Dig Dry Military Compass

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SDG/ ADG | DG

OFFICE OF DG BSF

Dy. No. 11254

Date: 21-11-12

RECEIVED

HQ DG BSF N. DELHI
Office of IG (Prov)
Dy No...3397.....
Date...22/11/12...

F. No. IV-21011/03/2012-Prov.I
Bharat Sarkar/Government of India
Griha Mantralaya/Ministry of Home Affairs
PM Division/Prov. I Desk
*****

26, Man Singh Road, Jaisalmer House
New Delhi, Dated 15th November, 2012

IG (Prov)

To,

DsG : AR (through LOAR), BSF, CISF, CRPF, ITBP, SSB, NSG & BPR&D.

Subject : QRs and Trial Directives for Dry Military Compass

The QRs and Trial Directives in respect of Dry Military Compass as per Annexure have been accepted by the Competent Authority in MHA

2. Henceforth, all the CAPFs should procure the above items required by them strictly as per the laid down Technical Specifications/QRs.

Yours faithfully,

(S. B. Nanda)
Under Secretary to the Govt. of India
Tel : 23381278

DIG (Prov)

23-11-12

Compliance

PDU Submit

Copy forwarded for necessary action to :-

(i) Director, NIC, MHA : It is requested to host the QRs and Trial Directives (soft copy attached) on the MHA website (under the page of Organisational Set up-Police Modernisation Division- Qualitative Requirements)

Rehg. 15/11/12

(Ritesh Kumar)
Section Offcier (Prov.II)

Copy to : Director (Procurement), MHA.
Copy for information to : PS to JS (PM)

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INTRODUCTION:-

A compass is an instrument that is used for navigation and mapping because it measures the geographic direction between two points. It is a fairly simple instrument that uses a magnet, mounted on a pivot that turns in response to the earth's magnetic field, to determine direction (but not position). The magnetic needle points to the magnetic North Pole, which is different from geographic North Pole. A compass bearing, which is typically expressed as an angle (degrees), refers to the horizontal direction to or from any point.

A compass is used for several different purposes including:

1. Determine direction to a destination or landmark during day and night.
2. Stay on a straight course to a destination or landmark, even if you lose sight of it.
3. Return to your starting point.
4. Pinpoint locations on a map and in the field.
5. Identify what you are looking at in the field or on a map.
6. Orient a map.
7. Plot points on a map.
8. Plot route of travel on a map.

There are a variety of different types and models of compasses, such as baseplate, sighting, prismatic and electronic/digital. The basic parts of a magnetic compass are the needle (a thin piece of magnetic metal), the dial (a circular card printed with directions), and the housing (which holds the other parts in place). Inexpensive compasses, generally used as toys, may have no other parts. Compasses intended for more serious purposes like military compasses usually have other parts to make them more useful. These other parts may include lids, covers or cases to protect the compass; sights making use of lenses or prisms or mirrors to enable the user to determine the direction of an object in the distance and a transparent base plate marked with a scale of inches or millimetres so that the compass can be used directly on a map. Dry military compass does not contain liquid.

AIM:-

To frame Trial Directives to facilitate Board of Officers to carry out physical/technical evaluation of Tender sample of Dry Military Compass at the time of procurement.

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GENERAL INSTRUCTIONS-

1. This Trial Directive is issued to assist and guide the evaluation committee. Nothing in this Trial Directive absolves the BOOs from their responsibility to ensure that the evaluation is carried out strictly as per the specifications in every respect.

2. The Evaluation committee may carry out additional test which they consider necessary after seeking approval of Competent Authority, to verify the quality of the tender sample with the specifications.

3. The Evaluation committee should ensure proper safety of man and equipment during evaluation to avoid any damage.

4. Trial / evaluation will be conducted in presence of firm representative only.

COMPOSITION OF THE BOARD:-

The physical evaluation of the tender samples of Dry Military Compass will be carried out by the Board of Officers detailed by the competent authority.

GENERAL REQUIREMENT:

Following test instruments should be available during the trial/evaluation:

1. Instrument testing stand (ITS).
2. Tripod testing stand (TTS).
3. Measuring tape 3 mtr.
4. Weighing machine.
5. Water container.
6. Scale 12 cm.
7. Stop watch.

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BOARD PROCEEDING

1.	Proceeding of	A Board of officers of Sub-group of Technical Experts
2.	Assembled at	BWWA Conference Hall, Ground Floor, HQ DG BSF
3.	Assembled on	30 Aug 2012
4.	By the order of	MHA UO Note No. IV-21011/3/2012-Prov.I dated 3rd Aug 2012 & fresh direction on formulating QRs of MHA vide letter No. IV-24011/12/2011-Prov.I dated 13 Jun 2012.
5.	For the purpose of	To formulate the QRs, & Trial Directive of Dry Military Compass and reply of MHA UO Note dated 3rd Aug 2012.
6.	Composition of the Board	Sh S K Tyagi, DIG, SIW, BSF Sh P S Karki, DCIOA, SSB Sh Sunil Kumar, DC, ITBP Sh M S N Swamy, Jt Director, DCPW Sh Rakesh Dev, DC (AIA), Cenwosto BSF Major K Okram, NSG Sh Mohd Yusuf, DC, CRPF Sh N K Nayyar, Dy Director, DRDO Sh Th. Binod Kumar Singh, AC, SSB Sh Sanjeev Kumar, DC (STS), BSF Sh Pradeep Kumar, JE(QA), DGQA

7. In compliance to the order of MHA letter vide above reference, the meeting of the Sub-group of technical experts were conducted on 09 Aug 2012 and 30 Aug 2012 to have a re-look on the draft QRs for Dry Military Compass in the light on the criteria/points given in the MHAs letter. The para wise reply, prepared by Sub-group is as under :-

(a) The Sub-group examined the draft QRs regarding weight of Dry Military Compass (at point-12) during the meeting held on 9th Aug 2012. Considering the fact that the weight of existing compass prismatic liquid MK-III A (OFD make, available with CAPFs) is 275 gms which contains the liquid (Isopropyl Alcohol) as 35 gms (approx), the Sub-group has decided that the **weight of Dry Military Compass should be not more than 250 gms instead of 200 gms (maximum)** as proposed in earlier draft QRs forwarded to MHA. Also no comments /views/suggestion/objection of the vendors/bidders is received on this proposed amendment in the weight.

(b) (i) Scaling :- The **Sub –group has not suggested scaling in the QRs** due to the following reasons:-

- Incorporating scale in the QRs would lead to add extra weight in the compass.
- To avoid unnecessary edges in the compass thereby ensuring compactness of the equipment and easy to carry during operational exigencies.
- On due course of time or after repainting the engraved line of scale generally gets erased/invisible.
- Requirement of service protector is essential to find out own position and other target position through Intersection Method of Map Reading in which scale is already available.

(ii) Graduation :- **Graduation criteria is included in the QR's of compass at Para-8.**

In addition to the changes made above at para (a) and b (ii) , the Sub-group during the meeting held on 9th Aug 2012 has proposed the following changes/amendments in the draft QRs, formulated on 20th Jan 2012 :-

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Para No.	Existing QRs (Formulated on 20th Jan 2012)	Proposed Fresh QRs
13	Size – Maximum 125mm x 60 mm.	Size – Maximum 125mm x 60 mm x 40mm.
15	Hard and soft carrying case should be provided for safe storage.	The compass should be contained in a soft durable carrying case having suitable carrying strap. A durable hard transportation box should be provided.
16	Neck sling with provision for neck sling should be available for compass	A Neck sling suitably attached with the compass should be provided. It should be in loop form, 150 ± 5 cm long, 2.5 ± 0.1 mm dia having lusterless green colour.
17	Compass should be durable, fully serviceable and repairable.	Compass should be durable and repairable.
New addition Para. 19		The outer body colour of the compass should be lustreless green.
New addition Para. 20		The magnetic assembly shall come to rest within 6 second of time being deflected 180 degree from a position of equilibrium.

No any comments/views/suggestion/objection of any vendor/bidders received on the proposed amendment, hence the Sub group has finalized the QRs with fresh amendments, which is placed with proceedings as **Appendix-'A'** .

(c) After the detail deliberations, the Sub-group has prepared the Trial Directives of freshly formulated QRs, which is attached with proceedings as **Appendix-'B'**.

(d) Comparative chart between existing and proposed QRs prepared by Sub-group in terms of MHAs letter dated 11th Aug'2011 is placed as **Appendix-'C'.** The existing QRs of compass were approved during the year 2005. As of now, a lot of technical advancement in the filed of compass has been undergone. Hence there have been substantive changes/deletion/addition has been proposed in the fresh QRs of Dry Military Compass in compare to existing QRs of compass.

(S K Tyagi)
DIG, SIW BSF 30.08.12

(P S Karki)
DCIOA,SSB

(M S N Swamy) 30/8/12
Jt Dir, DCPW

(Sunil Kumar)
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(Rakesh Dev) 30/8
DC (AIA), Cenwosto, BSF

(K Okram)
Major, NSG

(Mohd Yusuf)
DC, CRPF

(N K Nayyar)
Dy Dir, DRDO

(Th Binod Kr Singh)
AC, SSB

(Sanjeev Kumar)
DC (STS), BSF

(Pradeep Kumar)
JE(OA), DGOA

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Appendix 'A' (180)

Director General Border Security Force

(Provisioning Directorate)

The Sub-group of Technical Experts on Surveillance Equipments constituted by MHA vide their letter No. IV-17017/18/2001-Prov-I dated 05 Jul 2002 held its meting at BSF headquarters on 15 Sep 2011, 19 Oct 2011, 20 Jan 2012, 09 Aug 2012 and 30 Aug 2012 to formulate the fresh QRs of **"Dry Military Compass"**.

After detailed deliberations, the referred Sub-group during the meeting held on 30th Aug 2012 has finalized the QRs of "Dry Military Compass" which are as under:-

1. The compass should be dry and has the robust aluminium body. Parts should be made up of non-ferrous materials except magnetic needle and should not be fragile.

2. Compass should have luminous facility to facilitate night reading. The light source should be with such type that illumination does not require an external power source. The illumination material should be serviceable for minimum 10 years (Certificate to be provided by OEM). Facility for night navigation must be made available in the compass.

3. Index ring/Bezel (Outer ring where degree/pointer are marked/mentioned/printed/engraved) should move smoothly but does not move freely i.e., move when deliberate force is applied by user.

4. Provision of Anti-friction pads/feature should be given.

5. Compass should give accurate result in all climatic condition. The inaccuracy should not exceed ± 1 (One) degree from true course.

6. Compass should give accurate bearing up to minimum 7 degree tilt.

7. Compass should be correctly operated on the Temperature Range between -40 to +60 degree centigrade.

8. Graduation/marking provided for 360 degree. The number shall be printed/engraved at interval of each 10 degree, each degree shall be displayed with a small line and each fifth degree shall be displayed with a bigger line. All graduation shall be distinguishable during day and night.

9. Sighting device/sighting part should be an integral part of compass body, user friendly and bearing should be visible clearly.

10. The forward and back bearing both are required to be read simultaneously but user should be able to differentiate clearly.

11. Inner compartment should be properly sealed and strong enough to prevent ingress of any foreign material inside the compartment.

12. Compass weight should not be more than 250 grams

13. Size – Maximum 125mm x 60 mm x 40mm.

14. It should be rugged, shock proof and water proof.

15. The compass is contained in a soft durable carrying case having suitable carrying strap. A durable hard transportation box should be provided.

16. Neck sling suitable attached with the compass should be provided. It should be in loop from, 150 ± 5 cm long, 2.5 ± 0.1 mm dia having lustreless green colour .with provision for neck sling should be available for compass

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17. Compass should be durable and repairable.

18. The list of repairable parts, nomenclature of the parts and their cost, user manual with illustration in soft and hard copy should be provided at the time of procurement.

19. The outer body colour of the compass should be lustreless green.

20. The magnetic assembly shall come to rest within 6 second of time being deflected 180 degree from a position of equilibrium.

(S K Tyagi)
DIG, SFW BSF 30.08.12

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(M S N Swamy)
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Appendix 'B'

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TRIAL DIRECTIVE
FOR
DRY MILITARY COMPASS

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TRIAL DIRECTIVE FOR DRY MILITARY COMPASS

S No.	SPECIFICATION	Procedure suggested for trial for Board of Officers	Result expected / desired	Complied / Not Complied
01	The compass should be dry and has the robust aluminium body. Parts should be made up of non-ferrous materials except magnetic needle and should not be fragile.	➢ The compass shall be subjected to visual inspection and checked physically. ➢ The firm should submit National/International accredited Lab test report for this aspect.	➢ The compass should be as per the requirement mentioned in the QR's. ➢ Check the national/international accredited lab test report for the same. In case of any doubt in the test report, the veracity of the same may be checked from the concerned lab.	
02	Compass should have luminous facility to facilitate night reading. The light source should be with such type that illumination does not require an external power source. The illumination material should be serviceable for minimum 10 years (Certificate to be provided by OEM). Facility for night navigation must be made available in the compass.	➢ The compass shall be subjected to check physically for night navigation facility with self-illumination material for reading, sighting and navigation in the night. ➢ Check the OEM certificate in respect of the serviceability for minimum 10 years.	The compass should be as per the requirement mentioned in the QR's.	
03	Index ring/Bezel (Outer ring where degree/pointer are marked/mentioned/ printed/ engraved) should move smoothly but does not move freely i.e., move when deliberate force is applied by user.	➢ The index ring shall be rotated 360 Degree in both direction. ➢ The compass graduation shall be visually examined to verify that the degrees are engraved/printed as mentioned in the QR's.	The compass should be as per the requirement mentioned in the QR's.	

04	Provision of Anti-friction pads/feature should be given.	The compass shall be placed on a plain glass and the glass shall be tilted 15 Degree from its horizontal plain in all four direction.	Compass should not move from its position. Any movement of compass shall constitute failure of the requirement.	
05	Compass should give accurate result in all climatic condition. The inaccuracy should not exceed ± 1 (One) degree from true course.	The compass shall be placed in a horizontal position on a fixed point and by means of the sighting mechanism. The compass shall be sighted on three targets of known magnetic Degree i.e. 120 Degree apart. The difference between the known Degree and readings should not be more than 1 Degree.	An error greater than 1 Degree or failure of the compass to function correctly shall constitute failure of this test.	
06	Compass should give accurate bearing up to minimum 7 degree tilt.	The compass shall be tilted 7 Degree from the horizontal and uniformly rotated 360 Degree at approximately 10 seconds of time per revolution, in a plane normal to the longitudinal axis of the pivot. The compass shall be rotated one complete revolution in the clockwise direction and one complete revolution anticlockwise.	Inability of the dial or magnetic assembly to remain free while being rotated shall constitute failure of this test.	
07	Compass should be correctly operated on the Temperature range between -40 to +60 Degree Centigrade.	The firm should submit National/International accredited Lab test report for this aspect.	Check the national/international accredited lab test report for the same. In case of any doubt in the test report, the veracity of the same may be checked from the concerned lab.	

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08	The graduation shall be provided for entire 360 degree. The number shall be printed / engraved at interval of each 10 degree, each degree shall be displayed with a small line, and each fifth degree shall be bigger than the small line. All graduation shall be distinguishable during day & night.	The compass graduations shall be visually examined to verify that the graduations are distinguishable in day and night conditions.	The compass graduation must be as per the requirement mentioned in the QR's.	
09	Sighting device/sighting part should be an integral part of compass body, user friendly and bearing should be visible clearly.	➢ The compass shall be checked physically. ➢ The compass shall be aimed at a target and read the bearing. The bearing should be clearly visible. The sighting should be easy.	The compass should be as per the requirement mentioned in the QR's.	
10	The forward and back bearing both are required to be read simultaneously but user should be able to differentiate clearly.	Check the compass physically for this aspect.	The forward & back bearing both should be read simultaneously and user should be able to differentiate clearly.	
11	Inner compartment should be properly sealed and strong enough to prevent ingress of any foreign material inside the compartment.	The complete compass shall be submerged in normal water at the depth of 1 Meter for one hour at ambient temperature. The compass shall be removed from the water and examined for water leakage.	The inner compartment should be properly sealed and water should not ingress inside the compartment.	

12	Compass weight should not be more than 250 grams	The compass shall be weighed without carrying case.	The weight of compass should not be more than 250 grams.	
13	Size – Maximum 125mm x 60 mm x 40 mm.	The compass shall be measured.	The compass should be as per the requirement mentioned in the QR's.	
14	It should be rugged, shock proof and water proof.	➢ The complete compass shall be submerged in normal water at the depth of 1 Meter for one hour at ambient temperature. The compass shall be removed from the water and examined for water leakage. ➢ The firm should submit National/International accredited Lab test report in respect of ruggedness and shock proof feature.	➢ Water should not ingress inside the compartment. ➢ Check the national/international accredited lab test report for the same. In case of any doubt in the test report, the veracity of the same may be checked from the concerned lab.	
15	The compass is contained in a soft durable carrying case having suitable carrying strap. A durable hard transportation box should be provided.	Check the soft carrying case & hard transportation box physically.	The compass case should be as per the requirement mentioned in the QR's.	
16	A neck sling suitably attached with the compass should be provided. It should be in loop form, 150 ±5 cm long, 2.5 ±0.1 mm dia having lustreless green colour.	The neck sling shall be examined to verify that the thickness is 2.5 ± 0.1 mm, the ends are permanently joined to form a loop of 150 ± 5 cm in circumference, that the material is a suitable and durable having lusterless green colour.	The compass neck sling should be as per the requirement mentioned in the QR's.	
17	Compass should be durable and repairable.	➢ The entire compass shall be checked physically. ➢ OEM certificate to be obtained from the firm in r/o durability and repairability of the compass.	The compass should be as per the requirement mentioned in the QR's.	

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18	The list of repairable parts, nomenclature of the parts and their cost, user manual with illustration in soft and hard copy should be provided at the time of procurement	The firm should give an undertaking for the same.	Undertaking should be ensured.	
19	The outer body colour of the compass should be lustreless green.	Check the compass physically for this aspect.	The compass should be as per the requirement mentioned in the QR's.	
20	The magnetic assembly shall come to rest within 6 second of time being deflected 180 degree from a position of equilibrium.	The compass magnet shall be deflected 180 degree from a position of equilibrium and release. The magnetic assembly should come to rest with in 6 second.	The magnetic assembly should be as per the requirement mentioned in the QR's.	

30/08/12

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