973-74 averaged barely 28 units as against the target annual production of 84 units. Not only that, there were large scale rejections also. The rejections and low production are sought to be attributed to the tightening of inspection standards. The Committee is not prepared to accept this plea as the inspection system appeared to be lax earlier.

FACTORY 'C'

1.56. The Audit paragraph points out that the new factory 'C' was initially proposed to have a production capacity of 600 units of ammunition 'X' per annum. This was based on the recommendation of the Defence Provisioning Committee set up in March-April 1962 which *inter alia* suggested establishment of facilities for manufacture at the rate of 50 per cent of war wastage requirements of the Services each month in 2/10 hours shifts. This itself was based on an earlier decision by the Defence Minister in August 1957 that 'as a long term plan, the country should aim at sufficiency to meet the full requirements of the Services in times of emergency for an indefinite period.' With the decision to introduce a new type of weapon, it was assessed in early 1963 that there would be a very substantial requirement of ammunition 'X' on the basis of then calculated war wastage requirements. At that time the available capacity for ammunition 'X' and 'Y' was only 27 units per month in factories 'A' and 'B' out of which ammunition 'X' accounted for 8 units only per month. Even after taking into account the capacity of factories 'A' and 'B' for manufacture of ammunition 'X', it was felt that creation of additional production capacity of 600 units per annum in factory 'C' would still be less than 50 per cent of the war wastage rate. Creation of this additional capacity was approved by the Cabinet in its meeting held on 23 February 1963. Since an additional capacity was also proposed to be created in the new factory for augmentation of production of another ammunition 'Z' under manufacture in factory 'B' by 6 units per annum in view of certain common production facilities required by two types of ammunition 'X' and 'Z', buildings and services were planned for the purpose under two broad headings (i) build-

ings and services which were common to both types of ammunition and which on economic and design considerations could not be split up; and (ii) buildings and services which were required specially for ammunition 'Z'. On the basis of the above planning 3036 acres of land were acquired for the new factory keeping a cushion for future expansion.

1.57. The Committee find from the Audit paragraph that a plant capable of producing 432 units of ammunition per annum in two shifts of 10 hours each which had been in use for production of another ammunition in a foreign country was offered by that country and the same was accepted by the Government of India for the new factory.

1.58. Asked about the origin of the offer, the Committee were informed during evidence that when necessity was felt for setting up of additional capacity for manufacturing ammunition 'X', the Ministry came to know that there was a plant available with a foreign country. The first indication about the availability of these production facilities from abroad came in May 1963. This was, as a result of Defence Minister's discussions with the Foreign Government. Subsequently a formal communication was received from the foreign country offering the plant, which was accepted on 6 September 1963. The main plant was received from abroad by May 1964. A sum of Rs. 142.87 lakhs (including Rs. 46.47 lakhs in foreign exchange) had to be spent by Government on account of renovation and modification of the plant to make it suitable for manufacture of the new ammunition, transportation cost and installation charges. The production of the ammunition commenced in the factory from September 1965. The details of investment made in the factory have been indicated as follows:

Cost of works building	Rs. 999 lakhs.
Cost of land	Rs. 93 lakhs.
Cost of plant & machinery	Rs. 337 lakhs.
Total	Rs. 1428 lakhs.

1.59. Giving description of the plant obtained from the foreign Government, the Ministry of Defence have, in another note, stated:

> "The actual period for which the plant was in use in the foreign country is not available. Presumably, the plant was of World War II vintage. The plant was originally for a different type of ammunition, and had to be modified for production of ammunition 'X'. It was known that the plant would require extensive renovation and modification before supply to India. These renovations and modifications were carried out by the Foreign Government under their supervision before despatch to India."

1.60. Asked to indicate the reasons for accepting a very old plant from a foreign country for manufacture of the ammunition, the Ministry of Defence have, in a note, stated:

> "A Technical Committee had been deputed to the country of plant supplier in April 1963 to assess in detail the suitability or otherwise of the plant offered for production of ammunition 'X'. This Committee had after visual examination of the equipment, opined that the plant with suitable modifications can be counted upon to produce ammunition 'X'. The alternative to accept the free offer would have been to obtain new plant from any other source and it was then estimated (or the basis of the price indicated in the free offer made) that a new plant would have cost $9.5 million. As there was then a serious financial constraint particularly of foreign exchange resources no alternate source was considered then."

1.61. The reasons for accepting an old plant were elaborated in a subsequent note from the Ministry thus:

> "It would appear that the acceptance of the foreign offer to supply a plant free of cost had been done in view of the following considerations:—
>
> (a) The plant had a capacity to produce 432 units and this was being offered free of cost with promise to ship it out without any delay.
>
> (b) The Expert Technical Committee, who had seen the plant, had certified to its technical suitability for production of ammunition 'X'.
>
> (c) The supply of the plant was accompanied with complete documentation regarding the process schedules of testing/inspection procedures, gauges etc. which amounted to transfer of whole technology free of cost.
>
> (d) The urgency, with which a production unit was required to be obtained and commissioned for production on priority basis, implied that any other course of action to obtain an alternate plant in lieu, would have involved considerable lapse of time and outgo of foreign exchange which was a primary constraint at that time."

1.62. To another question whether efforts were made to explore other avenues for the procurement of a plant which would have been, *ab-initio*,

suitable for this ammunition, the Secretary, Defence Production, had the following to state in evidence:

> "To the best of our knowledge, we did not approach any other power or any other body. This was a gift to us. It was infact a part of Military Assistance Programme."

1.63. The Audit paragraph points out that factory 'C' was to have a production capacity of 600 units per annum and capital investment had been made accordingly. The foreign plant was capable of producing only 432 units of the ammunition per annum in two shifts of 10 hours each against the originally assessed capacity of 600 units. This led to excess capital investment.

1.64. Enumerating the reasons for deciding to accept a plant with a much less capacity than what was originally envisaged, the Secretary, Defence Production, stated during evidence:

> "The real reason for obtaining the plant was that the designing afresh of such a plant would have taken two years and its manufacture and commissioning would have taken another 4 years. We cut out the entire manufacturing time by obtaining the second hand plant.....The acceptance of this gift does not seem to have been an unwise decision. We got it cheap in terms of foreign exchange. We had to spend some money to fill in the supporting services, but a serviceable plant has been obtained and we feel that this has given a measure of support for the production Department."

1.65. In a written note, the Ministry of Defence have stated:

> "The Technical Committee of DGOF, which had visited a foreign country in early 1963 to assess the quality and capacity of the plant offered, had been informed by the foreign plant supplier that the plant to be offered was in very good condition (either new or renovated to be as new) and on the basis of foreign government calculation capable of producing 50 units of ammunition 'X' in 2|10 hours shifts. But, however, in the final offer made later by the foreign government they had themselves indicated supply of a plant with a capacity of 36 units of ammunition 'X' in 2|10 hours shift. The Committee was satisfied about the quality of the plant offered. It may be relevant to mention that the plant offered subsequently was practically provided free of cost."

1.66. The Ministry of Defence is stated to have intimated Audit in December 1969 that the failure of this factory to produce the new ammunition to the required level was on account of insufficiency of tools and components for which heavy reliance was placed on imports. It was also stated that the understanding was that until tool room and the section

for manufacturing the components, i.e., the primer and the propellant were commissioned, these would be supplied by the foreign country but this expectation did not materialise and this affected production in the factory. Asked to specify the assurance given|commitment entered into by the foreign Government in regard to the commissioning of the plant to its rated capacity and the extent to which these were actually honoured, the Ministry of Defence have stated:

> "No written agreement or understanding is available with Government regarding the foreign Government's supply of a plant free of cost to factory 'C'. However, it was then the view that until ancillary facilities were fully established, foreign Government would supply factory 'C' with necessary tools and components commensurate with the capacity of the factory and the requirements of ammunition 'X'. This assistance was extended by the Foreign Government until the Indo Pak hostilities broke out in September 1965 from which date the foreign government's assistance ceased."

. 1.67. The facts placed before the Committee in regard to factory 'C' reveal a sorry state of affairs. The setting up of this factory mainly for manufacturing ammunition 'X' was conceived in the wake of an emergent situation suddenly arising in 1962. Apart from the production capacity of about 8 units per annum in the existing factories 'A' and 'B', the additional requirements of ammunition 'X' was estimated as 600 units per annum. A new factory with a capacity of producing 600 units per annum was sanctioned by the Cabinet in February 1963. A Technical Committee which visited a foreign country in April 1963 to assess in detail the suitability or otherwise of a plant offered free for production of ammunition 'X' by that country "after visual examination of the equipment" opined that the plant, which was then producing some other type of ammunition, could, with suitable modifications, be counted upon to produce ammunition 'X'. The Committee assessed the production capacity of the plant as 600 units per annum. This was followed by a formal offer of free supply of the plant which was accepted by Government in September 1963. In the offer, however, the foreign country declared the production capacity of the plant as 432 units per annum only. The foreign country also undertook to renovate and modify the plant to make it suitable for the manufacture of new ammunition at our cost which come to be Rs. 46.47 lakhs in foreign exchange. Thus an old plant producing some other kind of ammunition in the foreign country which was to be renovated and modified for production of ammunition 'X' and which had a production capacity far less than the assessed requirements was accepted in utter disregard of the standard expected of a production unit manufacturing ammunition for the use

of defence forces. The reasons given for acceptance of such a plant are:

(i) Saving of foreign exchange as the plant was being offered free;

(ii) Urgency for setting up the production capacity; and

(iii) The plant was stated to be accompanied with transfer of whole technology and documentation free of cost.

1.68. It was known ab initio that the plant did not have the facilities for producing two esseential components of the ammunition 'X' i.e. the primer and the propellent. In addition to the deficiency in respect of these components, a tool-room facility had also to be set up in the factory. The foreign country undertook to supply the components and the tools to the factory until these facilities were fully established in the country.

1.69. The plant was received in May 1964 and the production commenced in September 1965. In that month, consequent upon the break of hostilities with a neighbouring country, all assistance from the foreign country ceased including the assistance in respect of the supply of components and tools for factory 'C'. For the propellant, primers and tools the country had, therefore, to depend upon imports. A plant for manufacturing primers was commissioned only in January 1967 while the tool-room was finally commissioned in 1969. The research for development of propellent suitable for ammunition 'X' is still going on. These deficiencies have affected the production which has never exceeded 119 units per annum in single 8 hour shift.

1.70. The above account brings to sharp focus the following features:

(i) The factory was actually commissioned in 1965-66, i.e., 3 years after the development of the emergent situation in 1962.

(ii) Although the plant is stated to have been received free, the total cost of plant and machinery is indicated as Rs. 3.36 crores, including Rs. 1.43 crores (F.E. Rs. 46.47 lakhs) spent on its renovation and modification, transportation and installation.

(iii) Although the plant was then expected to be accompanied with complete documentation and transfer of whole technology free of cost, the documentation and technology for production of propellent, primers and tools were not transferred, with the result that the plant for manufacture of primers and equipment for tool-room had to be purchased from some other country which took time, while the propellant was still under development.

(iv) The production in the plant could reach the maximum of 119 units only during 1972-73 in a single 8-hour shift whereas according to the rated capacity the plant working under similar conditions should have been capable of producing 168 units per annum. The Committee feel that in matters concerning Defence the more important consideration should have been the credit-worthiness of the plant and equipment. This dismal episode also underscores the need for developing indigenous tools and plants and avoiding too much reliance on foreign suppliers, particularly where the supplies are offered free. The Committee hope that Government would draw appropriate lessons from this transaction for guidance in future.

1.71. Audit has pointed out that buildings and services at the factory were planned for a production capacity of 600 units per annum of ammunition 'X' and 6 units of ammunition 'Z' and on that basis 3036 acres of land were acquired for the new factory keeping a cushion for the future. However, the capacity decided to be set up was limited to 432 units per annum as against 600 units originally planned. The plant for the production of ammunition 'Z' was also decided to be considered separately. This pruning of the factory's capacity led to excess capital investment in land, buildings, services etc.

1.72. Government have stated that action for acquisition of land for factory 'C' was initiated in September 1963. Provision for land for this factory included land requirements for Magazines and Estate. The land was procured by the State Government on behalf of the Ministry of Defence. To a question as to how much surplus land was available at present with the factory, its value and the manner in which it was proposed to be utilised, the Ministry, in a note stated:

> "As against the original estimated requirements of 35,000 acres of land for factory 'C', the area acquired for this project was limited to 3036 acres and the reduction in area had been due to (a) giving up of production of ammunition 'Z' and (b) reduction in the scope of ammunition 'X' in factory 'C' from 50 units to 36 units per month. No land is now said to be surplus to the factory's needs."

1.73. In regard to the observations of Audit that the plant for production of ammunition 'Z' was also decided to be considered separately, although it had initially been envisaged that an additional capacity would be created at factory 'C' for augmentation of the production of this ammunition, the Ministry have informed the Committee that in 1964 it was made known that we would not get any assistance from the foreign country for the manufacture of this ammunition at factory 'C'. Hence, it was decided

to consider production of ammunition 'Z' separately. No expenditure was attributed exclusively for ammunition 'Z' at the factory. This was already under manufacture at factory 'B' and requirements were being met by them.

1.74. The Committee learn that the buildings and services for factory 'C' were planned for a production capacity of 600 units per annum of ammunition 'X' and 6 units of ammunition 'Z' and on that basis 3036 acres of land were acquired for the new factory keeping a cushion for the future. As the capacity of the factory was ultimately limited to 432 units per annum of ammunition 'X' and ammunition 'Z' was also not to be produced in this factory, the capital investment in land, buildings and services etc. was reported to be in excess of the requirements. Government have, however, stated that the 3036 acres of land acquired for the factory were on the basis of reduced production capacity of the factory and that "no land is said to be surplus to the factory's needs". The Committee would like Government to examine whether any part of the land, buildings and services at the factory is in excess of the factory's present and potential requirements and if such excess is found, it should be put to full use.

1.75. According to Audit paragraph the plant obtained from abroad for the manufacture of the new ammunition 'X' did not include certain essential production facilities and it was, therefore, decided to create necessary facilities indigenously. The deficiency was in respect of (a) Primers, and (b) Propellant. To a question whether it was not clear from the offer of the foreign government that the plant did not include these facilities or whether it was known only on receipt of the plant in India, the Ministry have stated that the deficiencies were "known to us even at the initial stage".

1.76. Asked to indicate the steps taken since December 1963 for the establishment of the additional facilities not supplied by the foreign government and the expenditure incurred on procuring them, the Ministry have replied that the deficiency in regard to 'Primers' was met with the setting up of a plant to make the initiator and composition. This plant was sanctioned by Government in February 1964 at a cost of Rs. 24.68 lakhs. The indent for the plant was placed on DGS&D in March 1964 with delivery date as October 1964. DGS&D placed the order in July 1964 on a foreign party with a delivery in May 1965. The plant was actually delivered between May-July 1966 and commissioned in January 1967 Till that time reliance had to be placed on import of the component.

1.77. In regard to development of propellant, the Audit para points out that the design of the ammunition manufactured at Factory 'C', for which it was required, being different, it could not be established till August 1975 in another factory where this component was already being

manufactured for factories 'A' and 'B'. Factory 'C', therefore, had to rely primarily on imports for this propellant and the import cost amounted to Rs. 2.45 crores (January 1976). Asked why the propellant could not be developed by another ordanance factory despite the lapse of 9 years, the Ministry of Defence have, in a note, indicated the efforts made to develop the propellant and the difficulties encountered therein. These problems are stated to have been referred to the DRLO in 1975. As regards the time frame for the development, it is stated that "no time was fixed or possible for its development. Continued efforts were, however, being made at the ordnance factory to experiment on the factory 'C' propellant." Indicating the progress made so far in its development, the Ministry, in another note, have stated :

> "Development work as the ordnance factory is being done on top most priority. M/s. ....., the collaborator of the ordnance factory for this propellant, have promised to offer their suggestion on technical matters after studying the results of comparative firings of different powers with the different cap compositions. The same is awaited....."
>
> "It may also be observed that even if ordnance factory developed a satisfactory quality of propellant for factory 'C', the ordnance factory has no capacity to produce this propellant as its entire capacity is earmarked for meeting the propellant requirements of factories 'A' and 'B'. Hence, necessary arrangements have been made for production of propellant for factory 'C' in the new propellant factory being established at ....
>
> An amount of Rs. 1,84,500 has so far been incurred on the development of the propellant."

1.78. It is admitted by Government that they were aware ab initio that the plant offered by the foreign Government was deficient in respect of primers and propellant. For supplying the deficiency in regard to the primers, Government sanctioned the setting up of a plant in February 1964 at a cost of Rs. 24.68 lakhs. The indent for the plant was placed on DGS&D in March 1964 with delivery date as October 1964. DGS&D, however, placed the order in July 1964 on a foreign party with delivery date in May 1965. The plant was, however, actually delivered in July 1966 and commissioned in January 1967. Till that time the component had to be imported from abroad. The Committee are unhappy at the long time—as much as 3 years—taken in procuring and commissioning the plant for manufacturing primers, an essential component of the ammunition. The Committee would like Government to streamline the procedure for procurement of Defence requirements particularly when they are bought from the open market against free foreign exchange.

1.79. As regards the propellent, the Committee learn that it has not yet been possible to develop this component to suit the requirements of ammunition 'X', although efforts were being made to this end in an ordnance factory producing another type of propellant. The Committee are informed that in 1975 the problem was referred to Defence, Research & Development Organisation. The Committee feel that it should have been possible to develop the required propellant during the last 13 years if concerted efforts were made in this direction by pooling the technical know-how available for development in the field, be it the ordnance factory or the Defence, Research and Development Organisation. The Committee are surprised that DGOF thought it proper to refer the problem to the Defence, Research & Development Organisation only in 1975, even though it was known to Government right at the initial stage that the imported plant for the manufacture of the ammunition did not include this facility and that for this component we would have to depend upon either imports or indigenous development. The absence of a locally manufactured propellant for this ammunition has resulted in imports amounting to Rs. 2.45 crores by January 1976. This is yet another instance of lack of advance planning on the part of the Ministry. The Committee hope that the Defence, Research & Development Organisation would tackle this problem on priority basis and try to develop the propellant within the shortest possible time so as to obviate imports and make the country self-sufficient in regard to the manufacture of ammunition 'X'.

1.80. The Audit para points out that sanction for the purchase and installation of the equipment in the tool room of Factory 'C' was issued by Government in February, 1964 at an estimated cost of Rs. 175.92 lakhs. The machines were received between 1964 and 1969 and installed and commissioned during 1965—69. Trickle production of tools started since 1966-67. Due to shortfall in factory's production, tools and gauges worth Rs. 69.19 lakhs were imported during 1965-66 to 1972-73. In this connection, the Ministry of Defence is stated to have intimated Audit in December 1969 that "the tool room itself could not be commissioned in a balanced manner till early 1967. It is quite correct to state that the production of tools have not yet reached a satisfactory level."

1.81. As per the information furnished by the Ministry of Defence in advance of the evidence, the procurement of tools had been planned as under:—

"(a) The essential tools had been projected on a foreign country and supplies to the extent of six months requirements or a two shift basis had been received.

(b) The other tools were planned for manufacture in other ordnance factories and also by procurement from the civil trade.

(c) For the regular production of tools at factory 'C' a tool room was planned. The tool room was sanctioned in 1965 and was commissioned in phases from 1967 onwards.

The source (b) did not come up to the extent envisaged and further supplies from the foreign country were precluded by the ban which was imposed by them in 1965, although we had envisaged that till we were self-sufficient imports from that country would continue."

1.82. About the availability of tools in the country, the Ministry of Defence had intimated Audit (August 1973) as under:—

"The tool shortage has been a critical factor and it restricted the rate of production. The tools are not readily available in the Indian Market. Import of toolings had to be resorted to get over this problem to some extent."

1.83. The Committee desired to know when projections for manufacture of tools in other ordnance factories were made and what specific steps had been taken since then for the manufacture/procurement of the requisite tools indigenously. The Ministry, in a note, have stated:—

"In 1964 several supply orders/IFDs/ATs were placed on sister factories/trade since inception of the factory.....Sister factories were requested to undertake the manufacture and supply of the deficient and critical tools required for this ammunition. However, sister factories could assist in this manner only to a limited extent. Assistance from trade firms was not appreciable since the tools to be used were of high accuracy and finish.

The SAA tools required for ammunition 'X' are of high precision and of sophisticated nature requiring sufficient skill for their manufacture. The employees in beginning posted in factory 'C' (Tool Room) were apprentices/journeymen who lacked experience for this type of tools and gauges, as also supervisory staff to train/supervise them. Moreover, steels of special types specified for manufacture of these tools were not available indigenously and consequently tools manufactured with available steel were not reaching the quality o imported one. These tools also contributed for shortfalls/failures in production target."

1.84. Enumerating the efforts made/steps taken to develop indigenous technology and expertise in respect of tools and components required for

the manufacture of ammunition and weapons in the country, the Ministry have, in a note, stated:—

> "The development of technology for manufacture of tools and components required for manufacture of ammunition and weapons is a continuous process in the Ordnance Factories. Almost all the factories have got a tool room to meet the requirements of factory. Also the technology of manufacture of these items is continuously being updated to meet the requirements of production in the factories."

1.85. The Committee note that the Government sanction for purchase and installation of tool-room facilities in factory 'C' was issued in February 1964. The installation and commissioning of the tool-room equipment was, however, spread over a period of 5 years from 1965 to 1969. Meanwhile, the requirements of tools and gauges for the factory had to be met out of imports and during the period 1965-66, when the production commenced in the factory, to 1972-73 a sum of Rs. 69.19 lakhs was spent on imports on this account. The Committee regret that it should have taken Government as long as 5 years to instal and commission the equipment for the tool-room which is an absolute necessity for any large-scale self-contained production unit.

1.86. The Committee have been informed that the actual production of ammunition 'X' in Factory 'C' achieved during the years 1965-66 to 1970-71 against the targets fixed for these years were as under :

Year	Production programme fixed	Actual production
	(Units)	(Units)
1965-66	..	20·27
1966-67	..	25·59
1967-68	144	45·70
1968-69	100	55·55
1969-70	100	67·91
1970-71	100	76·55
1971-72	..	105·53
1972-73	..	119·15
1973-74	..	82·72

1.87. Giving reasons for the very low production from 1965-66 to 1970-71, the Ministry have, in a note, stated:

> "The optimum production of ammunition 'X' in factory 'C' depended upon two criteria namely (a) availability of inputs of correct quality such as primers, propellants and tools, (b) availability of trained manpower. Unless both these criteria were fully satisfied, the optimum production could not be undertaken. In actual effect it was seen in respect of factory 'C' that the availability of material inputs was either quantitatively inadequate or qualitatively not matching with the other inputs (incidentally, for the ammunition 'X' the specifications are ver critical and even a slight variation.... can lead to serious complications). The result was that there was difficulty in inducting additional trained manpower for optimum production without full back up of material inputs of right quality and combination. It was, therefore, considered necessary to run the plant or one shift for which both the inputs (a) and (b) were available."

1.88. Asked whether Government were getting from this factory appropriate production that was bargained for the Director-General, Ordnance Factories stated in evidence that the factory was under-loaded and unless more work was given, it could not be checked exactly how it worked. Subsequently, the Ministry of Defence have, in a written note furnished to the Committee, stated:

> "This issue has to be examined in its proper perspective. It must be appreciated that....in 1962, the shortcomings in the country's defence preparedness were made and long-term planning for meeting these shortcomings had to be necessarily made. It would be in this context that a stiring of Defence Production Unit including the factory 'C' was planned. Should any contingency as of 1962 happen or the Services requirements for ammunition 'X' be of the order planned for this factory 'C' we may assume that necessary infra-structure for meeting this demand has been made available. Thus in the overall context the establishment of this production unit cannot be said to be unjustified."

1.89. The Committee have learnt from Audit that the production programme of ammunition 'X' in three factories for the years 1974-75 to

1977-78 was fixed as under :—

Year	Factory			Total
	'A'	'B'	'C'	
1974-75	40	20	80	140
1975-76	40	10	90	140
1976-77	40	16	60	116
1977-78	40	16	60	116

1.90. During evidence, the Secretary, Defence Production has stated *inter alia* that "all our factories would have to work at substantially below their capacity in times of peace. This is inherent in defence production."

1.91. The Audit para points out that though the plant supplied by the foreign country was capable of operating to two shifts of 10 hours each, it was, however, considered inadvisable to operate the plant for more than one shift on account of its age. It also points out that the overtime bonus paid to the workers of this factory had been steadily increasing since 1967-68 and stood at Rs. 21.25 lakhs in 1972-73.

1.92. The Committee enquired how it was assessed initially that the plant could operate on a two shift basis and produce 432 units per annum. In a written note furnished to the Committee, the Ministry of Defence have explained:

> "The Technical Committee of DGOF which had examined the plant in the foreign country had assessed the production capability of the plant at 50 units per month in two 10 hours shifts. This assessment was based on the original capacity of the plant at 100 units per month on 3x8 hour shifts 6 days a week on 50 cycles electric supply. But working of this plant on 60 cycles electric supply, as available in India, and working for 2x10 hour shifts, it had been calculated that the capacity would be 55.5 units per month. Allowing for drop in production and our conditions of manufacture, the plant was assessed to have a 50 units production capacity per month."

1.93. Explaining reasons why it became necessary to work systematic overtime for two hours daily to get the maximum output of only 119 units, the Ministry have, in a note, stated:—

> "The optimum production depended upon various inputs and all of them becoming simultaneously available. The manpower input

had to be of highly trained quality and this was becoming difficult in view of (a) isolated place of location of factory 'C'; (b) time it takes to train the manpower in this type of activity, particularly in the tool room, (c) overall limited availability of trained manpower in the ordnance factories, with the result that the existing trained personnel from other factories could not be transferred to this factory in adequate numbers. Thus, it had become necessary to progressively increase the output of factory 'C' with the limited availability of trained manpower. Once the availability of material and required inputs improved it become possible to produce more of ammunition 'X' but for such increased production it was necessary to resort to overtime working as the availability of trained manpower was limited. Incidentally it may be pointed out that increase in overtime expenditure was largely due to increase in D.A. from time to time."

1.94. The Committee were informed that overtime bonus paid to the workers of the factory during the period 1968—72 was as under :

Year	Rs. (in lakhs)
1968-69	3·96
1969-70	7·02
1970-71	7·94
1971-72	12·64

1.95. The Committee desired to know whether the factory worked overtime in 1974-75 and 1975-76 also in spite of a fall in service demand and the low production programme assigned to it and if so what was the amount spent on overtime bonus during these years. The Ministry of Defence while replying in the affirmative have furnished the following figures of overtime bonus paid during these years:

1974-75	11·49 lakhs
1975-76	12·73 lakhs

1.96. The position in this regard in other two factories 'A' and 'B' as furnished by the Ministry of Defence at the instance of the Committee is reproduced below:

Year	Factory 'A'	Factory 'B'
	(Rs. in lakhs)	(Rs. in lakhs)
1968-69	1·53	1·23
1969-70	1·20	2·617
1970-71	1·62	3·264
1971-72	3·10	4·758
1974-75	3·65	4·33
1975-76	3·49	3·64

1.97. Justifying the payment of overtime bonus for all these years in all the 3 factories the Secretary, Defence Production, has stated during evidence:

> "... a situation has been developed in which overtime has become more or less endemic..... Only by pursuation, we found it possible to reduce it to 51 hours and then 43 hours. If we reduce it further, I doubt if in the bulk of our factories we will be able to improve our production target ..... It is better to give overtime than to face a labour situation. We think that it is a measure of good labour relations. It is better to face overtime than to precipitate crisis."

1.98. The plant was declared by the foreign Government to be capable of manufacturing 432 units of ammunition per annum on the basis of two 10-hour shifts. Therefore, in a single shift of 8 hours it should have been capable of producing 168 units of ammunition per annum. The Committee, however, note that in the course of its working since 1965-66, the factory was able to achieve the highest rate of production of 119 units during 1972-73, and that too after working overtime. The low production is attributed to the "quantitatively inadequate" or "qualitatively not matching" inputs such as primers, propellants and tools. In another context it is stated that the plant was not operated in two shifts because it was an old plant. Another reason advanced for low production is the general shortage of trained technical personnel who could handle the type of ammunition being produced in the factory. The Committee would like to point out that the very idea of setting up this factory was to achieve a production of at least 432 units in times of need. Government should, therefore, endeavour to keep the factory in proper trim so that in times of emergency the factory may be able to achieve the required production to meet the Service requirements.

1.99. The Committee note that the expenditure on overtime allowance to the factory staff is consistently rising over the years even when the production in the factory has been reduced. In justification of the payment of overtime it has been stated that the workers have become 'used to it' and that this payment 'is a measure of good labour relations'. The Committee are unable to accept this position. They would like Government to explore ways and means of reducing the overtime allowance to keep it within reasonable limits.

1.100. The Audit had observed that a contract was entered into by the DGS&D with a private firm in March 1964 for supply and erection of a gas plant for which a sum of Rs. 28.13 lakhs had been sanctioned in order to ensure supply of gas to factory 'C' by August 1964. Delay in commissioning of the gas plant and dispute over ractification of the defects by the suppliers resulted in purchase of gas worth Rs. 22.33 lakhs from trade upto March 1975. The case referred to arbitration in September 1970 was pending decision (August 1975). The Public Accounts Committee had already commented upon this issue in their 99th Report (Fourth Lok Sabha). Giving reasons for delay in the completion of the arbitration proceedings, the Ministry of Defence have, in a note furnished to the Committee, stated that arbitration in this case is in respect of a multitude of disputes and in fact tantamounts to a number of arbitration cases put together. The pleadings themselves run into a number of volumes and more than a thousand pages. Besides a huge mass of documentary evidence has been produced on either side. Many such documents are still in the process of being produced and they are required to be examined and inspected before further cross-examination can proceed. Expressing helplessness in this case, the Ministry, in a note, have stated:

> "We do not yet know how many more witnesses, the claimant will examine. It is only after conclusion of the oral evidence on behalf of the claimant that the oral evidence from government side would start. It is likely that the arbitration case may go on for another one and half to two years or even more. This is in spite of the fact that we have been having prolonged day to day sittings running into 7 to 10 days almost every month for the last 4 months or so. By the nature of the case a continuous sitting till the conclusion of arbitration proceedings is impossible. It is, therefore, difficult to anticipate as to how long exactly the arbitration would take."

1.101. Subsequently, in May, 1977, the Ministry have indicated the present position of the arbitration case as under:

> "It is understood that the arbitration case has still not been completed. DGS&D authorities have been reminded in the matter."

1.102. The delay in the commissioning of the gas plant, contracted for in March 1964 for Rs. 28.13 lakhs, and in resolving the dispute over rectification of defects in the plant by the suppliers was commented upon by the Public Accounts Committee earlier also in their 99th Report (Fourth Lok Sabha). The Committee had then recommended that the dispute between the Government and the supplier firm which was then under arbitration should be settled early so as to get the plant commissioned without further loss of time. It is astonishing that even after a lapse of nearly 7 years the dispute has not been settled and Government are still not able to estimate as to when the arbitration proceedings would be concluded. Meanwhile, factory 'C' is required to purchase gas from the trade and by March 1975 an expenditure of Rs. 22.33 lakhs had already been incurred on this account. This indeed is a serious situation which calls for an immediate action. The Committee hope that all-out effort would be made to have the arbitration proceedings finalised expeditiously.

1.103. According to Audit para the ammunition was to be supplied in a ready-to-use condition and two machines received along with the plant for one of the two methods of packing could not be put to use as certain parts were deficient with the result that the ammunition was issued to the services without packing. The Committee were informed by the Ministry of Defence that the two machines received along with the main plant for the purpose were designed for packing another type of ammunition. Since these were received free of cost no action would be taken against the suppliers when the defects were noticed. Factory 'C', however, initiated action to modify these Machines to meet the requirement of packing of ammunition 'X'. Presently, the two old machines are not in use. The Committee have been informed that since these machines could be used for belting of any small Arms Ammunition of similar calibre after suitable modification, these have not been considered for disposal.

1.104. The requirements for the two new machines in place of the defective ones received from abroad were projected by DGOF in September 1968 and a contract for their supply was placed on M/s. Voltas Ltd., Bombay by the DGS&D in July 1970 at a cost of Rs. 4 lakhs. The machines were received in the factory in September 1972 and were put to use in March 1973. Till such time, the ammunition required to be issued to the services were packed in various other forms of packing.

1.105. As regards other methods of packing, Audit have pointed out that out of the two components required, trade supply in the case of one component did not materialise. The requirement was, therefore, met partly by repairing the old ones and partly by import amounting to Rs. 5.74 lakhs. The other component supplied by factory 'E' was stated by the Controller

of Inspection (Ammunition) .... after testing the control samples which had been passed by the Local Inspectorate, to have contained a chemical in excess which could corrode the ammunition. As a result, components worth Rs. 3.44 lakhs which were in complete/semi-manufactured condition were lying in factory 'E' unaccepted, besides unused materials worth Rs. 2.73 lakhs. The Ministry have intimated on 18th June, 1977 that on re-inspection of the bandoliers full quantity was accepted by the Service Inspector and no manufactured bandoliers were rejected due to high PH value. Unused basic material was transferred to another factory for use in alternative store. As such the loss is really nominal.

1.106. The Committee find that as the packing machines supplied by the foreign country along with the main plant were found to be defective, the demand for new machines was projected by DGOF in September 1968. The contract for their supply was placed by the DGS&D on M/s. Voltas Ltd., Bombay in July 1970 at a cost of Rs. 4 lakhs. The new machines were received in September 1972 and commissioned in March 1973. Since the factory commenced production in 1965-66 the defects in the packing machines must have come to the notice of the management in that year itself. The Committee are, therefore, unable to appreciate the delay on the part of the DGOF of well over 2 years in projecting the demand for new machines on DGS&D. The Committee also note that it took almost 2 years for DGS&D to place the contract for the machines on M/s. Voltas Ltd., Bombay and another 2 years for this firm to supply the machines. The Committee regret the leisurely way of handling the matter by the DGOF and the DGS&D.

1.107. Meanwhile, the factory had to resort to other methods of packing which involved imports amounting to Rs. 5.74 lakhs. In addition, certain defects in packing material rendered components worth Rs. 3.44 lakhs and the unused material worth Rs. 2.73 lakhs unfit for use. The Committee are informed that subsequently on reinspection the components have been "accepted by the Service Inspector" and that "unused basic material was transferred to another factory for use in alternative store". The Committee have a doubt whether the components and the unused material which were initially declared to be unacceptable were really capable for being used or whether these were disposed of after the Audit pointed it out and the Committee took notice of it in order to minimise the loss. The Committee would like a thorough investigation to be done in regard to subsequent acceptance of the components and unused material so as to ensure that defective ammunition does not find its way to the stores.

II

DAMAGE TO AMMUNITION

Audit Paragrah

2.1. Army Regulation require appropriate storage being provided to obviate deterioration of ammunition; stocks in the open are to be invariably protected from sun, rain and snow by tarpaulin covers.

2.2. In November 1971, an Area Commander sanctioned an expenditure of Rs. 1.50 lakhs for the provision of dugouts at a station for storing substantial stocks of ammunition and volatile POL elements. Accordingly 144 dugouts, provided with drains and soaking pits, were progressively completed and put to use during November 1971—January 1972.

2.3. In January 1972, the question of the mode of storage was considered and it was decided to construct 50 overground plinths and 65,000 concrete dunnage blocks. It was also decided that the dugouts be provided with approach roads sloping into them to facilitate reversing of vehicles and loading and unloading of ammunition.

2.4. Against the sanction for 65,000 concrete dunnage blocks accorded by the Sub Area Headquarters in February 1972, only 16,600 had been delivered to the unit by 7th July, 1972. Against indents for 360 tarpaulins placed on an Ordnance Depot in March 1972, no supplies had materialised till the onset of monsoons. Only a part of imported ammunition could, therefore, be covered with the tarpaulins available with the unit.

2.5. After the initial showers on 6/7th July, 1972, earthen bunds were set up across the sloping driveway of the dugouts in order to prevent the flow of water into the dugouts. With the onset of monsoon and heavy rains during the second week of July 1972 almost all the dugouts were flooded and ammunition was submerged to heights varying from 1 foot to 6 feet. Incessant rains also hampered efforts to remove the submerged ammunition. The dugouts could be cleared of the ammunition only by 20th July, 1972; a final assessment placed the loss, including a substantial quantity of imported ammunition, at Rs. 99.29 lakhs.

2.6. A Court of Enquiry convened (August 1972) to investigate the circumstances in which ammunition held in the dugouts was damaged by the rains attributed this to continuous and heavy rainfall which during 5th—

14th July, 1972 amounted to 190.50 mm or 62 per cent of the average annual rainfall. It may be mentioned that rainfall at the station during July 1971 (previous year) was 159 mm. The Court of Enquiry made no comments on the suitablity (or otherwise) of the dugouts—open pits with roads sloping into them constructed for storing valuable ammunition, or the adequacy of steps taken for its protection, or removed well in time before the onset of monsoon.

2.7. On the basis of the findings of the Court of Enquiry the Army Commander considered that the damage to the ammunition was due to a natural calamity and no individual could be blamed therefore and recommended (October 1972) that the loss be borne by the State. The loss assessed at Rs. 99.29 lakhs has yet to be regularised (January 1976).

2.8. The Ministry of Defence stated (January 1976)

- — the ammunition stored in the dugouts for operational reasons was damaged, in spite of precautions taken, due to excessive rainfall;
- — the ammunition could not be fully provided with covers due to the non-availability of tarpaulins;
- — even provision of tarpaulins would not have prevented water from entering the dugouts;
- — lack of concrete blocks also did not affect the storage of ammunition on dunnage;
- — no one was held responsible for the loss; and
- — the question of remedial measures will be considered when the case for write off of the loss is taken up.

[Audit Paragraph 43 of the Report of the Comptroller & Audit General of India for the year 1974-75, Union Government (Defence Services).]

2.9. The Audit Para points out that the mode of storage of ammunition was considered in January 1972 when it was, *inter alia*, decided to construct 50 overground plinths and 65,000 concrete dunnage blocks. The Committee have been informed during evidence that the decision taken in January 1972 to construct overground plinths was countermanded. Explaining the position in this regard the Secretary, Ministry of Defence has stated in evidence:

> "When this decision was taken, it was taken in anticipation that the war situation would clear up. But when it came to be known that there was no settlement yet with Pakistan, the

decision to set up overground storage of the ammunition was counter-manded. Instead it was decided that this ammunition must continue in the dugouts. So, in these circumstances, the ammunition continued to be in the dugouts. The main hazard was the air strike. So, we have to provide for these and other hazards where the losses would have been much more. Since it was in the dugouts, the enemy could not locate it, and actually they bombarded the ..... and went away. They did not strike this ammunition merely because it was not in the open."

2.10. The Committee enquired when the January 1972 decision to construct overground plinths was actually rescinded and the level at which the decision was taken. The Ministry have in a note stated that no specific written record is available in this regard.

2.11. Against the sanction for 65,000 dunnage blocks accorded in February 1972 by the Sub-Area Headquarters only 16,600 blocks had been delivered to the Unit till July 1972. The Committee desired to know the agency to whom the work for construction of dunnage blocks was entrusted and the reasons which held up the supplies of the dunnage blocks. The Ministry of Defence, in a note, have stated:

"The work was entrusted to Garrison Engineer 881 Engrs. Works Sec. At this stage it has not been possible to ascertain exact reasons but presumably the Engineers who were to fabricate these items were preoccupied with other works. However, non-availability of the blocks did not in any way affect the storage because alternative dunnage through improvised means had been provided."

2.12. The Committee desired to know whether at the time of taking the decision to construct dunnage blocks in January 1972, the authorities had taken into consideration all the relevant factors of the case. The Secretary, Ministry of Defence has stated in evidence:

"This much I am informed that the question of mode of storage was considered and it was decided to construct overground plinths and concrete dunnage blocks."

2.13. The Committee have further been informed by the Ministry of Defence that "Dunnage blocks can be used anywhere whether over or underground and in fact all these dunnages which had been supplied were in use in the dugouts at the time of flooding. The Committee also enquired whether the order for the dunnage blocks subsequently cancelled after the decision to store the ammunition overground had been rescinded. The Ministry have stated in a written note that:

'Orders for dunnages were not cancelled since the dunnages were to be utilised irrespective of whether the storage was in dugouts or overground."

2.14. Giving details of the expenditure incurred on the construction of concrete dunnage blocks, the Ministry of Defence, in another note have stated:

"An expenditure of Rs. 3,58,800 was incurred on the construction of concrete dunnage blocks. No part of it became infructuous in view of the fact that all the dunnages were utilised."

2.15. The Audit para points out that against indents for 360 tarpaulins placed on an Ordnance Depot in March 1972, no supplies had materialised till the onset of monsoons. Only a part of imported ammunition could, therefore, be covered with the tarpaulins available with the unit. Asked why the tarpaulins were not supplied, the Secretary, Ministry of Defence has stated during evidence:

"This is a matter which is left to the judgement of the commanders. All the supplies go to them, they use them wherever they think it is operationally most needed. I might also mention that it is not only the ammunition that is exposed; all the jawans are exposed to the sky, they are in the field position, their rations and other kinds of stores are also there."

2.16. To a question as to how it could be claimed that reasonable precautions had been taken to protect the ammunition when it was evident from the facts brought before the Committee that the required number of dunnage blocks had not been provided and supplies of tarpaulins had not arrived at all, the witness has added:

"That is why they had in addition to the soaking pits, asked for tarpaulins also. It is because of the multifarious demands for the same commodity that somewhere there was a shortage, and I do not know how we can take that out of all proportion, because there were simultaneous demands from all headquarters in the armed forces for tarpaulins and the formation commanders are the peoples to judge where they are going to give them.

I would also like to submit that in this particular case it is not so much the shower directly fell on the dugouts, which perhaps could have been warded off to some extent by these tarpaulins, but the damage has been done by the water which has come because of flooding. The first initial rains saturated the soil and then which amounted to 62 per cent of the annual rainfall

in this particular year, led to flooding even from the sides and that is a situation which no tarpaulins could have really helped."

2.17. Asked whether it would not have been appropriate to place the indent for tarpaulins in November 1971 itself, the witness has stated:

> "No, because that is the month of November and December which is dry period and there was no requirement."

On the Committee pointing out in this context that the possibility of heavy rains in July-August should have been foreseen, the witness has deposed:

> "This is a matter of opinion" and added:
>
> "I must mention that they were not without cover altogether. They had with them 135 tarpaulins—one lot of 30'×30', another lot of 24'×18' and the third lot of 18'×15'. To the extent they had tarpaulins they did use them. The additional supplies did not materialise, I will again submit that had the tarpaulins been available, they would not necessarily have avoided the heavy flooding that took place."

Elaborating further on the subject a representative of the Army Headquarters has stated:

> "The number of tarpaulins we had was 135. An extra demand was placed in the month of March when it was foreseen that we were likely to continue even during the monsoon period in the dugouts. An order was placed for ..... tarpaulins in the month of March and before June we had to procure these to be able to get it to the depots. As I said, the requirement was much more."

2.18. Explaining the reasons for not initiating action for procurement of tarpaulins earlier, the witness has stated:

> "The point is quite straightforward in as much as that when you have outside storage conditions, you have certain distance that you maintain, keeping in view the outside safety distances that are required for safety of the ammunition. In such cases you have something like ..... tonnes being kept at one particular point. When you get into the dugout, there are limiting factors in the tonnage to be maintained inside. As you see in this particular case, the height is 1.5 metres which brings you to approximately 5' or 4½—5'. Therefore, taking

the dunnage, that is keeping the ammunition above the earth, another, I think, 6—8" you will be losing. So, the whole thing will come to about 3½—4'. Therefore, the number of tarpaulins that would be required to give the complete coverage would be much more. That is how you find that 144 dug-outs were made. Ordinarily we would have had a lesser number of stacks of stores. This is the reason why the requirements of tarpaulins came in suddenly. You know we do not go to the trade straight. We have to go back to our base depots which are supposed to stock these and from there they would come out. Now, these are extraordinary conditions and we require not only in one area but in many other areas also. At that point the ammunition under the covered accommodation was moved into the field conditions storage. Therefore, there is constant rise in the requirement of the tarpaulins. The tarpaulins position for that matter is acute even to-day. I do not want to dwell on that."

The Defence Secretary has added:

"Much is made out of these tarpaulins. The point is that the whole damage took place because of flooding. Therefore, the tarpaulins would not have mattered. As far as I can see, the tarpaulins were indented after the dug-outs were made but the supplies did not materialise."

2.19. The Committee desired to know whether it was on account of non-compliance by the Ammunition Depot with prescribed procedural formalities that the supplies of tarpaulins did not materialise and whether any enquiry had been made into the failure of the supply depot and the apparent inaction on the part of the indentor to follow up the demand. The Ministry of Defence in a note, have stated:

"The supplies were not adequate because of the paucity of stocks with the supplying depot i.e., Ordance Depot. As the entire Army was in a state of preparedness and deployed in the field, there was a general shortage of tarpaulins and this field unit had to bear a proportionate shortage along with other units of the Army. It was not considered necessary to make an enquiry because it was known that there was alround shortage of tarpaulins."

Asked to enumerate the steps taken by the FAD to expedite supplies of the stores, the Ministry have replied that the Ordinance Depot was reminded.

2.20. The Committee were also informed by the Ministry of Defence that in the absence of timely supplies, the requirements of tarpaulins were met by restricting the use to more important types of ammunition and that no portion of the damage to the ammunition by rains could be attributed to the non-provision of tarpaulins.

The Committee referred to various protective measures taken in January—March 1972 and desired to know whether all these measures could not have been initiated together in November 1971 when sanction for dugouts was accorded. The Committee also desired to know the steps taken for timely completion of supplies most of which had not materialised until the onset of monsoon in July 1972. The Secretary, Ministry of Defence has stated in evidence:

> "I think, in a war situation, leaving ammunition overground is just not acceptable to the army. This decision to have over-ground plinths could not have been taken in November itself. These decisions naturally could have been taken only after the situation eases somewhat and there was prospect of peace. They did take this decision to have over-ground plinths in January after the hostilities as such were over, but still higher people said: No, the situation has not improved to such an extent that we can countenance the removal of dugouts. Hence the plinths were not constructed. As far the tarpaulins, these were ordered, but unfortunately the supplies did not materialise as expected. They were coming to the Army and were being used according to their judgment."

Subsequently in a note furnished to the Committee in this regard, the Ministry of Defence stated:

> "In a field operation situation actions are taken on the basis of priorities unlike in the case of peace type activities where elaborate and planned measures can be undertaken."

Since the dugouts themselves had been completed only by January 1972, the Committee enquired how the ammunition was protected, in the meantime, from the vagaries of weather. The Ministry replied:

> "These dugouts were for protection from the tactical point of view and they do not offer any protection from the vagaries of weather."

2.21. The Bangla Desh hostilities was over by December 1971 but the ammunition continued to be stored in the dugouts for months together thereafter. The Committee desired to know whether it was the usual practice with the Army to keep the ammunition on "as-is-where-is" basis

even when the war had ended. The Secretary, Ministry of Defence has stated in evidence :

> "My short answer to that point is that until the actual peace settlement was made with Pakistan, the war situation continued and it was the judgment of our Commanders that no changes should be made which would interfere with the operational readiness of the armed forces or with the security of a vital thing like ammunition, and therefore the dugouts and the storage of ammunition had to continue."

2.22. Referring to the statement made by the witness that the anxiety of the Field Commanders to keep themselves in operational readiness till a settlement was signed with the enemy had necessitated the continued storage of the ammunition in the dugouts even after the ceasefire on 18 December 1971, the Committee desired to know the measures taken, on a war footing, to safeguard the ammunition for use if need should arise. The Secretary, Ministry of Defence has stated in evidence:

> "If I may say so, if there was a war like situation, there would still be need to use these things. It is easier to remove all these things, but it is difficult to build them."

In a written note furnished to the Committee subsequently, the Ministry of Defence have stated:

> "The tactical objectives of keeping the ammunition in the dugouts are:
>
> (i) to achieve camouflage and concealment;
>
> (ii) to contain the extent of damage in the event of direct hits; and
>
> (iii) to provide natural traverses.
>
> In an emergency, all units are required to take action to protect stores, and more so ammunition and they take necessary action depending upon the situation in each case."

2.23. Referring to the argument that the ammunition continued to be stored in the dugouts on account of threat of war persisting, the Committee pointed out that the Simla Agreement was concluded on 2 July 1972 and even in June 1972, it was well-known that such an agreement was in the offing and desired to know whether those factors had been taken due

note of and advantage taken of the developments during June 1972 to bring the ammunition (at least of foreign origin) overground before the onset of the monsoon. The Ministry of Defence have replied.

> "The Armed Forces have to be in a state of alert particularly under conditions which are often described as 'No war No peace'."

To a question whether the desirability of covered storage or removal of ammunition was considered at any stage, the Ministry of Defence in a note have stated:

> "Since in the judgment of General Staff the ammunition had to be kept in the dugouts for tactical reasons, the question of Covered storage or the removal of ammunition did not arise."

2.24. The Audit para pointed out that it was also decided in January 1972 that dugouts be provided with approach roads sloping into them to facilitate reversing of vehicles and loading and unloading of ammunition.

At the Committee's instance a copy of the report of the Court of Enquiry convened in August 1972 to investigate the circumstances in which the ammunition held in the dugouts was damaged by rains, was made available to them by the Ministry of Defence. On perusal of the evidence tendered before the Court, the Committee found that the Offg. COO (witness No. 4) had, *inter alia*, deposed before the Committee as follows:

> "8. On 5 January 1972 there was a conference at .....for Maint area to decide on the mode of storage of ammunition viz., whether overground plinths were required to be made or ammunition should continue to be stored in dugouts. The conference was attended by the following officers:
>
> * * * * *

The above officers also visited the.....and it was decided that an approach road should be made to connect the dugouts with cinder road for the following reasons :

(a) Amn was required to be hauled up and down the dugouts to put into the vehicles approx 30 yards away on the cinder road. This curtailed the loading/unloading time.

(b) Handling of amn. was dangerous to the civilian labour as it was a tiring and hazardous process. This could also lead to amn. accidents.

(c) It was essential that the approach road be provided for the vehicle to go into the dugout, from where amn., could be

directly loaded and unloaded to meet the operational requirements."

2.25. Referring further to the proceedings of the Court of Enquiry, the Committee pointed out that from the evidence of witness No. 3 it would appear that.....tonnes of ammunition used to be handled manually per day during the hostilities. Since the construction of approach roads was decided upon only at the conference of 5 January 1972, the Committee desired to know whether this decision was in any way connected with/ related to the decision taken at the same conference for the overground storage of the ammunition. In a note, the Ministry of Defence stated:

"On 5th January, 1972, a conference was held to consider the question of mode of storage of ammunition at the Detachment and it was recommended that 65,000 concrete blocks and 50 numbers of over-ground plinths should be provided. It was also recommended that the dugouts should be linked with an approach road sloping into them to enable expeditious and easy loading and unloading of ammunition directly in and out of the dugouts. The intention behind making such a provision of slopng road well into the dugouts was clearly to continue the use of dugouts, for some time to come to meet operational requirement. Accordingly these were provided."

2.26. Asked whether the provision of slopes in the dugouts had in effect helped the floods to be accentuated and whether knowing fully well that the monsoon in July in that particular region was going to be heavy, no special precautions were taken, the Secretary, Ministry of Defence has stated in evidence:

"The slopes were made not to let the water in. I think Audit itself should know that they are meant for facilitating the handling of this ammunition which is an ignitable substance. The more you handle it, the more there is danger of accidents, and so the ramps were made to bring the trucks in so that only by one-handling these could be loaded. On the point of taking special precautions, I may say that on the very first shower, they made a protective bund alongside these sloping ramps in order that water should not go in but the unprecedented rains just flooded these bunds also and there was nothing much more they could do at that particular stage."

However, in reply to another question whether at any point of time it had come to the notice of Government that the dugouts with slopes at one end constructed for storing valuable ammunition were defective on

account of which damage was caused to ammunition, the witness has added:

> "Now, we do know that the slopes that were made did help the flooding of certain dugouts. There is no doubt about that. But at the time of taking this decision, I presume the Commanders must have taken into account these points and perhaps they also did not expect that there would be excessive rainfall during that period. But as I explained as the work was operational it was built as a temporary measure and was not constructed as a long time requirement."

2.27. The Audit Para further states that after the initial showers of 6/7 July 1972, certain bunds were set up across the sloping driveway of the dugouts in order to prevent the flow of water into the dugouts.

2.28. Since the earthen bunds were provided across the sloping ramps to prevent flooding of the dugouts in the event of rainfall, the Committee desired to know why these were not set up and consolidated well before the onset of the monsoon. The Defence Secretary has stated in evidence :

> "It would have certainly stopped the flooding. Even over these pits of the dugouts there was a parapet wall all round meant to stop the water. Operationally, they found it risky to handle boxes of ammunition and when the Commanders had commissioned these dugouts, they decided that there should be ramp so that the truck can go down and bring out the ammunition. At the same time they wanted to save it from the rain water which might come down this ramp as a kind of drain to flood the pit. So, they put up a temporary bund, across the ramp."

Subsequently, the Ministry of Defence, in a note, have stated:

> "The unprecedented intensity of rainfall was such that any earthen bund would have been breached."

2.29. The Audit Para has stated that with the onset of monsoon and heavy rains during the second week of July 1972, almost all the dugouts were flooded and ammunition was submerged to heights varying from 1 foot to 6 feet. Incessant rains also hampered efforts to remove the submerged ammunition. The dugouts could be cleared of the ammunition

only by 20 July 1972. In this context the Committee found from the evidence tendered before the Court that witness No. 1 had deposed as follows:

> "The weather during July this year had been generally cloudy, with severe dust storms, followed by light showers. Such rain fall was never so much as to result in any damage to ammunition let along flooding in the dugouts. There were some rains on 6 and 7 July 1972, but it was scattered over a period of time and left no impression on the dugouts. However, to safeguard against heavier rains, earthen bunds were made by det personnel on the approach road to the dugouts, to stop flow of water through these into dugouts.
>
> A dust storm followed by heavy rain started at about 2100 hrs. on 8 July and contnued intermittantly throughout the night of 8/9 July. Water had entered in twenty dugouts. The level of the water was below the dunnage on which ammunition was staked. All the ammunition boxes were well clear of the water level. The soakage pits and drains inside the dugouts were filled up. Earthen bunds made earlier, were breached in some cases. By 1700 hrs. on 9 July water collected in the dugouts was removed and bunds strengthened. Drains which were filled up with slit were also deepened.
>
> It again rained heavily from 1700 hrs. to 2000 hrs. on 9 July 1972. An Officer of my det went round the area and reported that water had entered some of the dugouts but the level of the water was below the dunnage. The bunds on the road to the dugouts were further strengthened at night. At day break on 10 July 1972, I went round the ammunition and found that rain water had collected in many places. This water had washed away many parts of the cinder roads and erroded its sides at many places. The water had entered the dugouts through new formed channels into the approach road, breaching the bunds."

2.30. The Committee desired to know whether any steps were taken to evacuate the ammunition in the dugouts between 5 July 1972 (when there were only light showers) and 8/9 July 1972 (when there was heavy rainfall). The Ministry of Defence has replied in the negative and added:

> "Because it was never apprehended that the rains of the intensity which actually occurred, would occur."

In regard to evacuation of the ammunition on 10 July 1972, the officer-in-charge of the Det. (Witness No. 1) had deposed before the Court of Enquiry as under:

"I contacted Major.....over the telephone and requested assistance to provide maximum personnel from local units to evacuate ammunition. He visited the det and the ammunition area at about 0900 hrs. and after appreciating the situation arranged for 15 civilians labourers and 50 pioneers from local Pnr Coys. Evacuation continued the whole day as well as on 11 July 1972. The evacuation had later become difficult as personnel had to dive into the water from heavily flooded dugouts. Maj..... again visited the det at 1400 hrs. on 11 July. By that time ammunition from a large number of heavily flood dugouts had been evacuated and it was estimated that the remainder of such ammunition would be evacuated by last night on 11 July. In most dugouts which were less flooded water had seeped rapidly and gone below dunnage level. After evacuation, bunds were again strengthened and drains deepened."

Asked whether to remove a part of the ammunition for a day or two was the only measure taken in that situation, the Defence Secretary has stated :

"I am afraid, the situation was not so simple as is made out by the hon. Member. There were 144 dugouts and 75 people. This is not something which you can handle overnight."

Since the dugouts were stated to be spread over an area of 1193 acres, the Committee enquired whether the whole area was flooded. The witness has stated:

"The Court of Enquiry had brought out that there were 128 dugouts which were affected by water from one foot to six feet. As regards your suggestion that it could have been done overnight, help was taken from the neighbouring units, there were nearly 600 people deployed to clear the ammunition. Even then it took eight days to clear it and all this was done when the rain was on."

2.31. According to Audit Para the Court of Enquiry had opined that damage to ammunition was caused by continuous and heavy rainfall from 5 to 14 July, 1972 amounting to 190.50 mm or 62 per cent of the average annual rainfall at the station. The Audit Para further stated that the rainfall at the station during July 1971 (Previous year) was 159 mm. The Executive Engineer,.....Division Section had supplied to the Station Headquarters,.....figures of the yearwise total rainfall at the station and rainfall from 5 to 14 July 1972 in that area in connection

with the Court of Enquiry proceedings. A copy of the same furnished by the Ministry of Defence indicates the following position:

Year-wise total rainfall:	
1967-68	352·98 mm
1968-69	355·85 mm
1969-70	349·94 mm
1970-71	349 50 mm
1971-72	325·40 mm
Total	1743 67mm
(Average for the last 5 Years 1967 to 72—350.00 mm)	
Rainfall for July 1972	
5/7	12·70 mm
6/7	38·10 mm
7/7	12·70 mm
9/7	25·40 mm
10/7	50·80 mm
12/7	38·10 mm
14/7	12·70 mm
Total	190·50 mm

(or 62 per cent of the average annual rainfall of 350 mm)

2.32. In view of the fact that light showers were there from 5 to 7 July and then there was heavy rain accompanied by strong winds from 9 to 12 July 1972, the Committee wanted to know whether the Army was not fully equipped with information about the weather conditions in advance. The Defence Secretary has stated in evidence:

> "I would like to read out for your information details of these rains, which we received subsequently of course, from the Meteorological Centre, Lodi Road. The Total rain in 1970 was only 39 milimetres in the particular area with which we are concerned and it was 183 mm. in 1972 while in the subsequent year it was again only 66 mm. So, you can see that

it was unprecedented and, again, 62 per cent was concentrated in this week or so."

On being pointed out that July was supposed to be the rainiest month in that part of the country, the witness has clarified:

"The figures I have given are for July; it was 39 in 1970, 183 in 1972 and 66 in 1973. These are the figures officially obtained."

Elaborating further on the subject, the witness has stated:

"I am sure they did not have the forecast. But I would say that they had taken reasonable precautions by giving deeper soaking pits so that the water would automatically drain into the soaking pits. But if they get no respite from incessant rains, I think they cannot be blamed, particularly during an operation."

He has added:

"In this particular case, as I said, the commanders who commissioned these dugouts, perhaps did not have the rainfall data with them for the previous years. Secondly, whereas in the previous July the rain was somewhat on the higher side, you have to see that the rain in these few days exceeded the whole month's rain of the previous year."

The rainfall statistics for the period 1968—73 during July each year furnished subsequently by the Ministry of Defence at the Committee's instance are given below:

Month	Rainfall
July 1968	194·6 mm
July 1969	93·8 mm
July 1970	39·1 mm
July 1971	126·0 mm
July 1972	183·0 mm
July 1973	66·9 mm

On being pointed out that rainfall in July 1972 did not seem to be unprecedented and that the possibility of heavy rains during that period

could have been anticipated and adequate safeguards taken, the Witness has stated:

> "In the year 1971, the highest rainfall on any day in July was 22.9 mm, whereas in July 1972, there are three days when the rainfall was 54.4 mm, 50.4 mm and 32.8 mm and on other days it is about 20 mm. You can see how the bunching of rain has happened in these particular days. This data can be supplied to you if you want."

2.33. The Committee referred to the figures of daily rainfall at the station on some days during July 1972 and those (for 5 to 14 July, 1972) furnished by the Executive Engineer, Area Division Section to the Station Headquarters..... (vide Paragraph 2.31) and also to the figures furnished by the Regional Meteorological Centre, New Delhi, *viz.*, a total of 190.50 mm for these days (which has also been mentioned in the Audit paragraph) and 183 mm for the whole of July 1972 on which the evidence is stated to have been based and desired to know the correct factual position in this regard. In a note, the Ministry of Defence have stated:

> "The rainfall figures based on which the evidence was tendered were supplied by the Regional Meteorological Centre, New Delhi who are the only authoritative source in this country. Apart from the fact that variations in rainfall can occur in different sectors within the same area, possibility of erratic measurements on the part of an agency which is not specialised in this job cannot altogether be ruled out."

2.34. Since heavy rainfall during the monsoon appeared to be normal feature, the Committee desired to know the reasons for not taking adequate precautions to protect the ammunition from monsoon rains. In a note, the Ministry have stated:

> "Due measures were taken to protect the ammunition from normal anticipated rainfall. The intensity of the rainfall was, however, beyond the normal expectations."

2.35. The Committee enquired into the details of total holding of ammunition at the Unit as on 1 July 1972, holdings of imported ammunition and indigenous ammunition and the average quantity stored in each dugout. The information furnished by the Ministry of Defence in this regard, is tabulated below:

> "The total holding of ammunition in the unit as on 1st July 1972 was 5,162.463 tonnes valued at Rs. 7,54,50,222.36.
>
> (ii) Total quanity of imported ammunition was 2,663.423 tonnes valued at Rs. 4,70,90,052.87.

(iii) Total quantity of indigenous ammunition was 2,499.040 tonnes valued at Rs. 2,83,60,169.49.

(iv) The average quantity stored in each dugout works out to 36 tonnes."

2.36. As pointed out in the Audit para, a final assessment placed the loss, including a substantial quantity of imported ammunition, at Rs. 99.29 lakhs. Details of unserviceable and repairable ammunition and the extent of damage assessed up to date, as furnished by the Ministry of Defence, are indicated below:

	Amount
(a) Unserviceable	Rs. 98,78,383·43
(b) Repairable	Rs. 50,430·53
Total of (a) & (b)	Rs. 99,28,813·96

2.37. The Committee desired to know the point of time when the ammunition affected by rainfall was inspected for assessing the damage and the agency which conducted the inspection. The Ministry of Defence, in a note, have stated:

"The inspection started immediately after the ammunition was evacuated from the flooded dugouts. This was done by the officers posted to Ammunition Depots who are qualified technical officers and are competent to inspect the ammunition."

2.38. The Committee have been informed by the Ministry of Defence that the figure of loss of Rs. 99.29 lakhs had not undergone any revision on account of more ammunition having been declared unserviceable later on out of the two categories classified as 'repairable' and 'serviceable'.

2.39. The Committee desired to know whether the ammunition classified as repairable (including imported items) had since been repaired and if so, what was the expenditure incurred so far or likely to be incurred to make the ammunition entirely serviceable. The Secretary, Ministry of Defence has stated in evidence:

"It is not of Indian origin. If it is of our own manufacture, certainly we could repair these but this is of imported origin and therefore we could not manage ourselves. So, we are asking the foreign manufacturers either to supply us with the components or to give us the technology so that we could repair them here itself."

Subsequently, in a note, the Ministry of Defence have stated:

> "The entire quantity has been repaired except for a small quantity of 215 Kg. which is awaiting components. The expenditure incurred on the quantity already repaired was Rs. 50,430.53. As regards the expenditure that may be incurred on the balance of 215 Kg. it is likely to be less than Rs. 200 judging from the trend of expenditure so far incurred."

Asked whether the repaired ammunition could be utilised in the field without any restrictions and render entirely satisfactory service, the Ministry replied:

> "The repairable ammunition can be used without any restriction."

2.40. The Committee learnt from Audit that the Ministry of Defence had stated in March 1976 that there was no laid down dimension or standard design for the dugouts for storing ammunition and as the work was operational, it was built as a temporary measure and was not constructed as a long time requirement. The Committee, therefore, enquired whether the dugout was a normal and accepted mode of storage for costly ammunition and if so how it was that no standard dimension|layouts had so far been considered|laid down for storage of ammunition in dugouts and guidelines prescribed for protective measures during monsoons. The Ministry of Defence in a note, have stated:

> "The dugouts are not specifically a mode of storage for ammunition exclusively. Hence these dugouts do not have any standard specifications so far as their construction is concerned and taking a number of diverse factors into account, like soil, climate, terrain and nature of stores, the Engineers construct them to suit the specific requirements of the General Staff who control the operation in the area. In fact anything can be stored therein under operational conditions."

While admitting that no standard design had yet been laid down for the dugouts, the Defence Secretary has explained the reasons therefor as under:

> "This apparantly was the only instance which came to our notice. Standard are not laid down for the bad occurrences that they may happen once in a life's time. We have now set in motion something on this, that is, if such a situation happens again what should be the design of the dugout. They should have a trailer pump ready with them so that they can pump out the water quickly. So, in order to obviate damage by rain, we are thinking of having some mechanical arrangement for ammunition box so that we do not have any difficulty in the rainy season."

Explaining details of the measures taken in this regard, the witness has added:

> "We have given direction to the Army Headquarters to carry out an enquiry with the engineers as to the kind of specification they should adopt keeping in view this experience and certain suggestions have also been made to fill the ramp and also take in hand measures for de-watering of flooded pits."

2.41. Asked to state whether the Court of Enquiry which could well be expected to be composed of experts was specifically asked to find out the reasons of damage being caused by floods or otherwise and suggest appropriate measures, the Defence Secretary has clarified:

> "The Board of Inquiry is comprised of officials who are not necessarily experts in dug-outs. They are commanders and they deal with these things in an operational situation. It is a fact that subsequently we had our Army Headquarters to make an inquiry as to what kind of standards based on this experience should be hereafter adopted in similar situations, what kind of dugouts, what kind of protective measures and what kind of drainage measures should be taken, etc."

2.42. Enumerating the specific steps taken by Government to prevent recurrence of similar cases, the Ministry of Defence, in a note, have stated:

> "Based on the advice by the Technical experts or the Engineers, the units have been advised that whenever ammunition has to be stored in dug-outs the following precautions will be observed:
>
> (i) Raised bunds and proper drains are constructed all round the dugouts and on both sides of the ramp to prevent the surface water getting ingress into the dugouts.
>
> (ii) A small hump should be provided at the beginning of the ramp to divert water from the road to the side drain.
>
> (iii) Trailer fire pumps are positioned at the appropriate place for dewatering purposes should any accidental flooding occur.
>
> Some other measures e.g., the use of some mechanical device for storing and taking out ammunition and thereby eliminating the need for slope driveway etc. are under examination."

2.43. The Audit paragraph points out that the Ministry of Defence had, *inter alia*, intimated (January 1976) that no one was held responsible for the loss. Asked to state the reasons for the Court of Enquiry not going into the

question of fixing responsibility for the loss, the Defence Secretary has stated :

> "They would have gone into it, if they felt that there was some dereliction of duty on the part of somebody. These dugouts have been there for several months. If they were not according to the specifications, this would have been gone into well before the rain."

2.44. The Audit Paragraph points out that though the Court of Enquiry had recommended in October, 1972, that the loss in this case be borne by the State, the loss had not been regularised till January, 1976. The Committee therefore, desired to know the reasons for a delay of four years as well as the present position of regularisation of the loss. The Ministry of Defence in a note, in advance of the evidence stated:

> "The loss occurred in a Detachment which was on the war system of accounting whereas the main Unit was on the peace system. Subsequently the Detachment changed over to the peace system of accounting, and about the same time the Detachment was transferred to the administrative control of another Unit. As a result there was some confusion as to which particular Unit/LAO should deal with the loss statement and there was prolonged correspondence all round. It was only in October, 1975 that HQ W.C. gave a decision in this regard.
>
> Further the ammunition being a mixed lot of both imported and indigenous stores purchased from various sources, there was continuing difficulty in pricing the loss statement in the absence of satisfactory pricing data. It is now proposed to take up the matter at Headquarters level and finalise the pricing on an *ad hoc* basis."

The Controller General of Defence Accounts has clarified the position thus:

> "The main difficulty in handling this loss statement was that the detachment where the loss occurred, was under the War System of Accounting. Subsequently it was transferred to Ammunition Depot which was under the Peace System of Accounting. It was also not clear whether the documents pertaining to the loss were with the old unit or with the new unit. Each of the Army units was saying that the Other unit should deal with the case and audit had to go by the stand taken by the Army units. So, some confusion arose and finally the matter was referred to the headquarters. It was then decided by that Headquarter that the

case should be handled by 17 FAD. Even now, complete data for pricing the loss statement have not been furnished to us. There are various difficulties also. In many cases, the unit has adopted certain rates, but these rates have not been given by the Central Ammunition Depot. In certain cases the rates given by the unit are different from those given by CAD. But, I think the issue is simple. If the units give the catalogue or priced vocabulary number of various items of ammunition, we can get the prices from the catalogue and price the loss statement. For items the prices of which are not in the catalogue, the Ministry of Finance (Defence) in consultation with AHQ can give the rates."

The Ministry of Defence, in a note furnished to the Committee have indicated the present position of the case as under:

"This Ministry has approved the regularisation of the loss and the case is at present under consideration of the Ministry of Finance (Defence). The time taken in regularisation of the loss could have been reduced."

2.45. The Committee are given to understand that the ammunition was stored in the dugouts during the period of hostilities with Pakistan on tactical considerations. The hostilities ended on 18th December, 1971 and the Simla Agreement was signed on 2nd July, 1972. Yet, the ammunition continued to be stored in the dugouts. Explaining the reasons for continuing to store the ammunition in the dugouts, the Defence Secretary has, during evidence, stated that "the Armed Forces have to be in a state of alert particularly under conditions which are often described as 'no war no peace'." The Committee have, however, an impression that the question of removing the ammunition to overground positions as a precautionary measure against the impending rains was not considered with sense of urgency by the authorities concerned. In fact the decision earlier taken to construct overground plinths was countermanded because the authorities felt that "the situation has not improved to such an extent that we can countenance the removal of dugouts".

2.46. The Ministry of Defence have stated (i) that the damage to the ammunition was caused mainly due to unprecedented excessive rainfall in 1972, 62 per cent of which was concentrated in the week in which the flooding took place, and (ii) that all reasonable precautions were taken to protect the ammunition. The Committee have no desire to controvert the contention of the authorities that the rains were 'unprecedented' on the basis of a plethora of data—some of which are conflicting—made available to them, but they would like to point out that the vagaries of monsoon

are a phenomenon not unknown in India and, therefore, they should not be advanced as a cause majeur for the events which happened and put up as convenient excuses to cover up the human lapses in taking advance precautionary measures.

2.47. As for the statement that 'reasonable precautions' were taken, the Committee would like to point out that even if advance planning was not possible in the circumstances, the light showers from 5th to7th July, 1972 should have forewarned the authorities of the danger of a possible heavy rainfall in subsequent days and immediate steps should have been taken to remove the ammunition from the dugouts to safer position. But evidently this matter did not receive the attention that it deserved leading to a huge loss not only in terms of cost of ammunition but also in physical terms involving irreparable damage to costly imported ammunition.

2.48. The Committee note that a decision was taken in January, 1972 to acquire 65,000 concrete dunnage blocks for the protection of the stored ammunition. As against the number ordered, only 16,600 blocks were delivered to the Unit until July, 1972. Explaining the reasons for the non-delivery of a sizable part of the order before the onset of the monsoon, Ministry of Defence have stated that "at this stage it has not been possible to ascertain the exact reasons but presumably the Engineers who were to fabricate these items were preoccupied with other works." They also note the view of the Ministry that the "non-availability of the blocks did not in any way affect the storage because alternative dunnage through improvised means had been provided."

2.49. The Committee would like the Ministry to have it investigated by technical experts as to whether the use of proper dunnage blocks in the dugouts could have saved any part of the ammunition. They also desire that the Ministry should institute an inquiry into the reasons for non-delivery of the requisite number of dunnage blocks in due time to the unit to be utilised as a preventive measure against damage to the ammunition by rain. The Committee may be informed of the results of the inquiries.

2.50. The Committee also note that the indent for 360 tarpaulins placed by the Unit on the Ordnance Depot in March, 1972 for covering the ammunition dumps also did not materialise till the onset of monsoon. Explaining the non-supply of the tarpaulins in due time, the Defence Secretary has stated before the Committee that "it is because of the multifarious demands for the same commodity that somewhere there was shortage." He has, however, pleaded that the damage to the ammunition was due to the flooding of the dugouts by water against which the tarpaulins would not have been of much use. The Committee are not satisfied with the reasons advanced for non-supply of tarpaulins to the Unit in due time. Nor does the plea that the existence of the tarpaulins would not have

prevented the damage to the ammunition mitigate the gravity of the lapse. The Committee would like the Ministry to investigate the reasons for non-materialisation of the order of the unit before the onset of monsoon and, in the light of the findings, to streamline the supply procedures so that such lapses, which could result in dire consequences affecting the fighting forces do not recur.

2.51. It is admitted by Government that no standard design or lay-out has been evolved for the dugouts for storage of ammunition. The Committee consider that it is high time the Ministry evolves, on the basis of experience, a standard design or layout of the dugouts particularly for storing large quantities of ammunition. The Committee would like to be informed in some detail of the concrete measures taken to obviate recurrence of such losses.

2.52. The Committee note that though the incident took place in July 1972, the loss has not so far been regularised. The Committee stress that cases of such heavy losses should be thoroughly gone into to identify reasons for loss, learn the lessons to obviate recurrence, fix responsibility for lapses etc. but the matters should be brought to a conclusive stage without any delay instead of being carried forward from year to year.

NEW DELHI;
October 28, 1977.
Kartika 6, 1899 (*S*).

C. M. STEPHEN,
Chairman,
Public Accounts Committee.

APPENDIX

Statement showing the Conclusions/Recommendations

S. No.	Para No. of Report	Ministry Department Concerned	Conclusions/Recommendations
1	2	3	4
1	1.39	Ministry of Defence Department of Defence Production.	The Committee find that factory 'A' commenced production in 1962-63 and the low outturn and heavy rejections were a regular feature right from the very beginning. In 1963, *i.e.* nearly a year before the new weapon was inducted into the army the factory had proposed its modernisation by procurement of new machines for production of ammunition 'X', but this could not be accepted due to financial reasons "possibly because factory 'C' was then being planned." It was only in 1968 when the old plant of the factory "lost its capability resulting in heavy rejections and unreliable production" that a technical investigation was carried out in 1969 by the Directorate General of Inspection. The report of this investigation confirmed that the root-cause of unsatisfatory performance was "old and unreliable machines and inadequate tooling". Following the findings of the Directorate General of Inspection, a scheme for modernisation of the factory was approved by Government in April, 1971 and the DGOF was

authorised to place direct orders for the procurement of plant and machinery. These new machines were expected to be in position in three years' time, *i.e.*, by 1974. The indents for 159 machines were placed during September, 1972 and these were received between January, 1974 and September, 1975. Out of these, 154 machines were commissioned between January, 1975 and April, 1976 and 5 machines were not commissioned by May, 1976 when the information was furnished by DGOF to Audit. The Committee are surprised that no action was taken to equip factory 'A' for production of ammunition 'X' until 1971 even though right from 1962-63 when the factory commenced production it was showing low outturn and sub-standard production leading to heavy rejections. The Committee desire that the causes for this inaction for a period of 9 years from 1962 to 1971 should be gone into and the responsibility therefor fixed. Even when DGOF was given a green signal in early 1971 to procure the plant and equipment needed for modernising the factory, it took as much as 4 to 5 years for the new plant and machinery to be commissioned. The Committee would like Government to examine as to what extent the time taken in procurement, installation and commissioning of the new machinery could have been reduced by rationalising and streamlining the procurement procedures.

2	1.40	-do-	The Committee are distressed at the accumulation of rejected ammunition in factory 'A'. The increase in rejections is attributed to the Inspectorate having "procured new gauging and inspection machines which could assist in weeding the defective ammunition." It is maintained that "as the production had to be continued .... ammunition not coming to standard was kept aside (and) it had resulted in accumulation." The Committee consider that it was not desirable to continue production of sub-standard

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			ammunition by the factory just for the reason that "the production had to be continued" as it was a wasteful consumption of labour and scarce raw materials and components some of which were imported.
3	1.41	Ministry of Defence/Department of Defence Production	The Committee cannot too strongly emphasise the need for extreme care and caution being exercised by the Inspection Organisation at all times in the discharge of their responsibilities so as to ensure that sub-standard weapons and ammunition do not find their way in the defence stores. The Committee desire that the Government should closely examine the Inspection machinery and procedures with a view to bring about such improvements as may be necessary to make it more efficient and effective and fully conscious of its important responsibilities. The Committee would like the inspection machinery within the Ordnance Factories also to be revamped and made more effective so that quality checks are properly exercised at the production stage itself.
4	1.42	-do-	The Committee note that CGDA had pointed out certain irregularities of a serious nature in this factory, like booking of labour on warrants being disproportionately higher than the quantities of components drawn for manufacture, non-accountal of rejections warrant-wise and completion of warrants by transferring to earlier warrants, production against the subsequent warrants. It is stated that since certain instructions issued by DGOF in 1974 to overcome this problem did not bear fruit, a committee was set up to go into this problem in depth and make recommendations. Although the Committee was to report by the 15 December, 1976, its

			report had not been received until May, 1977. The Committee would like the Ministry to ensure that report of the Committee is made available without further delay. The Committee would like to be informed about the follow-up action on the recommendations of this Committee.
5	1·53	-do-	The Committee note that although indents for 160 items of plant and machinery for Factory 'B' were placed in 1963, it took more than five years to procure and erect 4 of the items. One item received during July 1971-March 1972 i.e. after 9 years, was awaiting erection till May 1977. The Committee are informed that the machine was put up for inspection in May 1974 when some defects were noticed which were immediately pointed out to the suppliers. The suppliers were, however, able to complete the repairs only in August 1976 and since then factory was awaiting the arrival of firm's engineers to commission the machinery. As regards action against the suppliers for defective supply and delay in rectification and commissioning, the Ministry have stated that 'after the rectifications are over, DGOF would be advised to take up the matter with the DGS&D to proceed against the supplier for delayed/defective supply of the equipment.'
	1·54	-do-	The Committee have no doubt that Government would be making an all out effort to have the remaining plant commissioned at the earliest possible time. They would, however, like that the causes for the unconcoinable delay in procurement and commissioning of this plant should be investigated and if any part of it is attributed to the supplier firm, stern action should be taken against them in terms of the agreement.

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7	1·55	Ministry of Defence/Department of Defence Production	From the facts placed before the Committee, they infer that production capability of this factory had not been properly investigated before planning production. This is evident from the fact that production of ammunition 'X' was started in this factory on the assumption that the available capacity for manufacture of empty components of the old ammunition could be straightaway translated for production of components of new ammunition, which, however, did not materialise due to the outdated equipment. When the production of the new ammunition was taken up the result was the same as in Factory 'A' *viz.* only a certain percentage of equipment was found suitable for producing the new ammunition. The rate of annual production during the period 1965-66 to 1973-74 averaged barely 28 units as against the target annual production of 84 units. Not only that, there were large scale rejections also. The rejections and low production are sought to be attributed to the tightening of inspection standards. The Committee are not prepared to accept this plea as the inspection system appeared to be lax earlier.
8	1·67	-do-	The facts placed before the Committee in regard to factory 'C' reveal a sorry state of affairs. The setting up of this factory mainly for manufacturing ammunition 'X' was conceived in the wake of an emergent situation suddenly arising in 1962. Apart from the production capacity of about 8 units per annum in the existing factories 'A' and 'B', the additional requirements of ammunition 'X' was estimated as 600 units per annum. A new factory with a capacity of producing 600 units per annum

was sanctioned by the Cabinet in February 1963. A Technical Committee which visited a foreign country in April 1963 to assess in detail the suitability or otherwise of a plant offered free for production of ammunition 'X' by that country "after visual examination of the equipment" opined that the plant, which was then producing some other type of ammunition, could, with suitable modifications, be counted upon to produce ammunition 'X'. The Committee assessed the production capacity of the plant as 600 units per annum. This was followed by a formal offer of free supply of the plant which was accepted by Government in September 1963. In the offer, however, the foreign country declared the production capacity of the plant as 432 units per annum only. The foreign country also undertook to renovate and modify the plant to make it suitable for the manufacture of new ammunition at our cost which come to be Rs. 46.47 lakhs in foreign exchange. Thus an old plant producing some other kind of ammunition in the foreign country which was to be renovated and modified for production of ammunition 'X' and which had a production capacity far less than the assessed requirements was accepted in utter disregard of the standard expected of a production units manufacturing ammunition for the use of defence forces. The reasons given for acceptance of such a plant are:

(i) Saving of foreign exchange as the plant was being offered free;

(ii) Urgency for setting up the production capacity; and

(iii) The plant was stated to be accompanied with transfer of whole technology and documentation free of cost.

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9	1·68	Ministry of Defence/Department of Defence Production	It was known *ab initio* that the plant did not have the facilities for producing two essential components of the ammunition 'X' *i.e.* the primer and the propellent. In addition to the deficiency in respect of these components, a tool-room facility had also to be set up in the factory. The foreign country undertook to supply the components and the tools to the factory until these facilities were fully established in the country.
10	1·69	-do	The plant was received in May 1964 and the production commenced in September 1965. In that month, consequent upon the break out of hostilities with a neighbouring country, all assistance from the foreign country ceased including the assistance in respect of the supply of components and tools for factory 'C'. For the propellent, primers and tools the country had, therefore, to depend upon imports. A plant for manufacturing primers was commissioned only in January 1967 while the tool-room was finally commissioned in 1969. The research for development of propellent suitable for ammunition 'X' is still going on. These deficiencies have affected the production which has never exceeded 119 units per annum in single 8 hour shift.
11	1·70	-do-	The above account brings to sharp focus the following features: (i) The factory was actually commissioned in 1965-66, *i.e.*, 3 years after the development of the emergent situation in 1962.

(ii) Although the plant is stated to have been received free, the total cost of plant and machinery is indicated as Rs. 3.36 crores, including Rs. 1.43 crores (F. E. Rs. 46.47 lakhs) spent on its renovation and modification, transportation and installation.

(iii) Although the plant was then expected to be accompanied with complete documentation and transfer of whole technology free of cost, the documentation and technology for production of propellent, primers and tools were not transferred, with the result that the plant for manufacture of primers and equipment for tool-room had to be purchased from some other country which took time, while the propellent was still under development.

(iv) The production in the plant could reach the maximum of 119 units only during 1972-73 in a single 8-hour shift whereas according to the rated capacity the plant working under similar conditions should have been capable of producing 168 units per annum. The Committee feel that in matters concerning Defence the more important consideration should have been the credit-worthiness of the plant and equipment. This dismal episode also underscores the need for developing indigenous tools and plants and avoiding too much reliance on foreign suppliers, particularly where the supplies are offered free. The Committee hope that Government would draw appropriate lessons from this transaction for guidance in future.

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12	1.74	Ministry of Defence/ Department of Defence Production	The Committee learn that the buildings and services for factory 'C' were planned for a production capacity of 600 units per annum of ammunition 'X' and 6 units of ammunition 'Z' and on that basis 3036 acres of land were acquired for the new factory keeping a cushion for the future. As the capacity of the factory was ultimately limited to 432 units per annum of ammunition 'X' and ammunition 'Z' was also not to be produced in this factory, the capital investment in land, buildings and services etc. was reported to be in excess of the requirements. Government have, however, stated that the 3036 acres of land acquired for the factory were on the basis of reduced production capacity of the factory and that "no land is said to be surplus to the factory's needs". The Committee would like Government to examine whether any part of the land, buildings and services at the factory is in excess of the factory's present and potential requirements and if such excess is found, it should be put to full use.
13	1.78	-do-	It is admitted by Government that they aware *ab initio* that the plant offered by the foreign Government was deficient in respect of primers and propellant. For supplying the deficiency in regard to the primers, Government sanctioned the setting up of a plant in February 1964 at a cost of Rs. 24.68 lakhs. The indent for the plant was placed on DGS&D in March 1964 with delivery date as October 1964. DGS&D, however, placed the order in July 1964 on a foreign party with delivery date in May 1965. The plant was, however, actually delivered in July 1966 and commissioned in January 1967. Till that time the component had to be

imported from abroad. The Committee are unhappy at the long time—as much as 3 years—taken in procuring and commissioning the plant for manufacturing primers, an essential component of the ammunition. The Committee would like Government to streamline the procedure for procurement of Defence requirements particularly when they are bought from the open market against free foreign exchange.

14	1·79	-do-	As regards the propellent, the Committee learn that it has not yet been possible to develop this component to suit the requirements of ammunition 'X', although efforts were being made to this end in an ordnance factory producing another type of propellent. The Committee are informed that in 1975 the problem was referred to Defence, Research & Development Organisation. The Committee feel that it should have been possible to develop the required propellent during the last 13 years if concerted efforts were made in this direction by pooling the technical know-how available for development in the field, be it the ordnance factory or the Defence, Research & Development Organisation. The Committee are surprised that DGOF thought it proper to refer the problem to the Defence, Research & Development Organisation only in 1975, even though it was known to Government right at the initial stage that the imported plant for the manufacture of the ammunition did not include this facility and that for this component we would have to depend upon either imports or indigenous development. The absence of a locally manufactured propellent for this ammunition has resulted in imports amounting to Rs. 2.45 crores by January 1976. This is yet another instance of lack of advance planning on the part of the Ministry. The Committee hope that the Defence, Research & Development Organisation would tackle this problem

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			on priority basis and try to develop the propellent within the shortest possible time so as to obviate imports and make the country self-sufficient in regard to the manufacture of ammunition 'X'.
15	1.85	Ministry of Defence/ Department of Defence Production	The Committee note that the Government sanction for purchase and installation of tool-room facilities in factory 'C' was issued in February 1964. The installation and commissioning of the tool-room equipment was, however, spread over a period of 5 years from 1965 to 1969. Meanwhile, the requirements of tools and gauges for the factory had to be met out of imports and during the period 1965-66, when the production commenced in the factory, to 1972-73 a sum of Rs. 69.19 lakhs was spent on imports on this account. The Committee regret that it should have taken Government as long as 5 years to instal and commission the equipment for the tool-room which is an absolute necessity for any large-scale self-contained production unit.
16	1.98	-do-	The plant was declared by the foreign Government to be capable of manufacturing 432 units of ammunition per annum on the basis of two 10-hour shifts. Therefore, in a single shift of 8 hours it should have been capable of producing 168 units of ammunition per annum. The Committee, however, note that in the course of its working since 1965-66, the factory was able to achieve the highest rate of production of 119 units during 1972-73, and that too after working overtime. The low production is attributed to the "quantitatively inadequate" or "qualitatively not matching" inputs such as primers, propellants and tools. In

			another context it is stated that the plant was not operated in two shifts because it was an old plant. Another reason advanced for low production is the general shortage of trained technical personnel who could handle the type of ammunition being produced in the factory. The Committee would like to point out that the very idea of setting up this factory was to achieve a production of at least 432 units in times of need. Government should, therefore, endeavour to keep the factory in proper trim so that in times of emergency the factory may be able to achieve the required production to meet the Service requirements.
17	1.99	do-	The Committee note that the expenditure on overtime allowance to the factory staff is consistently rising over the years even when the production in the factory has been reduced. In justification of the payment of overtime it has been stated that the workers have become 'used to it' and that this payment 'is a measur eof good labour relations'. The Committee are unable to accept this position. They would like Government to explore ways and means of reducing the overtime allowance to keep it within reasonable limits.
18	1.102	-do-	The delay in the commissioning of the gas plant, contracted for in March 1964 for Rs. 28.13 lakhs, and in resolving the dispute over modification of defects in the plant by the suppliers was commented upon by the Public Accounts Committee earlier also in their 99th Report (Fourth Lok Sabha). The Committee had then recommended that the dispute between the Government and the supplier firm which was then under arbitration should be settled early so as to get the plant commissioned without further loss of time. It is astonishing that even after a lapse of nearly 7 years the dispute has not been settled and Government are still not able

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			to estimate as to when the arbitration proceedings would be concluded. Meanwhile, factory 'C' is required to purchase gas from the trade and by March, 1975 an expenditure of Rs. 22.33 lakhs had already been incurred on this account. This indeed is a serious situation which calls for an immediate action. The Committee hope that all-out effort would be made to have the arbitration proceedings finalised expeditiously.
19	1.106	Ministry of Defence/ Department of Defence Production	The Committee find that as the packing machines supplied by the foreign country along with the main plant were found to be defective, the demand for new machines was projected by DGOF in September, 1968. The contract for their supply was placed by the DGS&D on a firm in July, 1970 at a cost of Rs. 4 lakhs. The new machines were received in September, 1972 and commissioned in March, 1973. Since the factory commenced production in 1965-66 the defects in the packing machines must have come to the notice of the management in that year itself. The Committee are, therefore, unable to appreciate the delay on the part of the DGOF of well over 2 years in projecting the demand for new machines on DGS&D. The Committee also note that it took almost 2 years for DGS&D to place the contract for the machines on a firm and another 2 years for the firm to supply the machines. The Committee regret the leisurely way of handling the matter by the DGOF and the DGS&D.
20	1.107	-do-	Meanwhile, the factory had to resort to other methods of packing which involved imports amounting to Rs. 5.74 lakhs. In addition, certain defects in packing material rendered components worth Rs. 3.44 lakhs and the

			unused material worth Rs. 2.73 lakhs unfit for use. The Committee are informed that subsequently on reinspection the components have been "accepted by the Service Inspector" and that "unused basic material was transferred to another factory for use in alternative store". The Committee have a doubt whether the components and the unused material which were initially declared to be unacceptable were really capable of being used or whether these were disposed of after the Audit pointed it out and the Committee took notice of it in order to minimise the loss. The Committee would like a thorough investigation to be done in regard to subsequent acceptance of the components and unused material so as to ensure that defective ammunition does not find its way to the stores.
21	2·45	Ministry of Defence	The Committee are given to understand that the ammunition was stored in the dug-outs during the period of hostilities with Pakistan on tactical considerations. The hostilities ended on 18 December, 1971 and the Simla Agreement was signed on 2 July, 1972. Yet, the ammunition continued to be stored in the dug-outs. Explaining the reasons for continuing to store the ammunition in the dug-outs, the Defence Secretary has, during evidence, stated that "the Armed Forces have to be in a state of alert particularly under conditions which are often described as 'no war no peace'." The Committee have, however, an impression that the question of removing the ammunition to overground positions as a precautionary measure against the impending rains was not considered with sense of urgency by the authorities concerned. In fact the decision earlier taken to construct overground plinths was countermanded because the authorities felt that "the situation has not improved to such an extent that we can countenance the removal of dug-outs".

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22.	2·46	Ministry of Defence	The Ministry of Defence have stated (i) that the damage to the ammunition was caused mainly due to unprecedented excessive rainfall in 1972, 62 per cent of which was concentrated in the week in which the flooding took place, and (ii) that all reasonable precautions were taken to protect the ammunition. The Commtttee have no desire to controvert the contention of the authorities that the rains were 'unprecedented' on the basis of a plethora of data—some of which are conflicting—made available to them, but they would like to point out that the vagaries of monsoon are a phenomenon not unknown in India and, therefore, they should not be advanced as a *cause majeur* for the events which happened and put up as convenient excuses to cover up the human lapses in taking advance precautionary measures.
23.	2·47	Do.	As for the statement that 'reasonable precautions' were taken, the Committee would like to point out that even if advance planning was not possible in the circumstances, the light showers from 5 to 7 July, 1972 should have forewarned the authorities of the danger of a possible heavy rainfall in subsequent days and immediate steps should have been taken to remove the ammunition from the dug-outs to safer position. But evidently this matter did not receive the attention that it deserved leading to a huge loss not only in terms of cost of ammunition but also in physical terms involving irrepairable damage to costly imported ammunition.
24.	2·48	Do.	The Committee note that a decision was taken in January, 1972 to acquire 65,000 concrete dunnage blocks for the protection of the stored

ammunition. As against the number ordered, only 16,600 blocks were delivered to the Unit until July 1972. Explaining the reasons for the non-delivery of a sizeable part of the order before the onset of the monsoon, Ministry of Defence have stated that "at this stage it has not been possible to ascertain the exact reasons but presumably the Engineers who were to fabricate these items were preoccupied with other works." They also note the view of the Ministry that the "non-availability of the blocks did not in any way effect the storage because alternative dunnage through improvised means had been provided."

25.	2·49	Do.	The Committee would like the Ministry to have it investigated by technical experts as to whether the use of proper dunnage blocks in the dug-outs could have saved any part of the ammunition. They also desire that the Ministry should institute an inquiry into the reasons for non-delivery of the requisite number of dunnage blocks in due time to the unit to be utilised as a preventive measure against damage to the ammunition by rain. The Committee may be informed of the results of the inquiries.
26.	2·50	Do.	The Committee also note that the indent for 360 tarpaulins placed by the Unit on the Ordnance Depot in March, 1972 for covering the ammunition dumps also did not materialise till the onset of monsoon. Explaining the non-supply of the tarpaulins in due time, the Defence Secretary has stated before the Committee that "it is because of the multifarious demands for the same commodity that somewhere there was shortage." He has, however, pleaded that the damage to the ammunition was due to the flooding of the dug-outs by water against which the tarpaulins would not have been of much use. The Committee are not satisfied with the reasons advanced for non-supply of tarpaulins to the Unit in due time. Nor does the plea

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			that the existence of the tarpaulins would not have prevented the damage to the ammunition mitigate the gravity of the lapse. The Committee would like the Ministry to investigate the reasons for non-materialisation of the order of the unit before the onset of monsoon and, in the light of the findings, to streamline the supply procedures so that such lapses, which could result in dire consequences affecting the fighting forces do not recur.
27.	2.51	Ministry of Defence	It is admitted by Government that no standard design or lay-out has been evolved for the dug-outs for storage of ammunition. The Committee consider that it is high time the Ministry evolves, on the basis of experience, a standard design or layout of the dug-outs particularly for storing large quantities of ammunition. The Committee would like to be informed in some detail of the concrete measures taken to obviate recurrence of such losses.
28.	2.52	Do.	The Committee note that though the incident took place in July 1972, the loss has not so far been regularised. The Committee stress that cases of such heavy losses should be thoroughly gone into to identify reasons for loss, learn the lessons to obviate recurrence, fix responsibility for lapses etc. but the matters should be brought to a conclusive stage without any delay instead of being carried forward from year to year.

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