

 <p>DEFENCE ESTATES Delivering Estate Solutions to Defence Needs</p>	<p align="center">TECHNICAL ADVISORY SECTION (ROYAL ENGINEERS) (TAS(RE))</p> <p>Headquarters Defence Training Estate Blenheim Hall Land Warfare Centre, Warminster, Wiltshire BA12 0DJ</p> <p>Tel: 0044 1985 222434 FAX : 2259 Email: DE Ops DTE-HQEstDel8a frank.compton251@mod.uk</p>	
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RANGE ADVICE NOTE 5/10

See Distribution

Reference:

Our reference: 28-14-01

A. JSP 403 Vol.2

Date 8 Oct 2010

Amendment 1 to JSP 403 Vol.2 Change 5.

Background.

1. DOSG are now able to amend each of the online JSP 403 series between hard copy changes. At the 93rd LRWP the first such amendment to JSP 403 Vol.2 has been agreed. DLRSC will update the online copy of Reference A shortly and issue a notice that this has been done. A summary of those changes is highlighted here for those who manage or inspect ranges covered by this JSP.

Compliance.

2. In Reference A at the end of most range chapters is a list of key compliance checks. The JSP provides no tolerances to the compliant criteria so for instance on an imperial Gallery Range a mantlet is 1.8 m high or more to be compliant. A mantlet of 1.75 m is non compliant. Clearly range inspectors apply common sense judgement in this area but where the inspector or RAU ask TAS(RE) for a compliance check and the subsequent report indicates marginal non compliance it is left to the RAO to decide if the range may be authorised as safe or if there is need for further assessment and Approved Range Status or Dispensation. In order to formalise this process the following is added to Chapter 2 in Change 5 Amendment 1.

02058. **Compliant Ranges.** A range which meets the design and build criteria specified for its type in JSP 403 or the appropriate Single Service publication. Most ranges have some degree of non conformity. Although different from those illustrated in this JSP they will conform to the safety critical elements described in the respective chapters. [For marginal non compliance where the RAO considers such non compliance will not reduce the level of risk on the range the range may be authorised by the RAO as compliant.](#) Where doubt exists, TAS (RE) is to be consulted and if necessary DOSG advice will be sought prior to seeking Approved Range Status. See paragraph 02009.

Nails.

3. The use of nails on ranges has always been an issue particularly on Gallery Ranges in hand held targets or targets in the gallery frames. Where nails are used it is necessary to ensure that any exposed heads do not generate metal fragment ricochet when rounds strike them. Addition detail is added in Amendment 1 to help illustrate this problem.

0296e. **Fixings.** When fixing a material to the structure in the ballistic zones, care is required to ensure unwanted ricochet or backslash is not caused. Oval head nails not round head nails (see below), are to be used to fix timber on to hard surfaces and the nail heads punched in. Bolts and screws are to be countersunk and plugged. Any other metal fixings should also be countersunk or protected. The wider heads of round head nails will cause rounds to shatter on impact sending fragments of nail head and bullet in many directions. Industrial staples may also be used to fix targets to timber supports.



Granulated rubber.

4. Following advice from the Building Research Establishment (BRE) and the DFRMO report interpreting the BRE report, changes have been made to the details in Chapter 2 relating to the use of granulated rubber on our ranges. The main recommendations are to minimise the volume of granulated rubber used and to reduce the number of rounds per lane that trigger maintenance to ensure there is no build up of fine rubber particles. The build up of fine rubber dust is believed to be the cause of fires from ball ammunition. Where on gallery ranges one or two lanes are used regularly for burst weapon practices or by civil clubs, this must be recorded in the MOD Form 906 so that the maintenance cycle for those lanes is controlled. This is suspected to be the cause of the fire at East Holme range. The recommendations made in the DFRMO report are listed below. The revised detail for Amendment 1 incorporating the DFRMO advice is attached to this Advice Note.

- Enforce the ban on tracer ammunition being fired across the Departments rubber granulate ranges, in accordance with advice note 09/09.
- Review their range requirements for water fire extinguishers, water supplies for dowsing rubber granulate localised 'hot spots' as an immediate first aid firefighting measure.
- Enforce the removal of heavy rubber tiles that are in use to cover the granulate material across all granulate ranges.
- Consider the use of woven fabrics in timber frames to retain the granulate and keep out target debris such as timber splinters and paper targets. The woven fabric material will enable any build up of heat within the granulate to dissipate.
- Issue new guidance regarding the number of live rounds fired into rubber granulate. The number of rounds fired into granulate must be based on reducing the level of break-up of the rubber to create dust. Fine dust is much more susceptible to ignition.

- Issue new guidance to stipulate and record the number of rounds fired per individual lane, rather than across all range lanes.
- Enforce quality control of rubber granulate material supplied to MOD ranges in accordance with the specification contained in JSP 403 and range notice 04/04.
- Must reconsider the practice of large scale coverage of rubber granulate materials across all range lanes. The use of smaller rubber granulate bullet catchers must be considered, surrounded by sand. This will reduce the overall fuel load and ensure that rubber granulate fires are contained within a much smaller area and which do not spread to other range lanes.
- Must review the requirement for deep volume rubber granulate range lanes. The rubber granulate depth should be reduced to 300mm to reduce the risk of self-heating.
- Range staff must adhere to the advice within JSP 403 and range note 04/04.
- Range staff should monitor the rubber granulate during and on completion of live firing for a period of not less than 24 hours.

ACQB Targets on 25m Barrack Ranges.

5. In order to accommodate the new multipoint targets issued for ACQB practices on barrack ranges, in particular the 1908 Barrack Range, the way in which compliance on these ranges is assessed has been amended.

0297. **Design Criteria.** Common to all range design are the following criteria;

- a. **Line of Fire (LofF).** An imaginary line taken from the barrel of a weapon to the point of aim on a target. Range structures in front of the barrel and down range such as baffles are designed by applying the respective CofF to the LofF or Lines of Fire where more than one points of aim or firing points exist. On 25m Barrack ranges assessment for compliance is taken only from the 25m firing points [to the centre of authorised targets.](#)

CQB(U) Shoot through facilities.

6. In order to provide some generic guidance to those involved in providing shoot through CQB(U) ranges, additional detail is added to Chapter 6 as an Annex. The Annex is attached to this Advice Note.

Tactical Grenade ranges.

7. Changes to terminology and some dimensional changes in Chapter 22 have been made. Type A & B trenches are now called Grenade Target Trench and Grenade Posting Trench. This hopefully will clarify their use. The depth of the trench for grenade posting has been increased from 450 mm to 600 mm to fall in line with the tactics set out in PAM21. With the posting trench at 450 mm the shell scrapes had to be used for cover each time and not just where grenades are miss placed.

Close Engagement (less than 10m)

8. For those with barrack ranges used by RM or MDP who currently use a dispensation for close engagement practices, the use of the anti backsplash curtain covered in Advice Note 4/10 is now an authorised option.

Original Signed

F S Compton
OC TAS(RE)

Attachments:

- 1 – Revised detail for granulated rubber.
- 2 - Annex A to chapter 6 – Shoot Through CQB(U)

Distribution:

Information:

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