



## AIR GROUND INTEGRATION READINESS AT NTC

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Many units arrive at the National Training Center (NTC) at Fort Irwin, California, unprepared to integrate aviation support into their operations. Army leaders understand the five-paragraph operations order and mission brief, but ground leaders frequently neglect to use this format when briefing aviators for mission support. As a result, the briefings to supporting aviation units lack proper format and content, which ultimately leaves the supporting aviators without a common operational picture (COP) of the mission and its impact in the brigade combat team's (BCT's) area of operations.

Ground commanders know and expect the benefits of the aviation support in the close fight, but do not train their units on the fundamentals of coordination with aviation units. Many would admit that they do not know what AGI (air ground integration)

means. This lack of familiarization frequently leaves ground elements and aircrews fighting the same fight but poorly integrated, resulting in poor mission coordination and therefore less than ideal execution.

As a force multiplier, aviation can provide significant combat power for ground commanders when used properly. Ground maneuver commanders use AGI to synchronize aviation support into their concept of maneuver and communicate mission information to supporting aviation elements. Like any supporting effort, aircrews must have specific mission details in order to execute the ground commander's intent. A trend observed at the NTC is that ground commanders and leaders are not familiar with the fundamentals of AGI prior to arrival and are therefore not prepared to coordinate with aircrews during combat missions. The purpose of this article is to emphasize the necessity and simplicity of AGI readiness.

### Observations

The failure to integrate aviation assets starts with mission planning and extends through execution. Ground leaders routinely overlook the fact that aviators need mission details no different than their own organic elements. Examples include a mission statement, concept, intent, graphics and control measures, and a task and purpose. Ground leaders tend to provide an informal

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overview of the mission rather than crucial information when briefing aviators. Due to this lack of integration, aviators often end up executing missions without details such as a specific recon objective, a universal urban area numbering system, a list of locations and limits of named areas of interest (NAI), and a timeline for mission execution. This reduces the aviation influence on the ground scheme of maneuver, and can also cause confusion on the objective and even fratricide in the case of conflicting building numbering systems. Ground leaders can easily maximize the effect of aviation support by conducting proper AGI planning prior to and even during mission execution.

Over a period of several training rotations, observer controllers (OCs) at the NTC have observed examples of poor AGI briefing techniques. In one incident after conducting a pre-mission brief with his company, a ground commander stood in the middle of his carefully prepared terrain model and gave the supporting pilots an abbreviated concept statement that did not include his intent or scheme of maneuver for the attack aviation team. He then proceeded to ask questions about the aircrew's capabilities during the mission without giving them a mission statement, intent, task, or purpose. Unfortunately, this style of AGI brief is closer to the norm rather than the exception.

On another mission, the ground commander gave an abbreviated brief to the crew chief, instead of the pilots, regarding his intent for aviation support. He only told the crew chief that he wanted route reconnaissance (recon) for his movement to the objective, then aerial security for the duration of the mission. He failed to provide the aircrew his maneuver plan, recon objectives, a timeline, a task and purpose for the aircrews, the location of the objective, and even a mission statement. This left the aircrew without situational awareness pertaining to these critical mission details. In this instance, the air mission commander (AMC) advised the ground commander that she needed additional mission details in order to provide specific aviation support. The ground commander then returned to provide a more thorough brief.

Even though many ground commanders have trouble integrating aviation, many do

Deliberate	Hasty
<p><b>Ground to air:</b> 5-paragraph OPORD and brief, all mission details and products, rehearsal *Pre-mission planning and coordination</p> <p><b>Aircrew to ground:</b> Number of aircraft, time on station, munitions number and type, number of casualties they can carry, aircraft marking *Pilots participate in pre-mission planning when possible</p>	<p><b>Ground to air:</b> 1. Situation update 2. MTGCRD elements 3. Friendly, enemy and target locations, description, and marking technique 4. Location of LZs/PZs in case of contingencies</p> <p><b>Aircrew to ground:</b> Number and type of aircraft, time on station, munitions number and type, number of casualties they can carry, aircraft marking</p>

**Figure 1 — Essentials of Deliberate and Hasty Coordination**

not. During these same rotations, OCs observed a number of examples of well-planned AGI. In one case, the ground commander provided an outstanding AGI package to his supporting aircrew by providing them a copy of his mission graphics and briefing them completely on his plan of execution. He clarified his concept of maneuver and aviation support, the aviation task and purpose, and his personnel recovery (PR) plan. He concluded with a brief back rehearsal in order to confirm that the aircrew understood his intent.

In general, the lack of coordination with supporting aviation teams points to the fact that most ground leaders are unfamiliar with AGI, and therefore do not train AGI at their home station. These leaders can greatly improve their combat readiness by becoming familiar with the essentials of AGI.

**Essentials**

*“Planning is the means by which the commander envisions a desired outcome, lays out effective ways of achieving it, and communicates to his subordinates his vision, intent, and decisions, focusing on the results he expects to achieve.”*

**— FM 5-0, Army Planning and Orders Production**

The ground commander uses AGI procedures to communicate his intent to the aviation supporting effort. AGI starts with the ground commander's concept of execution and must integrate aviation throughout the planning process for proper synchronization. In order for aviation to augment the

commander's combat power, supporting aviators must completely understand the ground maneuver plan and the commander's concept for aviation support.

The best way of communicating his plan to supporting aviators is for the ground commander to conduct a standard five-paragraph operations order (OPORD) brief, given to aircrews as the air mission brief (AMB). The ground commander should include the supporting aviation team as a maneuver element. Observers at the Joint Readiness Training Center (JRTC) routinely note that ground units that track aviation like one of their own maneuver platoons are most successful in AGI. This requires ground leaders to include aviators in the planning and briefing process and to provide them with all mission details, including their intent and concept of operation for both ground and aviation elements, task and purpose, graphics and control measures, communication (commo) plan, and end state.

Prior to executing operations, the aviation task force, in conjunction with the BCT brigade aviation element (BAE) and the ground task force, should establish the minimal essential planning information required in order to dedicate aviation assets to specific missions. Suggested planning requirements include timelines, graphics, concept and objective sketches, imagery, landing zone/pickup zone (LZ/PZ) locations, target list worksheet, no fire/restricted fire areas, and the command and control (C2) plan. Aviators also need to know the marking techniques for friendly, enemy, and target

<b>Air Ground Integration Smart Card</b>		
<p style="text-align: center;"><b>General Comments</b></p> <ul style="list-style-type: none"> <li>* Aviation assets have limited station time: use your aviation efficiently.</li> <li>* Task organize aviation assets as a maneuver element.</li> <li>* Maintain communication with aviation units as other maneuver elements.</li> <li>* Give specific task and purpose.</li> <li>* Weapons systems can cause collateral damage.</li> <li>* Weapon systems can not differentiate between friendly and hostile personnel.</li> <li>* Plan should not be dependent upon aviation.</li> <li>* Plan for aviation on all missions.</li> </ul>	<p style="text-align: center;"><b>Aviation Missions</b></p> <ul style="list-style-type: none"> <li>• Security (area, screen, air assault)</li> <li>• Attack (hasty, deliberate, shaping, decisive, close combat attack (CCA))</li> <li>• Reconnaissance (zone, area, route)</li> <li>• Defend</li> </ul> <p><b>Aviation Tactical Tasks:-</b></p> <ul style="list-style-type: none"> <li>- Destroy</li> <li>- Neutralize</li> <li>- Delay</li> <li>- Block</li> <li>- Defeat</li> </ul>	
<p style="text-align: center;"><b>Employment</b></p> <ul style="list-style-type: none"> <li>• Direct fire</li> <li>• Observation</li> <li>• Reconnaissance (zone, area, route)</li> <li>• Security</li> </ul>	<p style="text-align: center;"><b>Check In Brief</b></p> <p><b>Aircraft Check In:</b></p> <ul style="list-style-type: none"> <li>• Call sign</li> <li>• Number and type aircraft</li> <li>• Ordnance on board and laser code</li> <li>• Current location and ETA</li> <li>• Time on Station</li> <li>• Task and purpose</li> <li>• ABF/BP</li> </ul> <p><b>Supported Unit Attack Brief:</b></p> <ul style="list-style-type: none"> <li>• Unit identification and call sign</li> <li>• Target description</li> <li>• Target location</li> <li>• Type of mark / laser code</li> <li>• Location of friendly forces and unit markings</li> <li>• Proposed ABF/BP (include direction of fire)</li> <li>• Fire support (Include control of fires and clearance of fires)</li> <li>• Threat situational report (SITREP) (not limited to ADA systems)</li> <li>• Support unit attack helicopter control measures and anti-fratricide measures</li> </ul>	
<p style="text-align: center;"><b>Operational Graphics</b></p> <ul style="list-style-type: none"> <li>• Attack by fire (ABF)</li> <li>• Support by fire (SBF)</li> <li>• Battle position (BP)</li> <li>• Observation post (OP)</li> </ul>		
<p style="text-align: center;"><b>Communications</b></p> <ul style="list-style-type: none"> <li>• Use command net, maintain communication with air mission commander (AMC)</li> <li>• Ensure you have primary, alternate, contingency, and emergency communications (PACE)</li> <li>• Other aircraft may monitor alternate frequencies (fires, platoons, operations, and intelligence)</li> <li>• Use plain and simple language</li> <li>• Rehearse with aircrews if possible</li> </ul>	<p style="text-align: center;"><b>Clearance of Fires</b></p> <ul style="list-style-type: none"> <li>• Establish communications with aircraft</li> <li>• Ensure aircrew knows task and purpose</li> <li>• Know subordinate unit locations</li> <li>• Pass information per check in brief</li> <li>• Ensure ROE criteria is met</li> </ul> <p style="text-align: center;"><b>Marking Techniques</b></p> <p><b>Day</b></p> <ul style="list-style-type: none"> <li>• VS-17 panel</li> <li>• Smoke</li> <li>• Star cluster</li> <li>• Signal mirror</li> <li>• Reverse polarity paper / panel</li> <li>• Laser designator</li> <li>• Combat identification panel</li> <li>• Tracer fire</li> </ul> <p><b>Night</b></p> <ul style="list-style-type: none"> <li>• Infrared (IR) strobe</li> <li>• Spotlight</li> <li>• Chem light on a string (buzzsaw)</li> <li>• IR spotlight</li> <li>• IR laser pointer</li> <li>• Laser designator</li> <li>• Combat identification panel</li> <li>• Tracer fire</li> </ul> <p style="text-align: right;"><i>You must know your unit's location.</i></p>	
<p><b>Aircraft Capabilities</b></p> <p><b>AH-64 A/D</b> — Optics: TADS (FLIR), video recorder. Weapons: 30 mm cannon (300-600 rounds), 2.75 inch rockets (20-38), Hellfire missiles (4-8). On station time: 2.5 to 3.5 hours.</p> <p><b>OH-58D</b> — Optics: Day TV, video recorder. Weapons: .50 cal MG (300 rounds), 2.75 inch rockets (7), Hellfire missile (2). On station time: 2 hours.</p>		

Figure 2 — AGI Smart Card

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positions, who has authority for clearance of fires, applicable aviation rules of engagement (ROE), the ground commander's PR plan, and if there are any restricted operating zones (ROZs) in effect (CALL Handbook 04-16, Cordon and search, July 04, p. 108).

The more information aviators have regarding the mission, the better support they can provide. Ground leaders can also keep radio traffic to a minimum by ensuring that aviators have all necessary mission information before mission execution. The air mission request (AMR) or pre-mission brief techniques best serve this purpose. The minimum essential information requirement will vary with the type of mission request. For example, attack teams conducting hasty support of troops in contact (TIC) need less information than assault aircrews planning a deliberate limited objective air assault.

The preparation of a five-paragraph OPORD brief, which includes the supporting aviators in the planning and preparation, is the best approach for coordinating aviation supported missions. When time does not allow deliberate preparation, the hasty mission brief (i.e., a close combat attack [CCA]) request over the radio, must still provide as much information as possible to supporting aviators in order for them to maximize the effect of aviation support. The mnemonic "meeting card" (MTGCRD) serves as a mental checklist that simplifies the minimum essential details required for aviators to execute support for ground missions. The MTGCRD includes the mission, task/purpose, graphics and control measures, comms plan, rehearsal, and downed aircraft recovery team (DART) plan. Figure 1 outlines ground and air briefing requirements for deliberate and hasty mission coordination.

The benefit of the MTGCRD elements of AGI is that ground leaders can pass this information over the radio.

**Mission:** Provide aviation support team with mission statement.

**Task/Purpose:** Deliberate task and purpose for aviation support.

**Graphics and control measures:** All graphics and control measures pertinent to missions. If necessary, refer to ground reference points, buildings, trees, etc. in order to provide a COP to the supporting aircrew.

**Commo plan:** All possible elements of communication, including frequencies for the ground commander and all necessary supporting elements.

**Rehearsal:** Can be difficult during hasty mission request. When possible, pilots read back instructions for hasty AGI. If more time is available, leaders can use a more developed rehearsal.

**DART and Personnel Recovery plan:** Plan for recovering aircraft and isolated personnel

While many ground commanders do not understand the technical details of performing specific aviation missions, they can still provide an adequate mission statement by establishing the desired outcome of the aviation support. Leaders executing AGI can best accomplish this by using the simplest terms possible, such as "Destroy the [target] at [location]." Once the supporting pilots understand the intent, they can execute the task appropriately in order to accomplish the mission.

The rehearsal is essential to ensure understanding between the ground commander and the supporting aviation unit. Both the air mission commander and the ground commander can use a variety of rehearsals ranging from a verbal brief back over the radio to a full

dress walk through using a terrain model to ensure all parties understand the mission and their role in the successful completion of the mission. The use of a rehearsal is critical to AGI because it identifies points of uncertainty in the ground and aviation units' understanding of the operation.

Army units have produced significant amounts of documentation highlighting AGI techniques and lessons learned, including several Center for Army Lessons Learned (CALL) publications and unit AGI material such as the 3ID Warfighter Handbook. These resources present valuable techniques and are available for units to implement in their training. One example is the AGI smart card (Figure 2) and target handover event matrix found in the CALL Handbook 04-16, Cordon and Search, July 04, page 111-112. This smart card serves as a checklist for coordination with aviation elements, providing an effective baseline of AGI procedures.

The AGI smart card includes minimal essential items based on their importance. The initial check in, for example, sets the conditions for success by alerting the ground commander to the supporting aviation team's call sign, total number of aircraft, ordnance available, and time on station. The ground leader then updates the aircrew on applicable items as shown. Ground leaders can use the AGI card as a planning checklist as well as a quick reference for aviation employment, clearance of fires, marking techniques, and communications, as shown on the card.

In passing mission information, both aviation and ground leaders should utilize the "push/pull" method of passing mission information. If either the ground or the aviation element has information the other leader needs, that leader needs to "push" it to the appropriate unit. For example, aircrews notify convoy commanders regarding enemy activity or obstacles along their route, and convoy commanders push enemy surface to air (SA) weapons reports to the aircrew as soon as they detect the threat. On the same note, if either element needs specific information, that leader should "pull" it, meaning he should request it from the appropriate source until he gets it. Leaders can construct a continuous situation update by requesting information from other units.

Once deployed to a combat theater, ground mission commanders will rarely conduct face-to-face coordination with supporting aircrews prior to missions. At best, ground units may see a liaison officer (LNO) during mission planning from the supporting aviation unit. Rather, ground units will use air mission requests (AMRs) to request aviation support and inform aviation units regarding mission details through their respective BCT. Units send AMRs from the battalion S3 to brigade staff for approval and tasking, with further coordination through the BAE, the division, and the combat aviation brigade (CAB). Following approval, respective units make further coordination as necessary through various means in order to ensure mission success. The Army Command Post of the Future (CPOF) collaborative planning system best facilitates this process. Another way to refine the plan is for units to exchange LNOs to coordinate in person.

When using the AMR process, ground units should include as much detailed mission information as possible to include mission statement, task and purpose, graphics and control measures, communications plan, time for rehearsal, the DART and PR plans, the commander's intent and concept of maneuver, as well as a copy

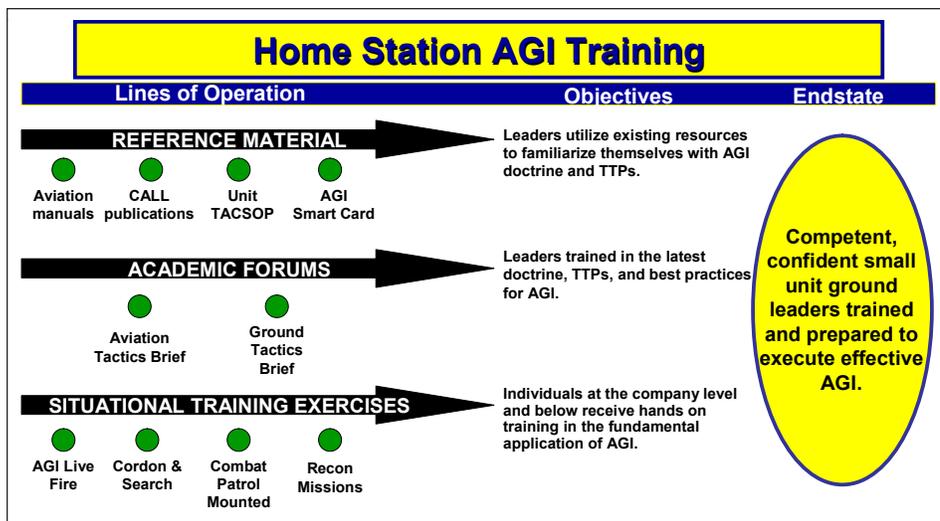


Figure 3 — HST Lines of Operation

of the applicable OPORD. This prevents aircrews and ground leaders from using valuable mission time clarifying details over the radio during execution. Ground and air elements then conduct further mission refinement via radio on site during mission execution.

Both ground and air teams often experience communication problems during mission execution. Ground leaders find that they can best communicate with aircrews if they fully integrate them into the ground scheme of maneuver and both ground and air elements have a common terminology. Leaders can ensure success in communications by developing a primary, alternate, contingency, and emergency (PACE) plan for frequencies and radios, ensuring they have redundant methods of communication should any one method fail.

**AGI Home Station Training**

To prepare for close combat, basic tasks must be completed during home station training. FM 3-04.126

The time to train AGI is not the day of the fight. Rather, the time to train AGI occurs as part of normal unit training during the months before deployment. This training will produce high payoffs in familiarizing unit leaders on AGI and preparing them to work with aviation teams during combat missions. Figure 3 depicts the development and resources supporting home station training.

During AGI training, units can train leaders on the full sequence of mission operations, from pre-mission planning through execution and debriefing. Ground

leaders will improve their comprehension of aviation capabilities by becoming acquainted with aviation manuals and CALL publications that refer to AGI, as well as their supporting aviation unit’s standard operating procedure (SOP) and AGI Smart Card. Unit leaders can use academic classes to familiarize both ground and aviation personnel on AGI procedures, highlighting information essential to successful coordination of aviation supported missions. Important topics include mission brief format and content, and the capabilities of Army tactical aircraft. As a baseline of familiarization, unit leaders should use their unit’s tactical SOP (TACSOP) and an AGI smart card similar to the one shown in Figure 2 to ensure they include essential information during AGI training.

Once they have a good understanding of the AGI process, key leaders can integrate AGI into their normal home station training. For example, units can coordinate aviation support for all training, including situational training exercises (STXs) for cordon and search missions, reconnaissance, combat mounted patrol missions, and convoy operations, with the intent of training AGI skills. AGI lanes can also focus on hasty operations, requiring ground leaders to utilize the essentials of hasty AGI. Ground leaders can maximize the benefit gained from aviation support if their AGI battle drill competence reaches down to the lowest level and is as common as that of the call for indirect fire battle drill. Sergeant’s Time Training is an example of such a training opportunity, and the results of this competence have already paid off in the

combat theater. For example, aviators returning from Afghanistan relate stories of junior enlisted Soldiers conducting AGI in order to direct aircraft during CCAs, air assaults, and even to call air strikes from Air Force close air support (CAS). Units can improve their AGI skills by including AGI in their TACSOP.

**Conclusion**

Units may not have the luxury of face-to-face coordination in the combat zone. Ground commanders will use AMRs to request aviation support and will find themselves conducting AGI over the radio once the aircraft arrive on station. Having trained on essential coordination tasks and conducted familiarization with aviation units long before deployment, ground leaders will be ready to add the combat power of aviation teams to their capabilities in the close fight.

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