

**UPDATED**

**STANDARD OPERATING PROCEDURE**

**FOR**

**ALLOTMENT AND UTILISATION OF**

**PROOF AND FIELD FIRING RANGES BY**

**PRIVATE DEFENCE INDUSTRY**

**13.07.2020**

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<u>1</u>	<u>18(2)/2019/GTF/DP(Plg-MS)</u>	<u>Para No. 4,8,11,12, Appendix OFB1 to OFB 6</u>	<u>6 proof ranges of OFB included</u>	<u>20.06.2019</u>
<u>2</u>	<u>18(2)/2019/GTF/DP(Plg-MS) R2</u>	<u>Appendix P</u>	<u>Six Field Firing ranges of Army offer testing of UAV/quadcopters.</u>	<u>05.09.2019</u>
<u>03</u>	<u>18(2)/2019/GTF/DP(Plg-MS) R3</u>	<u>Para 12, Sub-Para B</u>	<u>Contact Details of DRDO Nodal Officer</u>	<u>13.07.2020</u>

# **STANDARD OPERATING PROCEDURE FOR ALLOTMENT AND UTILISATION OF PROOF AND FIELD FIRING RANGES BY PRIVATE DEFENCE INDUSTRY**

## **General**

1. The MoD is committed to facilitating active participation of the Indian defence private industry to rapidly take forward Government of India initiative of 'Make in India' programme in the defence sector. It envisions creation of a well-developed defence industrial base as a functional imperative for modernisation of the Indian Armed Forces. Towards achieving this goal various initiatives have been taken by Ministry of Defence like GoI policy on indigenisation wherein Industry is encouraged to indigenise products in lieu of imported stores and launch of Defence Export Promotion Scheme to encourage Indian Defence Manufacturer for export promotion. One of the main impediments holding back the private industry is the non-availability of firing ranges to carry out R&D. It is well understood that the Indian defence private industry would require facilities to trial evaluate and test equipment developed by them. Presently, minimal test facilities are available outside of the Government owned infrastructure and it may not be financially viable for companies to create a huge testing infrastructure.

2. Testing and proving facilities are only held with the various MoD agencies i.e. Armed Forces, DRDO, DGQA and OFB. These include firing ranges, laboratories and trained personnel of these agencies. To assist the Indian private firms in achieving the 'Make in India' initiative and to further test and improve their products, there is a need to streamline the guidelines for allotment and utilization of Proof/Field Firing ranges for Indian private industry through this Standard Operating Procedure (SOP).

## **Aim**

3. To lay down the guidelines and procedure for allotment and utilisation of firing ranges under the MoD to Indian private defence industry.

## **Layout of SOP**

4. The SOP for Allotment and Utilisation of Proof and Field Firing Ranges by Private Defence Industry is laid out in two parts as under: -

- (a) **Part I.** Overview of trials.
- (b) **Part II.** Allotment and utilisation of firing ranges: -
  - (i) For DGQA and DRDO Proof Ranges.
  - (ii) For Services Field Firing Ranges.
  - (iii) For OFB Proof Ranges.

## **PART I : OVERVIEW OF TRIALS**

### **Types of Trials**

5. Trials required to be undertaken by the private defence industry can be classified into two broad categories: -

(a) **Evolutionary Ballistic Trials (Armament and Explosives Related).** Ballistic Trials relate to all armament, ammunition and other explosives related examination, including blast trials for materials, such as composites and steel, and vehicles fitted with such materials (light armoured vehicles, etc). These trials are required to be conducted in DGQA, DRDO and OFB facilities.

(b) **All types of Trials less Ballistic Trials (Including Mechanical, Electrical, etc).** Functional trials relate to all types of tests other than those related to armament, ammunition and explosives. These trials encompass a wide variety of tests such as automotive trials, NBC trials, software development etc and could require both the DRDO/DGQA/OFB as well as the Service HQ controlled facilities.

6. **Categorisation of Trials as per Stages of Development.** Trials can further be categorised as under: -

(a) **Developmental Trials (Conducted by Private Defence Industry).** Developmental Trials are conducted by the Private defence companies during the course of product development. These trials are applicable to indigenously developed products and not imported equipment and do not form part of the User Trials but are carried out to bring the equipment to User Trial level. Developmental Trials are conducted in order to ensure that the equipment meets the desired parameters and safety standards, before it is offered for User Trials. These tests fall under the following categories: -

(i) **Proof Tests.** Proof test or stress testing is used by the product development agency to demonstrate the fitness of a system or entity by subjecting the same to deliberately intense testing (beyond normal operational capacity, often up to the breaking point).

(ii) **Experimental Testing.** Experimental tests are conducted in the course of product development, by generally manipulating one or more variables to determine their effect on a dependent variable.

(iii) **Validation Tests.** Validation trials of products will be required to be conducted by product developers to validate the products developed including carrying out of certain minor improvements/modification to products keeping the future requirements of armed forces or for technical demonstration or for export purposes.

(b) **Field Trials (Conducted under the Aegis of Service Headquarters).** Field Trials are conducted to assess the performance of the equipment against desired parameters. Field Trials are carried out under the aegis of a nominated directorate of the Service Headquarters by a nominated command or Trial Cell of User Directorate in Service Headquarter controlled ranges.

(c) **Indigenisation Trials (Conducted by Private Defence Industry).** To encourage indigenisation, especially of Armaments and Ammunition stores which is developed by Industry as an indigenised product in lieu of imported products shall be taken up for proof testing at these proof ranges.

(d) **Trials for Defence Export Promotion.** Under the scheme for Defence Export Promotion any Indian Defence Manufacturer who has produced an item having export potential can get his product validated at these proof ranges.

### **Allotment of Ranges**

7. **Delegation of Authority for Allocation and Control.** With a large number of private defence industry players showing keen interest to set up manufacturing units, it is visualised that these entities would need to be provided with the existing testing infrastructure. To encourage defence production in the private sector all assistance possible will be provided by various Government / MoD stake holders to the industry.

8. In order to ensure a fair allotment of the facilities, it is considered prudent to adopt a decentralised approach for allocating these resources. Authority to exercise control and coordination of allotment of ranges has been delegated. The overall coordination of the allotment of ranges will rest with the **Additional Director General (ADG) DQA (ARMAMENT)**. The following HQs / offices are authorised to allocate the various types of ranges: -

(a) **Service HQ Controlled Field Firing Ranges (Army).** DDG PP ADB (TRC).

(b) **DGQA Proof Ranges.** ADGQA (A).

(c) **DRDO Proof Ranges.** Dir DQR&S.

(d) **Proof Ranges under OFB:** Sr.GM/GM of respective Ordnance Factories.

9. The detailed procedure for allotment of the ranges is as laid out in Part II of the SOP. Part II A deals with DGQA, DRDO and OFB proof ranges while Part II B deals with Service HQ (Army) Field Firing Ranges.

## **PART II A : PROCEDURE FOR ALLOCATION AND UTILISATION OF PROOF RANGES OF DGQA, DRDO AND OFB**

10. In order to extend assistance to the Indian private industry, guidelines are being issued for allotment and utilisation of proof and field firing ranges so that the procedures become as user friendly as possible. Processes for allocation and utilisation have been defined to include aspects of requisition, allotment procedure, availability of proof stock components/ ammunition and other consumables that may be required. Issues of ranges security, liability and compensation in case of accidents, legal approvals required by private industries, costing etc have been comprehensively addressed. Roles and responsibilities of government agencies and private industry have been clearly defined in the SOP. There are a number of proof and field firing ranges with various departments of MoD & Service HQs. These ranges can be utilised by private industries for conducting R&D. Details of proof and field firing ranges and procedures for requisitioning and utilising these ranges are covered in two sub parts.

11. The proof ranges of DGQA, DRDO and OFB are available to private industries for conducting trials and proof tests. The details of facilities and infrastructure available in each are given in **Appendices A, B, C, D and OFB 1, OFB 2, OFB 3, OFB 4, OFB 5, OFB 6** Proof ranges under different departments of MoD are asunder: -

(a) **DGQA.**

- (i) CPE, Itarsi.
- (ii) LPR, Khamaria.

(b) **DRDO.**

- (i) PXE, Balasore.
- (ii) TBRL, Chandigarh.

(c) **OFB**

- (i) OF Varangaon.
- (ii) AFK Kirkee Pune.
- (iii) .Proof Range Sasrul (OF Kanpur)
- (iv) HVF Avadi
- (v) OF Trichi
- (vi) RFI Ichapore

## **Requisitioning Procedure**

12. **Nodal Officer**. Private industries / firms desirous of utilising the proof ranges are required to approach the respective nodal officers along with information / documents duly provided as per **Appendix E**. The documents have to be forwarded to the Nodal Officer through E-Mail and also informed telephonically. The details of nodal officers are as under:

-

(a) **DGQA**. Indian private industries requesting for Proof Range at **CPE, Itarsi** and **LPR, Khamaria** should approach the under mentioned Nodal officer: -

### **Deputy Director General (DDG) DQA(A)/Arm-6**

DGQA, H- Block, New Delhi

Tele No. 011 - 2301 2041, 23013120, 2301 7379

E-Mail: armt-dgqa@nic.in

(b) **DRDO**. Indian private industries requesting for Proof Range at **PXE, Balasore** and **TBRL, Chandigarh** should approach the under mentioned Nodal officer :-

### **Director**

Directorate of Industry Interface & Technology Management (DIITM)

Room No. 447, DRDO Bhawan, DRDO HQ

Rajaji Marg, New Delhi- 110011

Ph - 011-23013209, 23015291

Fax – 011-23793008

(c) **OFB**. (i) Indian private industries requesting for Proof Range at **OF Varangaon & AFK Kirkee** should approach the under mentioned Nodal officer: -

### **DDG Ammn.**

OFB Hqrs., AYUDH BHAWAN

10 A SK BOSE ROAD, KOLKATA-1

Ph - 033-22480982

Fax –033-22107624

(ii) Indian private industries requesting for Proof Range at **RFI Ichapur & O.F Trichi** should approach the under mentioned Nodal officer: -

### **DDG /SA& Veh.**

OFB Hqrs., AYUDH BHAWAN

10 A SK BOSE ROAD, KOLKATA-1

Ph - 033-22483353

Fax –033-22480940

(iii) Indian private industries requesting for Proof Range at **Proof Range Sasrul (O.F Kanpur)** should approach the under mentioned Nodal officer :-

**DDG /W**

OFB Hqrs., AYUDH BHAWAN  
10 A SK BOSE ROAD, KOLKATA-1  
Ph - 033-22488318  
Fax –033-22480940

(iv) Indian private industries requesting for Proof Range at **HVF Avadi** should approach the under mentioned Nodal officer: -

**DDG /AVHQRS.**

OFB Hqrs., AYUDH BHAWAN  
10 A SK BOSE ROAD, KOLKATA-1  
Ph - 044- 26384784  
Fax –044-2638653

13. **Acceptance.** In respect of proof ranges under DGQA, Acceptance / Non Acceptance of the request of private industries for conduct of trial firing will be done by ADGQA (A) under intimation to the nominated proof range. In case of ranges under DRDO, the same will be accorded by Dir DQR&S. In respect of proof ranges under OFB, Acceptance / Non Acceptance of the request of private industries for conduct of trial firing will be done by DDG/ Operating Division under intimation to the nominated Proof Range (Factory). **Appendix E** will be forwarded to the nominated proof range by the nodal officers with information to the private industries for acceptance/ non-acceptance and contact detail of the nominated proof establishment.

14. Proof ranges will establish communication with the private firm as per **Appendices F, G and H.** **Appendix F** is for requirement of any additional information from private industries. **Appendix G** is for giving Executive Instructions for conduct of Trial Firing.

**Cost**

15. As per details provided in the application by the private defence company, expenditure will be worked out by the respective proof establishments and will be communicated to the private industries. On receipt of trial date from the proof range (**Appendix G**), the private firm will forward Commitment Certificate as per **Appendix H** along with advance payment of 25% of estimated cost of Trial Firing or the cost of proof stock component, whichever is higher. The booking of the range will, however, stand confirmed only on receipt of the advance payment, which is required to be done by the private firm latest by D plus 50. Remaining cost of firing trial will be deposited by the private firm one week prior to conduct of trial firing.

16. Expenditure incurred on account of utilisation of Proof Stock Equipment/Component, ammunition and other facilities during conduct of trial will be charged from the private industries as per laid down Government rates. DGQA and DRDO will annually promulgate the details of charges for utilisation of the ranges and facilities in the first month of each financial year. The rates to be charged will include all fixed (to be promulgated) and variable charges (depending upon actual utilisation of resources in the instance).

### **Change in Schedule**

17. Any change in the schedule of trials will be intimated by the private company to the nodal office and concerned range establishment minimum forty days in advance of the allotted date of commencement of firing. Any delay beyond this will invite a forfeiture of 15% of the total estimated trial cost. No forfeiture will, however, occur for reasons beyond the control of private industry, such as for reasons attributable to the range provider or force majeure.

### **Proof Stock Equipment and Ammunition**

18. Success of "Make in India" programme launched by the Government lies in timely proof of weapons/ammunition manufactured by various firms, both in public & private sectors. Proof Stock Components (PSCs) are required for validation, proof and developmental trials of the weapons and ammunition stores. Since OFB is the sole agency in the country manufacturing the PSCs, these need to be provided by them to the proof ranges/private firms. The procedure followed will be that the private industries will be provided with PSC available with the proof establishment for conduct of trials & same will be subsequently made up by OFB to the proof establishment on priority.

### **Security**

19. In case of foreign nationals attending the trial firing, full details along with passport, visa and sponsoring company be intimated at least 30 days in advance so that security clearance can be obtained.

20. Safety Certificate, Fit for Firing Certificate and Bond of Indemnity and other documents as per **Appendices J, K, L, M, N and O** are to be submitted by the private firms during final co-ordination meeting held at the proof range one working day prior to commencement of trial firing.

### **Timelines**

21. Timelines of various activities relating to conduct of trial firing by private firms at various proof establishments on payment basis are as given below: -

(a) **Timelines for Various Activities.**

Ser No	Activity	From	To	Timeline (Days)
(i)	Receipt of request for conduct of Trial Firing as per <b>Appendix E</b> from Private industries.	Private firm	Nodal Officer	D Day
(ii)	Forwarding of <b>Appendix E</b> and any additional inputs received by the Nodal Officer. Information to private industry for acceptance/ non-acceptance and contact detail of the nominated proof establishment	Nodal Officer	Proof Establishment  Private Firm	D plus 7
(iii)	Forwarding of initial response on Appendix E as per <b>Appendix F</b> after checking availability of PSCs /Weapon required for proof.	Proof Establishment	Private firm	D plus 17*
(iv)	Clarifications if any to be provided by Private firm on <b>Appendix F.</b>	Private industries	Proof range	D plus 27
(v)	Final response to Private firm as per <b>Appendix G</b> giving complete details and methodology of conduct of Trials Firing and Time Lines by Proof Establishment.	Proof Establishment	Private firm	D plus 37
(vi)	Deposition of advance payment by private company, latest by.	Private firm	Proof establishment	D plus 50

\* If all the desired information is available ab-initio, then the Executive Instruction for conduct of Trial Firing as per Annexure 3 will be issued by D+17.

(b) **Meetings with the Private Firms / Industries.** If at any stage, it is considered necessary to hold meeting with all the stake holders, the same can be held at the proof establishment. This would be most appropriate to resolve all the issues and expedite trial firing. These meetings should be held in the time frame D

plus 17 to D plus 37. Final co-ordination meeting at nominated proof range with all the stake holders will be held one day prior to conduct of trials.

(c) **Time Lines for Various Activities as per the Scheduled Date of Trial Firing.**

<b>Ser No</b>	<b>Activity</b>	<b>Timeline (Days)</b>
(i)	Scheduled date of Trial Firing.	TF Day
(ii)	Payment of remaining cost of Trial Firing by Private industries.	TF minus 7
(iii)	Positioning of Weapon / Ammunition store under Trial Firing at Proof Establishment by Private industries.	TF minus 7
(iv)	Positioning of Proof Stock Component if required at Proof Establishment by Private industries.	TF minus 7
(v)	Positioning of special instruments and other range facilities if required at Proof Establishment by Private industries.	TF minus 7
(vi)	Submission of nominal roll and security clearance of the personnel participating in Trial Firing by Private industries to the Proof Establishment.	TF minus 7
	In case of foreign nationals attending the Trial Firing full details along with passport, visa and details of sponsoring company etc be intimated to Proof Estt.	TF minus 30
(vii)	Final co-ordination meeting at Proof Establishment.	TF minus 1
(viii)	Submission of Safety Certificate, Fit for Firing Certificate, Bond of Indemnity and Arbitration Clause Certificate.	TF minus 1
(ix)	Conduct of Proof Firing.	TF Day
(x)	Preparation and compilation of Trial Data Report.	TF plus 3
(xi)	Dissemination of Trial Data Report.	TF plus 4

**Conduct of Firing**

22. Firing will be carried out by remote firing mechanism. All the personnel will be under cover for safety reasons. If for some reason firing cannot be conducted remotely, then it is

representative of the private industries who would be required to operate the equipment. All personnel of proof range will always be under cover.

### **Liability and Compensation**

23. Trials are to be conducted strictly as per date and time schedule decided beforehand.

24. Any damages to Proof Range equipment / instrument / property / personnel would be assessed by a Board of Officers after the firing and the cost of damages thereof shall be made good by the private industries.

25. Govt. of India will not be legally liable to pay any compensation for personnel / equipment of the private industries or their representative witnessing / participating in the proof / trial activities, in case of any mishap / accident or in an eventuality of fatal nature.

26. All necessary insurance / risk coverage for the trial shall be the responsibility of the private industries. Insurance should adequately cover the cost of proof equipments involved & other related assets.

27. Arbitration Clause listed in **Appendix M** is to be signed by representatives of both the proof establishment and private firm during the final co-ordination meeting and any legal dispute with the private firm are to be settled as per the Arbitration Clause.

### **Preparation of Result**

28. Responsibility of preparation of result will be decided before the commencement of firing clearly indicating whether the private firm requires detailed result from proof establishment or whether the firm wants to record own data.

29. **Sentencing.** Proof establishment will compile the result and provide the same to the Private Industries, if required. Proof establishment will not carry out any sentencing of the stores after the Trial Firing.

30. **Communication of Results.** The result will be communicated through E-Mail, Fax & Post.

## **PART II B : PROCEDURE FOR ALLOCATION OF FIELD FIRING RANGES BY SERVICE HQ (ARMY)**

31. Field Firing Ranges are under charge of Indian Army for conduct of their annual firing practices. These firing ranges can be made available to private industries for utilisation after the necessary clearances from Proof establishments have been obtained. A certificate to this effect needs be furnished by the private company at the time of raising application for allotment of range.

### **Procedure for Allotment of Field Firing Ranges**

32. **Processing of Requests for Field Firing Ranges.** To ensure that requests for field firing ranges are from authorised and established private industries in the defence private sector and for bona-fide purposes, applications for allotment of Field Firing Ranges shall be received and vetted by a nominated office of Ministry of Defence. The list of Field Firing Ranges for allotment is given at **Appendix P**.

33. **Nodal Agency: Army Headquarters.** Deputy Director General, Perspective Planning, Army Design Bureau, Technology Resource Centre (DDG PP ADB (TRC)) will be the nominated nodal office for processing of request from private industries. For processing of requests of private industries, the appointment, address and telephone number of the contact persons are as under: -

(a) **Contact Address.** DDG PP ADB (TRC), DGPP, A Wing, Sena Bhawan, IHQ of MoD (Army), New Delhi – 110011

(b) **Telephone No** 011-23019003, 09911143836

(c) **E mail:** ddgtechres-mod@gov.in

34. **Format.** Private firms will apply in the format as given at **Appendix Q**.

35. **Receipt of Requests.** All requests for Field Firing Ranges shall reach the Nodal Agency Office by post, e-mail and telephonically on or before 01 December, for consideration of allotment of Field Firing Ranges for the next training year. Training year commences on 01 July of the year and ends on 30 June of the next year. While private sector may indicate requirement of specific field firing range, final allotment will be coordinated with MT-5 based on slack time available between service requirements, which take priority, and consequent availability of time slots.

36. **Screening Procedure.** Comments of concerned directorates will be obtained by the DDG PP ADB (TRC) to screen the private industries, so as to allow only the serious private industries to participate.

37. **Acceptance.** Acceptance / Non-Acceptance of the request of private industries for conduct of trial firing will be done by DDG PP ADB (TRC). DGMT/MT 5 will coordinate the allotment with various command HQs.

38. **Interaction.** Direct interaction will be carried out between private industry representative and Director (Industry) at the DDG (ADB) to clarify and iterate the demand raised by the private company before the range is allotted. Nominated nodal officers at command HQs will additionally establish communication with the private firm as per **Appendices R, S and T. Appendix S** is for requirement of any additional information from private industries. **Appendix T** is for giving Executive Instructions for conduct of Firing.

### **Cost**

39. Expenditure incurred on account of utilisation of weapons, ammunition, manpower, equipment and administrative facilities during conduct of trial will be charged from the private industries as per laid down Government rates. Cost will be worked out by the respective Command HQ as per details provided in the application and will be communicated to the private industries. On receipt of date of firing from Command HQ (**Appendix S**), the private firm will forward Commitment Certificate as per **Appendix T** along with advance payment of 25% of estimated cost of firing. Prior to this the booking will only be considered provisional. Booking of the range will stand confirmed only on receipt of the advance payment through a Demand Draft (Details as given by Command HQ), which is required to be done by the private firm not later than 45 days of the scheduled date of commencement of firing. Remaining cost of firing trial will be deposited by the private firm, again through a Demand Draft, one week prior to conduct of firing.

40. Director (Industry) at the PP Dte (ADB) will annually promulgate guidelines to the commands HQ for calculation of charges to be levied to the private industry for utilisation of ranges and facilities. These shall be promulgated in the first month of commencement of each financial year. The rates to be charged by the Command HQ will include all fixed (to be promulgated by Army HQ) and variable charges (depending upon actual utilisation of resources in the instance).

### **Change in Schedule**

41. Payment of advance will not be refundable. Any change in the schedule of trials will be intimated by the private company to the nodal officer and concerned range establishment minimum forty days in advance beyond which rescheduling will not be carried out. Rescheduling of request, will not be entertained for emergent demands. No forfeiture will occur for reasons beyond the control of private industry, such as for reasons attributable to the range provider or force majeure. In such cases, firing will be rescheduled by MT 5 / Command HQ on mutually acceptable dates.

## Timelines

42. Timelines of various activities relating to conduct of trial firing by private firms at various proof establishments on payment basis are as given below: -

(a) Timelines for Various Activities.

S No	Activity	From	To	Normal Demand	Emergent demand
(i)	Receipt of request for conduct of Firing as per <b>Appendix Q</b> from Private industries.	Private firm	Nodal Officer at Army HQ.	01 Dec	D Day
(ii)	Forwarding of <b>Appendix Q</b> and any additional inputs received by the Nodal Officer.	Nodal Officer / MT-5	Command HQ	15 Mar	D plus 10
(iii)	Forwarding of initial response on Appendix Q as per <b>Appendix R</b>	Command HQ	Private firm	25 Mar	D plus 20*
(iv)	Clarifications if any to be provided by Private firm on <b>Appendix R.</b>	Private industries	Command HQ	05 Apr	D plus 27
(v)	Final response to Private firm as per <b>Appendix S</b> giving complete details and methodology of conduct of Trials Firing and Time Lines.	Command HQ	Private firm	15 Apr	D plus 37
(vi)	Deposition of advance payment by private company, latest by.	Private firm	Command HQ	45 days prior to the scheduled date of commencement of firing.	45 days before the scheduled date of commencement of firing.

\* If all the desired information is available ab-initio, then the Executive Instruction for conduct of Firing as per Annexure 3 will be issued by D plus 20.

(b) **Meetings with the Private Firms / Industries.** A preliminary meeting will be held at the nominated field firing range 10 days prior to conduct of trials to resolve any issues/familiarise with the range. Final co-ordination meeting at nominated proof range with all the stakeholders will be held one day prior to conduct of trials.

(c) **Time Lines for Various Activities as per the Scheduled Date of Trial Firing.**

Ser No	Activity	Timeline (Days)
(i)	Scheduled date of Firing.	TF Day
(ii)	Payment of remaining cost of Firing by Private industries.	TF minus 7
(iii)	Positioning of Weapon / Ammunition store under Firing at Field Firing Range by Private industries.	TF minus 7
(iv)	Positioning of special instruments and other range facilities if required at Field Firing Range by Private industries.	TF minus 7
(v)	Submission of nominal roll and security clearance of the personnel participating in Firing by Private industries to the Field Firing Range	TF minus 7
	In case of foreign nationals attending the Firing, full details along with passport, visa and details of sponsoring company etc be intimated to Field Firing Range.	TF minus 30
(vi)	Initial coordination meeting at Field Firing Range	TF minus 10
(vii)	Final co-ordination meeting at Field Firing Range.	TF minus 1
(viii)	Submission of Safety Certificate, Fit for Firing Certificate, Bond of Indemnity and Arbitration Clause Certificate.	TF minus 1
(ix)	Conduct of Firing.	TF Day

43. **Action by Private Sector.** On receipt of intimation of allotment, the private industries shall get in touch with the Local Military Authority (LMA) in charge of the allotted Field Firing Range at the earliest to get acquainted with the local range orders and to carry out formalities that would be specific to the Field Firing Range allotted. It is pertinent to point out that this SOP relates to range allocation only. Ranges are different in terms of testing facilities and related infrastructure available. They have differing security considerations and accordingly, have different detailed range utilisation SOPs.

44. **Contact Information.** Contact information of the nodal officer at concerned Command HQ intimated to the private sector private industries by DDG PP ADB (TRC). Contact of the LMA at the nominated Field Firing Range will be intimated by the Command HQ to the private firm while issuing out the allotment letter (**Appendices R&S**).

45. **Emergent Requests.** Emergent requests for allotment of Field Firing Ranges will be forwarded to the Nodal Agency minimum three months in advance from the proposed date of commencement. These requests will thereafter be processed for clearance as per the laid down procedure above. Format of the Emergent Request Form is given at **Appendix U**.

46. **Priority.** IA will reserve the rights to change/ cancel allocation based on its own requirements.

47. **Submission of Certificates.** Safety Certificate, Fit for Firing Certificate and Bond of Indemnity and other documents as per **Appendices J, K, L, M, N and O** are to be submitted by the private firms during final co-ordination meeting held at the proof range one working day prior to commencement of trial firing.

### **Field Firing Ranges Handing / Taking Over**

48. **Range Handing/ Taking Over Procedure.** On being allotted the Field Firing Range by the Nodal Agency, the private industries shall contact the LMA with a copy of range allotment letter by the nominated office. The LMA at the Field Firing Range shall make the private industries fully conversant with the Field Firing Range Standing Orders and safety guidelines. The Field Firing Range Standing Orders shall be perused by the private industries. In addition to the Field Firing Range Standing Orders, a separate comprehensive SOP for private industries shall be prepared by the LMA and copy given to the private industries. The following will be adhered to:-

(a) **Taking Over of Field Firing Range.** Once the private firm has fully read and understood the FFR Standing Orders and comprehensive SOP for private industries, the allotted FFR or part of it will be handed over to the private firm by the LMA.

(b) **Handing Over of Field Firing Range.** The range SOP available with the LMA and adherence to the range safety drills shall be binding on the private

industries. Onus of obtaining clearance from the local civil administration and the police prior to handing over the range back to LMA will be that of the private industries. Metal scrap generated, if any, would be collected by the local range contractor as per range SOP.

(c) **Communication.** In view of range safety requirements, telephone lines as required will be provided by the LMA through the local exchange. In addition, mobile telephony communication will be used when available as a backup medium of communication. In addition, the private industries will have at least three hand held UHF Radio Sets of which one shall be given to the LMA as an out station.

(d) **Verification of ID/MI Clearance.** All members of the testing/firing team shall carry valid nationally accepted ID proof. MI clearance shall be obtained as per procedure, where required.

49. **Liability and Compensation.** All liabilities that may accrue once the FFR or designated portion of it is handed over to the private sector private industries, till the time it remains with them will be that of the private industries.

50. **Legal Jurisdiction.** All legal issues that may arise shall be under the jurisdiction of the Court of Law nearest to the FFR, and in the state where it is located.

51. **Decision of LMA.** The decision of the LMA or personnel authorized on its behalf on all aspects will be binding on the private firm while utilizing the allotted Field Firing Range.

### **Assistance at the FFRs**

52. The following assistance shall be provided at the ranges on payment basis:-

(a) **Manpower Support.** Manpower support will be limited to coordination and facilitation of firing at the ranges.

(b) Survey and Meteorological Data.

(c) Medical cover.

(d) Water.

(e) Equipment and ammunition.

53. Services will try to assist with administrative arrangements to the extent possible but due to the extremely limited facilities that are available currently at the ranges, private firms would be well advised to harness local civilian administrative infrastructure available. Any additional requirements shall be obtained by them from the appropriate agencies under their own arrangement. Limited local facilities in terms of existing infrastructure may be earmarked/ allotted by the LMA as per availability.

## **Liability and Compensation**

54. Trials are to be conducted strictly as per date and time schedule decided beforehand.

55. Any damages to Field Firing Range equipment / instrument / property / personnel would be assessed by a Board of Officers after the firing and the cost of damages thereof shall be made good by the private industries.

56. Govt. of India / Indian Army / Local Military Authority will not be legally liable to pay any compensation for personnel / equipment of the private industries or their representative witnessing / participating in the proof / trial activities, in case of any mishap/ accident or in an eventuality of fatal nature.

57. All necessary insurance / risk coverage for the trial shall be the responsibility of the private industries. Insurance should adequately cover the cost of equipments & other assets.

58. Arbitration Clause listed in Appendix M is to be signed by representatives of both the proof establishment and private firm during the final co-ordination meeting and any legal dispute with the private firm are to be settled as per the Arbitration Clause.

59. All service personnel involved with the Proof Testing and Field Firing will be deemed to be on bonafide military duty.

60. **Relevant / Additional Guide-Lines.** To increase the chance of allotment and to ensure subsequent smooth conduct of firing/ trials etc, the following guide-lines may be followed by the applicants:-

(a) Give more than one choice of Field Firing Ranges, and for each choice, give multiple options in respect of dates. Restrict the period of requirement to the minimum possible.

(b) Be aware of the capabilities of Field Firing Ranges applied for, in terms of weapons/ ammunitions that can be fired/ tested there, as also the infrastructure available.

(c) Summer months, from May to July are the months when Field Firing Ranges are more likely to be available than in winters, especially in North and Central India.

(d) Be well acquainted with the various acts, rules, legal rulings and SOP issued by the LMA that govern the use of Field Firing Ranges.

(e) Establish contact with LMA immediately on allocation of Field Firing Range to be aware of the various acts and local rules governing the use of the allotted Field Firing Range as also on the issue of availability of local resources.

(f) Liaise with various agencies to ensure that additional requirements/assistances are tied up well in time.

### **Coordination**

61. The overall coordination of the allotment of ranges (Proof Testing & Field Firing Ranges) will rest with the **Additional Director General (ADG) DQA (A)**. He will enable the industrial partners by: -

(a) Giving directions to ensure smooth conduct of trials.

(b) Ensuring overlap and smooth conduct, whenever more than one establishment / agency is involved.

(c) Addressing any issues being faced by private firms during implementation of the SOP

62. **Contact Details-**

**Additional Director General (ADG) DQA (ARMAMENT)/Arm-6**

Room Number 140, H- Block, DGQA New Delhi

Tele No. 011 - 2301 1333, 23017243

Fax – 011-23014777 E-Mail: armt-dgqa@nic.in

### **Conclusion**

63. The MoD is committed to the success of the indigenisation process. Opening up of scarce resources like proof and field firing ranges to the private sector would significantly contribute to the process. It is well appreciated that development of huge testing infrastructure is not financially viable for the private companies, therefore, all possible assistance has been sought to be provided to the Indian private industry. The complete process of requisition, allotment and utilisation has been made transparent and time bound.

64. All possible efforts will be made at handholding of the nascent Indian private defence industry. But it may be appreciated that the Services have minimal administrative infrastructural facilities, presently, at the ranges. Assistance to the extent possible will be provided. Similarly, existing support for safety and security aspects, where available, will be extended. However, private companies will be well advised to harness local civilian administrative infrastructure available and be self-contained for their requirements.

65. This SOP is a work in progress and will be reviewed for revision/amendment after a period of two years, based on experience and feedback.

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**DETAILS OF PROOF UNDERTAKEN BY PROOF RANGES AND AVAILABILITY OF  
INFRASTRUCTURE (CPE ITARSI)**

<b><u>Calibre</u></b>	<b><u>Weapons Available</u></b>	<b><u>Stores Under Proof</u></b>	<b><u>Type of Proof</u></b>
12.7mm	Gun Machine 12.7 AD	Cartg.SA.12.7 APIT	Tracer functioning
81mm	81mm Mortar E-1	(i) HE	Functioning proof
		(ii) PWP Smoke	Functioning proof
		(iii) Illg	Functioning proof
		(iv) Prop.NGB 221	Velocity & Pressure
		(v) Fuze 162 Mk-8	Functioning proof
		(vi) Fuze 213 Mk-5	Functioning proof, Absence of premature, Time proof
		(vii) Tail Unit for 81mm Illg	Range & Functioning proof
		(viii) Breech Block for 81mm	Pressure proof
		(ix) Complete Barrel assembly	Pressure proof
105mm	(i) Ord 105/53 Tk Gun Mounted on 7.2" How Carrier	(i) Primer Electric L-1A4	Dynamic Proof, Functioning proof
		(ii) Case Cartg RW-242	Pressure & Functioning proof
		(iii) Shell 105mm Tk Sh Practice & Shell 105mm Tk HESH	Function proof
		(iv) Prop. NQ/S 156-056, Prop NQ/M 028 & Prop NQ/,-047	Velocity & Pressure
		(v) Tracer No 30 & 33	Functioning proof
		(vi) Fuze L-29A3	Functioning proof

	(ii) Ord QF 105/37 IFG	(i) Prof N 017	Velocity & pressure
		(ii) Fuze 213 Mk-5	Safety from Premature
		(iii) Shell 105mm IFG BE colour Smoke	Functioning proof
		(iv) Primer Electric 1A	Functioning proof
		(v) Shell 105mm IFG HESH	Functioning proof, Plate proof
		(vi) Fuze 117Mk-20	Absence of premature, Arming & Time Proof
120mm	120mm Mortar	(i) Fuze 162 Mk-9	Functioning proof
		(ii) Prop NGB 011 & 241	Velocity & Pressure
		(iii) HE	Range & Functioning
		(iv) Smoke PWP	Range & Functioning
		(v) Primary Cartg CL-3	Range & Functioning
		(vi) Tail Unit 2A	Range & Functioning
		(vii) Fuze 213 Mk-5	Functioning, Time, Absence of Premature & Percussion proof

125mm	(i) 125mm SB Gun 2A46 Tk T-72 (ii) 125mm SB Gun Article 2A46 Mounted on fix firing stand	(i) 125mm Shell 125mm TK HE	Vertical Target Consistency, Absence from premature & Order of Burst
		(ii) SCCC 125mm	Functioning safety
		(iii) Fuze B-15	Functioning proof, Absence of premature & safety from premature
		(iv) Tracer No 12	Functioning
		(v) Shell 125 mm HE	Area Target Consistency
		(vi) Shell 125mm Tk HEAT	Absence of premature & Strength of filling, Armour penetration
		(vii) Fuze B429E	Absence of premature Functioning proof
		(viii) Primer GUV-7	Functioning by Electric & Percussion method
		(ix) Funnel cone assembly	Armour Penetration
		(x) Combination proof metallic base & Primer GUV-7	Functioning proof

130mm	Ord QF 130MM Fd Gun M-46	(i) Primer Percn 18A * 19B	Functioning & Pressure proof
		(ii) Case Cartg IRW-154	Pressure proof
		(iii) Prop 130mm RVC/FVC	Velocity & Pressure
		(iv) Fuze B 429	Absence of premature, Arming proof
		(v) Breech Block for 130mm	Functioning proof
		(vi) Muzzle Brake for 130mm	Functioning proof
		(vii) Barrel for 130mm	Pressure proof
155mm	(i) Ord 155mm FH 77 BO 2	(i) Prop No 1180 CBI (Clear Burning igniters)	Velocity & Pressure
		(ii) Primer 191A2	Functioning proof
	(ii) Ord 155mm Up gunned Mk-1	(iii) Shell 155mm M107 HE	Functioning proof
		(iv) Fuze PDM 572 C1	Functioning Delay proof
		(v) Prop. SB/M82	Velocity & Pressure
		(vi) Obturating Spindle/Pad, Breech Screw/Breech	Pressure proof
		(vii) Muzzle brake	Functioning proof
		(viii) Packing/Sealing Rings	Functioning proof
		(ix) Recoil Buffer Assy	Functioning proof

122MM	(I) 122mm D-30 HOW	(i) Shell HE	Absence of premature. Functioning delay, Functioning proof
		(ii) Smoke	Functioning, Absence of premature
		(iii) Illg	Functioning, Absence of premature
	(ii) 122mm grad bm-21	(i) Rocket HE	Functioning proof

**DETAILS OF INSTRUMENT AVAILABLE AT CPE ITARSI**

<b><u>Ser No</u></b>	<b><u>Nomenclature</u></b>	<b><u>Usage</u></b>	<b><u>Range</u></b>	<b><u>Accuracy</u></b>
1.	Digital Chronometer BAL 605 & 303A	Fuze delay time Measurement	1 Sec - 15 Min	±0.01%
2.	Sky Screen LS 28 including Multipurpose Chronometer Bal 303 & 303A	Fuze delay time Measurement	1 Sec – 15 Min	±0.01%
3.	Fuze Delay Recording Apparatus (FDRA)	Fuze delay time Measurement	1 Sec – 15 min	±0.01%
4.	Doppler Radar DR – 5000	Measurement of MV	30 -2200 m/s	--
5.	MV Indicator MK-3 Sr.No. 450300001 for 155mm Gun	Measurement of MV	50-2400 m/s	±0.05%
6.	Time Interval Counter 2 Channel	For measurement of hang fire	Nk	--
7.	Doppler Radar (W-700/ SL-520M)	Measurement of MV	30-3000 m/s	±0.05%
8.	Internal Piezo Gauges	Measurement of pressure, Pressure curve, Rotary Voltage, temp	48-800 Mpa	±2.5%
9.	Air Burst and Ground Burst System	Measurement of Range & Height of burst	Nk	--
10.	Digital Video Recorder with 2 Camera	Videography of 125mm tank	NA	--
11.	Automatic Weather Station Davis Vantage PRO2	Measurement of meteorological data	Wind speed = 0-80 m/s Humidity – 1-100% Atm Pr = 540-1100mb Temp = -40° to + 60° C	-- -- --

**DETAILS OF PROOF UNDERTAKEN BY PROOF RANGES AND AVAILABILITY OF INFRASTRUCTURE (LPR KHAMARIA)**

<b><u>Calibre</u></b>	<b><u>Weapon Available</u></b>	<b><u>Stores Under Proof</u></b>	<b><u>Type of Proof</u></b>
0.50"	Gun Machine 1A 0.50 " HMG	Depot Proof – Functioning	
	Gun Machine RMG 0.50"	Cartridge 0.50 " RMG	Depot Proof – Functioning
	Rifle Spotting 0.50" Machine Gun	Cartridge 0.50 " Spotter	Depot Proof – Functioning
7.62mm	Rifle 7.62mm SLR	Tube Launching	Range (50m/100m/150m)
14.5mm	Gun Machine 14.5mm KNBT Ex-USSR	Bullet (Indigenous) U/D	Penetration
		Primer KB-25	Functioning
		Propellant 5/7	Charge assessment & Confirmatory
		Cartridge (OTL)	MV, Pressure, Consistency, Functioning & Casualty, Penetration and Incendiary
23mm	(a) 23mm AA Twin Gun ZU-23	Case	MV/Pressure & Strength, Extraction and Obstruction Proof
		Tracer	Tracer Burning time
		Det. NR 3	Shooting Test & Ballistic Time
		Fuze MG 25- Check Proof	Safety, Reliability, SD

23mm	(b) 23mm Velocity Barrel	Propellant	Charge Assessment, Confirmatory
	(c) 23mm Pressure Barrel	Propellant with Det NR-3	Suitability
	(d) 23mm A Twin Gun ZU-23 (e) 23mm Pressure Barrel (f) 23mm Velocity Barrel	Complete Round (OTL & Check Proof)	MV/Pressure, Tightness of Shell, Correct Cartridge Assy (Auto Mode & Single Shot), Tracer Burning time, Penetration & Incendiary
30mm	(a) 30mm Article 2A42	Case	Functioning & Strength
		Primer KB 30	Functioning & Ballistic Time
		Fuze A670 (HET & HEI)	Lower Limit, Reliability, Self Destruction Time
		Tracer (APT&HET)	Tracer Burning Time
		Ballistic Cap (APT)	Functioning
		Depot Proof	Functioning & Tracer BT
	(b) 30mm Ballistic Crusher Barrel	Shell APT	Accuracy, Recovery, MV/Penetration
		Shell HET	Accuracy, Recovery
		Shell HEI	Accuracy, Recovery & Stability
		Propellant	Charge Assessment & Confirmatory
		HE Pellet (HET & HEI)	Functioning
		Round Standardization	MV/Pressure
		Copper Crusher	MV/Pressure
	(c) 30mm Article 2A42 & Ballistic Crusher Barrel	Complete Round (OTL)	MV/Pressure & Functioning

40mm	(a) Eqpt 40mm L-70	Shell HET	Post Impact Delay
		Shell PFFC	Pressure & Functioning
		Case HET	Functioning & Strength
		Case PFFC	Pressure, Functioning & Strength
		Primer No.12 MK-4	Functioning
		Primer IM 87	Pressure & Functioning
		Propellant NC 1066	Charge Assessment & Confirmatory
		Propellant 19 Hole- PFFC	Charge Assessment, Confirmatory & TCF Firing
		Tracer for HET	Tracer Burning Time
		Fuze Fz104 M12 for HET	Safety From Premature, Post Impact Delay, Self Destruction Time
		Fuze FB 40 for PFFC	Safety From Premature, Percussion Self Destruction
		Copper Standardization	MV/Pressure
		Depot Proof	Functioning & Tracer Burning Time
		Complete Round HET (OTL)	MV/Pressure, RL, Auto Functioning Tracer Burning Time, Self Destruction
	Complete Round PFFC (OTL)	Functioning (Auto) & MV	
	(b) Ballistic Barrel 40mm UBGL Ex Bulgaria	Grenade 40mm UBGL	Functioning

81mm	(a) 84mm RL MK-II	Cap 5.7	Functioning
		Tracer 56D for TPT	Tracer Burning Time
		Stabilizing Tube for TPT	MV, RL & Consistency
		Fuze 64C for Illg	Time to Burst
	(b) 84mm RL MK-III	Arming Device - 551	Non-Arming/Muzzle Safety, MV/Arming
		Nose Plug-551	Type Test (MV, RL, Penetration)
	(c) 84mm RL MK-II & MK-III	Case for MK-II & III	Functioning, Strength & RL
		Round HE, Illg, HEAT 551 & 651 – Depot Proof	Functioning
	(d) 84mm RL MK-II, HPG	Propellant NGB 204 for HE/Illg/TPT	Charge Assessment, Confirmatory
		Propellant NGB 204 for TPT	Standardisation Proof
		Propellant NGB 204 for HE/Illg	Combination Proof
		Propellant AKB 204 for 551	Charge Assessment, Confirmatory & Charge Establishment
		Projectile for TPT	MV, Pressure, RL, Consistency, Recovery
TPT (OTL)		Pressure, RL, MV Consistency	
84mm	(d) 84mm RL MK-II, HPG	Round –Illg (OTL)	Pressure, RL, Time to Burst & Burning Time

		Round –HE (OTL)	Pressure, RL & Time to Burst
		War Head Body – 551	Type Test (Pressure, RL, MV, MPI (Accuracy), penetration, Functioning)
		Round -551 (OTL)	Pressure, RL, MV MPI (Accuracy), Penetration, Functioning
12 Bore	Shot Gun Single Bore Barrel	Cartridge 12 Bore	Strength Proof
	Shot Gun Double Bore Barrel	Cartridge 12 Bore	-do-
23mm	23mm Barrel	STD, APT & HEI	Strength & Attestation
30mm	30mm Ballistic Crusher Barrel	STD, APT & HEI	Strength & Attestation
40mm	40mm L-70 Barrel	STD, Complete RD	Functioning & Strength
51mm	Mortar	Plug-I & II, Primary Cartridge & Augmenting Charge	Functioning & Strength
81mm	Mortar	Bomb Inert (Normal & Modified), Primary Cartridge Augmenting Charge	Functioning & Strength
	Smoke Grenade Launcher	81mm Smoke Grenade Complete RD	Functioning
120mm	Mortar	Mortar Bomb Inert, Primary Cartridge, Augmenting Charge	Functioning & Strength

84mm	84mm MK-III	STD Round TPT	Integration Check Proof
105mm	LFG	Proof Shot, Cartridge Case, Primer, Charge Bag	Functioning
125mm	T-72 Spare Barrel & T-90 Spare Barrel	Hydro Cartridge, FSAPDS AMK-340, HE Inert	Functioning & Strength
	T-72 Article /OE	Hydro Cartridge, FSAPDS AMK-340, HE Inert	Acceptance Proof
	T-72 Article/OE	Hydro Cartridge, FSAPDS AMK-339	Accuracy Proof
	T-72 OH	Hydro Cartridge	Functioning
	T-90 Article/OE	Hydro Cartridge, FSAPDS AMK-340	Acceptance Proof
	T-90 Article/OE	Hydro Cartridge, FSAPDS AMK-339	Accuracy Proof

**DETAILS OF INSTRUMENTS AVAILABLE AT LPR KHAMARIA**

<b><u>Ser No</u></b>	<b><u>Nomenclature</u></b>	<b><u>Usage</u></b>	<b><u>Range</u></b>	<b><u>Accuracy</u></b>
1.	EDH South Africa Radar (2 NOs) Model : 3080	MV Rate of fire	50 m/s to 3000 m/s	Better than 0.3m/s
2.	Chronometer CC 3000 with EO 420 Long Range Photocell Transducer, PCC Sky screen	Time to burst for 84mm HE/IIIg	0.01 Sec to 59 Min 59 Sec	Max Failure IS $\pm 0.01\%$
3.	Pressure Recording system (Oscilloscope, Charge Amplifier, Piezo-electric Transducer)	Pressure measurement of 84mm, 20mm AMR, 30mm Rudra Grenade	Upto 80, 000	0.5%
4.	Digital Chronometer BAL 303 with EO 420 Long Range Photocell Transducer	Ballistic Time measurement 23mm, 30mm	1 Mili Sec to 900 Sec	
5.	Digital Chronometer BAL 303 with 2 PCC sky Screen	MV for T-70/ T-90		
6.	Internal Piezo Gauge (IPG) internal Pressure Gauge	Pressure measurement of T-72/ t-90	Upto 800 MPa	$\pm 0.02\%$
7.	Stop Watch 3 NOs	Time measurement, Time to Burst, Burning Time, TR B.T, SD	0.01 Sec to 9 Min 59 Sec	
8.	Dynalab Weather Tech	Measurement of Atmospheric Pressure, Temp Wind Speed, RH		

9.	Binocular (4 nos)	30mm Accuracy & PID, 40mm PID, 84 consistency)		
10.	Anemometer Hand Held	For Measuring Wind Speed	0.4 m/s to 30 m/s	
11.	Binocular (04 Nos)	30mm Accuracy & PID, 40mm PID, 84 consistency		
12.	Conditioning Chamber (Static-7 Nos)	For conditioning of Amn at various temperature	CH-1:-60 to +60CH-2:0°C to +60°C	$\pm 3^{\circ}\text{C}$ $\pm 1^{\circ}\text{C}$
13.	Infra Red Thermometer	Temperature Measurement of Conditioned Amn	20°C to 270°C	

**DETAILS OF PROOF UNDERTAKEN AND AVAILABILITY OF INFRASTRUCTURE  
PROOF & EXPERIMENTAL ESTABLISHMENT (PXE), BALASORE**

**Infrastructure Available**

1. **Weapons.** The weapons available are not on charge of PXE, Balasore. Approval for utilisation of these weapons should be taken from concerned agencies.

(a) **Army**

- (i) 155mm Up gun
- (ii) 130mm Field Gun
- (iii) 105mm IFG & LFG
- (iv) 40mm L/70.81 Mortar
- (v) 51mm Mortar
- (vi) 12.7mm rifle
- (vii) 7.62 mm rifle
- (viii) 120mm MBT ARJUN & NAKUL
- (ix) 125mm T-72 Tank

(b) **Navy**

- (i) 76.2mm
- (ii) 76/62mm SRGM
- (iii) 100mm for AK 100
- (iv) 40/60 Gun
- (v) 30mm AK 630

2. **Conditioning Chambers.** Heating/Cooling Chamber (-50 to +50).

3. **Instruments.**

- (a) High speed solid state cameras
- (b) Ultra High speed solid state camera
- (c) DVCAM System with Editing Facility
- (d) Still Photography System

- (e) CCTV System
- (f) Long Range Projectile Tracking Radar
- (g) Velocity Analyzing Doppler radar
- (h) Muzzle Velocity Radar
- (j) Acoustic Sensors
- (k) Accelerometer
- (l) Internal Piezo Gauge
- (m) Frequency Analyser
- (n) Fuze Delay Recorder
- (o) Spectrum Analyser (up to 10 GHz)
- (p) Digital Storage Oscilloscope
- (q) Voltage Pulse Generator
- (r) Upper Air Metrological Recording system
- (s) Automatic Weather Station
- (t) Smart Station with DGPS

**DETAILS OF FACILITIES AVAILABLE AT TBRL**

1. Details of facilities available at TBRL, Chandigarh are as under :-
  - (a) Ballistics Test Facility for testing of bullet resistant material against small arms fire.
  - (b) Instrumented Small Arms Ballistic Range.
  - (c) Blast Evaluation of Ammunition in free air, underground and under water.
  - (d) Quantitative Evaluation of Blast Protective System.
  - (e) BAM Fall Hammer Apparatus.
  - (f) Differential Scanning Calorimeter.
  - (g) Dynamic Mechanical Analyser.
  - (h) Friction Sensitivity Tester.
  - (j) Gas Chromatography-Mass Spectroscopy.
  - (k) High Performance Liquid Chromatography.
  - (l) Rail Track Rocket Sled (RTRS) Test Facility.
  - (m) Thermo Mechanical Analyser.

**APPLICATION FORM FOR TRIAL FIRING OF AMMUNITION / WEAPON IN MoD  
PROOF RANGES**

Sr.	QUESTIONNAIRE
1.	<p><b><u>Details of Private Firm / Private industries.</u></b></p> <p>(a) Name and type of the private industries.</p> <p>(b) Private (Indian company).</p> <p>(c) Private (<u>Indian company in collaboration with Foreign Manufacturer</u>).</p>
2.	<p><b><u>Status of Private Firm / Private industries.</u></b></p> <p>(a) Registered with MoD/DGQA/OFB/DPSU/DGOS/DRDO/MHA (any Govt agency/ Holder of Defence Equipment License).</p> <p>(b) Green Channel status with details of approving agency.</p>
3.	<p><b><u>Store to be tested.</u></b></p> <p>(a) Ammunition and its calibre.</p> <p>(b) Weapon and its calibre.</p> <p>(c) Any other.</p>
4.	<p><b><u>Type of Proof.</u></b></p> <p>(a) Static.</p> <p>(b) Dynamic.</p> <p>(c) Recovery.</p> <p>(d) Any other.</p>
5.	<p><b><u>Mode of Firing.</u></b></p> <p>(a) Direct Firing.</p> <p>(b) In-direct Firing.</p> <p>(c) Any other.</p>
6.	Parameters to be tested along with desired range and accuracy of measurement.
7.	Observation to be recorded.
8.*	Proof Schedule if any.
9.	Whether testing of this particular armament, ammunition or equipment has been carried out earlier? Provide details.
	* Optional information.

10.	<p><b><u>Technical Assistance required during Proof from Proof Establishment.</u></b></p> <p>(a) Measurement of Pressure.</p> <p>(b) Measurement of Velocity.</p> <p>(c) Photography and Videography.</p> <p>(d) Type of Target including specification if any.</p> <p>(e) Environmental conditioning including duration of conditioning.</p> <p>(f) Maximum and minimum range for proof.</p> <p>(g) Performance at Observation Post /Target end:-</p> <p>(i) Range.</p> <p>(ii) Functioning.</p> <p>(iii) Time to burst.</p> <p>(iv) Height of burst.</p> <p>(v) Duration of smoke/Illumination.</p> <p>(vi) Delay distance/timings.</p> <p>(vii) Any other.</p> <p>(h) Any other instrumentation requirements.</p> <p>(j) Any other technical assistance.</p>
11.	Details of test equipments & instruments being provided by the private industries, if any.
12.	Availability of range table of subject store. (YES / NO)
13.	Firing Series of the Trial (Detailed methodology of conduct of firing including number of rounds).
14.	Safety & Range precautions to be observed during conduct of Trial Firing.
15.	EMI/EMC details/compatibility.
16.	Name, Address, Telephone / Mobile Number of the individual / appointment to be contacted for further correspondence / planning of the Trial Firing.
17.	Name and details of the individuals including Foreign Representative participating in proof firing for obtaining security clearance.
18.	Any administrative requirements (subject to availability).
19.	Any miscellaneous relevant information to be provided / required.
20.	Firm to furnish the component details of ammunition to be tested namely composition, source (whether Ex-Import or Indigenous), explosive used etc.

**FORMAT FOR INITIAL RESPONSE BY PROOF ESTABLISHMENT TO PRIVATE FIRM**  
**/ PRI-VATE INDUSTRIES FOR UNDERTAKING TRIAL FIRING OF AMMUNITION /**  
**WEAPON IN MoD PROOF RANGES**

1.	Reference of Nodal Cell letter.
2.	Name of the Private Firm / Private industries.
3.	Store under proof.
4.	Type of proof / Mode of Firing.
5.	Details of the Nodal Officer at Proof Establishment (along with contact details).
6.	Feasibility of under taking proof w.r.t to the following:- <ul style="list-style-type: none"><li>• Range.</li><li>• Range restriction.</li><li>• Safety.</li><li>• Parameter / observation which can be recorded.</li><li>• Parameter / observation which cannot be recorded.</li><li>• Instruments facilities available.</li><li>• Instruments facilities not available.</li><li>• Instruments facilities to be made available by the private industries / requisitioned from other source (other Proof Establishment, DRDO etc).</li><li>• Availability of Proof Stock Component.</li><li>• If Proof Stock Component is not available then likely source and whether under current production or to be made available by the Private industries.</li></ul>
7.	Any clarifications w.r.t. observations /parameters for conduct of Trial Firing.
8.	Any other information desired from Firm / private industries.
9.	Administrative support, if any, which can be provided to the Firm / private industries.

**FORMAT FOR FINAL RESPONSE BY PROOF ESTABLISHMENT TO PRIVATE FIRM /  
PRI-VATE INDUSTRIES FOR UNDERTAKING TRIAL FIRING OF AMMUNITION /  
WEAPON IN MoD PROOF RANGES**

1.	Reference of Nodal Cell letter.
2.	Name of Private Firm / Private industries.
3.	Store under proof.
4.	Type of proof / Mode of Firing.
5.	Details of the Nodal Officer at Proof Establishment (along with contact details).
6.	Date of Trial Firing / Likely date (Subject to likely placement of Proof Stock Components)
7.	Cost of Trial Firing.
8.	Amount to be deposited by Private industries as security (25% of the cost of proof firing or the cost of Proof Stock components whichever is higher).
9.	Remaining cost of Proof Firing and date by which payment to be made by Private industries (Min one week prior to conduct of Proof).
10a	Payment: Account details in which payment to be made by the Private industries (NEFT transfer details).
10b	Insurance cover : Details of equipment& asset to be covered & the cost thereof.
11.	Day and time by which store under testing to be positioned at Proof Establishment by Private industries (Min one week prior to day of conduct of Trial Firing).
12.	Date by which Proof Stock Component to be provided by the Private industries (If not available with PE and cannot be procured ex OFB/DGOS) (Minimum one week in advance).
13.	Date by which instruments facilities to be provided by the Private industries (Minimum one week in advance).

14.	Date by which security clearance of personnel attending the proof by the Private industries (Minimum one week in advance). In case of foreign nationals attending the firing full details along with passport, visa and sponsoring company etc be intimated to Proof Range 30 days in advance.
15.	Date by which Safety Certificate, Fit for Firing Certificate and Bond of Indemnity to be provided by the Private industries (minimum one working day prior to conduct of Trial Firing).
16.	Date of final coordination meeting (minimum one working day prior to conduct of Trial Firing).
17.	Security requirement wrt the personnel, transport, equipment etc of private industries.
18.	Administrative support. If any which can be provided to the Firm/Private industries.
19.	Any other information desired / instructions.

**COMMITTMENT CERTIFICATE TO BE FURNISHED BY THE PRIVATE FIRM TO  
PROOF ESTABLISHMENT ON RECEIPT OF DATE OF TRIAL FIRING OF  
AMMUNITION / WEAPON IN MoD PROOF RANGES**

I, Shri / Smt \_\_\_\_\_ hereby commit the following w.r.t Trial Firing being conducted for \_\_\_\_\_ on behalf of \_\_\_\_\_ (Firm Name) :-

- (a) Commitment Amount. Payment of 25% of the cost of Trial Firing on confirmation of the date of Trial Firing. In case of failure to participate in the Trial Firing, the Commitment Amount is liable to be Forfeited.
- (b) Remaining cost of Proof Firing will be paid minimum one week prior to conduct of Trial Firing.
- (c) Weapon / Amn Store under proof will be positioned at the nominated Proof Establishment minimum one week prior to conduct of Trial Firing.
- (d) Proof Stock Component if required will be positioned at the nominated Proof Establishment minimum one week prior to conduct of Trial Firing.
- (e) Instrument and other range facilities like target, etc if required will be positioned at the nominated Proof Establishment minimum one week prior to conduct of Trial Firing.
- (f) Safety Certificate, Fit for Firing Certificate and Bond of Indemnity will be submitted minimum one working day prior to conduct of Trial Firing.
- (g) Final Trial Co-ordination meeting one working day prior to conduct of Trial Firing will be attended by reps of the Private firm / private industries.
- (h) Adhere to safety and range instructions/restrictions of the Proof Range.
- (j) Adhere to security requirement of the Proof Range.
- (k) Adhere to rules and regulation w.r.t. vehicle, personal and other administrative rules of the Proof Range.
- (l) Will make good or pay the cost for any damage to the equipment, store, instrument, range facility etc caused during Trial Firing.
- (m) Will be liable to pay compensation for any injury both fatal / non-fatal to any personnel as a result of Trial Firing.
- (n) Will be liable to settle any legal dispute as per the Arbitration clause given at Annexure 8 of this SOP.
- (o) Firm / Foreign Collaboration Firm is not currently blacklisted by Govt of India.

Place :

Name:

Date :

Appointment :

Name of the Firm:

**Note** To be provide on the official letterhead of the firm and to be signed by the appropriate authority.

**SAFETY CERTIFICATE**

**PROOF OF WEAPON / AMMUNITION STORE .....**

1. Refer MoD instructions and grant of permission for undertaking the proof of \_\_\_\_\_ (weapon/ ammunition store) at \_\_\_\_\_ (nominated Proof Establishment).

2. It is hereby certified that the following weapon / ammunition store are safe for firing:-

Weapon (along with details of components)

Ammunition (Types of Ammunition)

3. It is also certified that the Weapon / Ammunition Store/ Component is safe to be Proof Fired with Charge \_\_\_\_\_ with increment up to \_\_\_\_\_ gms and conditioned up to \_\_\_\_\_ temp tp achieve Pressure of \_\_\_\_\_ MPa .

3. Responsibility of any accident or defect during Trial Firing due to firing at higher pressure by addition of charge mass or high temp conditioning is that of Private Firm / Private industries and not of the Proof Establishment.

4. I also undertake the responsibility of making good in case of any accident or damage to the equipment / building / personnel occurs during the Trial Firing.

**(Private Industries)**

**Note**:- Suggested format may be modified suitably to meet the requirement.

**FIT FOR FIRING CERTIFICATE**

1. Refer MoD instructions and grant of permission for undertaking the proof of \_\_\_\_\_ (weapon/ ammunition store) at \_\_\_\_\_ (nominated Proof Establishment).
  
2. It is hereby certified that Weapon \_\_\_\_\_ and Barrel Regd No \_\_\_\_\_ have been physically inspected and pre firing checks carried out in-situ by the undersigned and found satisfactory. The equipment is certified 'FIT FOR FIRING'.
  
3. Ammunition assembly/conditioning has been witnessed and physical inspection of ammunition has been carried out and it is hereby certified that ammunition is 'FIT FOR FIRING'.

**(Signature)**

**Note**:- Suggested format may be modified suitably to meet the requirement.

**BOND OF INDEMNITY**

To,  
The President of India

In consideration of Trial Firing at \_\_\_\_\_ (Proof Estt) of \_\_\_\_\_ (Store) of \_\_\_\_\_ (firm) of whom I am the authorised and legal representative, I undertake and agree that neither I nor my executors or administrators or other legal representatives will make any claim against the Government, Proof Establishment or against person for any loss or injury including injury resulting in death which one may suffer during the conduct of Trial Firing and I understand and agree that no compensation will be paid by the Government, Proof Establishment or by any officer or by other rank or employee of the DGQA or any person in the service of the Government in respect of any such loss or injury and I further agree so as to bind myself, my heirs, my executors and administrator to indemnify Proof Establishment and any officer or other rank or employee of the Indian Government and any person in the service of the Government against any claim which may be made by any third party against Proof Establishment during or in connection with such Trial Firing.

Dated the \_\_\_\_\_ day of \_\_\_\_\_ 20

No \_\_\_\_\_

(Sign of the Individual)

Name \_\_\_\_\_  
Address \_\_\_\_\_  
Mobile No \_\_\_\_\_

Witness:-

1. Sign \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
Mobile No \_\_\_\_\_

2. Sign \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
Mobile No. \_\_\_\_\_

**COUNTERSIGNED**

Station:

Date:

**ARBITRATION CLAUSE**  
**(TRIAL FIRING AT MoD PROOF RANGE)**

1. All disputes or differences arising out of or in connection with the present Trial Firing, including the one concerned with the validity of the present Trial Firing or any part thereof, shall be settled by bilateral discussion.
2. Any dispute, disagreement or question arising out of or relating to this Trial Firing or relating to damage to equipment/property/range infrastructure or human casualties both fatal/not fatal (except as to any matter the decision or determination whereof is provided for by these conditions), which cannot be settled amicably, shall within sixty (60) day or such longer period as may be mutually agreed upon, from the date on which either party informs the other in writing by a notice that such dispute, disagreement or question exists, will be referred to the Arbitration Tribunal consisting of three arbitrators.
3. Within sixty (60) days of the receipt of the said notice, one arbitrator shall be nominated in writing by the Private industries and one arbitrator shall be nominated by the Proof Establishment.
4. The third arbitrator, shall be nominated by the parties within ninety (90) days of the receipt of the notice mentioned above, failing which the third arbitrator may be nominated under the provision of Indian Arbitration and Conciliation Act, 1996 or by dispute resolution institution like Indian Council of Arbitration or ICADR, at the request of either party, but the said nomination would be after consultation with both the parties. The arbitrator nominated under this Clause shall not be regarded nor act as an umpire.
5. The Arbitration Tribunal shall have its seat in New Delhi or such other place in India as may be decided by the arbitrator.
6. The Arbitration Proceedings shall be conducted in India under the Indian Arbitration and Conciliation Act, 1996 and the award of such Arbitration Tribunal shall be enforceable in Indian Courts only.
7. The decision of the majority of the arbitrators shall be final and binding on the parties of this contract.
8. Each party shall bear its own cost of preparing and presenting its case. The cost of arbitration including the fees and expenses of the third arbitrator shall be shared equally unless otherwise awarded by the Arbitration Tribunal.

9. In the event of vacancy caused in the office of the arbitrators, the party which nominated such arbitrator shall be entitled to nominate another in his place and the arbitration proceedings shall continue from the stage they were left by the retiring arbitrator.

10. In the event of one of the parties failing to nominate its arbitrator within sixty (60) days as above or if any of the parties does not nominate another arbitrator within sixty (60) days of the place of arbitrator failing vacant, then the other party shall be entitled after due notice of at least thirty (30) days to request dispute resolution in India like Indian Council of Arbitration and ICADR to nominate another arbitrator as above.

11. If the place of the third arbitrator falls vacant, his substitute shall be nominated according to the provisions herein above stipulated.

12. The parties shall continue to perform their respective obligations under this contract during the pendency of the arbitration proceedings except in so far as such obligations are the subject matter of the said arbitration proceedings.

\_\_\_\_\_  
**(Signature of Proof Establishment rep)**

\_\_\_\_\_  
**(Signature of Private Firm / Private industries rep)**

**NON DISCLOSURE AGREEMENT**

This agreement made this \_\_\_\_\_ Day of \_\_\_Month \_\_\_ Year between the President of India through the Director (Name of Lab/Estt), hereinafter referred to as “**First Party**” on the one part and the \_\_\_\_\_ Firm Name with address \_\_\_\_\_ (“**Second Party**”) herein after refereed as “**Receiving Party**” which expression shall unless it be repugnant to or inconsistent with subject or context thereof, include and be deemed to include their Heirs, Executers, Successors or Administrators and permitted assigns on the other part.

Hereafter collectively referred to as the “Parties” or individually as the “Party”

WHEREAS, First Party/Lab/Estt. (Disclosing Party) possess certain sensitive and confidential information and desires to disclose it to the Firm (the Receiving Party) to further co-development relationship between the Parties subject to the Terms and Conditions of this Agreement.

NOW IT IS AGREED AND DECLARED BY AND BETWEEN THE PARTIES AS FOLLOWS:

1. **Identification.** When Confidential information is disclosed in writing or other tangible form, the information shall be marked “CONFIDENTIAL” or with similar legend on each page containing Confidential information. When Confidential information is disclosed orally, visually or in any other intangible form, such information shall be identified as confidential at the time of disclosure, subsequently summarized and confirmed in writing within Thirty (30) days from the initial disclosure, referring the date of disclosure.
2. **Standard of Care.** The Receiving Party shall protect the confidential information disclosed by the First Party with appropriate care.
  - (a) Receiving Party shall communicate to First Party in writing the list of nominated persons for receiving confidential information.
  - (b) Confidential information should not be communicated through phone, fax, or email. Confidential information should be exchanged only through signed letters.
  - (c) When confidential information is received by Receiving Party, the Receiving Party should acknowledge the receipt of confidential information in writing.
  - (d) Receiving Party should not discuss the confidential information disclosed by First Party with any Third Party, within Government Organisations or outside Government Organisations without the prior written approval of Director/First Party. The Firm agrees to promptly notify First Party of any misuse / misappropriation/loss/comprise of the confidential information.

3. Either Party's failure to enforce any provision, right or remedy under this agreement shall not constitute a waiver of such provision, right or remedy.

4. This Agreement will be construed in, interpreted and applied to accordance with the laws of India.

5. **Confidentiality Period.** For the terms of this Agreement and Ten (10) years thereafter, the Receiving Party shall neither disclose the First Party's confidential information to any Party other than its Employees who have express need to know in the context of the relevant co-development.

6. **Exceptions.** No obligation shall be imposed regarding confidential information if the Receiving Party can demonstrate that the confidential information:

(a) Is or becomes thereafter available to the public through no breach of this Agreement;

(b) Is disclosed pursuant to governmental or judicial order requirement.

7. **Return of Materials.** The Receiving Party shall return to the First Party, or at the direction on the First Party certify the destruction of all copies of the First Party's confidential information upon written request of First Party.

8. **No License.** Nothing herein constitutes a license or other transfer of rights in respect of either Party's interest in any Confidential information disclosed pursuant to this Agreement.

9. **Term.** The Term of this agreement is Five (5) years from the effective Date, however, those Sections 5,6, 8 and 11 hereof shall survive even after expiration of termination hereof.

10. **Assignment, Modification and Waiver.** No assignment, modification, or waiver of any Tem of this Agreement shall be effective unless set forth in writing and signed by an Authorised Representative of each party. No failure to enforce any provision of this Agreement shall be construed as waiver.

11. **Dispute Resolution.** Difference of opinion, if any, arising during the period of this Agreement, concerning the execution of the responsibilities will be settled on the basis of mutual consultation by the signatories or their designated nominees. The parties will make best possible efforts to resolve the dispute and in case of their failure to do so and reconciling the dispute mutually, the same shall be referred for Arbitration.

12. **Arbitration.** Any question, dispute or difference arising under the Contract (except as to any matter, the decision of which is specifically provided for) shall be referred to the Sole Arbitration of the Scientific Advisor to Raksha Mantri. It will not be valid

objection that the Arbitrator is Government Servant and that he had to deal with the matters to which the Agreement relates or that in the course of his duties as a Government Servant he had expressed views on all or any of the matters, disputes or difference. The Award of the Arbitrator shall be final and binding on both the Parties. The Arbitrator shall be entitled to extend time of award by the consent of the parties from time to time. The venue of Arbitration shall be New Delhi or any other Place as may be decided by the Arbitrator and the expenses of the Arbitration shall be at the discretion of the Arbitrator. Subject as aforesaid, the Arbitration and Conciliation Act 1996 and the Rues there under and any statutory modification thereof for the time being in force shall be deemed to apply to the Arbitration proceedings under this condition.

13. **Entire Agreement.** This Agreement constitutes the entire Agreement between the Parties with respect to the matters covered by this Agreement, supersedes all prior agreements and understandings with respect thereof, and may only be amended in writing signed by both Parties.

14. **Binding Effect.** This Agreement shall be binding and inure to the benefit of the undersigned Parties, their Successors and Assigns.

IN WITNESS THEREOF, the parties have executed this Agreement to be executed as the effective date written above when signed below by their duly authorised representatives.

**For Lab/Estt/First Party**

Name :  
Designation :  
Address :  
Date :

**For Firm/Second Party**

Name :  
Designation :  
Address :  
Date :

1. **Definitions:**

In this Non-Disclosure Agreement the following terms shall, unless the context otherwise requires, have the following meanings:

**1.1 'Disclosing Party' or 'First Party'** means Proof Firing Establishment, disclosing Confidential Information to the Private industries/Seller/ Development Partner under this Agreement.

**1.2 'Receiving Party' means** the Private industries /Seller / Development Partner receiving Confidential Information from Proof Firing Establishment under this Agreement.

**1.3 'Confidential Information'** means any information, which shall include but is not limited to, design, fabrication and assembly drawings, know-how, processes, product specifications, raw materials, product samples, inventions, concepts and any other technical and /or commercial information, disclosed directly or indirectly and in any form whatsoever (including, but not limited to, disclosure made in writing, oral or in the form of samples, models, computer programmes, drawings or other instruments)furnished by the Disclosing Party to the Receiving Party under this Agreement.

**1.3.1** Such Confidential Information shall also include but shall not be limited to:

**1.3.1.1** information disclosed by the Disclosing Party / First Party in writing marked as confidential at the time of disclosure;

**1.3.1.2** Information disclosed by the Disclosing Party / First Party orally which is slated to be confidential at the time of disclosure;

**1.3.1.3** Information disclosed in any other manner is designated in writing as Confidential Information at the time of disclosure ; or

**1.3.1.4** Notwithstanding sub-clauses 1.3.1.1, 1.3.1.2 and 1.3.1.3 of this definition, any information whose nature makes it obvious that it is confidential.

**1.3.2** Such Confidential information shall not include any information which:

**1.3.2.1** is, at the time of disclosure, publicly known ; or

**1.3.2.2** becomes at a later date, publicly available otherwise than a wrongful act or negligence or breach of this Agreement of or by the Receiving Party ;or

**1.3.2.3** the Receiving Party can demonstrate by its written records was in its possession, or known to the Receiving Party

before receipt under this Agreement, and which was not previously acquired under an obligation of confidentiality; or

**1.3.2.4** is legitimately obtained at any time by the Receiving Party from a third Party without restrictions in respect of disclosure or use, or use; or

**1.3.2.5** the Receiving Party can demonstrate to the satisfaction of the Disclosing Party, has been developed independently of its obligations under this Agreement and without access to the Confidential Information.

2. **Administrative Instructions:**

**2.1** Authority of the Signatory of Receiving Party in NDA shall be established prior to signing of NDA. Preferably, a letter should be obtained from CEO / MD of the Receiving Party authorising a named senior level official to sign NDA on their behalf. Only such authorised Senior Level Officer should sign the NDA document on behalf of Receiving Party / Second Party.

**2.2** The confidentiality of the documents shall also be maintained by the Consortium Partners of the Suppliers/Receiving Party.

**2.3** The Proof Firing Establishment. Programmes are advised to enter into his NDA in all Contracts wherein any Confidential Information is being shared with the Receiving Party/Second Party.

**END USE CERTIFICATE FORM**

This is to certify that the item (name of product/system/component)  
.....developed by  
**(Name of the company)** M/s..... Will be used only for  
design, development and manufacturing of products for Ministry of Defence/Armed  
Forces

Name and designation of authorised person .....

Address off the company: .....

Signature: .....

With office seal: .....

Date.....

**LIST OF FIELD FIRING RANGES (FFRs)**

<b><u>S/ No</u></b>	<b><u>FFR</u></b>	<b><u>State</u></b>	<b><u>Max Range (KM)</u></b>	<b><u>Weapons to be Tested*</u></b>
1.	Bamori (Saugor)	MP	3	Small Arms (SA) weapons 81 mm mortar, Rocket Launcher (RL), Automatic Grenade Launcher (AGL) and 14.5 mm Artillery (Arty) Trainer
2.	Sikkim (HAA Area)	Sikkim	6	All infantry weapons and field guns at limited range, UAV, quadcopters
3.	Teesta	West Bengal	10	All infantry weapons and field guns at limited range
4.	Balwanta (Nasirabad)	Rajasthan	3	SA weapons 81 mm mortar RL, AGL and 14.5 mm Arty Trainer
5.	Gamrala (HAA Area)	Arunachal Pradesh	6	All infantry weapons and field guns at limited range, UAV, quadcopters
6.	Mahajan	Rajasthan	20	Tank and Infantry Combat Vehicle (ICV) Gun, Tank and ICV Missiles, All Inf, Army Air Defence (AAD) and Arty weapons, UAV, quadcopters
7.	Pokhran	Rajasthan	32	Tank and ICV Gun, Tank and ICV Missiles, All Inf, AAD and Arty weapons, UAV, quadcopters
8.	Babina	MP	10	Tank and ICV Gun, Tank and ICV Missiles, All Inf, AAD and Arty weapons
9.	KK Ranges	Maharashtra	34	125mm HEAT, 125mm HE, 105mm Arty Gun, Inf Bn Sp wpn, IAF, UAV, quadcopters
10.	Nasik	Maharashtra	21	All Arty Guns, Rkt Sys except SMERCH and PINAKA
11.	Mhow (Hema)	MP	3.5	SA weapons, 81mm mortar, 84mm RL, Automatic Grenade Launcher & ATGM.
12.	Mhow (Choral)	MP	6	SA weapons, 81mm mortar, 84mm RL, AGL & ATGM.
13.	Gopalpur	Odisha	76	All AAD weapons, UAV, quadcopters

**REQUEST FOR FIELD FIRING RANGE (FFR)**

1. Name of Firm:
2. Details of Firm :  
Registered with MoD / DGQA /OFB / DPSU / DGOS / DRDO / MHA (any Govt agency) :Defence Equipment Licence Holder :
3. Contact Person (with designation):
4. Telephone and e-mail details:
5. Brief Reason for Requirement of FFR: (To be appended on a separate sheet)
6. Name of Weapon System (s) / Ammunition (s)/ Equipment (s) to be Tested
7. Name of Preferred Range(s): (In descending order)
8. Requirement of FFRs (Number of days):
9. **Dates.**

S/No	Requirement of FFR					Remarks
	Dates FFR Required		Alternate Dates			
	From	To		From	To	
(a)			<b>Priority 2</b>			
			<b>Priority 3</b>			

10. Type(s) and Quantity of Ammunition to be fired:
11. Distance between Gun End and Target for each type of ammunition
12. Technical and Infrastructure assistance required.
13. Any other details:

Date: \_\_\_\_\_ (Signature of Private industries with stamp)

**RECOMMENDATION OF DIRECTOR GENERAL WEAPONS AND EQUIPMENT**

RECOMMENDED/ NOT RECOMMENDED

**FORMAT FOR INITIAL RESPONSE BY COMMAND HQ TO PRIVATE FIRM FOR  
UNDERTAKING TRIAL FIRING OF AMMUNITION / WEAPON / EQUIPMENT**

1.	Reference of Nodal Cell letter.
2.	Name of the Private Firm / Private industries.
3.	Store under trial.
4.	Details of the Nodal Officer at Firing Range allotted (along with contact details).
5.	Any clarifications w.r.t. observations /parameters for conduct of Trial Firing.
7.	Any other information desired from Firm / private industries.
8.	Administrative support. If any which can be provided to the Firm / private industries.

**FORMAT FOR FINAL RESPONSE BY PROOF ESTABLISHMENT TO PRIVATE FIRM**  
**/PRIVATE INDUSTRIES FOR UNDERTAKING TRIAL FIRING OF AMMUNITION /**  
**WEAPON IN MoD PROOF RANGES**

1.	Reference of Nodal Cell letter.
2.	Name of Private Firm / Private industries.
3.	Store under trial.
4.	Details of the Nodal Officer at range establishment (along with contact details).
5.	Date of Trial Firing.
6.	Cost of Trial Firing.
7.	Amount to be deposited by Private industries as security (25% of the estimated cost).
8.	Remaining cost of Proof Firing and date by which payment to be made by Private industries (Min one week prior to conduct of Proof).
9.	Payment: Account details in which payment to be made by the Private company (NEFT transfer details).
10.	Day and time by which store under testing to be positioned at range establishment by private firm (Min one week prior to day of conduct of Trial Firing).
11.	Date by which security clearance of personnel attending the firing by the Private industries (Minimum one week in advance). In case of foreign nationals attending the firing, full details along with passport, visa and sponsoring company etc be intimated to command HQ 30 days in advance.
12.	Date of final coordination meeting (minimum one working day prior to conduct of Trial Firing).
13.	Security requirement wrt the personnel, transport, equipment etc of private industries.
14.	Administrative support. If any which can be provided to the Firm/Private industries.
15.	Any other information desired / instructions.

**COMMITTMENT CERTIFICATE TO BE FURNISHED BY THE PRIVATE FIRM TO  
COMMAND HQ ON RECEIPT OF DATE OF TRIAL FIRING OF AMMUNITION /  
WEAPON IN FIELD FIRING RANGES**

I, Shri / Smt \_\_\_\_\_ hereby commit the following w.r.t Trial Firing being conducted for  
\_\_\_\_\_ on behalf of \_\_\_\_\_ (Firm Name) :-

- (a) **Commitment Amount.** Payment of 25% of the cost of Trial Firing on confirmation of the date of Trial Firing. In case of failure to participate in the Trial Firing, the Commitment Amount is liable to be Forfeited.
- (b) Remaining cost of trial firing will be paid minimum one week prior to conduct of Trial Firing.
- (c) Weapon / Amn Store under trial will be positioned at the nominated Firing Range minimum one week prior to conduct of Trial Firing.
- (d) Instrument and other range facilities like target, etc if required will be positioned at the nominated at the Firing Range minimum one week prior to conduct of Trial Firing.
- (e) Safety Certificate, Fit for Firing Certificate and Bond of Indemnity will be submitted minimum one working day prior to conduct of Trial Firing.
- (f) Final Trial Co-ordination meeting one working day prior to conduct of Trial Firing will be attended by reps of the Private firm.
- (g) Adhere to safety and range instructions/restrictions of the Field Firing Range.
- (h) Adhere to security requirement of the Firing Range.
- (j) Adhere to rules and regulation w.r.t. vehicle, personal and other administrative rules of the Firing Range.
- (k) Will make good or pay the cost for any damage to the equipment, store, instrument, range facility etc caused during Trial Firing.
- (l) Will be liable to pay compensation for any injury both fatal / non-fatal to any personnel as a result of Trial Firing.
- (m) Will be liable to settle any legal dispute as per laid down Arbitration clause.
- (n) Firm / Foreign Collaboration Firm is not currently blacklisted by Govt of India.

Place :

Name:

Date :

Appointment:

Name of the Firm:

**Note:** To be provide on the official letterhead of the firm and to be signed by the appropriate authority.

**EMERGENT REQUEST FOR FIELD FIRING RANGE (FFR)**

1. Name of Firm:
2. Address of Firm:
3. Contact Person (with designation):
4. Telephone and e-mail details:
5. Brief Reason for Requirement of FFR: (To be appended on a separate sheet)
6. Brief Reasons for Emergent request of FFRs: (To be appended on a separate sheet)
7. Name of Weapon System(s) / Ammunition (s) to be tested:
8. Name of Preferred Range(s): (In descending order)
9. Requirement of FFRs (Number of days):
10. **Dates.**

S/No	Requirement of FFR					Remarks
	Dates FFR Required		Alternate Dates			
	From	To		From	To	
(a)			<b>Priority 2</b>			
			<b>Priority 3</b>			

11. Type(s) and Quantity of Ammunition to be fired:
12. Distance between Gun End and Target for each type of ammunition:
13. Requirement of additional facilities:-
  - (a) Survey:
  - (b) Ammunition:
  - (c) Equipment:
  - (d) Store:

- (e) Safety:
- (f) Technical Command Posts:
- (g) Administrative support:
- (h) Medical cover:

Date: (Signature of Private Industries with stamp)

**RECOMMENDATION OF DIRECTOR GENERAL WEAPONS AND EQUIPMENT**

RECOMMENDED/ NOT RECOMMENDED

**DETAILS OF PROOF UNDERTAKEN BY PROOF RANGS AND AVAILABILITY OF  
INFRASTRUCTURE (O.F. VARANGAON) \***

<b><u>Calibre</u></b>	<b><u>Weapons Available</u></b>	<b><u>Stores Under Proof</u></b>	<b><u>Type of Proof</u></b>
5.56 mm	i) 5.56 mm Rifle  ii) Gun Machine 5.56 mm LA1  iii) Ballistic Barrels	Cartg. SA 5.56 mm Ball/TCR	a) Functioning & Causality b) Mean Observed Velocity c) Mean Chamber pressure d) Consistency e) Action time f) Primer Sensitivity g) Trace Test
7.62 mm	i) 7.62 mm RIFLE 1A1  ii) 7.62 MM Gun Machine 1B  iii) 7.62 mm Gun Machine (MAG) 2A/2A1  iv) Ballistic barrels	Cartg. SA 7.62 mm M-80/M-62	a) Functioning & Casualty b) Mean Observed Velocity c) Mean Chamber pressure d) Consistency e) Action time f) Sensitivity g) Port Pressure h) Trace Test
7.62 KT	i) Gun Machine 7.62 mm PKT (Co-Axial Type)  ii) Ballistic Barrels	Cartg. SA 7.62 mm PKT	a) Functioning & Casualty b) Mean Observed Velocity c) Mean Chamber pressure d) Consistency e) Action time f) Penetration
A-7 ( 7.62 X 39 mm)	i) AK-47 Rifle  ii) Ballistic Barrels	Cartg. SA 7.62 A-7 mm	a) Functioning & Casualty b) Mean Observed Velocity c) Mean Chamber pressure d) Consistency e) Action time f) Sensitivity g) Port Pressure
12.7 mm	i) Machine Gun 12.7 mm AD  ii) Ballistic Barrels	Cartg. SA 12.7 mm API/APIT	a) Functioning & Casualty b) Mean Observed Velocity c) Pressure d) Consistency e) Action time f) Sensitivity g) Piercing h) Incendiary i) Jolt test

\*The above test facilities for ammunition proof only and not for any type of weapon or spare accessory of the weapon.

### **DETAILS OF FACILITIES AVAILABLE AT O.F. VARANGAN**

Details of facilities available at O.F. Varangaon are as under: -

- (a) Environmental test chamber temp range: +50<sup>0</sup> to -75<sup>0</sup> C
- (b) Environmental test chamber temp range: 0<sup>0</sup> to 100<sup>0</sup> C
- (c) Environmental test chamber temp range: +50<sup>0</sup> to -60<sup>0</sup> C
- (d) Environmental test chamber temp range: +27<sup>0</sup> C
- (e) Velocity Screen
- (f) Microsecond chronometer for Action time proof
- (g) Jolt test machine

**DETAILS OF PROOF UNDERTAKEN BY PROOF RANGS AND AVAILABILITY OF  
INFRASTRUCTURE (AFK Kirkee Pune) \***

<b><u>Calibre</u></b>	<b><u>Weapons Available</u></b>	<b><u>Stores Under Proof</u></b>	<b><u>Type of Proof</u></b>
5.56 mm	5.56mm Rifle, 1 MG , Ballaistic Barrels, JVPC Weapon for Carbine	5.56mm Ball 5.56mm NATO 5.56mm Carbine	Functioning Proof, Consistency, Velocity, Pressure, Action Time
9mm	Carbine, Pistol 9mm VD Weapon for 9mm Tracer	9mm Ball 9mm tracer Ammunition	Functioning Proof, Consistency, velocity, Pressure, Action Time
7.62 mm	7.62 mm GPMG, LMG, Rifle, Ballistic Barrels	7.62 mm Blank Ammunition	Functioning proof, Action Time
0.22" RF	Sporting Rifle, Rifle No. .2 Mk 4	0.22 Ammunition	Functioning Proof, Consistency, Velocity
0.380"	Revolver and Ballistic Barrels	0.380" Ammunition	Functioning Proof, Consistency, Velocity
8 mm	8m Rifles, Ballistic Barrels	8 mm Ball Ammunition	Functioning Proof, Consistency, Velocity, Pressure.
12 Bore	12 Bore Pump Action Gun, DBBL Gun, 12 Bore Pressure Barrels	12 Bore Ammunition	Functioning Proof, Consistency, Velocity
0.32" Pistol & Rev.	0.32" Pistols, 0.32" Rev & Barrels	0.32" Pistol 0.32" Rev. RL	Functioning Proof, Consistency, Velocity.
Primer for 5.56 mm, 9 mm, 0.22", 0.380, 303" etc.	Sensitivity Test	Various primers for SAA	Sensitivity Test
51mm	51 mm Mortar	Bomb 51mm HE OT	Range & Functioning
Cartg.51 mm	51 mm Mortar	HE & Illug. Cartidges OT	Velocity
Fuze DA5 A	51 mm Mortar	E/F/P, F/P	Functioning
Fuze DA5A Fuze 117	Proof Facility Available	Fuze DA5A & Fuze 117	Sealing & Detonation
FMC 605	Proof Facility Available	FMC 605	Functioning (Pull & Force)
Mine APM 16	Proof facility available	Mine APM 16	Functioning
Charge Demolition	Proof facility available	Charge Demolition	Functioning
40 mm UBGL, HE, HEDP, PRF	40 mm UBGL 40 mm MGL 40mm Rounds	40 mm UBGL	Velocity, Pressure, Aim & Range , Functioning
Det.356mg, Det	Proof facility available	All types	Drop Sensitivity,

110mg, Det 86, Det 87, Det 27, Det N5, Det Elec. No. 33		Detonators	Pressure bar, Flash Delivery, Flash Pick up, Detonation.
Primer M 191 A2	Proof facility Available	Primer M191 A2	Safety, Functioning Proof, Performance Test, Delay Time
Det 36 M 4 sec Delay	Proof facility Available	Det. 36 M 4 sec Delay ATS	Delay time, functioning Proof
Cartg. 81 mm MTD	Proof facility Available	Cartgs. 81 mm MTD	Drop Sensitivity
Switch No. 4	Proof facility Available	Switch No. 4	Functioning proof

**DETAILS OF PROOF UNDERTAKEN BY PROOF RANGS AND AVAILABILITY OF  
INFRASTRUCTURE (O.F. KANPUR)**

<b><u>Calibre</u></b>	<b><u>Weapons Available</u></b>	<b><u>Stores Under Proof</u></b>	<b><u>Type of Proof</u></b>

**Note:** The Sarshaul Proof Range (SPR) is still a green field area and not at all operational. It will take minimum 2-4 years for it to get operational. Once operationalized, only “**Strength Proof**” can be done at the range due to limited range area.

**DETAILS OF PPROOF UNDERTAKEN AT HVF, PROOF RANGE, AVADI**

<b>Sl. No.</b>	<b>Type of Proof</b>	<b>Caliber</b>	<b>Ammunition</b>	<b>Remarks</b>
1	Mounting Stability Proof of Tank T-72 and its variants, Tank T-90	125 mm	125 mm HE (Inert)	Remote firing from 100 m to Arrestor Butt
2	Mounting Stability Proof of MBT Arjun	120 mm	120 mm Proof Shot	Remote firing from 100 m to Arrestor Butt
3	Zeroing and Functional proof of 12.7 mm AD Gun	12.7 mm	12.7 mm API	100 m Target, single & burst firing
4	Zeroing and Functional proof of 7.62 mm PKT Gun	7.62 mm	7.62 mm PKT	100 m Target, single & burst firing

**DETAILS OF INSTRUMENTS AVAILABLE AT HVF, PROOF RANGE, AVADI**

**NIL**

**DETAILS OF PROOF UNDERTAKEN BY PROOF RANGS AND AVAILABILITY OF  
INFRASTRUCTURE (O.F. Tiruchirappalli)**

<b><u>Calibre</u></b>	<b><u>Weapons Available</u></b>	<b><u>Stores Under Proof</u></b>	<b><u>Type of Proof</u></b>
30 mm	30mm Cannon	15 meter Range	Function & Rate of Fire
		100 meter Range	Accuracy Muzzle velocity
12.7 mm	12.7 mm AD Gun	100 meter Range	Function, Rate of Fire & Accuracy
14.5 mm	14.5 SCD		
7.62 mm	7.62 mm PKT		Function & Accuracy
0.315"	0.315" Sporting Rifle	100 meter Range	Function & Accuracy
7.62 mm	7.62 mm SLR	50 meters (Function)	Function & Accuracy
5.56 mm	7.62 mm TAR	30.5 meters (Accuracy)	
	5.56 mm INSAS		
38 mm & 40 mm	40 mm MGL 40 mm UBGL 38mm MSL	Up to 600 meter Grenade range	Function, Range & Accuracy

**DETAILS OF PROOF UNDERTAKEN BY PROOF RANGS AND AVAILABILITY OF  
INFRASTRUCTURE (Rifle factory, Ishape)**

<b><u>Calibre</u></b>	<b><u>Weapons Available</u></b>	<b><u>Stores Under Proof</u></b>	<b><u>Type of Proof</u></b>
5.56 mm	Not Applicable	Rifle 5.56mm 1B 1	Functional Firing proof of weapons
5.56 mm		Rifle 5.56 mm Ex-calibur	
5.56 mm		Rifle 5.56 mm INSAS 1C	
7.62 mm		7.62 mm Ghaatak	
7.62 mm		7.62 m Sniper Rifle	
9 mm		Pistol Auto 9 mm 1A	
12 mm		12 Bore pump Action Gun	
0.315		0.315 Sporting Rifle	
3006		30-06 Sporting Rifle	
0.22		0.22 Sporting Rifle	
0.32		0.32 Pistol	

It is pertinent to mention that RFI carries out only the functional test of weapons for internal assessment and remaining types of proof done by resident SQAE(SA), Ishape.

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