

## Chapter 7

### TERMINOLOGY MATRIX

#### INTRODUCTION.

0701. With the closer co-operation of all three Services in the utilisation of the limited number of Defence Land Ranges, it has become apparent that there could be a real danger of misunderstanding by either the Range Staff or the User Unit as to what exactly is meant by commonly used terms. In the past, single Service ranges have developed tried and tested safety systems for the safe conduct of specific practices on their ranges. These systems have been developed in isolation and thus certain phrases and key words have evolved with specific meanings within individual Services. However, on other ranges run by a different Service the same words or phrases have evolved through use to different meanings or different nuances of meaning.

0702. Inter-Service liaison on range terminology has resulted in a number of agreed definitions recorded in Volume IV of this JSP. However, in the context of air to surface engagements, there are a number of words and phrases where agreement has not been reached because of single Service 'custom and practice'. Rather than try to introduce a new meaning or term it has been decided to explain those terms in this volume that are specific to Arm or Service and when and where they are to be used. Where there are contradictory uses of a word or phrase, and it is important to the smooth operation of a specific practice, the meaning of the word or phrase is explained in the chapter covering that practice. It is also contained in the matrix at Annex A in the columns of those users who might require it.

0703. **Aim.** The aim of this chapter is to list and define the terminology that is in current use on the various Service ranges for the conduct of air to surface gunnery, rocket, bomb and missile practices.

#### MATRIX DIVISIONS.

0704. The air to surface weapons have been broadly grouped into three types for the purpose of this Volume:

- a. **Fixed Wing Aircraft Weapons (FWAW).** Which are defined as any weapon that is used in a ground attack role.
- b. **Rotary Wing (Crew Served Weapons) (RW(CSW)).** Which are defined as those that are removable from the aircraft, are pintle mounted and are operated and aimed by a crew member other than the flying pilot. This would include circumstances where handheld weapons are fired from helicopter doors or open doors on transport aircraft.
- c. **Rotary Wing (Integrated Weapon Systems) (RW(IWS)).** Which are defined as those that are either permanently attached or appended to the aircraft, and are operated directly by the pilot or co-pilot gunner. This specifically includes attack helicopter configurations.

0705. The matrix at Annex A is consequently divided into these three groupings. In many cases the term involved is only used by one Service and since it is unlikely to be used by any other should not cause a problem even where there are differing interpretations. Where a member of one Service is transposed to work in another Service Unit, it is a responsibility of the OC of that Unit to ensure that the newcomer is fully aware of the local use of these words

JSP 403 Volume 3  
Edition 1 Change 3

TERMINOLOGY MATRIX

and phrases.

Annex:

A. Terminology Matrix.

## TERMINOLOGY MATRIX

JSP 403 Volume 3  
Edition 1 Change 3

## CHAPTER 7 ANNEX A

## TERMINOLOGY MATRIX

	FW(AW)	RW(CSW)	RW(IWS)
<u>Abort.</u> Term used during a trial flight to abandon the trial.			
<u>Dedicated AWR.</u> A range with a published circuit for repeated attacks.			See Tactical Air Manoeuvre Range.
<u>Air Danger Area.</u> The airspace which has been notified as such within which activities dangerous to the flight of aircraft may take place at such times as may be notified.			
<u>Air-to-Surface Firing.</u> The firing of weapons from an aircraft at a target on land or on water.			
<u>Air-to-Surface Guided Missiles.</u> Missiles fired from an aircraft directed at a target on land or water.		NA	

	FW(AW)	RW(CSW)	RW(IWS)
<p><u>Air-to-Surface Gunnery</u> (RW). Helicopter gunnery is the firing of an Area Weapon System (AWS) at a surface target contained within a range. There are three modes of fire:</p> <p>a. <u>Hover fire</u>. Is defined as any engagement conducted below transitional lift. Hover fire may be stationary or moving. Both direct and indirect fire can be delivered during hover fire. Horizontal movement may be in any direction.</p> <p>b. <u>Running fire</u>. Is an engagement from a moving helicopter above transitional lift. Both direct and indirect fire can be delivered during running fire. The forward airspeed adds stability to the helicopter and increases the delivery accuracy of the weapons system, particularly rockets.</p> <p>c. <u>Diving fire</u>. Is a direct fire engagement from a helicopter that is in a diving flight profile. The airspeed and altitude of the aircraft improve the accuracy of engagements particularly for rockets.</p>	NA		
<p><u>Air-to-Surface Gunnery (Strafe)</u>. Strafe is the firing of guns at a target on land or water from FW aircraft</p> <p>a. Level.</p> <p>b. Low angle; up to 15°.</p> <p>c. High angle; more than 15°.</p>		NA	NA
<p><u>Air-to-Surface Rocketry</u>. The firing of rocket projectiles at a target on land or water from an aircraft</p>		NA	
<p><u>Arm</u>. Used during trial flights and means to make arming switches live.</p>			

## TERMINOLOGY MATRIX

JSP 403 Volume 3  
Edition 1 Change 3

	FW(AW)	RW(CSW)	RW(IWS)
<u>Arming Area Safety Officer (AASO)</u> . Is responsible for the safe loading and unloading of Ordnance in the FARP.			
<p><u>Attack (or Run or Pass)</u>. Is the part of a sortie in which an aircraft releases, or simulates the release of, a weapon against a target. An attack is qualified by the following terms:".</p> <p>a. In-Live. A live attack is one in which at least one live weapon is released.</p> <p>b. In-Hot. A hot attack is one in which practice weapons are released.</p> <p>c. In-Dry. A dry attack is one in which no weapon is released.</p> <p>During trial flights, Live/Hot/Dry runs may be prefixed with 'laser' or "Lima" indicating the use of Laser designators/markers.</p>			See Tactical Air Manoeuvre Range
<u>Air Traffic Service Units (ATSU)</u> . Is a unit selected by the appropriate authority to provide a DACS/DAAIS, usually as a result of its geographical position and facilities.			
<u>Air Weapons</u> . Is a generic term describing all types of bombs, ammunition, unguided rocket projectiles, guided missiles and illuminating pyrotechnics which are released from an aircraft.			
<u>Air Weapons Range (AWR)</u> . Is an area in which air weapon attacks take place.			
<u>Ballistic Bomb</u> . Is a bomb falling un-retarded throughout its trajectory and is sometimes called a slick bomb.		NA	NA

	FW(AW)	RW(CSW)	RW(IWS)
<u>Blind.</u> Is any ammunition, missile, explosive charge, pyrotechnic or training device, which has failed to function.			
<u>Bootleg.</u> Is the use of a range without prior booking. Aircraft merely call the range on an opportunity basis. These aircraft are known as bootleggers.			
<u>Cease Fire Line.</u> A clearly defined line between two easily recognisable points, once crossed weapon switches are made "Safe" The distance between start and cease fire lines is normally 1 Km (minimum) to allow for manoeuvre.	NA		
<u>Cold.</u> An AWR is said to be 'cold' when the range is available for use but with no current activity.		NA	NA
<u>Danger Area Crossing Service (DACS).</u> When listed as providing a DACS, the appropriate ATSU (in some cases the range control) will provide a clearance for aircraft wishing to cross the DA whenever DA activity permits. The clearance is only in relation to DA activity and does not constitute an air traffic control type clearance from other aircraft, which might be operating in the area.			
<u>Danger Area Activity Information Service (DAAIS).</u> When listed as providing a DAAIS, the appropriate ATSU will pass to pilots, on request, an update on the activity states of a DA. Such an update, which may be qualified by a time period, is only provided to assist pilots in deciding whether it would be prudent, on flight safety grounds, to penetrate the DA. DAAIS information does not constitute a clearance to cross a DA.			

## TERMINOLOGY MATRIX

JSP 403 Volume 3  
Edition 1 Change 3

	FW(AW)	RW(CSW)	RW(IWS)
<u>Delayed Release</u> . Is a hang-up which subsequently leaves the aircraft.		NA	NA
<u>Dive Bombing</u> . Is the release of a ballistic or retarded bomb during a dive manoeuvre.		NA	NA
<u>Duster</u> . Is said to occur when the debris or splash associated with the impact of an air weapon is seen, but not the smoke or flash.		NA	NA
<u>Event</u> . Is a single attack classified by both delivery profile and weapon type.		NA	
<u>Famil Run</u> . Run/flypast carried out on the range area to familiarise user with range layout/procedures. This is not the same as dry run.			
<u>Firing 'Now'</u> . Firing guns/missile/laser at the call of 'Now' – trials flight only.			
<u>First Run Attack (FRA)</u> . Is an attack made with the intention of releasing live or practice weapons on the first pass.			
<u>Forward Arming and Re-fueling Point (FARP)</u> . An installation to arm and refuel helicopters.	NA		
<u>Ghost</u> . When a flare parachute deploys but the flare fails to ignite, it is said to 'ghost'.		NA	NA
<u>Gross Aiming Error</u> . A gross aiming error occurs when an ac fires or releases a weapon as intended, the system operates as selected, and the result is a wide weapon relative to the target declared for the attack.		NA	
<u>Guided Bomb</u> . Is a live or practise weapon which is fitted with a guidance system.		NA	

	FW(AW)	RW(CSW)	RW(IWS)
<u>Hang-Up</u> . Is a weapon which is retained on an aircraft after the normal release controls have been operated. (see below)		NA	
<u>Hang Fire</u> . When a weapon is fired but remains on the aircraft after normal firing procedures.			
<u>Hazard Impact Area Trace (HIAT)</u> . Defines the boundaries of the WDA/Z on an air to surface range and is provided as a scaled overlay for use with range maps. In addition, it identifies the release conditions (with associated tolerances), the normal wind and the system aiming error. The HIAT also defines the dimensions and positioning of the release box in which the aircraft must be at weapon release.			
<u>High Altitude Level Bombing (HALB)</u> . Is the delivery of a bomb in level flight at a height above the target of more than 10,000 ft.		NA	
<u>Hollow Ripple</u> . Is the firing of only some of the rockets of a ripple, with the intermediate rockets represented by time interval only.		NA	
<u>Hollow Stick</u> . Is the release of the first and last weapons of a stick, with the intermediate weapons represented by time interval only.		NA	



## TERMINOLOGY MATRIX

JSP 403 Volume 3  
Edition 1 Change 3

	FW(AW)	RW(CSW)	RW(IWS)
<p><u>Impact Area/Zone.</u> Is a space authorized and applied permanently, or at the time of firing, in which specified weapons may impact, detonate, break up or operate. The space must be large enough to contain ricochet but have its edge no closer to the Danger Area/Zone (DA/Z) boundary than the authorised fragment Burst Safety Distance (BSD) or other weapon hazard distance (for example: Gas). Access to the impact area/zone must be physically controlled as directed by the Range Authorising HQ.</p> <ol style="list-style-type: none"> <li>1. The DA/Z is a variable distance away from the training area boundary.</li> <li>2. Weapons authorised will be limited by type or hazardous effect.</li> </ol>			
<p><u>Inadvertent Release.</u> Occurs when the aircraft weapon system operates as selected but not as intended. For example, stores, including towed targets, released at the wrong instant or from incorrect switch selections are inadvertent releases.</p>		NA	NA
<p><u>Irregular Release.</u> Occurs when any aircraft weapon or equipment is released or fired in a manner different from that selected by the aircrew.</p>			
<p><u>Level.</u> The term level, as applied to weaponry, describes an aircraft which is neither climbing nor descending.</p>			
<p><u>Live Weapon.</u> Is any weapon containing energetic materials.</p>			
<p><u>Loft Bombing.</u> Is the release of a bomb at a constant angle of climb. (See Toss Bombing).</p>		NA	NA

	FW(AW)	RW(CSW)	RW(IWS)
<u>Low Angle Drogue Delivery (LADD)</u> . Is a loft attack in which a retarded bomb is released at a constant shallow angle of climb after the aircraft has made a pitch-up from level flight.		NA	NA
<u>Low Altitude Level Bombing (LALB)</u> . Is the delivery of a bomb from level flight at a height above the target of less than 2,000 ft.		NA	NA
<u>Medium Altitude Level Bombing (MALB)</u> . Is the delivery of a bomb in level flight at a height above the target of between 2,000 ft and 10,000 ft.		NA	NA
<u>Misfire</u> . (from AAP6) (1) Failure to fire or explode properly. (2) Failure of a primer of the propelling charge of a round or projectile to function wholly or in part.			
<u>Moving Waterborne Target</u> . Is a target or aiming mark towed by a vessel, or which is self-propelled.			
<u>Negative/Positive Function</u> . For trials flights only and means airborne or ground system appears to be inoperative/operating normally.			
<u>Notified Danger Area</u> . Only becomes active after notification by Class I or Class II NOTAM.			
<u>Off</u> . Having overflown the target, the ac captain will call 'off hot', 'off live' or 'off dry' as appropriate.		NA	NA
<u>Offset Attack</u> . Occurs when the aircraft is flown to the weapon release point by reference to a surface feature other than the target.			

## TERMINOLOGY MATRIX

JSP 403 Volume 3  
Edition 1 Change 3

	FW(AW)	RW(CSW)	RW(IWS)
<u>Pop-Up Attack</u> . Is a manoeuvre in which the aircraft climbs steeply from a pull-up point (PUP) to take up the delivery profile or attack track required for a particular event .			
<u>Practice Weapon</u> . Is a weapon which is inert, or contains only a spotting charge of smoke or flash material. The spotting charge is dangerous and can cause grievous injury or death if mishandled.		NA	
<u>Radar Attack</u> . Is an attack where the aircraft is brought to the weapon release point using the aircraft radar.		NA	
<u>Range Conducting Officer</u> . The qualified or authorised, current and competent person who is appointed by the Exercise Director/Commanding Officer/Head of unit or organisation to be responsible for the safe conduct of firing in accordance with the relevant Service range instructions.			
<u>Range Safety Officer (Air Traffic Control) (RSO(ATC))</u> . RSO(ATC) for dedicated AWR is to be an officer or SNCO of the Air Traffic Control branch who holds a minimum endorsement of TC (AWR) L He/She is that person who has the overall responsibility for the safe execution of a particular range detail. He/She is responsible for the co-ordination of the practice should more than one user be upon the range.			

	FW(AW)	RW(CSW)	RW(IWS)
<p><u>Range Danger Area/Zone.</u> Is the space within a range in which there may be a risk to personnel, equipment or property from firing authorized weapons on a specified bearing line of fire. The RDA/Z is wholly within the range or training area boundary. Access to, and movement within, the RDA/Z is controlled through Standing Orders (SO).</p> <p>Note: The boundaries on land are always marked, signed, flagged and often fenced to warn the public and to deter access; at sea buoys may have to be provided.</p>			
<p><u>Recording Run.</u> A trial run during which ground instrumentation shall record.</p>			
<p><u>Retarded Bomb.</u> Is one which is fitted with a retarding device to enable safe separation between aircraft and bomb at detonation. It is also known as a lay-down bomb.</p>		NA	
<p><u>Ripple.</u> Is a succession of rockets released at predetermined time intervals from the same aircraft. (USAF pilots use the expression 'ripple' for a succession of bombs as well as rockets).</p>		NA	
<p><u>Salvo.</u> Is the intended simultaneous release of a number of weapons from an aircraft.</p>		NA	
<p><u>Skip Bombing.</u> Is the delivery, short of the target, of a bomb or practice bomb simulating a fire bomb at very low altitude in level flight or in a shallow dive.</p>		NA	
<p><u>Spot/No spot.</u> - reserved for Laser use.</p>			
<p><u>Splash.</u> The impact of a weapon.</p>			

## TERMINOLOGY MATRIX

JSP 403 Volume 3  
Edition 1 Change 3

	FW(AW)	RW(CSW)	RW(IWS)
<u>Splash Bombing</u> . Is the delivery of weapons against moving waterborne targets, which may take place in specified air-to-sea ranges or in open sea using clear range procedures.		NA	
<u>Stick Bombing</u> . Is the release of a succession of bombs at a predetermined time interval from a single aircraft.		NA	
<u>Stoppage</u> . Is the failure of a gun to fire.			
<u>Stop-stop-stop</u> . Do not fire/release store, stop action/discontinue profile.			
<u>Start Fire Line</u> . A clearly defined line between two easily recognisable points, once crossed weapon switches are made "Hot".			
<u>Surface Danger Area</u> . Is the land and/or sea area which contains the range impact areas of weapon events permitted on the range.			
<u>Tactical Air Manoeuvre Range</u> Is a range which allows air and surface manoeuvre, within defined limits. Engagements are allowed to be conducted throughout the range impact area from a variety of directions.	NA		

	FW(AW)	RW(CSW)	RW(IWS)
<p><u>Target Danger Area FW.</u> Is an area on the land or sea surface within the larger periphery of the sum of the following 3 elements:</p> <ul style="list-style-type: none"> <li>a. The HIAT for the event (not including the release box).</li> <li>b. A circle of radius equal to the wide-bomb limits for the event plus the explosive risk (fragmentation) distance for the weapon.</li> <li>c. A 20° sector in the undershoot of the target extending (in the undershoot) to the boundary of the designated Range Impact Area. The sector is centred on the authorised attack track; its dimensions may be amended by individual clearances. (this is a FW definition. Therefore the proposal is to separate the two)</li> </ul>		NA	NA
<p><u>Toss Bombing.</u> Is the release of a ballistic bomb during a constant g pitching manoeuvre.</p>		NA	NA
<p><u>Visual Attack.</u> Is an attack where the ac is brought to the weapons release point by means of visually sighted cues. Electro-optical enhancement devices may be employed.</p>			
<p><u>Weapon Danger Area/Zone(WDA/Z).</u> Is the space into which specified weapons or their fragments may travel, impact or function, given normal firing conditions. The WDA/Z excludes low probability human and system error.</p>			
<p><u>Weapon Danger Area/Zone Boundary.</u> Is the line depicting the outer edge of a WDA/Z.</p>			

TERMINOLOGY MATRIX

JSP 403 Volume 3  
Edition 1 Change 3

	FW(AW)	RW(CSW)	RW(IWS)
LASER BREVITY CODEWORDS from STANAG ATP 80-2 and ATP-27(B) INT Supp.	<b>Laser On</b> - directive call by aircrew for Laser TMOp to begin laser op. Refers to <b>ground</b> lasers only		
	<b>Spot</b> : - Aircrew receiving laser energy. LTMO should continue.		
	<b>Shift</b> : - Directive call for LTMO to illuminate a new Target with laser energy.		
	<b>Terminate</b> : - Directive call for LTMO to cease laser operation.		
	<b>Lima</b> : - Term used when referring to <b>airborne</b> laser.		

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