

CHAPTER 10**MOD TEST, EVALUATION, RESEARCH AND PROOF RANGES****GENERAL**

1001. The MOD operates a number of specialist ranges to provide the ability to carry out research, acquisition and through life test, evaluation and proof of weapon systems, ordnance, munitions and explosives. These ranges are controlled by MOD agencies/organisations and are operated by either MOD personnel or contractors. These ranges are known collectively as test, evaluation, research and proof (TERP) ranges.

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1002. The following MOD agencies/organisations have TERP ranges under their control:

- a. DE&S - Contractor operated (QinetiQ) ranges.
- b. Dstl - Both MOD and contractor operated (QinetiQ and Insys) ranges.
- c. DA - Contractor operated (Cranfield) ranges.
- d. DSG - Small arms (SA) test ranges.

SAFETY AND ENVIRONMENTAL MANAGEMENT

1003. MOD has a responsibility to ensure the safe operation of its ranges whether they are operated by MOD personnel or by contractor and therefore must ensure a robust safety and environmental management system is in place. The MOD safety management system for ranges is enshrined in JSP 403; however, due to the diversity of TERP ranges and the nature of the activities undertaken, the full requirements of JSP 403 may not always be applicable. Where this is the case TERP ranges must, as a minimum, comply with the range safety management principles laid down in Volume 1 of JSP 403 (except where specifically exempted in writing by the DE&S top level duty holder) and have an acceptable alternative to those established in other parts of JSP 403. TERP ranges must not be constrained by inappropriate military training practices/requirements which could compromise the TERP Safe System of Work. However, TERP ranges may be used for training activities with the appropriate Safety Management System where there is no conflict with TERP activities.

SAFETY MANAGEMENT

1004. As the top level duty holder, the Chief Executive (CE), Head of the MOD organisation or DA Commandant, through the appropriate management line or Head of Department, must ensure that all range activities are carried out safely, and that safe systems of work are created through the issue of standing orders and/or other instructions, based on risk assessments and, where appropriate, safety cases. These systems are to ensure the safety of people, buildings and equipment located both inside the range area and outside it, including all those associated with the firings.

1005. JSP 403 does not cover the flying operation of aircraft, Unmanned Air Vehicles (UAV), air to air gun and missile firings or Range Air Control. This is the responsibility of the nominated air space regulator such as TESD ATC.

1006. The CE, Head of the MOD organisation, or, in the case of the DA the Commandant will act as the Range Authorising Officer (RAO) and appoint one or more competent members of his staff to exercise responsibility as the Range Administering Unit (RAU) for the safety of the range.

1007. For MOD operated TERP ranges the Range Administering Unit (RAU), Head of Establishment or Area Manager may appoint a Range Safety Officer (RSO) (and, if necessary, a deputy) for each site who is to be responsible for approving and maintaining safe systems of work for all test, research and trials activities. Competency of the RSO is to be reviewed annually.

1008. For contractor operated TERP ranges the RAU is to be satisfied with the competence of the contractor operating the range and confirm that such mechanisms as are required to ensure the safe operation of the range are established and maintained.

1009. A key feature of the safe system of work on all TERP ranges is the appointment of competent Trials Conducting Officers (TCO) / Trials Safety Managers (TSM), or, in the case of SA Test ranges, Range Conducting Officers (RCO). They are responsible for the safe preparation and conduct of all trials and firings carried out under their control. The Head of Establishment/Range Administering Unit (RAU)/ Area Manager must certify as competent all TCO/TSM/RCO who are responsible for trials and other firings on range on an annual basis.

1010. The competence of the TCO/TSM or RCO is to be commensurate with the requirements of the specialist range and activity undertaken. A background of training as specified in Chapter 3 Annex A paragraph 5a or b is acceptable with the addition of appropriate training specific to the range in use and activity undertaken.

1011. To meet the legal obligations of MOD and those operating TERP ranges, it is the responsibility of the tasking authority to ensure that all relevant safety and environmental data is made available to the range operators in order that full risk assessments for the trial/test can be undertaken. The validity of all data provided must be certified and authorised for release by a competent authority.

TRIAL APPROVAL AND COMPLIANCE MONITORING

APPROVAL AND MONITORING

1012. On contractor operated ranges the requirement for trials approval or monitoring compliance with MOD instructions will be as specified in the relevant license, contract or partnering agreement. However, to aid those determining what activities require a level of MOD monitoring to be applied (trials approval or compliance monitoring) the guide below can be used:

- a. The proposed activity will require byelaws established by the Secretary of State for Defence to be invoked.
- b. An established Air Danger Area (ADA) will be activated by the proposed range / activity.
- c. The proposed activity may result in the placement of substances in UK waters which are not fully removed immediately upon termination of the testing activity.
- d. UK Services or government employed personnel will be involved or may be affected by the activity.
- e. Significant MOD or other government assets will be involved or may be affected by the activity.
- f. Personnel from foreign governments will be involved or may be affected by the activity.

- g. Significant Assets from Foreign Governments will be involved or may be affected by the activity.
- h. The Range Authorising Officer or Unit has expressed concern to the operating contractor about health and safety or environmental matters at a range.

1013. The MOD RAU has the right to access all range areas operated by a contractor to monitor and observe the preparation of weapons and equipment prior to and during a trial in order to assure itself that the contractor is complying with all relevant documentation. The MOD RAU will have access to and will monitor range logs and other records to ensure that they are maintained in accordance with stipulated requirements. If there are concerns about the safety of a trial the MOD RAU has the authority to stop the conduct of the trial immediately.

1014. A contractor operating a TERP range will ensure that any activity undertaken on a range is within the scope of that authorised on the Land Range Authorisation Certificate (MOD Form 904) and has a valid Range Safety Certificate (MOD Form 905). The Contractor will have available in all cases, as a minimum, the following trial / activity specific documentation:

- a. A safe system of work for the trial / activity,
- b. A suitable and sufficient risk assessment for the trial / activity,
- c. A suitable and sufficient environmental impact assessment for the trial / activity,
- d. A record of personnel competencies and annual certification of those personnel associated with the trial / activity.

RANGE SAFETY INSPECTION

1015. TERP ranges are to receive the range safety inspections specified in Chapter 8 of this volume, supplemented by additional inspections as required by the RAU to assure appropriate levels of safety and control are maintained.

TRIAL ORGANISATION

1016. **Risk and Hazard Analysis.** A risk and hazard analysis must be undertaken prior to the detailed planning and programming of any testing or trial of weapon systems, munitions, explosive stores or experimental items on the range. The results of this analysis are to be used to shape the development of the Range Trials Plan.

1017. **Suitability of Facilities.** A trial will be conducted only on or in a facility that has been designed and located for the purpose, or, alternatively, has been modified or otherwise made safe and suitable for the purpose. The selection of the trial site must take account particularly of the effects of fragments, blast, fire, shock and other hazards upon personnel and property both at the facility and outside it.

1018. **Storage and Processing.** Arrangements must be made for the transport, storage, accounting and necessary processing of weapon systems, explosives and other hazardous materials to be used in the test or trial activity, including provision for receipt and despatch. In this respect, attention should be paid to the relevant approvals and licenses required prior to receipt of the items. MOD guidance on such matters is published in JSP 375, JSP 418, JSP 482, and JSP 445. Contractor operated facilities must have established corporate policy / procedures taking account of legislation to cover all such activities. Where MOD publications are used care must be taken to establish the relevance to a contractor managed activity.

1019. **Trial Documentation.** The appointed TCO/TSM or RSO is responsible for maintaining a set of documents in support of the Trial Plan. This will include Hazard and Risk Assessment, Environmental Assessment, Trial Order/Firing Detail, Safe Systems of Work, Competencies and the Trial Specification. If any security constraints limit the information which the TCO/TSM/RSO can publish, references should be included to indicate where this information can be found. The document set must be sufficiently comprehensive to provide a clear audit trail covering the planning, development and execution of the test or trial activity.

REPORTING OF ACCIDENTS/INCIDENTS

1020. All accidents/incidents involving weapon systems, munitions, explosives stores or experimental or test items with the potential to cause significant harm (i.e. laser) on a range area must be reported to the RAU. The RAU will then arrange further reporting, e.g. to the DLRSC (see paragraph 0240) as necessary. Where an accident/incident involves MOD personnel an MOD investigation will be initiated, on behalf of the RAO, and a subsequent inquiry may be required (see paragraph 0240). A report is also to be made in accordance with procedures in JSP 442 and JSP 482 Vol 1 Chapter 25. For accidents/incidents not involving MOD personnel the contractor operating the range must have an agreed policy for accident/incident investigation and MOD must have in place a mechanism (either contractual or by agreement) that allows MOD participation in any contractor investigation/inquiry. Reports of all such inquiries must be copied to the RAU.

TERP RANGES USED FOR MILITARY TRAINING

1021. Where a TERP range is used for the training of Service personnel the conduct of range practices is the responsibility of the RAU or the contractor operating the range. All such activity must fall within that authorised on the MOD Form 904 and be assessed against the criteria used on the range for undertaking trials activities, although cognisance can be taken of standard military training practices and procedures.

1022. Due to the construction of fixed facilities on TERP ranges and the operating systems normally used (eg fixed firings on SA Ranges) particular account must be taken in construction of the RDA template and the intended training practices to ensure that the level of safety is commensurate with that normally expected by the service unit using the range and with that specified in the range safety case.

1023. In all cases the training is to be controlled, and supervised where necessary, by competent personnel appointed by the Service unit involved although the range activity is to be directed and conducted by a RSO/TCO/TSM provided by the RAU or contractor operating the range.

ENVIRONMENTAL HAZARDS ASSESSMENT

1024. To minimise the degree of harm to personnel, property, equipment and the general environment, consideration must be given to undertaking either generic or specific environmental assessments for all TERP ranges and activities on these ranges.

1025. Ranges are to have an environmental management system in accordance with JSP 418, or in the case of contractor operated ranges a company policy which supports a structure with which environmental management, sustainable development, legislative compliance and continual improvement can be managed.

1026. The policy driver for undertaking Sustainability Appraisals (SA) on MOD plans, programmes and projects re-confirms the MOD commitment to adhering to relevant legislation which specifies sustainability or environmental appraisals. This guidance and the mandate are applicable across MOD, including Contractors, Partners, Trading Funds and Agencies. Current policy is to carry out sustainability appraisals and environmental assessments, as appropriate, for new or revised policies, programmes (including acquisition programmes), office relocations, new projects and training activities.