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RECENT AIRPOWER APPROACHES TO

COUNTERINSURGENCY OPERATIONS

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The United States Air Force (USAF) has proven to be a valuable force multiplier over the last decade and a half of counterinsurgency (COIN) operations around the world. As the nation continues to address security concerns in far flung corners of the earth, the USAF must posture itself to meet the challenges associated with threats posed by peer competitors and also maintain its ability to support COIN operations for the foreseeable future. In a time of fiscal constraints, it will become increasingly difficult to provide a balanced force structure that maintains capabilities for low intensity conflict (LIC) as well as high-tech systems to meet national interests in conventional engagements.

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<u>Introduction</u>

The United States Air Force (USAF) has proven to be a valuable force multiplier over the last decade and a half of counterinsurgency (COIN) operations around the world. As the nation continues to address security concerns in far flung corners of the earth, the USAF must posture itself to meet the challenges associated with threats posed by peer competitors and also maintain its ability to support COIN operations for the foreseeable future. In a time of fiscal constraints, it will become increasingly difficult to provide a balanced force structure that maintains capabilities for low intensity conflict (LIC) as well as high-tech systems to meet national interests in conventional engagements.

Since its inception, the USAF, like the air forces of most other nations, has sought to prove that it possesses a unique capability to provide strategic effect and can be a decisive factor independent of the other services. Because of this cultural bent, the USAF tends to focus heavily on technology that can be leveraged in extremely challenging environments to provide national decision makers with strategic firepower. History has shown that the Air Force traditionally eschews low-tech systems that are incapable of accomplishing the more strategic aims that have characterized the service since its inception. However, the reality of conflict over the past century shows that the United States has encountered insurgencies on many occasions but often the military establishment treats these types of conflicts as the exception rather than the rule. The Air Force seems to forget lessons learned in the wake of COIN operations and quickly draws down its capabilities in favor of high-tech systems that support the wars it would like to fight versus the ones it will most likely fight. This paper will outline a brief cross section of the United States' counterinsurgency operations from Nicaragua in the 1920's and 30's, the Philippines in the 1950's, Vietnam in the 1960's, and present day efforts in Afghanistan and Iraq

to show a pattern that will most likely be repeated in the future. The next sections will provide an examination of how remotely piloted aircraft (RPA) contribute most effectively to the COIN struggle based on historical data and discuss how USAF funding has driven the rapid growth of RPA systems.

Historical Overview of Air power in COIN

The following examples of air power's contribution to counterinsurgency are by no means exhaustive. They merely serve as an illustration of American involvement in LIC and emphasize the point that the conventional military has traditionally viewed these types of engagements as an annoyance. The pattern of learning counterinsurgency lessons over the course of a conflict, concluding operations, and immediately returning to conventional doctrine has been repeated time and again over the past century. While much of the criticism is leveled at the U.S Army, the Air Force is certainly worthy of critique in this area as well. Understandably there is risk calculus that must take into account how the forces should be balanced after disengaging from COIN operations. The purpose of this paper is not to prescribe what that balance is, but merely to argue that the capability to perform COIN with relatively capable and inexpensive systems must be maintained. The raison d'etre of the armed forces is to fight and win the nations wars and obviously the greatest existential threats are posed by peer competitors. However, the institutional knowledge gained from irregular warfare should not be discarded in favor of a single minded focus on conventional warfare as if counterinsurgency is an anomaly.

Nicaragua 1926-1930

The United States' strategic interest in Nicaragua was based in part on its importance as an avenue for transcontinental communications following the war with Mexico. U.S. companies invested heavily across Nicaragua in anticipation of a canal being dug to connect the Pacific and

Atlantic oceans. While, the canal was ultimately constructed in Panama, Nicaragua remained a

source of interest and was subject to several interventions, primarily by Marines, during the first

three decades of the twentieth century. [1] Air power's main contribution occurred during the

Second Nicaraguan Campaign from 27 August 1926 through 31 March 1930. The Marines

employed Boeing O2-B1s, DH-4Bs, O2U-1s, TA-2, and RR-2 transports to support ground

forces in their effort to disarm nationalists led by Augusto C. Sandino. [2] The Marines effectively

used their aviation assets to provide observation, ground attack and transport capability for their

ground elements and were a valuable force multiplier because of the long distances and minimal

transportation infrastructure available in the countryside. The Marines developed crude weapons

delivery systems to provide close air support (CAS) and used their transports to resupply deep

penetration patrols and remote outposts. [3] Lejeune Cummins noted, "Perhaps the only subject

regarding the American intervention…upon which all authorities are able to agree is the efficacy

with which the marines employed the air power at their disposal." [4] The Marines were able to

adapt their tactics and organization to effectively utilize the relatively new capability of aircraft

and provide strategic effect on behalf of the United States in Nicaragua.

　　　Given the success of Marine aviation units, it would seem wise for the rest of the aviation

minded professional officers to take note of the lessons learned from Nicaragua. However, the

Army Air Corps officers were not interested in small wars or the role of aviation in support of

anti-guerilla operations because they were focused on strategic bombardment instead of tactical

aviation. [5] The single-minded determination of many Army Air Corps officers, and the Air Corps

Tactical School (ACTS) in particular, to focus almost exclusively on strategic bombardment, and

their quest for an independent air force, was incompatible with the lessons learned by the

Marines in Nicaragua. The Marines were able to institutionalize their experience and use

organic air power assets to great effect in follow on conflicts, but the air power community as a whole largely chose to ignore the role that aircraft played in the context of small wars. Several Marine Corps aviators attended ACTS and published their lessons learned in "Aircraft in Bush Warfare".[6] The Army Air Corps failed to recognize that, in Nicaragua, the most effective use of airpower, even with relatively crude systems, was demonstrated to be observation, CAS, and transportation.

Philippine Huk Rebellion

President Roosevelt signed the Tydings-McDuffie Act on March 23, 1934 and set in motion a gradual transition of the Philippines from a commonwealth of the U.S. to an independent country effective July 4, 1946.[7] During the first national elections in November of 1946, the wartime Huk leader, Luis Taruc, won a seat in the Philippine congress as part of a leftist collection of organizations called the Democratic Alliance.[8] The majority Liberal Party, led by newly elected president, Manuel Roxas, provided the impetus for peasants to join the Hukbalahap rebellion by not seating six candidates from the Democratic Alliance, including Taruc.[9] At the beginning of the rebellion, the guerillas numbered about 15,000 with an estimated 1 million supporters among the peasant population.[10] In 1949, following several years of deteriorating security and ineffective campaigns against the Huks, President Elpido Quirino, approved a new counterinsurgency strategy that saw heavy involvement by American advisers.[11] USAF LtCol Edward Lansdale and Army Major Charles Bohannan are credited with providing assistance to secretary of defense Ramon Magsaysay that proved instrumental in the Huk's defeat.[12] Bohannan was an expert in unconventional warfare and Lansdale's analysis led him to believe that popular support was the center of gravity of the insurgency.[13] Their advice and

ability to help Magsaysay reorganize the government's forces and change their approach to counterinsurgency allowed the Philippine authorities to get control of the growing crisis.

In particular, the contribution of the Philippine Air Force (PAF) proved to be invaluable in enabling government forces to effectively combat the Huks. The PAF received significant American military aid in the form of T-6, BT-13, P-51D and various transport aircraft that they employed in a variety of missions. The PAF provided CAS, intelligence surveillance and reconnaissance (ISR), transport and supply services, and psychological operations.[14] There was a drastic learning curve from the beginning of the rebellion in 1946 until the PAF reached peak efficiency in 1952.[15] Throughout the insurgency, PAF assets developed tactics to support the army and became adept at facilitating the whole of government approach that Magsaysay used to quell the insurgency. As Corum and Johnson note, "In the final analysis, airpower in the Philippines played primarily a supporting role. The small size of the PAF, types and numbers of useful aircraft, the nature of counterinsurgency strategy, and even the topography of the Philippines defined the role of the PAF. Transportation, reconnaissance, and aerial supply made the greatest contributions to the effort, but close air support, bombardment, psychological operations, and civic action missions played important roles as well."[16]

Despite the negligible American involvement in terms of combat personnel, there were valuable lessons that the USAF could have learned from the Huk Rebellion. Most notably, they could have seen how airpower evolved in its application as the insurgency moved from a guerilla campaign to a more conventional endeavor. The airpower theorists within the USAF were focused on strategic bombing and nuclear deterrence as the Cold War was well underway in the 1950s. It is evident that the existential threat posed by the Soviet Union and the conflict in Korea occupied much of the available academic bandwidth and there was not a lot to spare for

what was perceived as a small conflict in the Philippines. However, the primary lesson that should have been taken from the Huk rebellion was that, when the insurgency resorts to guerilla tactics, airpower was most useful in transportation, CAS, and ISR roles. As the conflict becomes more conventional, airpower can prove decisive by performing counterforce or interdiction airstrikes. The US became involved once the rebellion took on a more conventional tone and American analysts disregarded the limitations of airpower in guerilla warfare while convincing themselves that contemporary conventional doctrine would suffice to deal with counterinsurgency.[17] They concluded that no changes should be made to U.S. doctrine regarding the application of airpower in irregular warfare.[18]

The Huk rebellion is another example of the USAF disregarding lessons learned from counterinsurgency and opting instead to think they can bomb their way out of insurgencies. The desire to provide strategic effect in conventional warfare should not blind airpower practitioners to the fact that airpower application in counterinsurgency requires doctrine and equipment suited to the task. Drew notes, "With a significant portion of Asia embroiled in Communist-backed protracted revolutionary wars during the late 1940s and much of the 1950s, one would have expected a significant intellectual response from U.S. airmen. However, the interests of the airmen were focused on organizational independence from the U.S. Army, on the missions that best justified independence, i.e., strategic bombing (especially nuclear), and to a lesser extent deep interdiction, and for a time on the Korean conflict."[19] It does not suffice to have a force trained and equipped for a conventional conflict trying to learn on the fly without doctrinal and tactical guidance on how to apply airpower to support a different strategic problem set.

Vietnam

The U.S became involved in South Vietnam in the early 1950s as President Eisenhower's concern grew about the rapid spread of communism due to the "falling domino" effect. He was worried that if Vietnam fell to communism, it would only be a matter time until other countries in the region followed suit. President Kennedy further expanded U.S. commitment in 1961 by authorizing American advisers to help South Vietnamese forces conduct counter-guerrilla operations following Nikita Khrushchev's speech which voiced the Soviet Union's support for wars of national liberation.[20]

The beginning of concerted airpower application in Vietnam came after the U.S. congress passed the Gulf of Tonkin Resolution in 1964. Operation Rolling Thunder was the first major air offensive in North Vietnam that targeted strategic lines of communications, petroleum, oil and lubricants (POL), and industrial targets.[21] These attacks lasted for about four years, with intermittent pauses, and were essentially part of a risk strategy that was designed to compel the North Vietnamese to discontinue prosecuting the war out of fear of further bombing escalation. A risk strategy is essentially a bombing campaign of slowly increasing intensity designed to coerce the enemy by increasing their level of suffering.[22] On 1 November 1968 President Johnson discontinued Rolling Thunder in an effort to get peace talks started in Paris.[23] When the North Vietnamese Army invaded the South in 1972 a renewed bombing offensive, Operation Linebacker I, began to attack strategic targets around Hanoi and Haiphong as well as fielded conventional forces. The Linebacker I offensive was more effective because the North Vietnamese switched from a guerilla style war to a more conventional conflict that made them increasingly susceptible to bombing.[24] Operation Linebacker II was begun in December of 1972

because the peace talks in Paris had deadlocked. The North agreed to continue negotiations in January of 1973 and both parties signed a cease-fire agreement.

The USAF involvement in Vietnam is perhaps the most striking example of the failure of conventional airpower doctrine to produce results in irregular warfare. The USAF entered the war with doctrine that had been developed to fight industrialized nations in the context of the Cold War. Air Force Manual 1-2 from 1959 notes, "The best preparation for limited war is the proper preparation for general war…the latter is more important since there can be no guarantee that a limited war would not spread into a general conflict."[25] Additionally, Air Force Manual 1-1 lists vital targets that could be destroyed to cripple the enemy's war-making capacity or will to fight as, "concentrations of uncommitted elements of enemy armed forces, strategic weapons systems, command centers, communications facilities, manufacturing systems, transportation systems, and key agricultural areas."[26] When USAF leadership reacted to President Kennedy's mandate to emphasize counterinsurgency, they made no major doctrinal adjustments based on the new emphasis, and they did not reassess the validity of their doctrine as applied to the context of revolutionary warfare.[27] The fundamental flaw of doctrine and its application in Vietnam occurred because it ignored the context of the conflict and sought to apply a preconceived notion of proper employment of force to in a way that was unsuitable. As Glister notes, "North Vietnam at the start of the air war was essentially an agricultural country with only a rudimentary transportation system and little modern industry of any kind. More than 90 percent of the population lived in primitive villages and earned their living from the soil. Less than 2 percent were engaged in industry, and only the capital city of Hanoi and the port city of Haiphong had populations of more than 100,000."[28] The decentralization of logistics and the North's ability to adapt to the destruction during the initial phases of the war created a problem that prevailing

doctrine was not prepared to counter. Clodfelter notes, "Airpower was ineffective throughout the Johnson era of the Vietnam War because both civilian and military leaders possessed preconceived ideas that affected its application…American officials in Vietnam encountered a war that differed from experience and expectations."[29] He goes on the say, "Air leaders thought that air power, applied against an enemy's war making capability, could make a—if not *the*—key contribution to victory. As a result of these perceptions, Johnson and his advisers never defined a clear military objective for air power, and the objective the air chiefs themselves defined did not mesh with the President's political goals or the nature of the war."[30]

The lessons learned in Vietnam were the result of selective memory. Despite the failure of doctrine to produce results early in the conflict, most Air Force leaders looked to Linebacker II as a success because it was perceived as the decisive air campaign that brought the North back to the negotiating table. This myopic view vindicated the proponents of strategic bombing and they held it up as proof that air power could have a decisive effect in limited war despite the significant failures up to that point. Clodfelter states, "For the Air Force, the guerrilla struggle during most of the Vietnam War was an unacknowledged anomaly that may well reappear. If it does, military controls will again be likely to limit airpower's efficacy as a political tool. Bombing doctrine remains geared to a fast-paced conventional war, and the conviction that such doctrine is appropriate for any kind of conflict permeates the service."[31] Even the counterinsurgency capabilities that were developed during the Vietnam War were seen as no longer useful at the conclusion of the war. Within five years of the American withdrawal the special warfare command had declined from 19 flying squadrons and 550 aircraft to less than 40 aircraft.[32] Corum and Johnson note, "In the final analysis, the American experience in South Vietnam is a stark reminder that in counterinsurgency, airpower is but one variable in a complex

equation. Airpower is not an end in and of itself. This is perhaps especially true in counterinsurgency where social, political, economic, juridical and other issues beyond the military dimension are the key to victory or defeat…the problem in South Vietnam was that there was never any agreement on how airpower was to be employed, its relationship to other instruments of counterinsurgency, and what practical steps were necessary for airpower to contribute to ultimate victory."[33] Additionally, Drew states, "The seriously mixed feelings about the denouement of the U.S. combat involvement in Vietnam, the unfortunate final outcome of the struggle in 1975, the desire to put the entire experience to rest, the perceived need to refocus on the Soviet threat, and a variety of other factors combined to limit debate and research about airpower in protracted revolutionary warfare."[34]

Overall, the experience in Vietnam did not lead to the doctrinal adjustment that should have taken place in the event that the lessons learned would need to be applied in the future. The need to focus attention on the continued threat of a conventional or nuclear conflict with the Soviet Union is undeniable given the geopolitics of the time and the Army and USAF focused on AirLand battle as their primary mission. However the rebalance of forces and doctrine erred by doing a large pendulum swing away from COIN toward conventional war. While it must be acknowledged that the USAF was only one part of a complex situation, the fact remains that airpower theory was unprepared to deal with the challenges of guerilla warfare and the equipment and training were geared toward high intensity conflict. In the aftermath, the service returned to the status quo and brushed aside the lessons learned in hopes that the COIN experience in Vietnam would not present a problem in the future.

Afghanistan and Iraq

Following the September 11, 2001 attacks on the World Trade Center, the United States launched successive campaigns in Afghanistan and Iraq designed to remove governments that were thought to be supporting terrorist groups. The initial phases of these campaigns once again demonstrated that United States' military capabilities were capable of quickly overwhelming conventional forces and establishing dominance in the air and on the ground. However, given the rise of insurgency in both areas of responsibility (AOR), the military transitioned from traditional combat operations, enabled by high tech systems, toward COIN. The expensive advanced air power assets that were decisive in the early phases of both campaigns, began to be replaced by systems that provided decision makers with long loiter times, enhanced intelligence gathering, and precision attack capability. The ability to find, fix, track, target, engage, assess (F2T2EA) is important in COIN and high performance fighters were not suitable for the intensive ISR requirements that arose.

Operation Enduring Freedom (OEF) began on October 7, 2001, a mere twenty-six days after the terror attacks that fundamentally altered the nature of conflict in the early part of the twenty first century.[35] The main goal of OEF was to remove the Taliban regime and destroy al Qaeda's safe haven in Afghanistan using precision standoff weapons as the primary method of attack with the option to commit numerous ground forces only if required.[36] The effectiveness of American and coalition airpower in targeting Taliban and al Qaeda positions around Afghanistan, while coordinating with SOF forces on the ground, was a testament to the ability of modern technology to be leveraged to quickly and effectively achieve strategic objectives. The Taliban regime was severely degraded 102 days after the September 11th attacks. General Franks executed a strategy that concurrently employed indigenous Afghan forces and allied SOF units

that were supported by American airpower as the main enabling mechanism.[37] The advanced

technology employed in Afghanistan allowed the initial takedown phase of the operation to be

over relatively quickly, however, once the precision targets were eliminated, the fight became

more mobile and time sensitive targets (TST) made up the preponderance of kinetic actions.

OEF provided an opportunity to employ RPA systems for ISR, signals intelligence (SIGINT),

and precision targeting. The sensor fusion advancements demonstrated a significant upgrade in

capabilities compared to previous conflicts. The conduct of OEF proved to be transformational

because fused information from multiple platforms enabled the integration of several

components of air and ground systems to work in conjunction to shorten the kill chain.[38] Real-

time imagery and the ability to communicate effectively enabled impressive accuracy and

immediate battle damage assessment (BDA). Lambeth notes, "Such network-enabled operations

are now the cutting edge of an ongoing paradigm shift in combat style that may be of greater

potential influence on future warfighting by the world's most advanced air arms than was the

introduction of the tank at the beginning of the twentieth century."[39]

      For all its success, the air campaign in OEF could not prevent the insurgency that arose in

the aftermath of the operation. The task of rebuilding Afghanistan and stabilizing the

government is something that requires the presence of significant numbers of ground forces and

a whole of government approach. The contribution of airpower in OEF for the past several years

has been mainly concerned with providing, mobility, logistics, CAS to troops in contact (TIC),

ISR, and occasional interdiction missions. The uncontested environment has allowed air assets

to support ground forces and provide essential information that enables them to conduct COIN

operations. In a pattern that was demonstrated in Nicaragua and the Philippines, the most

effective enablers in current COIN operations are the air mobility assets, CAS platforms, C2, and ISR assets.

The opening strikes in Operation Iraqi Freedom (OIF) were conducted by F-117 stealth bombers on 21 March 2003 in an attempt to decapitate the regime by killing Saddam Hussein at Dora Farms.[40] Despite airpower being employed to target leadership in the very early phases of the war, Murray notes, "The air war against Saddam Hussein's Ba'athist regime represented a throwback to the earliest days of air power, when the most significant contribution that aircraft made was to the ground campaign."[41] Prior to the official start of OIF, the Air Force initiated Operation Southern Focus (OSF) in June 2002. The premise behind this plan was to use Operation Southern Watch (OSW) as an avenue to intensify attacks against Iraqi integrated air defense systems (IADS) and catalogue the location of various systems in the southern part of the country.[42] The most significant change from OSW protocol was that OSF targeted not only the actual missile systems and radars but also command and control (C2) nodes within the IADS system in an attempt to degrade Iraqi capability leading up to the start of OIF.[43] Therefore, given the accomplishments of OSF, there was not an extensive air campaign directed at strategic targets to prepare the battlespace as a precursor to ground operations upon initiation of OIF. Rather, air power concentrated on the task of supporting the Third Infantry Division and the First Marine Division in their drive across Iraq.[44] This departure from doctrine was the result of Secretary of Defense Rumsfeld's insistence on a running start to the campaign in which operations would start while ground forces were building up versus a massive buildup prior to the offensive like the one in Desert Storm.[45] While the preponderance of air assets were used to support the ground invasion, those that were dedicated to strategic strikes did "little substantive damage to the regime's willingness to continue the conflict, [but] did inflict considerable damage

on the civilian and bureaucratic infrastructure that would be necessary in putting Iraq back together."[46]

Despite the fact that air power doctrine was not applied entirely as envisioned by contemporary theorists, those strikes that did take place in accordance with prevailing wisdom are noted to have done more harm than good. This again demonstrates that the application of air power should be shaped by the context of the problem it is trying to solve. Because of airpower's overwhelming success in many conventional conflicts, the strategic use of airpower in OIF was shaped by the desire to remove Saddam's regime but did not give consideration to the second and third order effects that such targeting would create. As Gray notes, "It is precisely because every war is distinctive that each must be understood on its own terms."[47] Targeting leadership, infrastructure, and other strategic targets is not always the most useful application of airpower if the damage done will negatively impact the desired end state. This criticism of airpower obviously does not address the complex political forces at work in both Afghanistan and Iraq. Airpower should be viewed as a tool that serves politics and ultimately , as Clausewitz says, "The statesman and commander have to…establish by that test the kind of war on which they are embarking; neither mistaking it for, nor trying to turn it into, something that is alien to its nature. This is the first of all strategic questions and the most comprehensive."[48] No amount of technical or tactical proficiency, nor good strategy, can sufficiently compensate when airpower is applied to the wrong problem or seeks to answer the wrong question. However, airpower can become a victim of its own success and theorists who become enamored with the single strategic usefulness of airpower will be unable to adapt quickly when the nature of the conflict changes from conventional to COIN. Gray again notes, "Airpower theory in practice, as particular historical strategies in execution, allows for a wide

range of potential utility depending upon the situation. But when theorists and doctrine writers adopt a teleological and strategically deterministic view of airpower, they confuse themselves and guarantee that their favored military tool must to some extent fail to deliver on what is promised to flow strategically from its employment."[49]

As the conflict in Iraq moved from the conventional takedown of the Ba'athist regime and became bogged down in counterinsurgency, the strategic usefulness of traditional airpower diminished. As Martin van Creveld writes, "If counterinsurgent, counter guerilla, and counterterrorism operations, and the like have anything in common, it is this: in over one hundred such struggles since 1945, with hardly any exception, the regulars, or occupants, or counterinsurgents, or 'forces of order',...had absolute command of the air" but still fared very badly in the conflicts in question.[50] The COIN efforts in OIF, as in OEF, began to be more directed toward ISR, CAS, and mobility. The high-performance fighters and bombers that the Air Force has in abundance are not optimal for this type of fight but are clearly necessary in a conventional context. The development and employment of RPA systems saw a significant increase during the COIN phases of both operations because they are slow, provide long loiter time, cheap, and don't entail casualties if lost. The ability of these ISR assets to provide support to ground forces performing a variety of missions while, in the case of armed platforms, providing on-call CAS, became indispensable to COIN. Additionally, the USAF mobility assets provided rapid intra-theater lift for ground forces that proved to be indispensable in the rapidly evolving COIN environment.

Afghanistan and Iraq were fundamentally different problem sets that ultimately resulted in a counterinsurgency situation. The application of airpower in both OEF and OIF was successful as a tool to help remove regimes that the United States government determined were

threats to national security. Once the conventional phase of the operations had concluded

however, the USAF struggled to adapt to an unconventional fight that its doctrine and systems

were ill prepared to tackle. All other political, social and economic complexities aside, the

application of airpower in COIN had been demonstrated numerous times in previous instances

but the Air Force was not ready to transition from a high end kinetic operation to a low intensity

fight. The procurement of systems that were force multipliers for ground forces conducting

COIN operations began to accelerate as the conflict dragged on, but the USAF has had to play

catch up over the course of the past decade.

Lessons Not Learned

A common thread that runs through each of the examples above, is that the Air Force

does a good job of preparing for the high intensity environment that will be encountered in a

conventional conflict with a peer adversary. The ability of airpower to provide combat

capability when the fight becomes more conventional is extant and remains an important focus

for the service. The primary weakness the Air Force has historically displayed is that doctrine

and systems are so wholly focused on this high end fight that equipment and training are not

ready for a COIN effort. Traditional air-power doctrine has proven to be inappropriate for

counterinsurgency warfare because it is designed for conventional wars with enemies fighting in

a similar manner. In most LIC situations, air dominance is virtually a given and need not be

fought over. The most useful role of airpower is in support functions like reconnaissance, troop

transport, resupply, and providing a visible presence.[51]

In light of the historical record of counterinsurgency operations and the application of

airpower, preparation for future conflicts must not ignore the lessons of the past. The purpose of

this paper is not to argue against any particular weapons system or minimize the need for 5th

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generation fighters, nor is it to argue against the need to be prepared for a high intensity conflict, as if that is outside the realm of possibility. However, the systems and doctrine that have evolved over the past decade of COIN in Afghanistan and Iraq must be institutionalized and nurtured for the low intensity conflicts of the coming years. Modern air forces have proven to need a significant amount of time to adapt doctrine, training, and equipment to effectively counter insurgent forces.[52] The USAF needs to break the cycle of forgetting lessons learned and posture the force to meet the challenges that will be faced tomorrow despite the fiscal limitations and tendency to favor conventional warfare.

Current Airpower COIN Doctrine

The lessons learned from Afghanistan and Iraq are reflected in the most recent Counterinsurgency Doctrine published by the U.S. Armed Forces. JP 3-24 notes that Air Force capabilities that are essential to COIN are, close air support, precision strike, personnel recovery (PR), air interdiction, intelligence, communications, electronic warfare (EW), combat support, counter-air, airspace control, and air mobility. The Air Force provides advantages in COIN by denying insurgents secrecy and access to bases of operation through persistent ISR coverage of target areas. Additionally, if insurgents gather in large groups, air assets can target them quickly with precision weapons or airlift ground forces to enemy locations. Airpower also enables COIN in the rough terrain that insurgents traditionally consider to be a safe haven.[53] Because COIN is an intelligence intensive endeavor, great emphasis is given to the ISR capability of airborne assets. "Effective strike operations are inextricably tied to the availability of actionable intelligence, effective intelligence collection, and detailed systems analysis that identifies and fully characterizes the potential targets of interest. Persistence is critical as it is often not known in advance how long a particular node will remain stationary."[54]

In addition to the intelligence functions that can be performed by airpower assets, JP 3-24 recognizes that the air component has precision engagement capabilities. The kinetic use of airpower must be carefully executed because any misstep in the execution of a strike may produce collateral or civilian damage and become a powerful propaganda tool for the insurgents. Strikes with precision munitions enable a great degree of accuracy and, when properly executed, can prevent blue force casualties or eliminate high value targets (HVTs) without endangering ground forces.

Joint doctrine recognizes that a critical requirement for COIN is interoperability between ground and air operations. Again, JP 3-24 notes,

> Video downlink and data link technology have revolutionized real-time air to ground employment allowing air assets to seamlessly integrate into and support the ground commander's scheme of maneuver. Armed aircraft on-call or scheduled as airborne force escorts may provide ground forces with the critical situational awareness, flexibility for maneuver, and immediate fire support necessary to succeed in the dynamic COIN environment. Airpower's ability to quickly support ground forces can reduce the risk to dispersed ground units, lower the need for mutual support between ground units and therefore decrease overall troop requirements. This allows counterinsurgents to further disperse ground forces in areas and in numbers that would not be feasible without air power—mutual support can come from the air rather than from other ground forces or indirect ground fire. Dispersion of ground forces facilitates the actual and perceived level of security.[55]

The ability of airpower to function as a force multiplier in COIN is enhanced by technology upgrades, such as Remotely Operated Video Enhanced Receiver (ROVER). This system allows overhead assets to provide real-time video to supported forces. The "God's eye", battlespace awareness, provided from airborne platforms, enables ground forces to call in CAS quickly and effectively or see over-the-hill video coverage without exposing themselves to danger. The role of airpower in COIN that is codified in joint doctrine is updated to reflect the advanced systems

in the inventory, but the core missions remain the same as those discussed in the historical

examples. Technology potentially makes the process more efficient.

The Roll of RPAs in COIN

One of the most significant force multiplying capabilities that has been developed in

response to COIN requirements is RPAs. While these types of aircraft are not the solution to

every problem that the Air Force faces, they do provide a low cost alternative to using high-end

fighters to provide needed support in COIN. As noted in the historical examples, ISR and CAS

support for ground forces pursuing direct action against insurgents, or doing standard population-

centric COIN activities, is invaluable. The ability to loiter for extended periods of time, with an

assortment of sensors trained on the target of interest, allows an unprecedented level of

intelligence information that can prove to be a valuable force enabler. When combined with

armed RPAs, as in the case of MQ-1s or MQ-9s, ISR capability can quickly transition to CAS

for troops on the ground or provide higher level decision makers time sensitive targeting options.

The following sections will outline how RPAs can perform several functions necessary for

successful COIN operations in light of current doctrine and analyze how Air Force procurement

of RPA systems has evolved over the past decade.

RPA intelligence platforms have provided a reliable, beneficial contribution to the task of

gaining a holistic understanding of COIN operational environments.[56] In addition to the strict

intelligence gathering mission normally associated with RPAs, armed systems fulfill multiple

roles in COIN using a single platform. The sensor to shooter time cycle has historically been a

challenge in COIN. In the case studies presented in the previous sections, the time from

observing insurgent activity to taking action could sometimes be measured in hours. The fusion

of sensors with real-time video transmission and weapons capability in a single RPA system, allows the observation to action cycle to be reduced to minutes in some cases. This multirole capability has a multitude of benefits in the challenging COIN environment because it provides decision makers with the ability to drastically reduce the kill chain time requirements, since real-time intelligence can be analyzed in the combined air operations center (CAOC), and acted upon seamlessly by the collection asset. The rapid kill chain cycle has allowed intelligence to drive operations in some regards since the persistence and precision strike capability of RPAs provides the opportunity to prosecute fleeting targets almost immediately after they are observed. Since many HVTs present themselves infrequently and then blend back into the populace, it is important to act quickly when they are observed. In the case of kinetic actions where the intent is to kill the HVT, ground force support is not required and there is also no need to wait for a separate strike asset to be called in to drop a weapon. The long loiter times that RPAs provide also allow TST engagement in a collateral free area because it is possible to remain on station and pick the best place to shoot. If capturing the HVT is the primary goal, persistence again allows the targets to be tracked while ground forces are mobilized on an interdiction mission.

COIN is a dynamic, decentralized, and three-dimensional type of operation where the strategic, operational, and tactical levels are usually more interdependent than in conventional conflicts.[57] RPA's can provide information to commanders in higher level decision making positions so they can gauge the strategic impact of various kinetic operations. When the lines blur between the strategic, operational, and tactical levels of warfare, full motion imagery, delivered instantaneously by RPAs, can be instrumental in allowing leadership to make informed choices. Additionally, the lessons learned from the historical analysis of airpower in COIN, point to several important mission sets that enhance the supported forces' ability to conduct

operations. COIN is historically most effective when airpower is carefully coordinated in joint operations with ground forces.[58] RPAs provide a number of capabilities that enhance joint operational effectives to include: ISR, CAS, and precision strike.

Population-centric COIN requires large numbers of ground forces that disperse into the local population in an attempt gain their trust and sway their allegiance away from the insurgent cause.[59] This methodology was eventually utilized in Iraq and Afghanistan and is codified in FM 3-24. While this manual does address the whole of government approach that is necessary for COIN to work, the primary focus for the military is to provide security for the population, separate the insurgency from the populace while neutralizing political and support infrastructure, countering crime, securing national and regional borders to isolate the insurgency, and finally, transitioning the responsibility for security to the host nation.[60] Moyar argues that "Most of the successful U.S. commanders in Iraq—including General David Petraeus, the driving force behind the manual's creation—did not adhere closely to the purely population-centric paradigm of the COIN manual. Instead, they combined population-security and governance measures with aggressive offensive operations against enemy forces on the periphery of populous areas and beyond."[61] Attacking enemy HVTs or small groups away from the population precludes collateral damage in many cases and will not alienate the people by unintended civilian casualties. All of the steps in 3-24 are intended to disrupt the insurgent's ability to mass an attack that significantly disrupts the host nation government or operations.[62] At the same time, most experts agree that there is still an element of enemy-centric COIN that must be used to achieve desired effects. In both cases, RPAs can provide needed support.

In population-centric COIN, RPA's ability to give ground forces a God's-eye view of the battlefield and provide situational awareness is invaluable. The initial phases of clearing a

village or city of insurgents can be supported with ISR and CAS capability from armed RPA

systems. Route scans to detect improvised explosive devices (IEDs), choke points, and

suspicious activity provide ground forces an added level of protection and SA that saves lives.

In the authors experience as an Mq-9 operator, the transition from an ISR posture that provides

real-time full motion video (FMV) to a supported unit can transition into a CAS scenario in a

matter of minutes. Joint Terminal Attack Controllers (JTACs) embedded with Army units can

direct weapons employment from overhead RPA assets and get weapons effects in a matter of a

few minutes when needed. The persistence of RPAs gives supported units continuous coverage

in excess of 15 hours and can be expanded to unblinking eye (UBE), 24 hour, coverage, using

multiple aircraft, if the mission requires it. The long loiter times and precision attack capabilities

also provide supported units with on-call firepower if required during the initial clearing phases

of a COIN operation. Precise weapons placement is an important capability provided by RPAs

since aerial operations that target enemy fighters located among the population are

counterproductive if they cause civilian casualties.[63] While unintended collateral damage has

been widely documented and is an unfortunate result of airstrikes, when employed correctly,

RPAs minimize the risk of civilian casualties when closely coordinated with supported ground

forces.

Insurgents can gain and maintain the advantage over government forces when they are

able to move quickly across the country, gain intelligence from supportive population centers,

carefully chose points of attack and blend into the crowd afterward.[64] RPAs can negate many of

these advantages by providing the initiative and flexibility to ground forces executing COIN

through reconnaissance and on-call firepower. They do this in a more cost effective manner

versus high performance aircraft that are better suited to conventional conflicts. The average on

station time of an Mq-9 loaded with 4 Hellfire missiles and 2 GBU-12 bombs is about 15 hours depending on the distance from the recovery base. According to USAF fact sheets, the unit cost of a single weapons system is $56.5 million (fiscal 2011 dollars) and includes four aircraft with sensors, ground control station and Predator Primary satellite link (PPSL).[65] This equates to about $14.1 million per aircraft. Overall, this is a cost effective option that provides significant capability in terms of ISR, CAS, long loiter times, and precision strike with low collateral damage. Larger aircraft with bigger payloads and less loiter time may have a part to play if enemy forces gather in significant enough numbers to present a suitable target. As a rule, RPA systems are much cheaper to keep in the air because they consume less fuel and have lower maintenance costs versus fighter type aircraft.

Funding

As the insurgency grew in Afghanistan and Iraq, the military was slow to recognize the need to address the COIN challenge. Significant resources were devoted to revising doctrine and training, while restructuring organizations and introducing new equipment.[66] One facet of the Air Forces transformation was the rapid growth of the relatively new RQ-1 Predator system that was weaponized and redesignated as the MQ-1 in 2002.[67] Additionally, the USAF proposed the MQ-9 Reaper system, initially operations capable (IOC) in 2007, in response to the Department of Defense's (DOD) directive to support overseas contingency operations (OCO).[68] Once the utility of RPAs was recognized, the USAF used OCO funding to increase the rate that it could field the new airframes. In Fiscal Year (FY) 2009, the Air Force requested $195,858,000 of appropriated supplemental Overseas Contingency Operations funding to increase MQ-9 production.[69] The USAF fiscal year 2010 budget notes, "Unmanned Aircraft Systems (UASs) are having a more significant role in meeting mission needs for the warfighter. In FY 2010

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UASs comprise 36 percent of the planned aircraft procurements."[70] In FY 2011, funding totals included $216,000,000 in requested OCO funding to increase the number of aircraft purchased for the year from 36 to 48.[71] From this brief snapshot, it is clear that the Air Force recognized the effect that RPAs were having on the battlefield and wisely used OCO dollars to expand the capability.

Some of the costs that are not reflected in the budget are those associated with satellite bandwidth and the personnel who process, exploit, and distribute (PED) the data that is collected by RPAs. The space based systems that enable Ku band satellite transmission are clearly expensive and must not be ignored when talking about the cost of operating RPAs. As of 2009, the U.S. government leased nearly 80 percent of its satellite communications capacity, including Ku band for RPA operations, from commercial providers.[72] It is projected that by 2020, the U.S. government will have nearly 800 satellite unmanned systems that depend on satellite communications. MQ-1s and MQ-9 will account for the majority of these systems.[73] According to the Air Force Comptroller's office, the cost per flight hour for MQ-1 and MQ-9 systems is $3,630 and $3,612 respectively.[74] These figures include maintenance, fuel, and satellite communications. By way of comparison, the A-10 is one of the cheaper fighters to operate and the flight hour cost is $17,564.[75] This is not to suggest that the MQ-9 has the same capability as the A-10, but it does demonstrate that the cost of having a fighter do an RPA mission would be significantly more expensive. The personnel costs associated with RPA operations are difficult to calculate since there is no standard number of people associated with each aircraft. The people required to facilitate RPA operations can't be discounted in the funding discussion, but it is necessary to PED data from any collection system regardless of if they are manned or not. The quantity of information that is generated by RPA systems requires significant manpower

investment but that same quantity of data would need to be processed even it was generated by a manned U-2 or space based system.

<div align="center">Conclusion</div>

The USAF can use 100 years of historical examples, from numerous countries, to determine the most effective way to support ground forces conducting COIN operations. As the current conflicts draw to a close and the military refocuses on recapitalizing equipment and preparing for the next war, it is imperative that the Air Force remember the lessons learned over the course of the last 14 years. Historical cases illustrate that there is a high probability that COIN will be part of the Air Force's mission set for the foreseeable future and we ignore the lessons of the past at our own peril. The USAF must provide equipment and training to support the long war and ensure that doctrine is maintained that addresses the difficult nature of COIN. As budgets shrink, the Air Force needs to resist the urge to singly focus on conventional warfare and leave a place in the budget for COIN assets that provide lower-cost, force enhancing capabilities.

The role that airpower has played in COIN is that of a significant force multiplier. The COIN struggle is not won from the air, but airpower can provide personnel on the ground capabilities that greatly enhance their chances of success. The relatively new addition of RPAs in the most recent operations, have demonstrated that the lessons from historical COIN are still valid. In addition to air mobility, CAS and ISR are still two of the most important ways that airpower can support the ground forces. RPAs have not created a new mission set but have enabled ISR and CAS capability to be combined with long loiter times, real-time multispectral imaging, and signals intelligence. The fusion of these attributes allows targets to be prosecuted quickly and precisely, sometimes in a matter of minutes. These systems must be maintained

because they are a relatively low-cost addition to COIN operations when compared to the cost of

doing the same mission and achieving the same effects with high-performance aircraft.

Notes

(All notes appear in shortened form. For full details, see the appropriate entry

in the bibliography.)

1 Corum and Johnson, *Airpower in Small Wars,* 31.
2 Ibid., 33-39.
3 Ibid., 37-39.
4 Lejeune, *Quijote on a Burro, 54.*
5 Corum and Johnson, *Airpower in Small Wars,* 42-43.
6 Ibid., 42-43.
7 Encyclopedia Britannica, *Tydings-Mcduffie Act.*
8 Corum and Johnson, *Airpower in Small Wars,* 116.
9 Ibid., 116.
10 Borg, *The United States, the Huk Movement, and Ramon Magsaysay*, 4.
11 Corum and Johnson, *Airpower in Small Wars,* 119.
12 Borg, *The United States, the Huk Movement, and Ramon Magsaysay*, 6-8.
13 Corum and Johnson, *Airpower in Small Wars,* 119.
14 Ibid., 128.
15 Ibid., 126-128.
16 Ibid., 132-133.
17 Ibid., 137.
18 Ibid., 138.
19 Drew, *U.S. Airpower Theory and the Insurgent Challenge*, 812.
20 Ibid., 237.
21 Glister, *The Air War in Southeast Asia,* 1.
22 Pape, *Bombing to Win,* 18.
23 Glister, *The Air War in Southeast Asia*, 2.
24 Ibid., 2.
25 Air Force Manual 1-2, 5.
26 Air Force Manual 1-1, 3-2.
27 Corum and Johnson, *Airpower in Small Wars,* 270.
28 Glister, *The Air War in Southeast Asia,* 122.
29 Clodfelter, The Limits of Airpower, 209.
30 Ibid., 209
31 Ibid., 210.
32 Corum and Johnson, *Airpower in Small Wars,* 273.
33 Ibid., 274.
34 Drew, *U.S. Airpower Theory and the Insurgent Challenge*, 821.
35 Lambeth, *A History of Air Warfare*, 255-257.
36 Ibid., 257.
37 Ibid., 265.
38 Ibid., 277.

39 Ibid., 277.

40 Murray, *A History of Air Warfare*, 287.

41 Ibid., 279.

42 Lambeth, *The Unseen War*, 61.

43 Ibid., 64-65.

44 Murray, *A History of Air Warfare*, 280.

45 Ibid., 282.

46 Ibid., 289.

47 Gray, *Airpower for Strategic Effect*, 34.

48 Clausewitz, *On War*, 88–89.

49 Gray, *Airpower for Strategic Effect*, 198.

50 Van Creveld, *A History of Air Warfare*, 364.

51 Drew, *U.S. Airpower Theory and the Insurgent Challenge*, 828. Quotes Olsen from *Air Power in Low-Intensity Conflict*, 17-18.

52 Corum and Johnson, *Airpower in Small Wars,* 436.

53 JP 3-24, *Counterinsurgency,* VII-2.

54 Ibid., VII-3.

55 Ibid., VII-4.

56 Ibid, VII-3.

57 Sewall, *Modernizing U.S. Counterinsurgency Practice*, 104.

58 Corum and Johnson, *Airpower in Small Wars* 433.

59 Gentile, *A Strategy of Tactics*, 8.

60 Army Field Manual 3-24, 7-9.

61 Moyar, *The Third Way of COIN: Defeating the Taliban in Sangin*, 6.

62 Army Field Manual 3-24, 7-9.

63 Corum and Johnson, *Airpower in Small Wars,* 428.

64 Ibid., 435.

65 Air Force Fact Sheet, *Mq-9 Reaper*.

66 Sewall, *Modernizing U.S. Counterinsurgency Practice*,103.

67 Air Force Fact Sheet, *Mq-1 Predator*.

68 Air Force Fact Sheet, *Mq-9 Reaper*.

69 Air Force Budget, *Air Force Aircraft Procurement, Vol 1, FY11*, 4-121.

70 Air Force Budget, *FY 2010 Budget Overview,* 48.

71 Air Force Budget, *Air Force Aircraft Procurement, Vol 1, FY11*, 4-121.

72 Jean, *Remotely Piloted Aircraft Fuel Demand for Satellite Bandwidth*, 1.

73 Ibid., 1.

74 Thompson, *Costly Flight Hours,* 1.

75 Ibid., 1.

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