

**DIRECTORATE GENERAL BORDER ROADS**  
**GENERAL MAINTENANCE INSTRUCTION NO 186**  
**ON**  
**INVENTORY MANAGEMENT BY FIELD WORKSHOP (GREF)**

**Introduction**

1. Since the inception of BRO, the field workshops (GREF) have developed technical know how in repairs and maintenance of all types of Vehs/eqpt/plants used for the constructions of roads in hilly terrain, snow bound high altitudes, desert plain areas.
2. The weakest link, which affects the performance and efficiency of a base workshop is the Tech Stores Section, as the right type of spares are not available at the right time and in sufficient quantity. The provision of spares need a closer look and more methodical ways of provisioning and demanding till computers are introduced.
3. Generally, each Fd Wksp is holding 20-30 thousand of items in various range of depth for hundreds types and models of Vehs/eqpt/plants of different management manually till such time it is computerized.

**Objectives**

4. The objectives of this instruction is to deal with the inventory management of spares in a Fd Wksp (GREF) manually.

**Provision of spares**

5. This organization is having two Stores Division located at Tezpur and Pathankot known as Eastern Stores Division and Western Stores Division, respectively. Each Store Division holds the spares of all equipment to cater the requirement of all Projects located in Eastern and Western Sectors.
6. The spares are provisioned centrally by HQ DGBR as per the allotment of funds for Cat "A" spares and the spares are consigned to each stores divisions as per their load for further issue Spares are issued to Fd Wksp as per quarterly demands to hold stock for seven months due to the following reasons.

- 6.1. Lead time
- 6.2. Remoteness of area
- 6.3. Heavy rains
- 6.4. Land slides
- 6.5. Vintage of Equipment

**Inventory Management System-Appraisal**

7. For Central Provisioning of spares various types of indent are prepared by Store Division and forwarded to HQ DGBR/BRDB for their approval as per financial powers delegated.
  - 7.1. Initial Spares Indent
  - 7.2. Provision Review Indent
  - 7.3. Life Time Review Indent
  - 7.4. Special Repair Indents
8. When spares are not available from central provisioning agencies, it can be procured by CE/TF/Fd Wksp for emergent requirement to meet off road equipment demand for stocking upto three months only.

### **Power Delegated**

9. Financial power delegated to various agencies to meet their emergent demands are as under:-

9.1.	Chief Engineer	-	Rs.	40,000 / -	on each occasion
9.2.	TF Commander	-	Rs	5,000 / -	on each occasion
9.3.	Comdr Base Wksp	-	Rs	15000 / -	on each occasion
9.4.	OC Fd Wksp	-	Rs	1,000 / -	on each occasion
9.5.	OC Store Division	-	Rs	20,000 / -	per item at one time subject to maximum limit of Rs 20 Lakhs per annum

The procurement of spares under above power will be done after getting non availability certificates from Store Divisions and as per stores and accounting procedure of Central Govt with pre-audit of S.O.'s etc.

### **Emergent Purchase**

10. Certain powers are delegated to various agencies to meet the urgent off road demand and their imprest account without pre-audit, Powers delegated are-

10.1.	CE	-	Rs	2,000 / -	on each occasion
10.2.	TF Commander	-	Rs	2,000 / -	on each occasion
10.3.	OC Fd Wksp	-	Rs	1,000 / -	on each occasion

The above powers are only to meet their urgent off road demand and are not for stocking purpose.

### **Adm Support for inventory Management**

11. Fd wksp are authorised technical staff to maintain the efficient management of spares to avoid stock out as well as surpluses of spares. The staff authorised are-

	<u>Fd Wksp</u>	<u>(I) Wksp Section</u>
11.1. Store Officer	01	01
11.2. SK Gde I/Nb Sub SMT	02	01
11.3. SKT/Hav SMT	05	02

### **Maximum Stock Potential of Field Workshop**

12. Fd Wksp are authorised to hold the stock of all type of spares as per their MSP (Max Stock Potential) for 04 months of stocking bases on consumption of previous months and holding of vehs/eqpt/plants.

### **How to work M.S.P**

13. At the beginning of every year each Fd Wksp will work out their M.S.P and it will be marked on each ledger sheet.

$$\text{M.S.P} = \frac{C \times N1}{N} \times \frac{07}{12}$$

Where	C	= Consumption during last one year (Jan to Dec)
	N	= Nos of vehs/eqpt held on charge last year
	N1	= Nos of vehs/eqpt held now on charge

### **Recoup ment of Spares**

14. Fd wksp are supposed to recoup their consumption as per M.S.P from store Divisions located in their sector. As such, they have to submit quarterly demands for release of stores/spares, if spares are not issued, non-availability certificate will be issued by Stores Divisions to carry out local purchases within their financial powers of various agencies as mentioned in para 9 & 10 above. Procurement will be done based on two NAC's.

### **Inventory Control Model Standard System**

15. The easiest and best method to control the spares is with the help of computers, which for the time being, beyond the scope of field workshop due to various financial and administrative constraints. Till such time computers are inducted, a model of manual system is designed to manage the provision of spares within limited time schedule as quarterly demands for hundred of type of eqpt/models have to process, are explained in subsequent.

16. Generally the provision/holding of spares are carried out by three to four various sub section in a Fd wksp:-

16.1. Spares demanded in Fd wksp through R&I section

17 Unless the activities are through Sub Section is coordinated meticulously, it is next to impossible to provision spares to meet all time requirement. There should be a well-guarded check for each sub-section to have correct inventory management of spares.

18. Generally each stockholder is maintained 40 to 50 ledger having 200 to 250 items in each ledger. To review all pages of ledger for re-couplement and preparation of demands and to carry out local purchase in a short time of 3 – 7 days in a quarter is a Herculean job.

19. The system evolved to overcome this job is that each ledger will be pasted with a sheet as per details given in appendix "A".

20. Suppose one D-80-A-12 ledger Vol No. II is having the items on its ledger charge serial No 201 to 370. So the Appendix "A" will have Srl No 201 to 370.

21 When a mechanic will come with a job card to demand one item, say a fan belt, in the month of Feb and the position of this item as per ledger is as under:-

Ledger page No.	220
MSP	30 Nos
Stock held	30 Nos

This means that after issue of one fan belt the balance will reduce to below MSP. The stockholder will put a circle with red colour, round No. 220 in appendix "A".

### **Colour code**

22. Since demands are being prepared every quarter, four different colour codes will be used for each quarter:-

For Q/E	Jan to march	-	Red
	Apr to June	-	Yellow
	Jul to September	-	Blue
	Oct to Dec	-	Green

23. Suppose another mechanic comes with a demand if water repair kit and status of this item as per ledger is as under:

Ledger page No.	302
MSP	02 Nos
Stock held	Nil

Since the stockholder could not issue item, he will put circle around No. 302 as per colour code and will mark the circle with letter one. Again, another mechanic demanded the same item in the same quarter and if he could not issue, the stockholder will mark the circle around srl No.302 with letter Two and so on, if no issue is made to another mechanic.

24. Whenever mechanic do not get spares they should see that store man technical is making necessary circles as per colour code on the index page of each ledger. This will have a check over the stockholder by wksp rep.

25. On similar lines, in various quarter, different colour code will be used and items not issued or below MSP will be marked with circles on the same Appendix "A" for four quarters which will lead to a pattern of non-availability of items or below MSP items to be seen at the time of preparation of demands by demand section and LP section to ensure timely processing. Items marked with circles, one's and two's will only be purchased under LP system.

#### **Items not held on Ledger Charge**

26. Suppose mechanic requires some item but it is not having any ledger page. SKT will mark NA on job card and will open a separate page on a register where he will write ISG Nos only of items demanded and will mark circles as explained in Para 23 & 24 above. It will reduce his work of writing part No, nomenclature etc.

#### **Consumption of Dett/Platoon**

27. The job cards from dett are received generally after 30 days. It should be called for every 15 days and items gone below MSP or not issued will be marked on Appendix 'A' as explained in Para 20 to 26.

#### **Pattern of consumption**

28. With the passage of time, a pattern of consumption will develop which will show type of spares required during various working periods. Consumption pattern of fast moving spares will be developed for working seasons as well as off seasons. By computing such sheets for 3 to 4 years, a real consumption pattern of spares will be develop for the Wksp for future procurement/stocking to give an effective and efficient inventory of spares.

#### **Quarterly Demand**

29. The in charge demand section will prepare quarterly demand for those items which are marked with circles. It will reduce his work to check scrutinize a few limited Nos. of items reduce below MSP and of Nil stock. It will be easier to scrutinize a few items than checking all ledgers from cover to cover at the time of demand.

#### **Local Purchase**

30. Store Officer/OC Wksp/Commander TF will report emergent purchase of only those items, which are likely to come to nil stock and having recorded consumption, and at the time of LP, they could verify those items from ledger, as it is likely to stock out and required repeatedly by the rep of Wksp. Hence, a guiding sheet will be available to check items demanded.

31. Field Workshops are the spinal cord of any Task Force in BRO (Border Roads Organisation). They have developed technical know how in repairs, maintenance and preventive repairs since the inception of BRO since 1960. Non-availability of spares due to various reasons like remoteness of area, no proper and efficient communication system, heavy rains and landslides in hilly terrains, snow avalanches ,sand dunes unpredictable and uncertain weather and long lead time results in more down time and non-availability of equipment for road work.

32. Generally a field workshop in BRO is stocking spares to the range of 20 to 30 thousand items in various depths from one's and two's and in hundreds. As such, an accurate and timely provisioning of spares is need of the time. It is beyond the comprehension of a person to review/scrutinize all spares in range and depth at one time under existing system, which results in frequent stock out or surpluses.

33. The inventory control model by manual system describe, overcomes all physical and surrounding constraints. It creates awareness at lowest working level taking into seasonal variations. The new system designed is a dynamic model where working of each sub group is watched, scrutinized by other. It will result in accurate provision of spares with less strain on working group and will improve availability of eqpt. This model evolves a consumption patter as such reduces inventory carrying cost and helps in better Management Information System with good control over financial management of spares.

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