



## TECHNICAL ADVISORY SECTION (ROYAL ENGINEERS) (TAS(RE))

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### RANGE ADVICE NOTE 8/09

See Distribution

Your reference:

Our reference: 28-14-01

Reference:

Date 27 Oct 09

A. JSP 403 Vol.2 Edition 3 Change 4

#### UPDATE ON USE OF GRANULATED RUBBER

##### Background.

1. As most will be aware there have been three fires in rubber granulate on gallery ranges at East Holm, Bulford and Strensall. The Strensall fire may be the result of treated timber being struck by tracer and not the granulate catching fire. The fires at East Holm and Bulford were fires in granulate.
2. DTE has through the Defence Fire & Risk Management Organisation (DFRMO) commissioned an investigation into the fires by the Building Research Establishment (BRE). BRE have taken samples from East Holm and Strensall (prior to the fire there) and will also take samples from the supplier at source. These will be tested in ovens to determine the ignition point of each sample. BRE will also be using heat sensors to analyse heat generation in the mass material within stop butts.
3. US Forces and other nations who use similar material have not reported such problems with their material so we are seeking details of any additive or source control they use.
4. Initial thoughts on cause of these fires is the build up and retention of heat within the rubber due to self heating and that heat building up to the point of ignition. The BRE tests will provide more detail and ensure it is not the source material that is the problem.

##### Advice.

5. Until more detail is available the advice currently in Reference A stands. This calls for granulate to be used on gallery ranges only in shooting in boxes behind the targets to minimise the impact should there be a fire (para. 0295). Reference A also advises on the use of additional fire prevention measures where tracer is used (0292d).
6. Heavy dense rubber tiles should be removed from large areas of granulate except in smaller areas of granulate such as shooting in boxes in mantlets. Light rubber or woven fabrics in timber frames to retain granulate and keep out target debris has proven a cost effective

solution that allows granulate to cool after heavy range use. See photo of covers used at Penally. The granulate spill is from a time before the covers were installed.



7. The fire at Strensall was in part at least caused by tracer in treated timber. Timber is being used more and more on ranges to minimise the need for grass cutting. At Strensall the timber was placed over granulate at the top of the stop butt; this allowed air to flow up under the timber that was engaged with tracer ammunition. Had the timber been set into earth or sand the outcome might not have been so drastic.



8. Heavy use ranges with large volumes of granulate and particularly those where tracer is fired should ensure that orders for the range warden include checking granulate after each days firing and if there is any sign of latent heat in the rubber, dowse with water. This precaution includes barrack ranges with granulated rubber bullet traps as well.

9. It is important that we do all that is possible to eliminate and reduce the risk of fires that necessitates the operational response of the local fire and rescue services. Under current legislation, Regulatory Reform (Fire Safety) Order 2006 the Defence Fire Risk Management Organisation may impose enforcement actions if we continue the current trend. It is the current investigation being undertaken and the precautions in this Advice Note that prevents such actions being issued at this point.

*Original Signed*

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