

Chapter 2: DRY RATIONS

Audit Objective:

To assess whether

- **the system of provisioning ensured realistic estimation of requirement.**
- **Procurement was conducted to ensure timely availability of the required quantity of quality ration.**

2.1 Provisioning of Dry rations

Provisioning is the process of estimation of the annual demand for rations, for which procurement action is taken. In view of the large feeding strength, the vast geographical spread of the Army and centralized system of procurement coupled with limited shelf life of dry rations, correct estimation of requirement is a challenging but important



Volume of Rations is very high.

task. Since bulk contracts are executed by the APO for supply of dry rations based on the agreed levels of annual demands and thereafter, quantities are released to the Commands for which payments are released centrally, realistic provisioning becomes extremely important from the point of view of inventory management. Unrealistic provisioning can lead to over-provisioning, which in turn causes wastage. Under-provisioning, on the other hand, results in short supply of rations to the troops. Such provisioning depends on three critical factors namely opening balance including Dues-in, feeding strength, and estimated dues-out based on laid down scales of rations.

Ministry of Defence (Finance) laid down Standard Operating Procedures (SOPs) in December 2003, for Provision Review and Quantity Vetting for procurement through Army Purchase Organisation. In terms of these, the primary parameter for provisioning is the feeding strength which is calculated at 5/6th level of posted strength. 1/6th of the posted strength is not taken into account as army personnel are allowed two months' annual leave. The other inputs taken into account by the Area / Command HQ while preparing the demand are enumerated below.

- (a) Scales of rations as authorised by relevant Government and Army instructions;
- (b) Number of issues authorised;
- (c) Estimated assets on ground as on 31 March i.e. opening balance for the ensuing year;
- (d) Consumption figures for the last three years; and
- (e) Estimated payment issue requirement, if any.

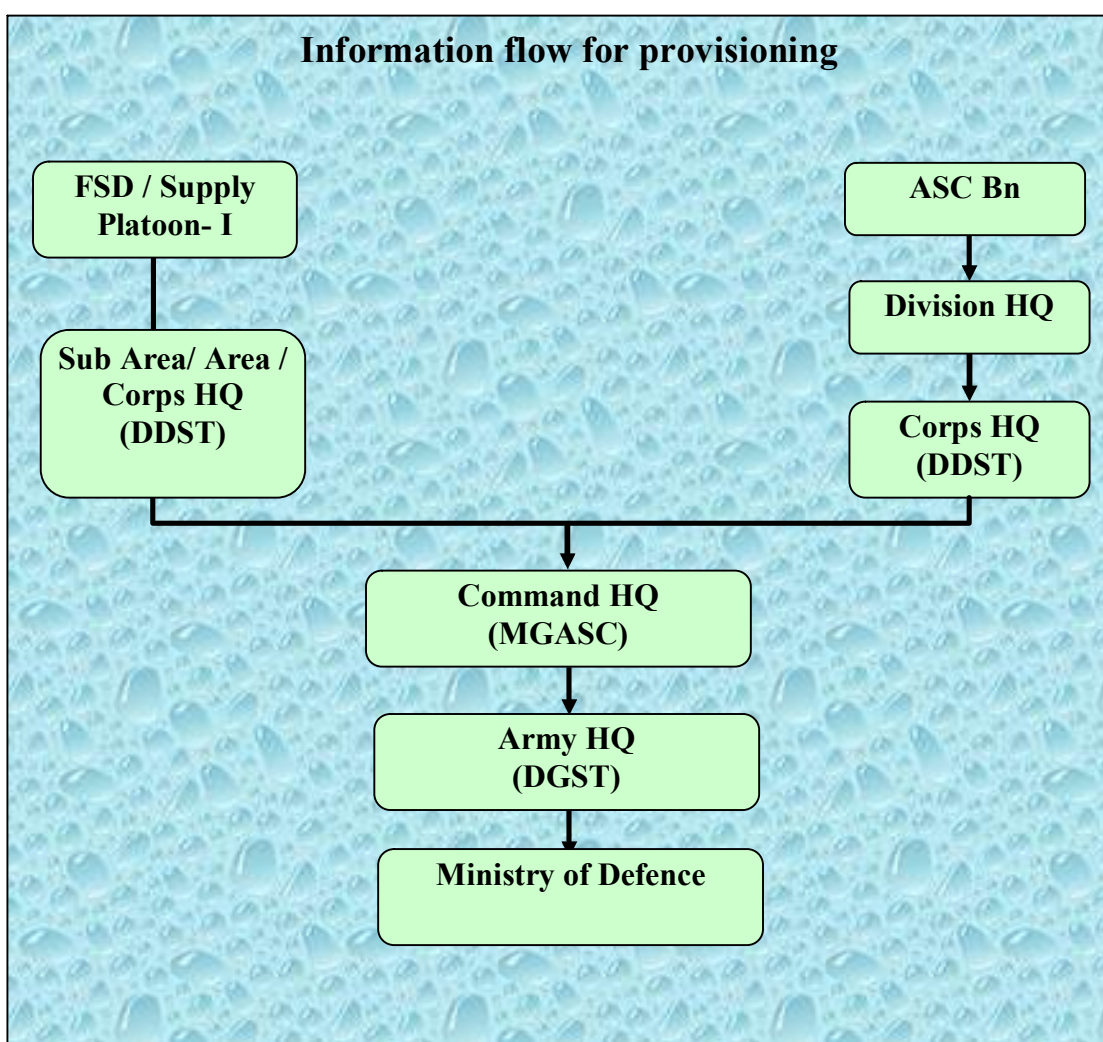
The annual demands are compiled at the Command level by generating the Stock Return and Demand Statement (SRDS) from similar returns received from the lower echelons. The demands reflected in the SRDS take into account the feeding strength, scales of rations, opening balance and dues-in requirements.

The SOPs also prescribe the schedule for various stages to be observed for timely completion of the provisioning process. The time frame requires the Command HQ to submit the Stock Return and Demand Statement (SRDS) to DGST by 31 May for provisioning for the next year. The DGST is required to validate the correctness of the demands and scrutinize the same to ensure that all the requisite inputs have been furnished by the Commands. The demand statements received from Commands are to be compiled to make a proposal separately for dry items and tinned rations. Additional quantity on account of the following eventualities is also catered for by the DGST, over and above the requirements projected by the Commands as per the normal formula:

- (a) Cushion on account of time required in inspection, analysis and verdict by CFL and transit from place of tendering to consignee depot;
- (b) Three months Advance Winter Stocking (AWS) in Northern Command beyond normal consumption year (April to March) to cater for road closure/transit up to June; and

(c) Crushing/grinding refraction loss in case of wheat.

The DGST then projects the annual requirement of rations by 20 July to the Ministry for concurrence. Feeding strength statement of Army, Air Force, Navy and Paramilitary Forces along with consumption figures statement for preceding year are submitted with the proposal. The Ministry is required to concur with the proposal by 20 August, which is followed by approval of quantity for each item by the competent financial authority (CFA). Chart indicating the flow of information/data for provisioning of dry rations from Supply Depot to the Ministry is given below:



Indents are then placed for the required quantities on the agencies concerned for procurement.

Provisioning was done on normative basis

During audit, we found little evidence of seamless implementation of the laid down procedures. In fact we noticed differences in the estimation of annual requirement of dry rations at all levels i.e. Command HQ, the Army HQ and the Ministry. Different quantities were worked out by different agencies using different figures of the feeding strength of the troops and more importantly of the opening balance. The final requirement, on which procurement action was taken, was arrived after discussion and mutual agreement between the DGST and the Ministry. Scales of rations are laid down and data relating to opening balance and feeding strength is verifiable. Yet, critical data like feeding strength and opening balance, on the basis of which the provisioning was done, varied at different levels and was thus exposed to the risk of over or under provisioning. Scrutiny by Audit indicated more of excess provisioning than under provisioning. The discrepancies noticed in the provisioning process are discussed in the following paragraphs:

The annual requirement of dry rations projected by the three Commands to the DGST was significantly different from the demand worked out after consolidation of the SRDS received from the lower echelons under its control. Significant variations in respect of the items selected by Audit are given in Table 3:

Table-3
Variation in the quantities worked out and quantities projected by the Commands

Year	Item	Command	Qty (in MT) Worked out by lower echelons	Qty (in MT) projected by Commands to DGST	Variation (in per cent)
1	2	3	4	5	6
2005-06	Rice	Western	18914	22000	+16
2006-07	Rice	Northern	49386	40000	-19
2007-08	Rice	Northern	32583	40000	+23
2006-07	Wheat	Western	24124	22000	-9
2006-07	Dal	Northern	13949	11000	-21
2005-06	Sugar	Eastern	6271	8483	+35
2007-08	Sugar	Northern	11006	13000	+18
2007-08	Sugar	Eastern	8806	10365	+18
2007-08	Edible Oil	Northern	7350	12000	+63
2006-07	Tea	Northern	1676	1300	-22
2007-08	Tea	Northern	1058	1300	+23
2005-06	MMF	Northern	378	560	+48
2006-07	MMF	Northern	927	600	-35
2006-07	Jam	Northern	681	400	-41
2006-07	Jam	Western	122	175	+43

During audit, we could not find any consistent pattern to such differences nor was it explained to us. In case of Edible Oil the quantities projected to the DGST exceeded the combined demands by as much as 63 per cent, while the projected demand for jam was less than the combined demands by 41 per cent.

Despite the elaborate exercise at the Command level, the DGST at Army HQ independently worked out the requirements of dry rations based on the posted strength of troops obtained from the manpower planning (MP) Directorate of Army HQ. There were, again, significant differences between the quantities demanded by the Commands and the requirements determined by the DGST. For instance, the requirement of wheat determined by DGST in 2005-06 was 162469 MT against the aggregated demand of 124934 MT of all the Commands i.e., 37,535 MT in excess. On the other hand, the requirement of sugar determined by the DGST in 2007-08 was 17,712 MT short of the combined demand projected by the Commands. The position is given in Table 4.

Table-4

Quantities demanded by all Command HQs and quantity worked out by Army HQ

Item	Demand for net quantities projected by (in MT)								
	2005-06			2006-07			2007-08		
	Commands	AHQ	Percentage Variation	Commands	AHQ	Percentage Variation	Commands	AHQ	Percentage Variation
Atta/Wheat	124934	162469	30	142000	142309	0.2	144246	141840	-2
Rice	137342	131829	-4	139620	128546	-8	129702	129077	-0.5
Sugar	49921	51024	2	46097	42973	-7	51451	33739	-34
Dal	40286	42685	6	38512	37929	-2	44633	40540	-9
Tea	4027	5388	34	4349	NA	NA	4092	4294	5
Oil	34122	37648	10	35194	32387	-8	34298	35070	2
Jam Tinned	997	1020	2	1140	1199	5	976	765	-22
MMF	3512	3474	-1	4200	4137	-2	3287	3079	-6

When the total annual requirement determined by DGST was finally proposed to the Ministry for approval, the Ministry calculated the requirement on its own using the posted strength as furnished by the MISO (Management Information System Organization) as input. The total annual requirement for dry rations was finally arrived at through discussion between the Ministry and the DGST. It was observed in audit that the requirement finally projected by the Army HQ was always far in excess of requirement calculated by the Ministry and in most of the cases, the demand that was finally agreed was closer to the demand estimated by the Ministry as shown in table below:

Table-5

Quantity projected by Army HQ and those negotiated with MOD (Fin) (in MT)

Item	2005-06			2006-07			2007-08		
	Projected by AHQ ¹	Worked out by MOD(Fin)	Finally Agreed	Projected by AHQ	Worked out by MOD(Fin)	Finally Agreed	Projected by AHQ	Worked out by MOD(Fin)	Finally Agreed
Wheat	188500	155000	145000	167400	150000	145000	167700	145000	145000
Rice	156000	140000	140000	152000	125000	138000	152700	139000	130000
Sugar	62102	47000	47000	54000	49000	47000	50050	47000	47000
Dal	50300	45000	47000	45300	41000	42000	48000	42000	42000
Oil	46000	40000	41000	43000	34000	37000	44000	40000	40000
Tea	6400	4800	5000	5200	3410	4100	5350	4100	4200
MMF	4168	2750	2750	4900	3900	3200	3881	3400	3300

Audit found that the huge variation between the requirements worked out by the Ministry and the Army HQ was mainly due to the difference in arriving at the

¹ Includes projections for Paramilitary Forces for 2005-06,2006-07 &2007-08

feeding strength i.e. the number of persons to be provided with rations. However, more alarmingly, the estimated opening stock as on 01 April of the ensuing year at the start of the provisioning period as adopted by the Ministry was different from that adopted by the Army HQ. Thus the total requirement was centrally determined more on a normative basis rather than on actual data as neither DGST nor the Ministry had at their disposal the correct figures of feeding strength and opening balance on ground.

Opening Stock balances adopted at different levels for demand projections differed substantially

The opening balances for various items as projected by Army HQ differed substantially from the opening balances adopted by the Ministry while provisioning for the year. As on 1 April 2007, Army projected an opening balance of 15037 MT of wheat, whereas Ministry took 20105 MT as opening balance while calculating requirements for the year. The difference was of 5068 MT (34 *per cent*). In case of Sugar, the difference was of 2656 MT (19 *per cent*). In the absence of any data regarding opening balance at the stock holding echelons, such normative estimation of the opening stock by various agencies becomes a guessing exercise. The issue attains significance as in case of items other than wheat and rice, local purchases are resorted to frequently.

Factors like lack of reliable data on actual opening stock balance and feeding strength create significant risks of loss and wastage in the supply chain of dry rations. Management of commodities has a great deal of inherent risks of loss and wastage. The risks are exacerbated by lack of real data.

Recommendation 1

Accurate estimation of requirement being of critical importance in the large scale Supply Chain of Dry Rations, the Standard Operating Procedures need to be reviewed urgently so that more realistic assessment of requirement can be made. Ministry should also review the reasons why the laid down procedures have failed to generate realistically accurate estimates and take corrective actions accordingly.


As regards the variations at the Command levels, while the HQ Northern and Eastern Commands did not offer any comments, Western Command HQ termed these variations as marginal and insignificant. The Army HQ in its reply attributed the variations to the additional cushion of two or three months which are planned to ensure that provisioning is adequately sufficient for the entire

strength of defence forces and also to cater for increase/decrease of dependant troops in any area due to operational deployment, movement of units, training/exercises etc. The contention of Army HQ needs to be viewed in the light of the fact that cushions for the above stated unforeseen eventualities are also applied by the DGST.

The difference in working out the requirement at the Command level and by DGST was ascribed by the Army HQ to the perception of strength compilation at various levels. The Army HQ further acknowledged that the correct feeding strength of dependant troops can only best be obtained from Command HQ and that the strength obtained from MP directorate serve as general guidelines only. Notwithstanding such assertions and the provisions in the SOPs, the fact remains that the Army HQ overruled the numbers projected by the Commands and worked out the requirement on the basis of strength furnished by MP directorate.

The Army HQ stated that the difference in opening stock balances as on 01 April of ensuing year, adopted by the Army HQ and the Ministry was due to time lag of four/five months between the respective dates of their projection of requirement. While this may be true, this does not explain the wide variations in the figures of opening balance adopted by different agencies. None of the agencies use real data for provisioning.

Noting the concern of audit, Army HQ also informed that automation of supply functionalities was under way and once implemented, it would lead to better asset visibility and responsiveness and would ultimately lead to judicious management of resources.



2.2. Procurement of Dry Rations

Procurement of dry rations is the responsibility of the Army Purchase Organisation (APO) which is a separate wing functioning under the Ministry of Defence. Rice and Wheat are directly procured from the Food Corporation of India (FCI) after allocation by Department of Food & Public Distribution on a quarterly basis. These quarterly allocations are further distributed among the Command Headquarters, who based on the stock position in the Supply Depots issue release orders. The stock is then released by FCI on pre payment made by Supply Depots through the Controllers of Defence Accounts. Acceptance of these articles is subject to inspection by Composite Food Laboratories (CFL)/ Food Inspection Units (FIU) prior to dispatch by road. Sugar is allocated to the Army out of the levy quota by the Directorate of Sugar, Government of India. On allocation of levy sugar quota, APO issues supply orders to the concerned mills at the levy rates decided by Ministry of Consumer Affairs, Food and Public Distribution. *Dal*, Tea and Edible Oils are procured by APO from PSUs, state/national level cooperatives and federations enlisted with the Organisation. Tinned food and dry fruits are procured through open tender system from private firms/dealers registered with APO.

Procurement not aligned with provisioning

Indents are placed on APO for the annual requirement of rations as approved by the Ministry. It was noticed during audit that during the last three years, except in the case of wheat and milk and malted food in 2005-06, none of the selected items was procured according to the quantity arrived after the provisioning exercise. The shortfall in procurement was due to failure of the contractors, most of them national level federations, to supply. The table on the following page sums up the picture.

Table-6
Shortfall in procurement of indented quantity of dry rations
(Qty in MT)

2005-06					
Item	Qty provisioned	Qty procured	Percent short fall(-) / Excess(+)	Local Purchase qty	Net Percent shortfall(-) / Excess(+)
Wheat	145000	145000	Nil	Nil	Nil
Rice	140000	137000	(-) 2	Nil	(-) 2
Sugar	47000	54765	(+) 17	Nil	(+) 17
Dal	47000	24385	(-) 48	7266	(-) 33
Oil	41000	36325	(-) 11	Nil	(-) 11
Tea	5150	3735	(-) 27	Nil	(-) 27
MMF	2160	2160	Nil	Nil	Nil
Jam Td	1050	599	(-) 43	Nil	(-) 43
2006-07					
Wheat	145000	138075	(-) 5	Nil	(-) 5
Rice	138000	128147	(-) 7	Nil	(-) 7
Sugar	47000	58944	(+) 25	Nil	(+) 25
Dal	42000	24612	(-) 41	12687	(-) 11
Oil	37000	32805	(-) 11	Nil	(-) 11
Tea	4100	3405	(-) 17	400	(-) 7
MMF	3200	2800	(-)13	Nil	(-) 13
Jam Td	870	1292	(+)49	Nil	(+)49
2007-08					
Wheat	145000	119500	(-) 18	Nil	(-) 18
Rice	130000	116500	(-) 10	Nil	(-) 10
Sugar	47000	44120	(-) 6	Nil	(-)6
Dal	37500	27004	(-)28	1161	(-) 25
Oil	40000	26325	(-) 34	Nil	(-) 34
Tea	4200	1385	(-) 67	1915	(-) 22
MMF	3300	3067	(-) 7	Nil	(-) 7
Jam Td	867	947	(+)9	Nil	(+)9

Except for Sugar and Jam, in all other items, there were significant under procurements. In fact in most of the cases, the actual quantity procured was so much at variance with the provisioned quantity that the whole exercise of provisioning was rendered largely infructuous. While only in the case of *Dal* and *Tea*, the shortages were made up to some extent through local procurement by the depots, in other items the significant shortages were never made up.

The fact that shortages up to 43 per cent translating into requirements for 3 to 4 months implies one or more of following three possibilities:

- The troops consumed fewer rations than their entitlements or had resorted to large amount of in lieu items.
- There were enough unreported or unrecorded stocks with the army to tide over these shortages.
- The requirements projected annually were higher than what was actually required and consumed.

Excess procurement of Sugar, Short procurement of *Dal* and Tea

It was observed in audit that in case of Sugar, there was excess procurement over and above the provisioned requirement in two years. During 2006-07, 11944 MT of sugar was procured in excess of the provisioned quantity i.e. an excess of 25 *per cent* over the requirement. The excess expenditure due to over procurement of various rations items was Rs. 9.99 crore in 2005-06 and Rs 18.42 crore in 2006-07.

As opposed to Sugar, in case of Tea and *Dal*, there was consistent shortfall in procurement in all the three years, which had to be made up to some extent through procurement at the local level by the depots. These local procurements led to additional expenditure on account of the higher price of such procurement. In 2005-06, there was a shortfall of 22615 MT (48 *per cent*) in central procurement of *Dal* and even after local procurement there was a shortfall of 33 *per cent*. The quantity of 7266 MT of *Dal* locally procured during the year was purchased at a rate of Rs 10288 per MT higher than the price of central procurement thus resulting in additional expenditure of Rs. 7.48 crore. Even during 2006-07 and 2007-08, there was a shortfall of 11 *per cent* and 25 *per cent* respectively. The extra expenditure due to the local procurement of rations to overcome shortages was Rs 7.48 crore during 2005-06, Rs. 10.92 crore during 2006-07 and Rs. 11.66 crore during 2007-08.

Large number of contracts pertaining to *Dal* and Tea failed

Audit observed that a number of contracts signed for annual procurement had to be cancelled due to the failure of the contractor to supply the contracted rations. Of the 343 contracts signed during the three years period of 2005-06 to 2007-08, 80 contracts (23 *per cent*) had to be cancelled due to the non-performance of the contractors. 39 of these cancelled contracts pertained to *Dal* and Tea.

While the contracts entered into by APO provide for risk expense provisions in case of failure of the contracts, local procurements are made by the Supply Depots to meet the deficit. Despite failure of many contracts and consequent resort to local procurement at higher rates, in no case, provisions of risk purchase in the original contract could be invoked. This was because such provisions could be invoked only if APO had carried out the risk purchases.

These items are procured only from State or National level co-operatives, federation or PSUs. Some of the well known suppliers who failed were M/S Balmer and Lawrie, MMTC, STC, Andrew Yule, Bharat Food Co-operative Ltd, PUNSUP, Bharat Agri Exports, and M/S MP Trifac etc. Consistent shortfall in

procurement of Tea, *Dal* and Edible Oil would indicate that the State Co-operatives and Federations are either unwilling or incapable of supplying such huge quantity in bulk. Since these agencies also procure from private agencies in the market, giving preference to these agencies only resulted in restricted competition and short procurement

Of the 23 contracts cancelled during 2007-08, four contracts pertained to the procurement of 1800 MT of North East Tea out of an indent of 2400 MT. The contracts were cancelled because the samples produced by the firm could not meet the enhanced specifications wherein moisture content was revised during 2007-08 from 41 *per cent* to 42 *per cent*. Due to cancellation of the contracts, 1915 MT of tea valuing Rs 20.09 crore had to be procured locally by the Supply Depots incurring an excess expenditure of Rs. 9.16 crore due to the higher price of local procurement vis-à-vis central procurement. Also local procurements were not made according to the stipulated specification. In fact the tender notices that were issued to the CSD and local vendors did not even describe the specification of the tea. Thus, in the end, the very purpose of ensuring quality for which the contracts were cancelled and for which additional expenditure of Rs. 9.16 crore was incurred could not be achieved. In September 2008, the specification of Tea was lowered to align these with the quality of tea available in the market.

Recommendation 2

Ministry of Defence and Army Headquarters should take urgent steps to strengthen the procurement procedures so that wide variations between provisioning and procurement are avoided. Ministry and APO should consider introduction of such risk purchase clauses in the Central Procurement contracts which will cover the local purchases made by the Supply Depots in case of non-performance of the Central Contract.

Recommendation 3

Opening up in well calibrated stages, the procurement process to bulk producing companies especially in case of Sugar, *Dal*, and Edible Oil should be considered.

Army HQ in its reply stated that failure of large value contracts for perishable items with short storage life could lead to disruption of the supply chain since their storage life precludes holding large reserves. It stated that as regards tea, a new policy which will lead to procurement through open tendering and with

stringent quality control mechanism would be operational from 2009-2010. It acknowledged that procurement of *Dal* has been erratic.

Army HQ further stated that it visualized the following action to minimise variations between provisioning and procurement:

- (i) A study by expert bodies like Institute of Chartered Accountants and Law firms to be undertaken to refine the contract procedures of the APO to ensure uninterrupted supply;
- (ii) Conclusion of Rate contracts in a graduated manner for certain low volume items like Coffee, Jam, Milk products with reputed suppliers so as to simplify the contractual procedures of the APO and reduce the inventory of ration items; and
- (iii) Automation of APO and modern measures like e-tendering to bring in transparency and efficiency in the system.

Uneconomic cost of *Atta*

The practice of procuring wheat and then grinding it to *atta* for the troops is quite old. Meanwhile *Atta* is now widely available in the open market in packed bags. Comparative analysis at one Supply Depot proved that the cost of 50 Kg bags of a branded *Atta* as given in the offer submitted by one branded *Atta* company was much less than the cost of *Atta* produced through the present practice of grinding of wheat into *Atta* by the Army. The average cost difference between obtaining *Atta* from grinding of wheat and procuring branded *atta* readily available in the market was Rs 2 per Kg as indicated in table below:

Table-7
*Cost comparison of grounded *atta* and branded *atta**

	Cost of <i>Atta</i> supplied by Army (per MT)	Market price of branded <i>Atta</i> (per MT)
Cost of wheat (Rs)	13676.00	-
Add (+): Cost of transportation and grinding : Rs 229.73	(-) 257.91	-
Less (-): Buy back bran/bags: Rs 487.64		
Total cost per MT (on wheat) (Rs)	13418.09	-
Quantity of <i>Atta</i> produced per MT of wheat	0.9215	-
Net cost of <i>Atta</i> (Rs)	14561.00	12600

Going by this calculation, about Rs.25 crore could have been saved annually by procuring *atta* directly from the market. This would also save the expenditure for the Army for operating a detachment of personnel in each mill when grinding of wheat for the army takes place. The Audit view was endorsed by the Depot Commandant who stated in October 2008 that the case on the basis of similar analysis had been taken up with higher HQ, but the directions were awaited.

During audit, inconsistency in the rates at which contracts for grinding of *atta* were entered into by the Army at various stations was also noticed. For example, while the contracted rate for grinding at Jalandhar during 2005-06 was Rs 80 per MT, the rate at Jammu was Rs 250 per MT.

Recommendation 4

Ministry of Defence and Army Headquarters should consider the issue of procuring *Atta* directly from the open market, in packed bags.

Army HQ confirmed that a case was being initiated for obtaining the approval of Ministry for procuring branded *atta* meeting ASC specifications under self certification by way of concluding contracts at the Command level.

2.3 Despatch of Stores much after the Estimated Storage Life (ESL)

Estimated Storage Life (ESL) of a food item is the period for which the food item is likely to remain fit for human consumption, under normal storage conditions. According to the DGST Technical Instructions, the Supply Depots are to ensure that food items are issued in accordance with their storage life (ESL).

The instructions also state that food stuffs must be consumed when they are sound, wholesome and fit in all respects and not at the last stages of storage. In special circumstances, ESL may be extended by a maximum period of three months.

Audit found that out of the 11,346 samples of rations sent to the three CFLs for extension of ESL, extension was granted in respect of 11330 cases. Thus almost in all the cases, extension was granted. It was noticed that the CFLs in Mumbai and Delhi adhered to the DGST instructions 2005, of not extending the life of rations beyond three months of expiry of the prescribed ESL. However, CFL Jammu which covers the whole of Northern Command and some parts of Western Command was found to grant extensions well beyond three months of the prescribed ESL, in some cases even up to 28 months. It was found that *Atta*,

Sugar, Rice, Tea, *Dal*, Edible Oil and raisins were consumed even six to 28 months after the expiry of their normal ESL.

Though in reply the CFL stated that such extensions were given after conducting detailed microbiological and chemical analysis, no such report was furnished to Audit. Even otherwise, according to the DGST instructions, no extension of life beyond three months should have been granted by the CFL under any circumstances. Repeated grant of extension in ESL clearly shows that troops located in Northern Command despite having difficult operational conditions are fed with rations of the quality far below DGST norms.

Table- 8

Cases of extended ESL

	2005-06	2006-07	2007-08
No. of samples received	3508	3812	4026
No. of samples in which ESL extended	3506	3802	4022
No. of samples in which ESL rejected	2	10	4

Recommendation 5

To ensure supply of good quality rations to the troops, Ministry and Army HQ should set a time limit for extension of estimated storage life taking into account the climatic conditions, beyond which under any circumstances, ESL of food items should not be extended to ensure supply of good quality rations to the troops.