

18

DEFECTIVE AMMUNITION

MINISTRY OF DEFENCE

(Department of Defence Production and Supplies)

**PUBLIC ACCOUNTS
COMMITTEE**

1990-91

EIGHTEENTH REPORT

NINTH LOK SABHA



**LOK SABHA SECRETARIAT
NEW DELHI**

**EIGHTEENTH REPORT
PUBLIC ACCOUNTS COMMITTEE
(1990-91)**

(NINTH LOK SABHA)

DEFECTIVE AMMUNITION

**MINISTRY OF DEFENCE
(DEPARTMENT OF DEFENCE PRODUCTION
AND SUPPLIES)**

[Action Taken on 144th Report of Public Accounts Committee
(8th Lok Sabha)]



सममेव जयते

Presented to Lok Sabha on 27 Feb. 1991

Laid in Rajya Sabha on 27 Feb. 1991

**LOK SABHA SECRETARIAT
NEW DELHI**

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CORRIGENDA TO 18TH REPORT OF THE
PUBLIC ACCOUNTS COMMITTEE (9TH LOK SABHA)

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CONTENTS

| | PAGE |
|---|------|
| COMPOSITION OF THE PUBLIC ACCOUNTS COMMITTEE | |
| INTRODUCTION | (v) |
| CHAPTER I Report | 1 |
| CHAPTER II Recommendations and Observations which have been accepted by Government | 8 |
| CHAPTER III Recommendations and Observations which the Committee do not desire to pursue in the light of the replies received from Government | 11 |
| CHAPTER IV Recommendations and Observations re- plies to which have not been accepted by the Committee and which require reitera- tion | 13 |
| CHAPTER V Recommendations and Observations in re- spect of which Government have furnished interim replies | 16 |
| APPENDICES | |
| APPENDIX I Statement showing classification of action taken notes received from Government ... | 17 |
| APPENDIX II Directorate General of Ordnance Factories Letter No. 33148 / OS-6C(i) dated 14.5.1990 | 18 |
| APPENDIX III Ministry of Defence (Deptt. of Defence Production) Letter No. 87460 / DGG(Arm-5) dated 21.12.1989 | 19 |
| APPENDIX IV Conclusions and Recommendations | 21 |
| PART II | |
| Minutes of the sittings of Public Accounts Committee held on 31.7.1990 and 11.1.1991 | 24 |

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(1990-91)

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** Appointed w.e.f. 10.1.91 *vice* Shri Kamal Morarka ceased to be member of the Committee on his appointment as a Minister of State.

INTRODUCTION

1. the Chairman of the Public Accounts Committee as authorised by the Committee, do present on their behalf this Eighteenth Report on action taken by Government on the recommendations of the Public Accounts Committee contained in their 144th Report (Eighth Lok Sabha) on Defective Ammunition.

2. In their earlier Report, presented to the Lok Sabha on 5 April, 1989, the Committee had emphasized the need for taking urgent steps to repair the costly ammunition expeditiously. According to the action taken note furnished by the Ministry of Defence, the work of repair was likely to start by October, 1989. The Committee have been deeply concerned to note from the information furnished by the Ministry on 10 September, 1990, at their instance that the repair work is yet to commence. Consequently, the operationally required ammunition costing about Rs. 6 crores has been lying unused for a considerably long time apart from the ammunition valuing Rs. 127.50 lakhs since declared unserviceable. According to the Committee, this inordinate delay is both unpardonable and deplorable. Obviously, any more delay would further curtail the useful life of the ammunition. The Committee have stressed that immediate steps be taken to repair the defective ammunition without any further delay and its compliance reported to the Committee within three months.

3. The Government have appointed a high-powered Committee to fix responsibility for the loss to the exchequer in this case. The Committee have strongly emphasized the need for early finalisation of the Report by the high powered committee. The Committee have also observed that Report of the high powered Committee and further action taken thereon should be furnished to them within a period of six months.

4. The Report was considered by the Committee at their sitting held on 31 July, 1990, when they had decided that further information might be called for from the Ministry of Defence in respect of the recommendations at Serial Nos. 1 and 6 on receipt of which the draft Report might be suitably modified, if necessary. The desired information was accordingly obtained from the Ministry and suitably incorporated in the Report. The Report was finally considered and adopted by the Public Accounts Committee at their sitting held on 11 January, 1991. Minutes of the sittings form Part II of the Report.

5. For facility of reference and convenience, the recommendations of the Committee have been printed in thick type in the body of the Report and have also been reproduced in a consolidated form in Appendix IV of the Report.

6. The Committee place on record their appreciation of the assistance rendered to them in the matter by the Office of the Comptroller and Auditor General of India.

NEW DELHI;

January 24, 1991

Magha 4, 1912(S)

SONTOSH MOHAN DEV

Chairman

Public Accounts Committee

CHAPTER I

REPORT

1.1 This Report of the Committee deals with the action taken by Government on the Committee's recommendations/observations contained in their Report* on Defective ammunition.

1.2 The Committee's report contained eight recommendations/observations. Action taken notes on all these recommendations/observations have been received from the Ministry of Defence (Department of Defence Production and Supplies). The action taken notes have been broadly divided into four categories as indicated in Appendix I.

1.3 The Committee hope that final reply to the recommendation contained in para 42 in respect of which only interim reply has so far been furnished will be expeditiously submitted after getting it vetted by Audit.

1.4 In the succeeding paragraphs the Committee will deal with action taken on some of their recommendations/observations.

1.5 The first defect of lid detachment from the body of the ammunition which was being manufactured and supplied by the Ordnance Factories to the Army since 1964, was noticed in 1975. The authorities failed to remove this defect in spite of the various repair measures taken from 1980 till March 1985. It was established as a result of the findings of the two Investigating Committees constituted in 1981 and 1985 that the incidence of reopening of lids of repaired ammunition was due to inadequate care during repairs. Further while the repeated processes of repair were going on, new ammunition manufactured and supplied also suffered from the same deficiency. According to the Ministry of Defence, production of the ammunition could not be stopped due to its operational requirement.

1.6 Repair of the ammunition with detached lids was suspended when the second defect of cracking in the body of the ammunition was reported in March, 1985. It was felt that repair of both the defects, should be carried out simultaneously.

Lack of seriousness in repairing the defective ammunition initially
(se. No. 1 — Para 9)

1.7 Commenting upon the lack of seriousness in attending to the defect initially noticed in the ammunition in 1975, the Committee had in para 9 of their 144th Report observed as follows:

“The Committee note that the first defect of lid detachment from the body of the ammunition which was being manufactured and

*Hundred and Forty-fourth Report (8th Lok Sabha) on Paragraph 76 of the Report of the Comptroller and Auditor General of India for the year ended 31 March, 1987, No. 2 of 1988 Union Government (Defence Services).

supplied by the Ordnance Factories to the Army since 1964, was noticed only in 1975. For reasons not very cogent, at this stage the matter was not taken seriously and the defect was sought to be removed by local repairs. When this mode of repair did not prove effective, the Director General Ordnance Services reported the matter to Director General Inspection (now Director General Quality Assurance) in March 1977. The Director General of Inspection attributed the defect to inadequate fusing of welded material between the ammunition body and the lid at the manufacturing stage”.

1.8 In their action taken note the Ministry of Defence (Department of Defence Production and Supplies) have stated as follows:

“The ammunition was received by Army from DGOF from 1966. 1% of the packages of each batch/lot with minimum of 5 and maximum of 10 were taken by DGOS for initial acceptance inspection at the time of receipt and mines were found serviceable. After this initial inspection the mines were not inspected by them upto 2 years from the date of filling (i.e. 1966) as per existing instructions contained in Ammunition Maintenance Instructions for Army Ordnance Service OP/2 series.

Thereafter annual routine inspection of 1% of each batch/lot minimum of 5 and a maximum of 10 were carried out by Army till 1974 and mines were found serviceable. In 1975 annual inspection was carried out by them in which lid opening defect was noticed. The quality of defective ammunition was not alarming as only partial lid opening was detected. Ammunition Technicians of Army Ordnance Corps are trained for repair of defective ammunition and as the defect of partial lid opening was under the purview of repairs, the defective mines were repaired in the depots by fixing with 2 inch adhesive tape. In 1977 it was detected that adhesive tape so applied had started peeling off and the defect of partial lid opening remained. The matter was therefore communicated by them to DGQA in 1977.

No room was there for any one to suspect that there was any defect in the manufacturing process while welding the body and the lid. Body and lid of the same supplier were matched and welded together at a specified temperature and the welded joints were subjected to “pull off” tests at a higher load than specified. In addition to ensure leak proof/leak free joint, the welded components were also subjected to water leakage tests at a specified pressure. These tests were enough to ensure perfect fusion of welding material at the welded joint. The filled/finished mines satisfied qualitative and proof requirements and were issued by OFB to Depots only after acceptance by DGQA”.

1.9 The Committee desired to know as to how the process of removal of the defect by fixing 2 inch adhesive tape was devised and at what level it was approved. The Committee also desired to know the outcome of the

reference made to Director General Quality Assurance (DGQA) in 1977. In their note dated 10th September 1990, the Ministry of Defence (Department of Defence Production) have stated as follows:

“This defect was noticed for the first time and was not considered alarming as there was only a partial lid opening. The defect, being within the purview of local repairs was attended to locally by the Ordnance Depot’s Ammunition Technicians who are competent to undertake such repairs. On receipt of Defect Report by Director General Quality Assurance (DGQA) from the Depot, an Investigation Committee was detailed by them associating the Designer, Armament Research & Development Establishment (ARDE). After detailed investigation, welding procedure adopted by Ordnance Factory was further improved. Ordnance Factory was accordingly to improve the welding techniques on the shop floor. Depots were also advised by DGQA to carry out rewelding of the lids in the depots based on the repair schedule approved by Authority Holding Sealed Particulars (AHSP).”

1.10 In pursuance of the earlier recommendation of the Committee, the Government have issued instructions to all concerned *inter alia* stating that in future, any defect whether minor or major, noticed first time in the newly introduced items would be reported to the Headquarters without any delay. These instructions are contained in the letters at Appendices II and III.

1.11 The Committee are deeply concerned to note that in 1975, when the first defect of lid detachment from the body of the ammunition was noticed, the matter was not taken up seriously. At this stage, the defect was sought to be removed by fixing with 2 inch adhesive tape. Subsequently, it was detected that adhesive tape so applied had started peeling off and the defect of partial lid detachment remained. Thus the lack of serious approach at the initial stage resulted in the wastage of about two years’ time without taking any concrete steps to remove the defect as it was only in 1977 that the matter was reported to the Director General, Quality Assurance. The Committee note that in pursuance of their earlier recommendation, the Government have issued instructions to all concerned, *inter alia* stating that any defect whether minor or major, noticed first time in the newly introduced items would be reported to the Headquarters without any delay. It has also been emphasized that repair/remedial measures should be finalised on priority basis in consultation with ARDE/factories as well as other expert bodies and once a repair schedule is finalised it should be implemented expeditiously by all concerned. The Committee hope that these instructions will be effectively followed both in letter and spirit. The Committee recommend that deterrent action should be taken against those found not following these instructions in future so as to obviate the chances of such recurrence in future.

Delay in repairing the defective ammunition

(Sl. Nos. 5 and 6 Paras 31 and 32)

1.12 Commenting upon the question of delay in repairing the defective ammunition, the Committee had in para 31 of their 144th Report observed as follows:

“The second defect of cracking in the body of the ammunition was reported in March, 1985. Both Central Institute of Plastic Engineering, Madras and National Chemical Laboratory, Pune on carrying out the defect investigations on cracked ammunition had intimated that the used material LDPE was generally susceptible to environmental stress cracking. 100% survey of the ammunition in depots has since been completed by DGOS, as a result of which the cost of the ammunition declared repairable and those declared unserviceable was stated to be of the order of Rs. 598.55 lakhs and Rs. 127.50 lakhs, respectively. The cracked ammunition is proposed to be retrieved by providing the recommended coating. Cracked ammunition so retrieved were subjected to user's trials on 10th And 11th April, 1987 and were found satisfactory. According to the Ministry the cost and time involved in repairing the defective ammunition will be approximately Rs. 197 lakhs and 1½ years, respectively.”

1.13 In their action taken note the Ministry of Defence (Department of Defence Production and Supplies) have stated as follows:

“After carrying out an in-depth study, the technical authorities concluded that the best possible remedy to retrieve the defective ammunition was to repair these mines with FRP coating. After user and technical trials, this method of repair has been found to be satisfactory and also approved by the competent authority in the Army HQrs in 1987. The case was then processed by DGOS for according financial sanction. Due to severe resource crunch the financial sanction to incur the expenditure on weapon has been given only in May, 1989 by Deptt. of Defence vide their letter No. (PC to MF) 33148/QS-6C/2095-B/D(GS IV) dated 8th May, 1989.

In the mean-time, Deptt. of Defence has directed DGQA that the repair of defective mines will be taken up only after all the technical problems have been sorted out in consultation with DRDO and prior concurrence of Integrated Finance obtained regarding rates. Meanwhile, DRDO has subjected some of repaired mines to additional tests which was not carried out earlier. They have made certain observations. These have been discussed and it is planned to improve upon the repair techniques/procedures. For this purpose additional samples have been called and trials have commenced. The outcome of trials will be discussed by DGQA with DRDO, GS Branch and DGOS before finally clearing the repair procedure.”

1.14 About the clearance of the repair procedure, the Ministry of Defence (Department of Defence Production) in their note dated the 6th September, 1990, have stated as follows:

“The matter regarding trails was discussed in the meeting held on 16.2.90 chaired by Addl. Secy (DP&S) in which it has been decided that the entire rejected stock will be repaired by giving the coating, if trial results are found satisfactory. The users trials have since been completed in July, 1990 on the coated repaired samples and results are satisfactory. Army HQs have permitted DGQA to undertake repairs of mines. DGQA have identified trade firms for undertaking the repair. The repair work will be taken up in the Depots where mines are stored. The repair procedure has been approved by ARDE and all concerned agencies.”

1.15 The Ministry were requested to furnish information on the following points:

- (i) Who was responsible for using sub-standard material LDPE in the ammunition?
- (ii) Was the matter investigated to fix responsibility?
- (iii) Was the suitability of material — LDPE examined before using it in the ammunition?

In their note furnished on 6th September, 1990 the Ministry of Defence (Department of Defence Production) have stated as follows:

“The suitability of use of material LDPE for the mine was examined by the designer by laying the mines in desert conditions as a part of exposure trials in the initial stages of production. The property of material of cracking due to environmental stresses and ageing could be known only when the matter was examined by Central Institute of Plastic Engineering, Madras in 1985. A high-powered inquiry Committee has been ordered to fix the responsibility for the loss to the exchequer. The findings of the Committee are awaited.”

1.16 Further emphasising the need for taking urgent steps to repair the costly defective ammunition, the Committee had in Para 32 of their 144th Report recommended as follows:

“It is highly distressing to note that in spite of the fact that ARDE, Pashan had confirmed the technical suitability of the ammunition repaired by coating in September, 1987 no tangible steps have so far been taken to initiate the repair measures. Even the case for obtaining the Ministry's approval in principle for the repair job has not been processed so far. The Committee strongly condemn this lackadaisical approach on the part of the concerned authorities in spite of the operational requirement of the ammunition and also when an exorbitant amount of about Rs. 725.75 lakhs being the cost of the defective ammunition remains indefinitely locked up unused.

The Committee need hardly stress that urgent steps should be taken to repair the costly defective ammunition expeditiously, keeping in view the remaining shelf-life of the defective ammunition. The Committee would like to be apprised of further steps taken in this direction in repairing the defective ammunition and the cost involved in the entire operations.”

1.17 Action taken note furnished by the Ministry of Defence (Department of Defence Production and Supplies) reads as follows:

“Army HQrs were awaiting the results of 100% survey of the mines which became available only in Feb., 1988. The case for repair was then processed by DGOS for according financial sanction. Due to severe resource crunch the financial sanction to incur the repair expenditure has been given only in May, 1989 by Deptt. of Defence. However, that Deptt. has directed DGQA that the repair of defective mines be taken up only after all the technical problems have been sorted out in consultation with DRDO and prior concurrence of Integrated Finance obtained regarding rates. Meanwhile DRDO has subjected some of the repaired mines to additional tests which were not carried out earlier. They have made certain observations. These have been discussed and it is planned to improve upon the repair techniques/procedures. For this purpose, additional samples have been called and trials have commenced. The outcome of trials will be discussed by DGQA with DRDO, GS Branch and DGOS before finally clearing the repair procedure. It is expected that the work of repair is likely to start by October, 1989.”

1.18 The Committee desired to know whether the process of repair of the ammunition has since been completed and if so the date of its completion and the expenditure incurred thereon. In a note dated 10 September, 1990, the Ministry of Defence (Department of Defence Production) have stated as follows:

“The repair work is yet to commence. The repair technique involves extensive testing of Fibre Glass Reinforced Polyster (FRP) coated mines and repeated environmental tests some of which extend upto 21 days. The perfecting of repair procedure is time consuming and great care has to be taken so that the defects do not reappear.

Subsequently, these mines are to be subjected to repeated User trials to locate faults if any. Since repair work was joint responsibility of various agencies viz. ARDE, AHSP, DGQA and DGOS for perfecting repair procedure and evolving successful repair technique, it took considerable time. Hence repair activities could not be commenced by October, 1989.

The repair schedules have since been approved by ARDE, the designer and the AHSP. The user trials on the repaired mines have since been completed in July, 1990 and results are satisfactory.

Army HQrs have permitted DGQA to undertake the repairs of mines. DGQA has ascertained the position of repairable mines in depots for execution of repair work through trade firms.”

1.19 The two major defects of lid detachment from the body and cracking in the body of the ammunition were detected in 1975 and 1985. In September, 1987, ARDE, Pashan had confirmed the technical suitability of the ammunition repaired by coating. The Committee's earlier examination had revealed that the Government failed to take any tangible steps after September, 1987 to initiate the repair measures. In their earlier Report, presented to the Lok Sabha on 5 April, 1989, the Committee had emphasized the need for taking urgent steps to repair the costly ammunition expeditiously. According to the action taken note furnished by the Ministry of Defence, the work of repair was likely to start by October, 1989. The Committee are deeply concerned to note from the information furnished by the Ministry on 10 September, 1990, at their instance that the repair work is yet to commence. Consequently, the operationally required ammunition costing about Rs. 6 crores has been lying unused for a considerably long time apart from the ammunition valuing Rs. 127.50 lakhs since declared unserviceable. In the Committee's view, this inordinate delay is both unpardonable and deplorable. Obviously, any delay would further curtail the useful life of the ammunition. The Committee are also unhappy over the delay in according sanction in May, 1989 to incur the expenditure required for implementing the method of repair which was found to be satisfactory and also approved by the competent authority in the Army Headquarters in 1987. Severe resource crunch has been advanced to be the reason for this delay. The Committee are surprised that resource crunch was allowed to come into the way of repairing ammunition which was already available thus jeopardise the operational requirements of the Army. The Committee cannot but express their severe displeasure at this casual approach on the part of the concerned authorities in such a vital sector like defence and expect that adequate measures are taken to guard against the recurrence of such lapses in future. The Committee would like to stress that immediate steps be taken to repair the defective ammunition without any further delay and its compliance reported to the Committee within three months.

1.20 The Committee note that the Government have appointed a high powered Committee to fix responsibility for the loss to the exchequer in this case. The Committee strongly emphasize the need for early finalisation of the Report by the high powered committee. Report of the high powered Committee and further action taken thereon should be furnished to the Committee within a period of six months.

CHAPTER II

RECOMMENDATIONS AND OBSERVATIONS WHICH HAVE BEEN ACCEPTED BY GOVERNMENT

Recommendation

The Committee find that inspite of the fact that the operational requirements for this ammunition was inescapable the defect of lid detachment from the body was not given the urgency and seriousness it deserved even after March, 1977. A repair schedule was prepared in September, 1978 and repair process was to be tried out after a period of 10 months at an Ordnance Factory in July, 1979. Since the factory could not undertake repair work it was decided by the Ministry in December, 1979 that the repair should be arranged by the Director General Ordnance Services. It was decided at this stage to repair the ammunition by rewelding of the loose/detached lids by PVC welding rods. The repair work was ultimately undertaken only in 1980. The Committee are concerned to note that it took in abnormally long period of about 5 years in commencing this repair work after detection of the defect in 1975. The Committee cannot but deprecate that a matter involving defence preparedness of the country was not treated seriously and earnest efforts do not appear to have been made to solve the problem promptly. The Committee hope that the Government would draw a lesson from this sad experience and gear up their machinery adequately so that such type challenges are met affectively as the country cannot afford to take any chance in items concerning the defence preparedness of the country.

[Sl. No. 2 (Para 10) of Appendix II to 144th report of PAC (8th Lok Sabha)]

Action Taken

The defect of partial lid opening of the mines was first time noticed by DGOS in 1975. As the magnitude of defect was not alarming these mines were repaired and attended to locally by the ammunition technicians of the DGOS, who are trained for repair of ammunition in Depots. This is the normal practice followed in the depots for minor defects.

When the local repairs did not prove effective the matter was referred by DGOS to DGQA for the first time in 1977. DGOS had also carried out 100% inspection of mines held, to assess the magnitude of work involved. As, such type of defects in plastic filled ammunition were noticed for the first time, it required a detailed and thorough analysis of the defects which is a time consuming process. After considering all pros and cons and carrying out trial repairs, the repair schedule for bulk

repairs was prepared by DGQA in 1978. The case was then processed. The delay was mainly due to procedural problems and all concerned are being advised to avoid delays in such matters in future.

[Ministry of Defence (Department of Defence Production) O.M. No. 1(2)/89/D (Prod) dated 28-9-1989]

Recommendation

The ammunition repaired in 1980 again developed the same defect of lid detachment from the body. The first Investigating Committee to go into the causes of the defect of lid detachment from the body and to suggest remedial measures was constituted on 30.4.1981. This Committee found that the main causes of ineffective welding was the existence of improper and insufficient instructions regarding process of repair, use of non-standard apparatus and lack of understanding of important aspects of the welding process. The Committee strongly deplore the lack of seriousness on the part of the concerned authorities as borne out by the findings of the Investigating Committee to ensure proper arrangements for the repair of defective ammunition. The investments Committee recommended that stainless steel non-magnetic clips should be used in the ammunition to strengthen the welded joints of the ammunition body and lid, and that these clips should be provided in repaired ammunition pieces also. The Committee note that rectification of the defect by use of non-magnetic metal clips also did not prove to be a satisfactory arrangement. The Committee would like the Government to take urgent steps to strengthen adequately the implementing and monitoring machinery pertaining to defence store items of sensitive nature so that situations of this type do not recur in future and defence requirements of the country are not adversely affected.

[Sl. No. 3 (Para 15) of Appedix II to 144th Report of PAC 1988-89 (8th Lok Sabha)]

Action Taken

The repair schedule for the welding of the detached lids of mines A/T ND1A was prepared by CQA(A) Kirkee who was the concerned AHSP. Repair work which was spread over various depots, was carried out by DGOS as per repair schedule prepared by CQA(A). The observations made by the Investigating Committee that the defect reappeared even after repairs, due to inadequate care and improper instructions are not borne by the facts. It was established, later, that reappearance of the defect was due to inherent limitation of plastic material (LDPE) which is prone to stress cracking due to ageing.

However, to make the system/procedure fool proof for such jobs, instructions have been issued by DGQA to CQA(A) Kirkee, the concerned AHSP, that whilst preparing such repair schedules in future assistance of sister organisations and renowned institutions in the civil sector of that particular field be also sought which should be backed

up by extensive technical trials to evaluate the repair process instead of finding short term solutions.

[Ministry of Defence (Department of Defence Production) O.M. No. 1(2)/89/D (Prod) dated 14-11-1989]

Recommendation

The Committee are deeply concerned to note that the authorities failed to remove the defect of lid detachment from the body, which was noticed in the ammunition as early as in 1975, inspite of the various repair measures taken from 1980 till March, 1985. As borne out by the findings of both the Investigating Committee constituted in 1981 and 1985, the incidence of reopening of lids of repaired ammunition was due to inadequate care during repairs, which is highly deplorable. It is further distressing to find that while the repeated processes of repair were going on, new ammunition manufactured and supplied also suffered from the same deficiency. The Ministry stated that the production of the ammunition could not in the meantime, be stopped due to its operational requirements. According to the Ministry of Defence, the expenditure involved in carrying out repair activity at the depot was to the tune of Rs. 7,85,157. Further, the cost of surplus material left unuse at the time of suspension of repairs in February 1985 was Rs. 1,42,194. The Committee deprecate that apart from above wasteful expenditure store items worth Rs. 10.42 crores remained unused for a considerably long time which is clearly indicative of faulty planning in a vital matter concerning the defence of the country. It is imperative that the Ministry should draw appropriate lesson from this sad experience and take effective measures in future to avoid gross mis-utilisation of meagre resources of the country.

[Sl. No. 4 (Para 23) of Appendix II to 144th Report of the PAC 1988-89 (8th Lok Sabha)]

Action Taken

The finding of the investigations committee were based on limited information as later on it was established that the specified material (LDPE) is prone to stress cracking and therefore even the repaired mines exhibited defect of separation of lids.

Repair of Mines with detached lids had to be suspended when the defect of cracking Mines came to light in 1985. It was felt that repair of both defects, should be carried out simultaneously. Some of surplus material such as welding rods will now be utilised for joining partially opened lids prior to FRP coating repair.

Instructions have been issued by DGQA to the concerned AHSP that henceforth whilst preparing such repair schedule, assistance of sister organisations and the renowned institutions in the field should also be sought which should be backed up by extensive technical trials to evaluate the repair process instead of finding short term solutions.

[Ministry of Defence (Department of Defence Production) O.M. No. 1(2)/89/D (Prod) dated 14-9-1989]

CHAPTER III

RECOMMENDATIONS AND OBSERVATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN THE LIGHT OF THE REPLIES RECEIVED FROM GOVERNMENT,

Recommendation

The Technical Group was constituted on 22 August 1986. This technical group held its first meeting on 29 Nov. 1986. It is regrettable that the second meeting of this Group for consideration of a very important and serious matter was held only after a period of more than one year on 8th December 1987. The Minutes of these two meetings were circulated to all concerned on 27th January 1987 and 18 Mar. 1988 respectively. In the opinion of the Committee the above situation reflects very poorly on the working of the Defence Ministry in the matter as vital as the Defence preparedness of the country.

[Sl. No. 7 (Para 36) of Appendix II to 144th Report of PAC (8th Lok Sabha)]

Action Taken

Department of Defence has mentioned that there was a gap of more than one year between two meetings of the Technical Group as 100% survey of the ammunition was being carried out by the agencies concerned viz. DGOS and DGQA. The second meeting of the Technical Group was to be held after the results of this survey were available. It was initially expected that the survey would be completed by August 1987, but it was realised that the survey would take more time, the General Staff Branch of the Army HQ decided to hold the second meeting of the Technical Group on 8th December 1987. The second meeting of the Technical Group should have been held in February 1988 when the 100% survey was completed. Thus, no delay took place in holding the second meeting of the Technical Group.

Regarding the delay in the issue of the minutes, necessary instructions have been issued to Army HQ by Deptt of Defence to ensure that the minutes of meetings are issued soon after the meeting is over. A copy of these instructions is enclosed (Annexure).

[Ministry of Defence (Department of Defence Production) O.M. No. 1(2)/89/D (Prod) dated 28-9-1989]

ANNEXURE

No. 10(8) 88-D (GS.IV.)
Govt. of India,
Ministry of Defence,
New Delhi the 1st Sept., 1989

To

The Vice Chief of Army Staff,
New Delhi.

Sir,

I am directed to state that the Public Accounts Committee has recently observed a case in which the minutes of an important meeting were issued very belatedly. As a result the required action could not be initiated in time. It has been observed by the PAC that such delays reflect poorly on the working of Govt. offices in matters vital to the Defence of the country. Govt. share the misgivings of PAC and feel that such delays must in future be sternly viewed.

2. It is requested therefore, that suitable instructions may kindly be issued to all concerned in the Army HQrs to ensure that the minutes of the meetings in the Army HQrs are circulated soon after the meetings in the Army HQrs are circulated soon after the meetings are held so that necessary action required on the minutes could be initiated by all concerned without any loss of time.

Yours faithfully,

Sd/-
(T.K. Banerji)
Joint Secretary (O)

CHAPTER IV

RECOMMENDATIONS AND OBSERVATIONS REPLIES TO WHICH HAVE NOT BEEN ACCEPTED BY THE COMMITTEE AND WHICH REQUIRE REITERATION

Recommendation

The Committee note that the first defect of lid detachment from the body of the ammunition which was being manufactured and supplied by the Ordnance Factories to the Army since 1964, was noticed only in 1975. For reasons not very cogent, at this stage the matter was not taken up seriously and the defect was sought to be removed by local repairs. When this mode of repair did not prove effective, the Director General Ordnance Services reported the matter to Director General Inspection (now Director General Quality Assurance) in March, 1977. The Director General of Inspection attributed the defect to inadequate fusing of welded material between the ammunition body and the lid at the manufacturing stage.

[Sl. No. 1 (Para 9) of Appendix II to 144th Report of PAC (1988-89) (8th Lok Sabha)]

Action Taken

The ammunition was received by Army from DGOF from 1966. 1% of the packages of each batch/lot with minimum of 5 and maximum of 10 were taken by DGOS for initial acceptance inspection at the time of receipt and mines were found serviceable. After this initial inspection the mines were not inspected by them upto 2 years from the date of filling (i.e. 1966) as per existing instructions contained in Ammunition Maintenance Instructions for Army Ordnance Service OP/2 series.

Thereafter annual routine inspection of 1% of each batch/lot minimum of 5 and a maximum of 10 were carried out by Army till 1974 and mines were found serviceable. In 1975 annual inspection was carried out by them in which lid opening defect was noticed. The quality of defective ammunition was not alarming as only partial lid opening was detected. Ammunition Technicians of Army Ordnance Corps are trained for repair of defective ammunition and as the defect of partial lid opening was under the purview of repairs, the defective mines were repaired in the depots by fixing with 2 inch adhesive tape. In 1977 it was detected that adhesive tape so applied had started peeling off and the defect of partial lid opening remained. The matter was therefore communicated by them to DGQA in 1977.

No. room was there for any one to suspect that/there was any defect in the manufacturing process while welding the body and the lid. Body & lid of the same supplier were matched and welded together at a specified temperature and the welded joints were subjected to "pull off" tests at a

higher load than specified. In addition to ensure leak proof/leak free joint, the welded components were also subjected to water leakage tests at a specified pressure. These tests were enough to ensure perfect fusion of welding material at the welded joint. The filled/finished mines satisfied qualitative and proof requirements and were issued by OFB to Depots only after acceptance by DGQA.

[Ministry of Defence (Department of Defence Production) O.M. No. 1(2)/89/D (Prod) dated 14-9-1989]

Recommendations

The second defect of cracking in the body of the ammunition was reported in March 1985. Both Central Institute of Plastic Engineering, Madras and National Chemical Laboratory, Pune on carrying out the defect investigations on cracked ammunition had intimated that the used material LDPE was generally susceptible to environmental stress cracking. 100% survey of the ammunition in depots has since been completed by DGOS, as a result of which the cost of the ammunition declared repairable and those declared unserviceable was stated to be of the order of Rs. 598.55 lakhs and Rs. 127.50 lakhs, respectively. The cracked ammunition is proposed to be retrieved by providing the recommended coating. Cracked ammunition so retrieved were subjected to user's trials on 10th and 11th April, 1987 and were found satisfactory. According to the Ministry the cost and time involved in repairing the defective ammunition will be approximately Rs. 197 lakhs and 1½ years, respectively.

[Sl. No. 5 (Para 31) of Appendix II to 144th Report of PAC (8th Lok Sabha)]

Action Taken

After carrying out an in-depth study, the technical authorities concluded that the best possible remedy to retrieve the defective ammunition was to repair these mines with FRP coating. After user and technical trials, this method of repair has been found to be satisfactory and also approved by the competent authority in the Army HQrs in 1987. The case was then processed by DGOS for according financial sanction. Due to severe resource crunch the financial sanction to incur the expenditure on weapon has been given only in May, 1989 by Deptt. of Defence vide their letter No. (PC to IF) 33148/CS-6C/2095-B/D (GS.IV) dated 8th May, 1989.

2. In the mean-time, Deptt. of Defence has directed DGQA that the repair of defective mines will be taken up only after all the technical problems have been sorted out in consultation with DRDO and prior concurrence of Integrated Finance obtained regarding rates. Meanwhile, DRDO has subjected some of the repaired mines to additional tests which was not carried out earlier. They have made certain observations. These have been discussed and it is planned to improve upon the repair techniques/procedures. For this purpose additional samples have been called and trials have commenced the outcome of trials will be discussed by DGQA with DRDO, GS Branch and DGOS before finally clearing the repair procedure.

[Ministry of Defence (Department of Defence Production) O.M. No. 1(2)/89/D (Prod) dated 28-9-1989]

Recommendation

It is highly distressing to note that in spite of the fact that ARDE, Rashan had confirmed the technical suitability of the ammunition repaired by coating in September 1987 no tangible steps have so far been taken to initiate the repair measures. Even the case for obtaining the Ministry's approval in principle for the repair job has not been processed so far. The Committee strongly condemn this lackadaisical approach on the part of the concerned authorities in spite of the operational requirement of the ammunition and also when an exorbitant amount of about Rs. 725.75 lakhs being the cost of the defective ammunition remains indefinitely locked up unused. The Committee need hardly stress that urgent steps should be taken to repair the costly defective ammunition expeditiously, keeping in view the remaining shelf-life of the defective ammunition. The Committee would like to be apprised of further steps taken in this direction in repairing the defective ammunition and the cost involved in the entire operations.

[Sl. No. 6 (Para 32) of Appendix II to 144th Report of PAC (8th Lok Sabha)]

Action Taken

Army HQrs were awaiting the results of 100% survey of the mines which became available only in Feb. 1988. The case for repair was then processed by DGOS for according financial sanction. Due to severe resource crunch the financial sanction to incur the repair expenditure has been given only in May 1989 by Deptt. of Defence. However, that Deptt. has directed DGQA that the repair of defective mines be taken up only after all the technical problems have been sorted out in consultation with DRDO and prior concurrence of Integrated Finance obtained regarding rates. Meanwhile DRDO has subjected some of the repaired mines to additional tests which were not carried out earlier. They have made certain observations. These have been discussed and it is planned to improve upon the repair techniques/procedures. For this purpose, additional samples have been called and trials have commenced. The outcome of trials will be discussed by DGQA with DRDO, GS Branch and DGOS before finally clearing the repair procedure. It is expected that the work of repair is likely to start by October 1989.

[Ministry of Defence (Department of Defence Production) O.M. No. 1(2)/89/D (Prod) dated 28-9-1989]

CHAPTER V

RECOMMENDATIONS AND OBSERVATIONS IN RESPECT OF WHICH GOVERNMENT HAVE FURNISHED INTERIM REPLIES

Recommendation

The Committee are shocked to note that out of the 9 suppliers of empty bodies between 1980 and 1984 firm A has supplied upto 58.6% only under the category of serviceable pieces, firm B has supplies upto 75.8% and firm D upto 80.5%. If as intimated to the Committee, the quality checks on release of raw materials before consumption and scrutiny of the supplies at the time of taking delivery at the Ordnance Factories were as efficient as is required to be, the Committee wonder how a substantially large number of defective pieces were procured during 1980 to 1984 particularly from the 3 firms mentioned above. The Committee are convinced that lack of quality checks and failure to enforce the prescribed standards had resulted in acquisition of a large number of bad stock over the years, requiring further expenditure on repairs. The Committee recommend that the entire issue as to the observance of the prescribed procedures should be examined by an independent Committee and responsibility fixed for the substantial loss that occurred to the exchequer due to apparent failures in performance of the prescribed duties by some of the concerned officers.

[Sl. No. 8 (Para 42) of Appendix II to 144th Report of
PAC 1988-89 (8th Lok Sabha)]

Action taken

As recommended by the Public Accounts Committee an Independent Committee was appointed on 13.7.89. Its report is awaited.

[Ministry of Defence (Department of Defence Production)
O.M.No. 1(2)/89/D(Prod) dated 14-9-1989]

NEW DELHI;
January 24, 1991
Magha 4, 1912 (S)

SONTOSH MOHAN DEV
Chairman,
Public Accounts Committee

APPENDIX I

(Vide para 1.2)

*Statement showing classification of action taken notes
received from Government.*

- (i) Recommendations and observations which have been accepted by Government:
Sl. Nos. 2, 3 and 4
 - (ii) Recommendations and observations which the Committee do not desire to pursue in the light of the replies received from Government:
Sl. No. 7
 - (iii) Recommendations and observations replies to which have not been accepted by the Committee and which require reiteration:
Sl. Nos. 1, 5 and 6
 - (iv) Recommendations and observations in respect of which Government have furnished interim replies:
Sl. No. 8
-

APPENDIX II

Directorate General of Ordnance Fys
Master General of the Ord. Br. (OS-6C)
Army Headquarters
DHQ PO New Delhi-110001

33148/OS-6C(i)

14 May 1990

MGs AOC
HQ Southern Command
HQ Eastern Command
HQ Western Command
HQ Northern Command
HQ Central Command

DEFECT IN MINE A/TK ND 1A-REPORT OF THE PAC ON PARA-76 OF THE REPORT OF C&AG FOR THE YEAR ENDING 31ST MARCH, 1987

MGs AOC are aware of the case relating to repair of huge qtls of the subject mine in our depots. The subject amount introduced into service in 1966. During the routine annual inspection no defect was noticed till 1974. However, in 1975 a defect of partial lid separation from the body was noticed by one of our depots. This defect was termed RMI (is repairable minor) and repairs were carried out by application of adhesive tape. However, due to inherent manufacturing and material defects the problem propagated into a major defect and the adhesive tape so applied started peeling off. Not only the defect of partial lid opening persisted but the bodies of mines in some cases also started cracking.

2. The Public Accounts Committee has pointed out that the defect was not taken seriously at the initial stage which has resulted in a huge loss to the State and the PAC has directed that remedial measures should be taken and instructions be issued to all concerned to ensure that such lapses are not repeated.

3. In view of the above, MGs AOC are requested to issue necessary instructions to the depots under their jurisdiction that in future, any defect whether minor or major, noticed first time in the newly introduced items will be reported to this HQ without any delay. A copy of such report will also be endorsed to the concerned AHSP i.e. the DGQA (Arm).

Please ack.

Sd/-
(AS Sehrawat)
Col
Dir (OS Amn)

APPENDIX III

Government of India
Ministry of Defence
Deptt. of Defence Production (DGQA)
Dte of Quality Assurance
DHQ PO New Delhi-110011

No. 87460/DGQA (Arm-5)

21 Dec. 1989

To

The Controller
Controllerate of Quality Assurance (Amn)
Kirkee, Pune-411 003

The Controller,
Controllerate of Quality Assurance (ME)
Audh Road, Kirkee, Pune-411 004

REPAIR OF DEFENCE STORE : AMMUNITION

In one of the recent cases, the Public Accounts Committee has highlighted that even though the defect in an ammunition item was first noticed in 1975 and confirmed in 1977, yet the urgency and seriousness it deserved was not given. As a result the repair schedule was prepared in 1978 followed by trials in 1979 and repair was ultimately undertaken in 1980. The Committee had commented adversely on such a delay and advised that a proper lesson should be drawn from such an experience and the machinery should be adequately geared up to take corrective action speedily.

2. In view of the above, it is essential that suitable instructions are issued by you to all concerned establishments and officers at your Controllerate so that the defects when noticed are taken seriously and reported to the concerned higher authorities promptly for technical investigation. Repair/remedial measures should be finalised on priority in consultation

with APDE/factories as well as other expert bodies. Once a repair schedule is finalised it should be implemented expeditiously by all concerned.

Sd/-
(HARBANS SINGH)
Brig.
Offg. DQA (Arm)
For Dir of Quality Assurance
(Armaments)

Copy to :

SQAO

Sr. Quality Assurance Estt (Armts) Kirkee-411 003

SQAO

Sr. Quality Assurance Estt. (Armts) Khamaria-482 005

QAO

Quality Assurance Estt (Armts) Chanda-442 501

QAO

Quality Assurance Estt (Armts) Varangaon-425 308

APPENDIX IV

CONCLUSIONS AND RECOMMENDATIONS

| Sl. No. | Para No. | Ministry/ Department concerned | Conclusion/Recommendation |
|---------|----------|---|--|
| 1 | 2 | 3 | 4 |
| 1 | 1.3 | Defence (Department of Defence Production and Supplies) | The Committee hope that final reply to the recommendation contained in para 42 in respect of which only interim reply has so far been furnished will be expeditiously submitted after getting it vetted by Audit. |
| 2 | 1.11 | Defence (Department of Defence Production and Supplies) | The Committee are deeply concerned to note that in 1975, when the first defect of lid detachment from the body of the ammunition was noticed, the matter was not taken up seriously. At this stage, the defect was sought to be removed by fixing with 2 inch adhesive tape. Subsequently, it was detected that adhesive tape so applied had started peeling off and the defect of partial lid detachment remained. Thus the lack of serious approach at the initial stage resulted in the wastage of about two years' time without taking any concrete steps to remove the defect as it was only in 1977 that the matter was reported to the Director General, Quality Assurance. The Committee note that in pursuance of their earlier recommendation, the Government have issued instructions to all concerned, <i>inter alia</i> stating that any defect whether minor or major, noticed first time in the newly introduced items would be reported to the Headquarters without any delay. It has also been emphasized that repair/remedial measures should be finalised on priority basis in consultation |

| 1 | 2 | 3 | 4 |
|---|------|---|---|
| 3 | 1.19 | Defence (Department of Defence Production and Supplies) | <p>with ARDE-factories as well as other expert bodies and once a repair schedule is finalised it should be implemented expeditiously by all concerned. The Committee hope that these instructions will be effectively followed both in letter and spirit. The Committee recommend that deterrent action should be taken against those found not following these instructions in future so as to obviate the chances of such recurrence in future.</p> <p>The two major defects of lid detachment from the body and cracking in the body of the ammunition were detected in 1975 and 1985. In September, 1987, ARDE, Pashan had confirmed the technical suitability of the ammunition repaired by coating. The Committee's earlier examination had revealed that the Government failed to take any tangible steps after September, 1987 to initiate the repair measures. In their earlier Report, presented to the Lok Sabha on 5 April, 1989, the Committee had emphasized the need for taking urgent steps to repair the costly ammunition expeditiously. According to the action taken note furnished by the Ministry of Defence, the work of repair was likely to start by October, 1989. The Committee are deeply concerned to note from the information furnished by the Ministry on 10 September, 1990, at their instance that the repair work is yet to commence. Consequently, the operationally required ammunition costing about Rs. 6 crores has been lying unused for a considerably long time apart from the ammunition valuing Rs 127.50 lakhs since declared unserviceable. In the Committee's view, this inordinate delay is both unpardonable and deplorable. Obviously, any delay would further</p> |

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curtail the useful life of the ammunition. The Committee are also unhappy over the delay in according sanction in May 1989 to incur the expenditure required for implementing the method of repair which was found to be satisfactory and also approved by the competent authority in the Army Headquarters in 1987. Severe resource crunch has been advanced to be the reason for this delay. The Committee are surprised that resource crunch was allowed to come into the way of repairing ammunition which was already available thus jeopardise the operational requirements of the Army. The Committee cannot but express their severe displeasure at this casual approach on the part of the concerned authorities in such a vital sector like defence and expect that adequate measures are taken to guard against the recurrence of such lapses in future. The Committee would like to stress that immediate steps be taken to repair the defective ammunition without any further delay and its compliance reported to the Committee within three months.

1.20 Defence (De-
partment of
Defence Pro-
duction and
Supplies)

The Committee note that the Government have appointed a high-powered Committee to fix responsibility for the loss to the exchequer in this case. The Committee strongly emphasize the need for early finalisation of the Report by the high powered Committee. Report of the high powered Committee and further action taken thereon should be furnished to the Committee within a period of six months.

PART II

MINUTES OF THE 5TH SITTING OF THE PUBLIC ACCOUNTS COMMITTEE HELD ON 31ST JULY, 1990 IN COMMITTEE ROOM NO. 50, PARLIAMENT HOUSE

The Committee sat from 1500 hrs. to 1730 hrs.

PRESENT

Shri Sontosh Mohan Dev—*Chairman*

MEMBERS

2. Shri G.M. Banatwalla
3. Shri Nirmal Kanti Chatterjee
4. Shri P. Chidambaram
5. Shri Mallikarjun
6. Prof. Gopalrao Mayekar
7. Shri Kailash Meghwal
8. Shri Shantilal Purushottamdas Patel
9. Shri Janardhana Poojary
10. Shri Amar Roypradhan
11. Shri T.R. Balu
12. Shri H. Hanumanthappa
13. Shri Sunil Basu Ray
14. Shri Vishvjit P. Singh
15. Shri Rameshwar Thakur

SECRETARIAT

Shri G.S. Bhasin—*Deputy Secretary*

REPRESENTATIVES OF AUDIT

- | | |
|--------------------------|---|
| 1. Shri R. Parameshwar | — Dy. C&AG |
| 2. Shri S. Sounderrajan | — Addl. Dy. C&AG |
| 3. Shri S.B. Krishnan | — Pr. Director (Reports) |
| 4. Shri T. Sethumadhawan | — Pr. Director (Direct Taxes) |
| 5. Shri K. Krishnan | — Director (Direct Taxes) |
| 6. Shri K. Jayraman | — Dy. Director (Rlys.) |
| 7. Shri A.K. Menon | — Director General of Audit, Defence Services |
| 8. Shri Baldev Rai | — Pr. Director of Audit, Air Force & Navy |
| 9. Shri R.P. Singh | — Director (Reports) Office of DGA DS, New Delhi |

2. *** *** ***

3. The Committee, then took up consideration of draft Report on action

taken on 144th Report of PAC (8th LS) regarding Defective Ammunition. After some discussion the Committee decided that consideration of the report might be deferred and some further information might be called for from the Ministry in respect of the recommendations at Sl. Nos. 1 and 6 on receipt of which the draft report might be suitably modified, if necessary.

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|----|-----|-----|-----|
| 4. | *** | *** | *** |
| 5. | *** | *** | *** |
| 6. | *** | *** | *** |

The Committee then adjourned.

MINUTES OF THE 19TH SITTING OF THE PUBLIC ACCOUNTS
COMMITTEE HELD ON 11.1.1991 IN COMMITTEE ROOM 'C'
PARLIAMENT HOUSE ANNEXE

The Committee sat from 1500 hrs. to 1600 hrs.

PRESENT

Shri Sontosh Mohan Dev—*Chairman*

MEMBERS

2. Shri Mallikarjun
3. Shri Manjay Lal
4. Shri Kailash Meghwal
5. Shri M.S. Pal
6. Shri Ajit Kumar Panja
7. Shri Janardhana Poojary
8. Shri H. Hanumanthappa
9. Shri Sunil Basu Ray
10. Dr. Nagen Saikia
11. Shri Vishvjit P. Singh
12. Shri Rameshwar Thakur
13. Shri A.N. Singh Deo

SECRETARIAT

1. Shri G.L. Batra — *Joint Secretary*
2. Shri G.S. Bhasin — *Director, PAC*
3. Shri B.S. Johar — *Under Secretary*
4. Shri K.C. Shekhar — *Assistant Director*

REPRESENTATIVES OF AUDIT

1. Shri S. Soundararajan — *ADAI*
2. Shri S.B. Krishnan — *Principal Director*
3. Shri A.K. Menon — *DG Defence Audit*
4. Shri V.A. Mahajan — *DG Telecom Audit*
5. Shri D.S. Iyer — *DG (ESM)*
6. Shri T. Sethumadhavan — *Principal Director*
7. Shri K. Krishnan — *Director*
8. Mrs. Ajanta Dayalun — *Director*
9. Mrs. Sudershana Talpatra — *Director*

2. The Committee considered the following draft Reports and adopted the same subject to certain modifications and amendments as indicated in

*Annexures I-II.

- | | | | |
|-------|---|-----|-----|
| (i) | *** | *** | *** |
| (ii) | Draft Report on Action Taken on the 144th Report of PAC (8th LS) re: Defective Ammunition. | | |
| (iii) | *** | *** | *** |
| (iv) | *** | *** | *** |

3. The Committee authorised the Chairman to finalise these draft Reports in the light of verbal changes and minor modifications/amendments arising out of factual verification by the audit and present the reports to the House.

| | | | |
|----|-----|-----|-----|
| 4. | *** | *** | *** |
| 5. | *** | *** | *** |

The Committee then adjourned.

ANNEXURE II

AMENDMENTS/MODIFICATIONS MADE BY THE PUBLIC
ACCOUNTS COMMITTEE IN THEIR DRAFT REPORT ON ACTION
TAKEN ON THEIR 144TH REPORT, 8TH LOK SABHA, RELATING
TO DEFECTIVE AMMUNITION

| <i>Page</i> | <i>Para</i> | <i>Line</i> | <i>For</i> | <i>Read</i> |
|-------------|-------------|-------------|-----------------|----------------------------------|
| 14 | 1.20 | Last line | at the earliest | within a period of six months |

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| Sl. No. | Name of Agent | Sl. No. | Name of Agent |
|-----------------------|--|----------------------|---|
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| 2. | M / s. Crown Book Depot, Upper Bazar, Ranchi (Bihar). | 13. | M / s. Manimala, Buys & Sells, 123, Bow Bazar Street, Calcutta-1 |
| GUJARAT | | DELHI | |
| 3. | The New Order Book Company, Ellis Bridge, Ahmedabad-380006. (T. No. 79065). | 14. | M / s. Jain Book Agency, C-9, Connaught Place, New Delhi. (T. No. 351663 & 350806) |
| MADHYA PRADESH | | 15. | M / s. J. M. Jaina & Brothers, P. Box 1020, Mori Gate, Delhi-110006. (T. No. 2915064 & 230936). |
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| MAHARASHTRA | | 17. | M / s. Bookwell, 2 / 72, Sant Nirankari Colony, Kingsway Camp, Delhi-110009. (T.No. 7112309). |
| 5. | M / s. Sunderdas Gian Chand, 601, Girgaum Road, Near Princes Street, Bombay-400002. | 18. | M / s. Rajendra Book Agency IV-DR59, Lajpat Nagar, Old, Double Storey, New Delhi-110024. (T. No. 6412362 & 6412131). |
| 6. | The International Book Service, Deccan Gymkhana, Poona-4. | 19. | M / s. Ashok Book Agency, BH-82, Poorvi Shalimar Bagh, Delhi-110033. |
| 7. | The Current Book House, Maruti Lane, Raghunath Dadaji Street, Bombay-400001. | 20. | M / s. Venus Enterprises, B-2 / 85, Phase-II, Ashok Vihar, Delhi. |
| 8. | M / s. Usha Book Depot, 'Law Book Seller and Publishers' Agents Govt. Publications 585, Chira Bazar Khan House, Bombay-400002. | 21. | M / s. Central News Agency Pvt. Ltd., 23 / 90, Connaught Circus, New Delhi- 110001. (T. No. 344448, 322705, 344478 & 344508). |
| 9. | M&J Services, Publisher, Representative Accounts & Law Book Sellers, Mohan Kunj, Ground Floor 68, Jyotiba Fuele Road, Nalgaum-Dadar, Bombay-400014. | 22. | M / s. Amrit Book Co., N-21, Connaught Circus, New Delhi. |
| 10. | Subscribers Subscription Services India, 21, Raghunath Dadaji Street, 2nd floor, Bombay-400001. | 23. | M / s. Books India Corporation Publishers, Importers & Exporters, L-27, Shastri Nagar, Delhi-110052. (T. No. 269631 & 714465). |
| TAMIL NADU | | 24. | M / s. Sangam Book Depot, 4378 / 4B, Murari Lal Street, Ansari Road, Darya Ganj, New Delhi-110002. |