The Tower of Babel?

Joint CAS Operations in Afghanistan

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"Babel: In the Old Testament, a city in Shinar where the construction of a heaven-reaching tower was interrupted when the builders became unable to understand one another's language."

— ***The American Heritage Dictionary of the English Language***
Houghton Mifflin Company, New York, 1992.

Parked in the North Arabian Sea, the USS John C. Stennis catapults a section of F/A-18s into the night. The lead and wingman are armed with one joint direct attack munition (JDAM), one AIM-9 and 500 rounds of 20mm each. They head north to provide on-call close air support (CAS) in support of Operation Anaconda (OA). As they arrive overhead the Shah-e-Kot Valley, the lead switches the auxillery radios to the tactical air direction (TAD) frequency given to him by AWACS (Airborne Warning and Control System). He has been given no mission brief of any kind up to this point. He has not been given a control point (CP) that designates his CAS holding point. He knows who is on the air tasking order (ATO) and that this is where the action is, but he really doesn't know where anyone else is located or what friendly and enemy situation is on the ground. He has a frequency and a terminal controller's call sign.

After establishing communications with the terminal controller, the controller has the lead aircraft advise when he is ready to copy the 9-line.

"Ready."

The controller starts off: "Lines 1-3 N/A."

"Roger that..."

As the section of Hornets dodges the co-altitude EP-3 and passes over the Predator flying a couple thousand feet below them, they copy the abbreviated 9-Line and prepare themselves for the attack.

All the controller really wants is to give the pilots a precise coordinate, have them program the JDAMs, and let em' rip. The target is a mortar pit. The lead asks for an attack axis, which the controller provides. The altitude given is a round number: 9800 feet. The wingman takes high cover, and as they go through the very careful process of verbally crosschecking the accuracy of the precise coordinates, another voice breaks in on the TAD frequency. It is another controller who immediately proceeds to provide a different 9-Line.

The two controllers then engage in a free-text, plain English discussion of who gets the aerial fire support.

"What's your target?"

"Mortars."

"So is mine."

"Well, are yours firing at you?!?!"

"No."

"Hey listen ... have you cleared this through the brigade ALO (air liaison officer) or the FSC (fire support coordinator)?"

Gas for the jets starts to become an issue.

The terminal controllers sort out the priority of fires and the lead delivers his JDAM. It misses by 200 feet. The controllers decide to switch to a different mortar pit, and the pilots again go through the process of crosschecking the coordinates being entered into the weapons system. The altitude given is, again, a round number: 10,200 feet. As the wingman sets up his attack run, the AWACS controller comes up on the common freq to tell a B-52 that he is "cleared hot" to drop leaflets. Dash 2 jumps on the auxiliary radio to preemptively assure lead that he has not been fooled, and that he understands that the clearance given was not his.

Dash 2's JDAM misses too. It is off by 150 feet. Lead asks for the bomb hit assessment. The controller reports that the JDAM did not hit the targets but did hit close to the targets. After a couple of questions from the lead, the controller acknowledges that there was "No effect on target." Off target, the outgoing F/A-18s dodge an inbound section of A-10s as they head to the tanker.

The mission presented above was ineffective and inefficient. Piecemeal situational awareness (SA), an absence of any kind of agreed upon joint procedures, communications discipline that bordered on the dangerous, and ultimately, no effect on the target characterized this mission. The tale is not an embellishment or a composite picture from various missions. It is the summary of an actual mission. Unfortunately, this mission is representative of joint CAS missions in support of engaged ground forces during Operation Anaconda. Extremely competent and highly trained professionals on the ground and in the air worked together to "make it happen" and deliver deadly fires to the enemy. Ground controllers identified targets and, more often than not, attack aircraft hit those targets. However, there are enduring themes in this mission that bring into question our ability to effectively and efficiently provide aerial fires in support of the ground combat commander (GCC). This mission is representative of the way that CAS was carried out in support of conventional ground forces engaged with the enemy in Operation Anaconda. Is this a problem? Yes. Will it repeat itself? Maybe.

It is important to examine the performance in executing CAS missions in Afghanistan because CAS is one of the defining expressions of joint operations at the tactical level of war. This is

where service forces come together as a joint force on the tactical battlefield. Although some of the most important aspects of J-CAS reside at the operational level of war, net effectiveness and efficiency is manifested at the tactical level. How well you execute CAS missions is a key indicator of overall joint effectiveness.

If CAS performance is an overall indicator of joint performance, then given our performance in Operation Anaconda, we did not execute as an effective joint force. Poor CAS performance resulted from a lack of adherence or even an understanding of joint doctrine. Given the prospect for continued application of joint combined arms in the War on Terror, we must examine this performance and commit to change — fast. To change for the better, we must agree to build the operational architecture that's provided for in Joint Pub 3-09.3 - *JTTP for Close Air Support*.

This article examines the specifics of that proposition. It catalogues observations of joint-CAS (J-CAS) performance in Afghanistan and provides specific recommendations for action which will improve performance on the battlefield.

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OBSERVATIONS FROM AFGHANISTAN

Operational and tactical execution as a joint force in Operation Anaconda was less than disciplined. We did not adhere to agreed upon fundamental mechanics. The following section catalogues how the poor implementation of warfighting basics resulted in a level of performance that fell short of the mark. These performance issues are not new. The amount of self-induced friction experienced by all players during the operation in question was so significant that a J-CAS conference was convened at Al Jaber Air Base in Kuwait immediately after the operation in an attempt to identify and correct the problems.

Here are many of the identified problems:

• While there was some understanding by aircrew of the commander's intent and the ground scheme of maneuver at the outset of the operation, there was little understanding of how aerial fires supported the ground scheme of maneuver after the infantry took the field. There was even less awareness of where the forces were located and what their objectives were as the operation progressed.

• There was no dedicated, traditional airborne command and control. The Air Force Airborne Battlefield Command and Control Center (ABCCC) C-130 was not on the force list. The role was given to AWACS, but they did not have the workstations or the experience to fill the gap. Consequently, aircrew did not receive check-in briefs, updates or procedural control.

• The Army did not have a full-up air support operations center (ASOC) capable of translating the commander's intent into a priority of fires. This created confusion/friction as terminal controllers fought for aerial fire support assets on an ad hoc basis over a single TAD frequency.

• There was no traditional CP/IP (control point/initial point) matrix. What was used was a holdover from the initial armed reconnaissance phase of Operation Enduring Freedom, which was nothing more than a very simple grid system based on latitude/longitude coordinates. This system was adequate for positioning attack/support aircraft for presence missions, holding tracks, and refueling tracks, but it was not adequate for providing the qualitative system required to enable controllers to construct effective attack missions. This was because there were no IPs established for which optimal geometry could be created for the aerial attack runs. The absence of a satisfactory CP/IP structure and standard procedural control resulted in heavy bombers making attack runs over the top of TACAIR (tactical aircraft) that were on attack runs in the same airspace with helicopters of various types in that same target area.

• Standard comm architecture was not adhered to. Rather than having a discrete TAD freq assigned to individual terminal controllers or units, a single TAD was used. (This was in part due to the requirement for the combined air operations center [CAOC] to monitor all release clearances through AWACS.) This created confusion when multiple controllers attempted to control a single aircraft element.

• Standard communications brevity was not used and comm discipline was poor to the point of being dangerous.

• AWACS transmitted "cleared hot" relay calls from the CAOC to strike aircraft on the strike common frequency. Other attack aircraft monitored that same frequency while working with terminal controllers over the TAD frequency in their other radio. Aircrew in CAS aircraft, for whom the clearance was not intended, stood the chance of mistakenly delivering ordnance based on a "cleared hot" that was intended for other strike aircraft being controlled by the CAOC through AWACS.

• Some terminal controllers shied away from the responsibility of clearing aircraft "hot" by using the terms "cleared to engage" or "cleared to fire." Some aircrew were not sure what these terms dictated or even implied.

• Some doctrinal terms looked like and sounded like traditional fire support coordination measures but were used in non-doctrinal, sometimes dangerous ways. Free fire areas (FFAs) were not FFAs as defined by joint doctrine or the DOD dictionary. In this example, FFAs were plotted on maps in the carrier intelligence center as promulgated through the SPINS (ATO special instructions) and the intelligence network. When aircrew sought clarification on this control measure, they were told that the FFAs, as promulgated, were not really FFAs that allowed free engagements in that area, but were some type of control measure that was intended for ground forces only. Such misuse caused great confusion and bore potential for even greater disaster.

• Terminal controllers seldom used J-CAS 9-Line briefs. When they did, Lines 1-3 were listed as "N/A."

• Time on targets (TOT) were not used. The use of a TOT is not required and sometimes not appropriate. This is especially true when permissive CAS procedures are being used, volume of fires is not an issue and/or targets are relatively static. In this operation however, the absence of TOT as a control measure created a very "open ended" enterprise that increased individual aircraft

time overhead the target area. This had the net effect of reducing the aggregate number of aircraft that delivered fires in that target area.

- Aircrew were very rarely provided a "mark." Like the TOT, a mark is not a requirement for CAS. Marks may not be appropriate when employing J-Weapons (joint weapons) and positive visual identification of the target by the aircrew is not required. But J-Weapons are not the only weapons in the inventory. For example, MK-82's with VT fuses were used as a weapon/target match against personnel in the Shah-e-Kot Valley and positive identification was often required. And while a mark may not be a requirement for CAS, it is listed in JP 3-09.3 as being one of the nine determining conditions for effective CAS. When a mark was used in Anaconda, it was generally a laser mark, which worked extremely well for aircraft with laser trackers. But not all controllers had suitable lasers and not all aircraft had laser trackers. The absence of a visual mark increased the time required to acquire the target, which increased time-to-kill and decreased the overall number of aircraft available to the ground combat commander.

- The quality of visual "talk-ons" by terminal controllers to a target was poor. Aircrew would often have to terminate the talk-on to go to a tanker to extend their time on station. Sometimes the aircraft were merely sent home. Once again, this decreased the overall number of aircraft available to the ground combat commander.

- Target elevations were sometimes only very roughly estimated which detracted from the effectiveness of GPS (global positioning system) guided munitions.

- Procedures and requirements for using airborne forward air controllers (FAC[A]) were confused with procedures and requirements for working with a ground FAC or enlisted terminal controller (ETAC).

All of the issues catalogued above are violations or aberrations of joint doctrine by either "letter" or intent. When examined in total, our warfighting record for the operation is less than acceptable. To put this record into perspective — tactical performance by the community was good. Professional warriors demonstrated technical proficiency in the mastery of their complex weapons systems. Most significant to OEF and OA were the new weapons and aircraft used in support of special operations forces (SOF) in the CAS role.

SOF CAS AND CONVENTIONAL CAS

Operation Anaconda (OA) was a small operation that took place within the larger context of Operation Enduring Freedom. Operations prior to Anaconda relied primarily on Special Forces who employed precision munitions delivered by coalition aircraft to break the back of Taliban and al-Qaida forces. OA on the other hand, used conventional forces and somewhat more conventional tactics in an attempt to target remaining pockets of al-Qaida fighters. The procedures and tactics used during Anaconda were largely representative of the procedures used during the SOF phase of combat. During the post-Anaconda CAS Conference in Kuwait, all agreed that poor performance in Anaconda was due to unsatisfactory procedural implementation and execution. Poor performance led to an examination of procedures and tactics used when working with SOF teams which initiated the inevitable discussion of whether or not the delivery of aerial fires in support of SOF is CAS. Many argued that it is not. That is a tenuous and dangerous position.

The two defining components of CAS are proximity of friendly combat forces to enemy forces and a requirement for detailed integration between the ground forces and the air forces. The Joint Doctrine Encyclopedia says that:

CAS can be conducted at any place and time friendly combat forces are in close proximity to enemy forces. The word "close" does not imply a specific distance; rather, it is situational. The requirement for detailed integration because of proximity, fires, or movement is the determining factor. CAS provides firepower in offensive and defensive operations to destroy, disrupt, suppress, fix or delay enemy forces.

Given this definition, the most compelling of the two requirements is the requirement for detailed integration. The most common mistake in defining this "integration" is to assume that integration is defined by the coordination required to deliver fires short of the fire support coordination line (FSCL). This argument says that fires beyond the FSCL are permissive, and that there is little need for integration. It says there is no need for CAS TTPs when supporting SOF operating very deep. Chances for fratricide are small because of SOF's small footprint and the absence of a defined Forward Line of Troops beyond the FSCL. It argues that tactical procedures are inappropriate for forces that may be executing a strategic mission.

This argument is flawed. There may be

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Operation Anaconda occurred in February and March 2002 as part of Operation Enduring Freedom. During the operation, Coalition forces moved through mountainous regions of Afghanistan searching for Taliban and al Qaeda fighters.

less of a chance of fratricide due to the exceptionally small footprint of an SOF Team, but the level of detailed integration required between a section of aircraft with live ordnance and an SOF Team on the ground is no less important. SOF teams deploy early in an operation and have little opportunity for prior planning and coordination. This creates a requirement for shared language and standardized procedures. In SOF CAS, there is still a potential for fratricide and unacceptable collateral damage through mis-ID or a poor attack plan. There is still a requirement for an effective attack that brings the appropriate effect on target while minimizing the exposure of the SOF team. There is still a requirement that high tempo fires be made available to the teams. This requires an efficient attack so that attack aircraft get in and out to make way for the next attack element. And there is still a danger of mid-air collisions between attack and support aircraft if appropriate control measures are not used. No TTP's exist outside the bounds of CAS that provide the procedural discipline to satisfy these requirements. By definition and by practicality, aerial fires delivered in support of Special Forces is close air support.

While it is understandable that the unique characteristics of CAS in support of Special Forces produce doctrinal discussion, it is disconcerting that a convincing argument should have to be made to support the practice and use of J-CAS TTP's in the execution of a conventional fight. Current JCAS doctrine is time tested and relevant. Born out of the requirement for orchestrating high volume of aircraft originating from many different locations, operated by four different services supporting multiple ground units in contact with the enemy, it is designed to efficiently match a perishable air support asset with a need. Therefore, disciplined procedures are required for a number of reasons.

Due to the fluid and relatively large (sometimes massive) footprint of conventional forces on the ground, the opportunity for fratricide is extremely high. The Gun-Target-Lines of indirect fires and their trajectories must be accounted for. The volume of aircraft will probably be much higher than in a deep, SOF team scenario and the requirement for efficiency that provides tempo will be commensurately higher. There will likely be a much greater potential of exposure of attack aircraft to the threat as commanders assume higher risk in order to support and defend the ground combat element.

These factors point to a compelling need for the employment of J-CAS doctrine.

JCAS AT THE TACTICAL LEVEL

Tactical level is the point where terminal controllers receive their direction from ground commanders, coordinate requirements through the C^2 architecture, and interface with aircrew for the terminal control of aerial fires in support of the ground commander. This article will attempt to make the same case for an understanding of the tactics and techniques that are catalogued in Joint Pub 3-09.3, *JTTP for Close Air Support*. It will not, however, attempt to make the case that those tactics and techniques must be adhered to. Tactics are the thoughtful outcome of planning by trigger-pullers who look to achieve mission objectives in consonance with commanders intent with respect given to the threat and in accordance with the Rules of Engagement. Therefore, tactics can never be prescribed.

Still, there must be a common understanding and appreciation of the various J-CAS tactical and technical foundations on which we train in peace so that there is a satisfactory level of interoperability to our tactical applications in war. Given our performance in Afghanistan and the Joint conversations that followed, it seems that some understanding of the importance of certain J-CAS fundamentals have become lost or confused over time. This article offers an opportunity for a re-evaluation Joint Close Air Support (J-CAS) fundamentals by making a case for the utility and use of

Recommendations to improve JCAS at operational level

⇨ Commanders should ensure that all operators involved in an operation get an overview of commander's intent, ground scheme of maneuver and priorities of fire. Ensure that these are updated regularly. This information should be pushed to major subordinate commands – not merely posted on a secret internet protocol router (SIPR) Web site.

⇨ Operational-level planners should design airspace control measures, especially the CP/IPs, as a team effort between the GCC (ground component commander) and the ACC (air component commander).

⇨ C^2 should provide a check-in brief to aircrew that maximizes their situational awareness.

⇨ Ground combat commander should ensure that the ASOC/DASC coordinates with the FSC to establish and assign priorities of fire.

⇨ ATO planners should declare the C^2 language that will be used and stick to it.

⇨ Operational level planners should ensure that the communications architecture is constructed keeping in mind the tactical end state. The use of a common frequency (such as an Air Defense Net or a positive control AWACS frequency is acceptable as long as only correct, disciplined communications are used. Ensure that terminal controllers are assigned discrete frequencies to the maximum extent possible.

⇨ Everyone should know Joint Pub 3-09.3, *JTTP for Close Air Support*. When arriving in theater, be prepared to comply with joint procedures out of the joint pub. Also be prepared to adapt or create tactics given the mission, commander's intent, the threat and the ROE.

⇨ Remember to communicate. Understand where and how the commander is deviating from joint doctrine. Provide appropriate feedback during the course of combat operations either real time or through the chain of command.

⇨ Update doctrine immediately upon cessation of hostilities. Ensure that after action reviews get submitted to the Joint Lessons Learned System.

select CAS tactics and techniques that were most under-utilized in Afghan operations during Operation Anaconda in February-March of 2002.

WHO NEEDS A CHECK-IN BRIEF?

Who needs a check-in brief? "Get your gas. Check in with AWACS. Go hold where you're told. You will get your information from the forward air controller (FAC) or the enlisted terminal air controller (ETAC) soon enough."

This is not the correct way to operate under any circumstance. Valuable time is lost that aircrew could use to prepare themselves for the mission. Aircrew need answers to questions that can be answered while in CAS holding: Where is the fight? Do I have the right chart out? What is the lay of the land? What is the current threat? How will the threat affect my desired/required weapons delivery parameters? Where is arty? What batteries are hot? Is there a prepared 9-line waiting for me that can be passed through the controlling agency? Is the controller using a hasty Initial Point that was not in the SPINS?

Providing a check-in brief gets the aircrew "out in front" in an enterprise that requires a clear mind for sound judgment and split-second timing that will result in effects on target. The C^2 agency providing the interface and connectivity between the ground combat element and the attack aircraft is critical in providing this information. C^2 platforms come in many shapes and sizes: USAF ABCCC in the form of a C-130, AWACS or JSTARS; Marine Direct Air Support Center (DASC) or DASC(Airborne); or USN E-2C. Regardless of the platform, it is essential to understand how critical the check-in brief is to aircrew and to their enhanced potential for a successful CAS mission.

WHAT IS THE IMPORTANCE OF THE ASOC/DASC?

A primary task of the ASOC or the DASC is to translate the commander's intent to the many types of aircrew in the form of priority of fires as directed by the ground commander's FSC in a very short period of time. The ASOC/DASC are co-located with the FSC and provide the FSC with updates on aircraft, ordnance and TOS available. The FSC gives direction to the ASOC/DASC for the assignment of those aircraft to units/controllers based on focus of effort and priority of fires. The ASOC/DASC takes the FSC's direction and assigns aircraft to specific units/controllers. They also provide routing for the aircraft to ensure deconfliction from other fires and other aircraft. This is transparent to the aircrew but is critically important since aircrew are normally based hundreds of miles from the ground elements and are normally not privy to the latest developments of the ground battle. They may or may not talk directly to the ASOC or the DASC depending on the C2 architecture in place. All the aircrew knows is that they have been assigned a TAD frequency and a controller along with other essential elements of information contained in their check-in brief — information that most likely has changed since they planned the mission due the fluidity of the ground battle. The aircrew switches frequencies and executes. It's that simple and that critical.

WHY ARE LINES 1-3 OF THE 9-LINE BRIEF APPLICABLE?

9-Line
TIME ON:
TIME OFF:
Authenticate!
ABORT CODE:
Abort Abort Abort
Fighter Check-In:
CALLSIGN
PLAYTIME
MISSION #
& TYPE A/C
ORDNANCE
POSITION & ALTITUDE
Traffic Advisories: (Other aircraft in Area, Location, Altitude, Call Sign and TAD)
Situation Update:
UNIT MISSION / ENEMY DISPOSITION
THREAT ACTIVITY IN TARGET AREA / WEATHER
FRIENDLY POSITIONS / CURRENT FIRE SUPPORT COORDINATION MEASURES
Ground CC Appr Type 1, 2, OR 3:
FSO Coord:
ADA Coord:
9-LINE:
1 IP
2 HDG (°M)
OFFSET L / R
3 Dist (NM)
4 Tgt Elev (Feet MSL)
5 Tgt Desc
6 Tgt Loc Grid:
DM., Lat / Long:
DMS, Lat/Long:
7 Mark Type Laser Code: 1 LTL:
8 Friendlies (Distance & Cardinal Direction)
9 Egress (IP/ To a Wheel)

Sample 9-Line Part 1

Of all of the concepts, procedures and tactics that require an explanation of "Why we do it that way," the need to explain the utility of the J-CAS 9-line brief is the most troubling. Some operators in the Afghan operation argued that there is little requirement for a 9-line at all. These operators contend that a derivation of precise target coordinates make possible the employment of accurate weapons such as JDAM and obviate the need to plan attack geometry or to coordinate timing and flow. Others see the utility in the standard briefing format, but do not appreciate the benefits of the first three lines.

Granted, there are times when a 9-line is not required. In a permissive, low tempo environment with a relatively low number of targets, good weather conditions, and attack aircraft with a healthy amount of time on station, a terminal controller is justified in bringing a section of aircraft or two over the target area and talking their eyes on to the target. Under the same conditions with a FAC(A) controlling, the FAC(A) is probably going to arrange for a rendezvous with the attack aircraft and lead them to

Remarks

THREAT	THREAT	THREAT
SUPPRESSED?	SUPPRESSED?	SUPPRESSED?
VICINITY OF GRID:	VICINITY OF GRID:	VICINITY OF GRID:
GTL:	GTL:	GTL:
MAX ORD:	MAX ORD:	MAX ORD:

Hazards

Enhanced Target Description / Talk-On

Attack Restrictions

Restricted Attack Heading: (°M)

Ordnance Selection:

Danger Close, Friendlies (m) Ground CC Init:

Timing Options

CONFIRM FSO HAS GPS TIME

TOT: (Confirm GPS Time)

TTT: "_____ PLUS _____ _____, READY, READY, HACK"

Control Instructions (GROUND CC APPROVAL / VALID TARGET)

"Call Departing IP, Report in the Pop, Expect Clearance on Final"
"Call Departing IP, Call in with Direction, Expect Clearance on Final"
"Call Departing IP, Call in with Direction, Call Visual Friendlies /Tally Target, Expect Clearance on Final"

BDA:

Successful / Unsuccessful:

Target Coordinates:

Time on Target:

Specific Results:

Notes

Request Tactics: Shooter Shooter/Shooter Cover

Sample 9-Line Part 2

the target area where he will provide a mark or a talk-on. However, in most other circumstances a 9-line can or should be used.

The obvious circumstance that dictates the use of a 9-line is when the threat is moderate or high and restrictive CAS procedures are used. The standard attack format is used along with a TOT to reduce the exposure of attack aircraft to the threat. Not much argument here. The argument arises when the threat level is medium to low. In this case, there times when a more developed attack can be planned and transmitted via the 9-line brief. 9-lines can be used when aircraft time on station is low due to aircraft type, ship/airfield location, availability of tankers, etc. The increased level of planning for the attack and the coordination of a mark will pay great dividends in the form of significantly reduced time required to acquire and kill the target which maximizes the productivity of that time on station. The same can be said for the scenario of low threat, good weather, good time on station... but a relatively high number of targets. This scenario requires a greater number of aircraft over the target area in order to kill as many targets as possible before they either mass for an attack or flee. The more restrictive measures of a 9-line brief impose geometry that improves the flow of aircraft and, if a mark is used, reduces time to acquire the targets by the aircrew. The net effect is a greater number of aircraft in the target area over a given amount of time, which increases the potential to kill targets. Finally, 9-lines should be used when the controller wants to control the geometry of the attack when there is even the most remote chance for fratricide or unacceptable collateral damage.

Many operators accept the utility of the standard attack format for the reasons covered above. They believe that lines 1-3 are unnecessary and that the remaining lines provide required information such as target elevation and target description. Or they transmit the 9-line because the JTF commander requires them to, but opt out of the full 9-line by transmitting "Lines 1-3 N.A." They do not understand how critical lines 1-3 are in developing an effective, efficient attack.

Lines 1-3 are applicable. The first three lines provide the initial point (IP), heading (as well as offset direction) and distance to the target in one burst transmission. They increase the odds of a successful attack to a degree that far outweighs the time it takes for a controller to generate the geometry and the time it takes aircrew to copy the information down. As mentioned above, precise attack geometry reduces the odds of fratricide by dictating the bomb fall line. (Offset direction is critical here.) Precise attack geometry also ensures greater effect on target by taking into account terrain in terms of target acquisition, uninterrupted laser energy, and impact angle of the ordnance (especially in mountainous terrain). It increases the odds of first pass target acquisition for the aircrew. Pre-planned attack geometry also increases the odds of first pass acquisition of the attack aircraft by the controller so that he can provide the aircraft a "cleared hot".

Using Lines 1-3 also increases effectiveness throughout the area of responsibility (AOR) by optimizing aircraft flow and providing deconfliction. Because pre-planned CAS missions are vetted through the ATO planning process and assignment of CPs are an essential part of that process, flow into and out of the target area can be optimized and mid-air collision potential reduced. This benefit also occurs in the case of immediate requests because those requests are routed in the form of a joint tactical airstrike request (JTAR), and the JTAR is routed through close air support request channels. If a JTAR is approved by the senior fire support control agency, the mission will be transmitted back to the requesting unit with mission data that includes an assigned CP. The optimal CP is chosen if the ASOC/DASC knows what IP the controller wants to use. The ASOC/DASC transmit the mission data directly to the aircraft or to other C2 agencies who relay the information and the assigned CP. Aircraft deconfliction takes place when a C2 agency uses positive or procedural control to route aircraft to and from CPs throughout the AOR. This routing also provides deconfliction from other fires to include mortars, artillery and naval gunfire. Creating the attack geometry for the pilot and transmitting it in a standard 9-line format provides the critical functions of optimizing the effect of the attack and providing efficient aircraft flow and deconfliction.

WHO CREATES IP'S?

The understanding for the importance and determining

characteristics of the IP has been lost. Terminal controllers must have well thought out options from which to execute final attack planning. Terrain, location of friendlies, scheme of maneuver, threat axis and location, locations of indirect fire assets and aircraft flow into and out of the target area must be accounted for. More importantly, an understanding of who creates IPs and gets them inserted into the ATO has been lost. Before ground combat forces take the field, the FSC and his air liaison officer (ALO) or air officer (AO) need to coordinate with the air operations center (AOC) (through the battlefield coordination detachment (BCD) if necessary), to plan the operation. Central to this planning is creation of IP's that will facilitate the ground scheme of maneuver. But in Afghanistan, the CAOC developed all airspace control measures. It was a simple grid system laid out in 30 NM by 30 NM boxes. The corners of these boxes were labeled CP/IPs. Grid points laid out in such a simple system are neither geometrically or geographically suitable for use as IPs. There was an effort to create useable IP's to support OA but this happened well into the operation and the terminal controllers never used them.

WHAT HAPPENED TO THE EFFECTIVE "TALK-ON"?

The general consensus of aviators in Afghanistan was that American ground forces' ability to provide a Talk-On to a target has deteriorated. talk-ons simply took too long. talk-ons are not hard to do. For example, talk-ons given by UN protection forces FAC's in Bosnia were referred to as "Grey Line Tours". Those FAC's could take aircrew over the river and through the woods to a mortar position in a treeline very quickly. They used very simple rules for a good talk-on.

Start by looking at a map. This will help create and expand a mental picture of the target area beyond line-of-sight and will help visualize what the aircrew may see.

Stay away from reference points that are significant only in their vertical development. Aircrew at 10, 15, or 20 thousand feet above the ground cannot pick out the "big ridgeline" if their world is nothing but ridgelines. They cannot pick out the "big castle" in the middle of a city when nothing on the ground looks much like a castle at all from the air.

Look on the chart for the most significant man-made or natural feature within 5 NM of your target. Use that as your starting point. Instead of a "big castle" for example, the unique circular street in the middle the city from which all streets emanate is probably a better anchor point. A unique reference point such as the one cited may not be visible from your "castle", but it does show up on the map and the aircrew can make it out plain as day.

Color or significant changes in color, as in the difference between types of sand, soil or fields, sometimes make excellent reference points. Ensure that they are unique and will stand out.

Use a signal mirror to show the aircrew your position. The signal mirror will highlight your position to the aircrew, which will reduce the potential for fratricide. Your position also makes an excellent anchor point, especially if you are eyes on the target. The light from the mirror is directional as you look through the sight on the mirror and will not give away your position if you are careful.

Find a unit of measure on the ground that you can use to walk the aircrew to the target. Typical units of measure include airfields or distances between two significant man-made features such as bridges.

Use the principle of "big to small" to lead the aircrew to the target.

TERMINAL CONTROLLERS

If tempo, threat, or need for volume of fires is high — use a 9-Line.

Lines 1-3 are not only applicable — they are critical for an effective, efficient mission.

Account for bomb fall line to prevent fratricide and unacceptable collateral damage. Account for bomb fall line to ensure effect on target given terrain, laser target lines and impact angles.

Be as precise as possible when deriving target elevation — especially when constructing JDAM missions.

Use a mark in permissive environments if it is important to get the aircrews' eyes on the target quickly especially if targets are fleeting in nature.

Use TOT's in permissive environments if you want to create a high tempo of fires by sequencing multiple sections of aircraft across the target area.

When executing a Talk-On, first construct the mission on a chart. Try to put yourself in the cockpit and visualize what the pilot is looking at.

When appropriate, mark your own position with a signal mirror during the day or with an IR strobe or pointer at night.

Make sure your laser comm and IR comm are squared away and that you do not confuse the two.

Practice. Call your local USAF, USAF Reserve, Air National Guard, USN or USMC unit to support your training. Create airspace control measures. Develop 9-lines to reflect different types of threat scenarios and missions. Coordinate with your mortars to provide marks. If you do not have a local impact area, get a case of smoke grenades and use the smokes to simulate marks and bomb hits. Work talk-on missions. Debrief and analyze.

Finally, as a terminal controller — control!

Lieutenant Colonel John Jansen is an F/A-18 pilot who recently served as the executive officer for Marine Fighter Attack Squadron 314 and flew combat missions off of the USS John C. Stennis over Afghanistan in support of Operations Enduring Freedom and Anaconda.

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