

Chapter 3

GROUND BASED AIR DEFENCE (GBAD) MISSILE FIRINGS

INTRODUCTION

0301. General. GBAD¹⁰ missiles are used by the RN and Army. However, there are other groups of users who may also use Service surface to air ranges for missile firings. These can include contractors at the direction of the MOD and commercial enterprises carrying out private venture work. Additionally, some TERP ranges provide facilities to Service units for in-service equipment firings. This variety highlights the need for a flexible, and often individually tailored, approach to the provision of the SMS for GBAD missile systems and their targets.

0302. GBAD Missile Environment. From a doctrinal point of view GBAD is considered both as a joint¹¹ and combined¹² responsibility. The UK contribution as part of the combined GBAD environment is focused on Low Level AD (LLAD) up to 16,000ft (4876m) and is divided into Close GBAD and Area GBAD. Historically, this division has required different training needs and standards and has resulted over the years in different approaches to the requirements of the user from the UK surface to air range providers.

0303. Aim. The aim of this Chapter is to provide guidance on the operation of a range being used for GBAD missile firings.

PRINCIPLES

0304. General. The User may not fire on the range unless the practice has been authorised and the range is declared to be open for firing. The Range Officer has the delegated authority from the Range Authorising Officer (RAO) to stop all firing on the range at any time if he feels it is necessary so to do. Anyone may call for the firing to be stopped if he or she sees or detects a dangerous or potentially dangerous situation.

0305. Planning. Prior to the User arriving on the range a planning conference will have taken place to settle the details of the firing practice. Targetry and administrative details will also be discussed. It is upon this planning that the Daily Range Summary/Training Safety Authority/Range Detail/ Trial Plan is based. Minor changes to the planned activity may be accepted by the range operator provided no new risks are introduced. Major changes will require the submission of a new plan of the firing practice to the range operator, and may require formal approval.

0306. The WDA. The Range Staff are responsible for applying the WDA template that has been promulgated by the holder of the Safety Case. If there is any discrepancy or doubt about the WDA or its application then advice must be sought through the SME HQ and DOSG.

¹⁰ GBAD is a NATO term that also covers ship-borne weapon systems.

¹¹ Joint – where 2 or more Services are involved.

¹² Combined – where the forces of more than one Nation are involved.

0307. Mitigation of Hazard. There are methods to mitigate hazards of GBAD missile weapon systems, such as independent cut-down and self-destruct systems. These are assessed by DOSG who will provide Range Safety Advice to the platform Integrated Project Team (IPT) that holds the weapon system Safety Case. This Advice will contain the recommended WDA and the restrictions on its use. Only the IPT and Service approved WDA is to be used for GBAD missile firings. The range operator will require prior and timely information on the WDA, its construction and restrictions, in order to consider approval for the firing to take place.

RANGE PROCEDURES

0308. Firing Practices. The appropriate Service training/procedural publication provides the detail for the conduct of practice to be used with the weapon system.

- a. RN/RM: Reference AE.
- b. RM (on land): Reference AM.
- c. Army: Reference AM.

A Variation¹³ is required if any change to these procedures is contemplated.

0309. Service Technical Publications. These publications provide the User and Technicians with operating procedures, equipment function explanations and repair/maintenance information and should be available on the range.

0310. Training Safety Authority/Range Summary/Range Detail. Only those practices that appear on the Training Safety Authority/daily range summary/range detail may be fired, using the equipment and ammunition specified in the areas designated and within the times stated.

0311. Range Clear for Firing. The Range Staff will inform all User Units when the range is open and clear for firing and also when it is closed. Temporary suspensions of the authority to fire will occur and it is the duty of the Range Staff to ensure that all users are aware of where and when these suspensions apply and what range activities are affected.

0312. Target Provision. The target provider, whether civilian or military, will be treated as any other range user and is responsible for ensuring the safe operation of the target equipment.

0313. Ammunition Technical Support. An Ammunition Technician(AT) is normally required to be present at all missile firings to deal with misfires, performance failures and other ammunition incidents. The AT will make a report about any ammunition incident that occurs and forward it through the chain of command.

0314. Ammunition Incidents. Both the Practising Unit and the Range Staff should make reports on ammunition incidents in accordance with Service/Agency procedures. In the event of death, serious injury or damage the Civil Police are to be informed and the site cordoned off, initially by the Unit.

¹³ See Reference A1 Chapter 2

0315. Misfires. A safe bearing and elevation is to be calculated and applied for each firing point that will allow any subsequent launch to be contained within the centre of the WDA.

0316. Observation. All missiles fired are to be observed and the results of the firing recorded. If the target is flown beyond visual range the target operating team is to record its track. These records and observations are important should an investigation become necessary.

0317. Target Operation. The target may be operated by either MOD or Contractor staff. A log of all significant events (launch and recovery times, number of engagements, hits, target track and flying conditions) is to be opened and maintained whilst operating on the range. This log is to be made available to the Range Staff. The records are to be kept for one year.

0318. Overflight. The question of whether a target may overfly an unprotected position or any other range user or critical store will be addressed in the Aircraft Release and the Safety Case. Limitations will also be addressed in the same documents. For GBAD missiles firings it is entirely possible that the command link or control of the target UAS may be damaged during an engagement. Thus, during presentations for the engagement, a limitation may allow the target to be flown directly towards the firing point provided it is kept at low enough height and far enough away for the cut down mechanism to operate before the engagement of the UAS presents a potential hazard to those on the firing point.

0319. End of firing. At the end of firing the user unit RCO is to report all suspected blinds and the position of fallen debris. Confirmation must also be provided to the Range Staff that all weapon systems are clear and set to safe, and have been inspected as such by a competent Officer.

