



## TYPES OF TERMINAL ATTACK CONTROL

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There are three types of [terminal attack control](#) (TAC) designated as Types 1, 2, and 3 (discussed below). Each type is characterized by a specific set of procedures outlined in Joint Publication (JP) 3-09.3, [Close Air Support](#). The ground commander considers the situation and issues guidance to the [joint terminal attack controller](#) (JTAC) based on the associated risks identified in the tactical risk assessment. The intent is to offer the lowest level [supported commander](#) the latitude to determine which type of TAC best accomplishes the mission. Risk level is not directly tied to a given type of TAC. The three types of control are not ordnance-specific and the tactical situation will define the risk level (e.g., global positioning system [GPS] and digital targeting systems used in Type 2 control may be a better mitigation of risk than using non-guided free-fall munitions under Type 1 control). It is important to understand the most important risk mitigation tool is target verification prior to attack. Therefore, when delivering guided weapons, the point designated by the aircraft sensor, or the coordinates entered into an inertial guided weapon, may be more practical factors for risk mitigation as opposed to attack aircraft nose position. Only a JTAC or [forward air controller–airborne](#) (FAC[A]) can provide Types 1-3 TAC.

Because there is no requirement for the JTAC to visually acquire the target or attacking aircraft in Type 2 or 3 control, JTACs may be required to coordinate [close air support](#) (CAS) attacks using targeting information from an observer or other asset with real time targeting information. The JTAC maintains control of the attacks, making clearance or abort calls based on the information provided by additional observers or targeting sensors. The JTAC should consider the timeliness and accuracy of targeting information when relying on any form of remote targeting.

Technological advances in aircraft capabilities, weapons systems, and munitions have provided JTACs additional tools to maximize effects of fires while reducing collateral damage and the risk of friendly fire incidents when employing airpower in close proximity to friendly forces. GPS-equipped aircraft and munitions, laser range finders/designators, and digital system capabilities are technologies that can be exploited in the CAS mission area. Regardless of the general guidance listed here, **specific procedures for TAC should always be addressed in theater special instructions (SPINS) or [rules of engagement](#) (ROE).** The following discussion provides an operational description of types 1-3 control of CAS:

- ★ **Type 1** control is used when the JTAC requires control of individual attacks and must visually acquire the attacking aircraft *and* the target for each attack ([JP 3-09.3](#)). “Visually acquire” is literally eyes-on or via optics such as binoculars, without the use of third party devices such as laptops or other digital imagery. Analysis of attacking aircraft geometry is required to reduce the risk of collateral damage or the attack affecting friendly forces. Language barriers when controlling coalition aircraft, lack of confidence in a particular platform, ability to operate in adverse weather, or aircrew capability are all examples where visual means of TAC may be the method of choice.
- ★ **Type 2** control is used when the JTAC requires control of individual attacks and any or all of these conditions exist: JTAC is unable to visually acquire the attacking aircraft at weapons release, JTAC is unable to visually acquire the target, or the attacking aircraft is unable to acquire the mark/target prior to weapons release ([JP 3-09.3](#)). The JTAC must acquire the target visually or use targeting data from a scout, [fire support team](#), [joint fires observer](#), unmanned aircraft (UA), special operations forces, CAS aircrew, or other asset with accurate real-time targeting information. Type 2 control may be applicable during certain conditions, such as night, adverse weather, and high altitude or standoff weapons employment. Type 2 control is also applicable when using configured UA or targeting pod sensor aimpoint via remotely operated video enhanced receiver. A JTAC, who can see a laser spot on the target or a real-time feed from a targeting pod, may be better able to minimize collateral damage and deconflict an attack from friendly forces than one relying on visual contact with an attacking aircraft at high altitude. Currently fielded technology has the capability to improve the flow of information between the JTAC and pilot. These tools are an additional means to ensure the destruction of the enemy, minimization of collateral damage and prevent friendly fire incidents, and in many cases are a more reliable means of aimpoint verification than observing the attacker’s nose position.
- ★ **Type 3** control is used when the JTAC requires the ability to provide clearance for multiple attacks within a single engagement subject to specific attack restrictions. Type 3 control does not require the JTAC to visually acquire the aircraft or the target; however, all targeting data must be coordinated through the supported commander’s battle staff ([JP 3-09.3](#)). During Type 3 control, JTACs provide attacking aircraft targeting restrictions (e.g., time, geographic boundaries, final attack heading, specific target set, etc.) and then grant a “blanket” weapons release clearance to meet the prescribed restrictions. The JTAC monitors radio transmissions and other available digital information to maintain control of the engagement. The JTAC maintains abort authority. Observers may be used to provide targeting data and the target mark during Type 3 control. Type 3 is a CAS TAC procedure and should not be confused with terminal guidance operations or AI. **Missions attacking targets not in close proximity to friendly forces, and beyond the range requiring detailed integration with surface fires and maneuver, should be conducted using [air interdiction](#) (AI) procedures vice CAS.**

JTACs provide the type of control as part of the CAS brief. It is not unusual to have two types of control in effect at one time for different flights. For example, a JTAC may control helicopters working Type 2 control from an attack position outside the JTAC's field of view while simultaneously controlling medium or low altitude fixed-wing attacks under Type 1 or 3 control. The JTAC maintains the flexibility to change the type of TAC within guidelines established by the supported commander. Senior commanders may impose restrictions that prevent subordinate commanders from using certain types of terminal attack control. However, the intent is for senior commanders to provide guidance that allows the lowest level supported commander to make the decision based on the situation. The JTAC maintains abort authority in all cases.

**Armed unmanned aircraft (UA) considerations.** Clearance of fires and CAS final control for armed UA should be clearly established before combat operations begin.<sup>10</sup> Armed UA procedures should follow the same procedures as other CAS airframes in most cases, but there are situations that require additional consideration. The [air support request](#) (ASR) process typically begins when a ground commander requests CAS from the [air support operations center](#) (ASOC) through the [joint air request net](#). The ASR process often works in reverse when an intelligence, surveillance, and reconnaissance (ISR)-tasked UA locates hostile forces in an area that requires detailed integration with or is in close proximity to ground forces. In this case, the UA operator usually informs the ground commander (through the ASOC or the [direct air support center](#) [DASC]) that a recently discovered target may require CAS as opposed to the ground commander making the request. There are two basic scenarios in which an armed UA could require clearance of fires and final control. These cases all assume that targets identified by a UA meet ROE requirements.

- ★ **Case 1: UA on an ASR tasking in communication with a JTAC who is in communication with the ground force commander.** In this case, standard CAS procedures should be used. The local ground commander clears and gives approval for fires in the target area, and the JTAC provides final control.
- ★ **Case 2: UA on an ISR tasking that is not in communication with ground forces.** In this case, the UA operator should receive approval to terminate the ISR tasking temporarily. UA responsibilities within the [air operations center](#) (AOC) should transition from the senior intelligence duty officer to the senior offensive duty officer.<sup>11</sup> Overall [command and control](#) (C2) should transition from the AOC to the ASOC or DASC. The UA operator should contact the ASOC or DASC to ensure the appropriate ground commander is contacted through appropriate command channels. If the local ground commander has an available JTAC, the ASOC or DASC should provide a C2 and datalink frequency for the UA operator to facilitate clearance of fires.

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<sup>10</sup> The USAF refers to some of its larger UAs as remotely piloted aircraft (RPA) to differentiate its operators who have been trained to similar standards as manned aircraft pilots.

<sup>11</sup> See [Air Force Instruction 13-1 AOC, Volume 3](#) for an expanded discussion on AOC divisions and teams.

Terminal attack control and clearance of fires is important to the effective employment of armed UA during CAS. There is an increased chance of collateral damage, friendly fire incidents, mid-air collision, and confusion if procedures are not clearly defined. These risks are further increased with the increase of armed UA. Because every conflict is different, these procedures may not apply exactly to every combat situation. The bottom line: **commanders should ensure the SPINS include clear and precise procedures for armed UA.**

Recent technological advances in weaponry and digital/data link systems have provided significant enhancements to the CAS mission; however, commanders and operators should fully understand the capabilities and limitations of the systems being brought to the fight. Descriptive, concise dialog between the JTAC and aircraft often remains the best means to understand and mitigate the risk and produce the desired effect on target. **It is essential that all CAS participants use standard procedures and terminology** (see JP 3-09.3, [Close Air Support](#) and AFTTP [I] 3-2.6, [Multi-Service Procedures for the Joint Application of Firepower \[JFIRE\]](#)).

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