

Close Air Support in COIN operations

Dr Carlo Kopp

Close Air Support (CAS) has been controversial for decades and continues to be so today, with nine years of conflict under the GWOT/OCO label renewing all the 'traditional' considerations in CAS and related Battlefield Air Interdiction. Persistence and the responsiveness of aircraft matter in any battlespace, while precision of delivery and weapons effect – to avoid fratricide and collateral damage – also matter. Additionally, around the clock all-weather operations have become the norm. CAS is therefore relevant in military campaigns today, and tomorrow.

CAS is broadly defined as air attack on ground targets in direct contact with friendly troops. In contrast, Battlefield Air Interdiction (BAI) is when aircraft attack targets across the battlefield, often hundreds of kilometres from friendly troops. With indirect fire weapons of increasing range, the distinction between CAS and BAI will blur over time. In a Counter Insurgency (COIN) environment, the problems inherent in CAS and BAI operations are magnified by the disproportionate political damage arising from collateral damage.

Historically, CAS has been contentious because of the challenging demands of being responsive in time. If a ground unit is pinned down and taking losses from enemy fire every second of delay costs lives. The problem is magnified by the potential for fratricide, either from weapon collateral damage or targeting mistakes. Too large a weapon used may kill friendly troops just as surely as putting the weapon in the wrong place. A complicating factor for CAS operations is the pervasive global digital media, which can globally broadcast collateral damage incidents at unprecedented rates, providing a no less unprecedented advantage to propagandists acting for, or as proxies for the insurgent side.

Unlike earlier COIN campaigns, the Global War On Terror or Overseas Contingency Operation, in current bureaucratise, seldom involves large concentrations of insurgent infantry or the use of heavier weapons. The IED, AKM, RPG and MANPADS are the insurgent's weapons of choice in this campaign. More conventional tactics used in 2001 by Al Qaeda and Taliban forces in Afghanistan brought their annihilation by B-52H bombers armed with JDAMs and LGB-armed F-14D and F/A-18 fighters. A similar pattern emerged during the Iraqi insurgency with JDAMs, LGBs and laser guided Hellfire missiles inflicting heavy losses, especially in the Second Battle for Fallujah.

In modern CAS/BAI, the aircraft orbits well above the reach of all handheld weapons, and obliterates the target with a precision guided weapon, or accurate gunfire from altitude.

An increasingly common feature of recent COIN operations is the use of persistent UAVs typified by the RQ-1/MQ-1 Predator series and the larger and newer MQ-9 Reaper (formerly Predator B). These robotic platforms are used for Intelligence



Tactical fighters like this F/A-18 remain pivotal in CAS operations.

Surveillance Reconnaissance (ISR) as well as armed reconnaissance tasks.

Much smaller and slower, with lower payloads than jets used for CAS/BAI, the Predator/Reaper are lightweights in the CAS/BAI role but they are highly persistent and well equipped with modern imaging sensor packages. This makes them well suited for hunting and interdicting small unit insurgent cells conducting raids, planting IEDs or performing other small unit activities – all of which fall under BAI rather than CAS.

UAVs have yet to prove themselves particularly effective in traditional CAS operations where friendly troops are in direct contact with hostile ground forces exchanging automatic weapon fire and receiving RPG fire and mortar fire. The latter can entail a complex engagement in complex urban or rural terrain, where a 'soda straw' view of the engagement via a thermal imaging telescope from 15,000 ft may be much less useful than a pair or more of human eyeballs looking at the situation through a perspex canopy at 2,000 feet AGL.

The use of UAVs for CAS operations has been contentious in its own right. Most contemporary UAVs best fit the traditional label of RPV (Remotely Piloted Vehicle), as these are almost exclusively tethered via a radio datalink to a remote operator,

more than often over intercontinental distances. A current attempt at innovation involves fitting much smaller UAVs, directly operated or controlled by ground troops in proximity to the engagement, with miniature smart weapons. This would allow an infantry unit under attack to launch its own large model aeroplane-sized UAV to search the area, localise the insurgents and then attack them with one or another precision guided anti-personnel weapon.

A major concern with direct control of better armed UAVs by ground troops involved in an engagement is that firepower traditionally handled by well trained officers could be made available to a much less trained and experienced infantryman, moreover under intense survival pressure from enemy fire. As numerous collateral damage and civilian casualty examples over recent years show, inexperienced and young enlisted troops do not always react in a measured fashion when under fire. A UAV armed with half a dozen 250 kg satellite/inertial smart bombs produces equivalent firepower to a battery of very large artillery pieces. The application of such firepower in a complex engagement in the midst of civilians needs to be deliberate, careful and measured – and not necessarily by troops in survival mode.



The defeat of massed Taliban and Al Qaeda forces in late 2001 was achieved largely by USAF heavy bombers and carrier based fighter bombers, the latter relying heavily on aerial refuelling for range and persistence.

Attack helicopters have also been employed for CAS operations in Afghanistan and later Iraq. With a good package of thermal imaging and TV sensors, and precision weapons such as 'Hellfire', helos have proved very effective. An Israeli speciality has been the use of AH-64 Apaches to attack terrorist bomb factories, safe-houses and vehicles on the move – although technically this better qualifies as an unusual form of BAI. Problems can arise for attack helicopters in conditions such as urban terrain when they need to fly close to a target to see it, which in turn exposes them to fire from heavy machine guns, MANPADS or RPGs.

The directives of the US Office of the Secretary of Defense, to effectively convert as much of the US Air Force as possible into a COIN oriented UAV force, is largely predicated on some curious strategic assumptions about future wars, including the idea that insurgents will never mass to larger numbers, or that all wars will be like current insurgencies.

The reality is that if Western ground combat forces are required to provide a CAS/BAI capability against a modern opponent armed with mobile SAMs, AAA or future DEW (Directed Energy Weapons), then the operational environment goes from 'highly permissive' to 'non-permissive'. Much of the capability that has evolved around the unique environment of hunting AKM-armed insurgents on foot will become unusable against a modern technologically sophisticated opponent.

The central lesson learned from eight decades of COIN CAS operations is that air power is vital to COIN operations, and COIN operations require specialised tactics more than specialised systems.

CYCLIC REINVENTION OF CAS IN COIN

What is most remarkable about CAS operations in COIN contingencies is the extent to which corporate knowledge is 'forgotten' in between COIN campaigns, and the extent to which such forgotten tactics and weapons are 'reinvented' decades later, or simply reused.

CAS and BAI emerged during the Great War. The RAF used air power extensively to suppress the Iraqi insurgency between the two world wars and should be credited with the first large scale use of CAS/BAI capability for COIN.

The first modern-era integrated doctrine using CAS/BAI was the German Blitzkrieg model. The campaigns across Europe and North Africa enabled unprecedented rates of advance by German Panzer manoeuvre formations, supported by a formidable force of Ju-87 Stuka dive bombers, the most

precise ground attack weapon of that period. Less known is that the larger Ju-88, He-111, Do-17 and Do-217 level bombers were widely used for obliterating area targets. Advancing Panzer columns would be supported by bombers, which delivered precise high volume firepower against opposing infantry, armour and fortifications.

Larger period aerial bombs were comparable in size, weight, explosive fill and impact velocity to artillery shells of 10 inch to 18 inch calibre. For Wehrmacht and Waffen SS Panzer force commanders, the Luftwaffe amounted to portable heavy artillery, often with far greater accuracy.

The German success was rapidly emulated by the British, Americans, Australians and Soviets. The Western powers primarily used fighters especially obsolete or underperforming fighters for CAS/BAI roles, whereas the Soviets developed and mass produced the armoured Ilyushin Il-2 Sturmovik and Il-10 for this purpose. The RAF Hawker Typhoon displaced the earlier Hurricane as the primary CAS/BAI aircraft, armed with four 20 mm guns and up to eight unguided rockets or dumb bombs.

The US Army used almost all its fighter types but the P-47 Thunderbolt was considered the most popular. The US Navy and Marine Corps used all types armed with guns, rockets, dumb bombs and napalm tanks. Napalm proved especially effective in the Pacific against infantry and fortifications.

The RAAF during this period used CAC Wirraways, CAC Boomerangs and later the P-40 Kittyhawk to effect, in addition to the potent CAC Beaufighters and US supplied A-20 Bostons. Operations in New Guinea pioneered innovations by the mixed US and Australian force, including the first use of cluster munitions and batteries of nose mounted 50 calibre guns in twin engine A-20s and B-25s.

By the end of World War II CAS/BAI technique

centred in using fixed-wing fighter or attack aircraft armed with rockets to 'kill' tanks, artillery and pillboxes, with guns used for strafing and napalm or bombs against infantry and other 'soft' targets. Aircraft were launched on request to support a ground unit, or orbit in the area awaiting requests for fire support. Voice radio was used extensively. CAS/BAI was generally a 'high risk' role, as aircraft at low altitudes were exposed to small arms fire, machine gun fire, and automatic artillery fire of calibres up to 60 mm, with 20 mm and 30 mm guns widely used. Aircraft often suffered high loss rates to automatic gunfire.

The 1950s were an important period, as insurgencies in colonies, driven by nascent nationalism in some instances and covert communist intervention in others, became increasingly frequent. The British used air power to effectively suppress the Kenyan Mau-Mau insurgency from 1952 to 1956, including heavy bombing by the Avro Lincoln B.2. Concurrently, the British with Australian support fought the PKM insurgency in Malaya. RAAF 1 Squadron Lincoln heavy bombers played a pivotal role in breaking the insurgency.

The decade long Vietnam conflict changed CAS/BAI techniques and weapon technology. While the conflict is often portrayed as an insurgency much of it was fought by PAVN regular troops armed with Chinese and Soviet supplied PT-76 light amphibious tanks, T-34/85 medium battle tanks and a wide range of direct and indirect fire artillery pieces. Anti-aircraft fire ranged from AK-47 and AKM small arms up to 37 mm and 57 mm guns. Areas of the Ho Chi Minh trail were often defended by S-75 Dvina / SA-2 Guideline SAM systems. Vietnam was also the first large scale use of the 9K32 / SA-7 Grail MANPADS, the first Soviet shoulder launched SAM.



Developed initially as a tank buster, the persistent A-10 has proven a key asset for COIN operations, like its predecessor, the A-1 Skyraider.

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Initially, CAS and BAI operations in the South relied on obsolete piston aircraft, especially the A-26/B-26 Invader and T-28 Trojan. As the conflict escalated the US deployed large numbers of jet aircraft. CAS operations in the South were performed by USAF B-57 Canberras, supplemented by RAAF 2 Squadron Canberras – along with the full spectrum of USAF, USN and USMC fast jets, which used bombs, unguided rockets, napalm and gunfire. The B-52D was used extensively as its 20+ tonne payload could collapse tunnels and bunker complexes.

The Korean War era A-1E/H/J Skyraider, a large naval piston engine aircraft, proved very effective. The A-1 could loiter much longer than jet fighters, and with a large bomb payload and four 20 mm guns was effective also at strafing targets. The subsequent A-10 Thunderbolt II or 'Warthog' was defined largely around the operational concept of the A-1 – with extensive design input from ace tank killer, then retired Luftwaffe Colonel Hans Ulrich Rudel.

Several important innovations emerged. The first was the adaptation of transport airframes

as fire support gunships, initially the AC-47D Spooky followed by adaptations of the C-130 Hercules and C-119 Boxcar. The AC-130A Spectre and AC-119G Shadow were used primarily to support special forces units isolated from other ground units in complex terrain where fast jets had difficulty locating targets, day or night.

The idea was to provide a persistent fire support capability, which could orbit near a defending ground unit and pour fire from a battery of side-looking Gatling guns on to the opposing ground force. Flying a circular orbit around an aimpoint, the hail of automatic fire arrived from all 360 degrees of the compass, more than often defeating the use of large trees and ground features as cover.

The contemporary AC-130H/U Spectre gunships are direct descendants of the early 1970s designs and have been used extensively in Somalia, Afghanistan and Iraq.

The second important innovation was the specialised attack helicopter intended to escort and support assault helicopters carrying troops into battle. The early model AH-1 Cobras were a direct evolution of the early

UH-1 Huey assault helicopter, armed with 7.62 mm Gatling guns, grenade launchers and unguided rockets. The USMC and a number of other Services continue to use later AH-1 variants. Modern attack and attack/reconnaissance helicopters like the AH-64 Apache, the Tiger and the Russian Mi-24 Hind series are all modelled on the concept pioneered in the original AH-1 Cobra gunship. The third important innovation was the use of guided munitions. These included Laser Guided Bombs (LGB) and wire guided anti-tank missiles, the latter launched by helicopters. While introduced later in the conflict they proved highly effective.

In the decades between the end of the Vietnam War and the GWOT/OCO thermal imaging and night vision equipment were used increasingly along with a wide range of guided munitions. An important innovation has been the introduction of wireless radio networks, used to digitally relay targeting data to fixed and rotary wing aircraft, and to deconflict ground forces. However, at the most fundamental level little has changed in COIN oriented CAS.