

AUTHOR

capt. Marko Gordić

Serbian Armed Forces

## COUNTERINSURGENCY AIRCRAFT. PILOT'S PERSPECTIVE

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### Introduction

The unstoppable progress of human civilization leads to the inevitable development of the art of warfare and thus to the constant improvement of military equipment and weapons. This is reflected in the need of highly sophisticated combat machines and therefore it leads to the emergence of increasingly refined aircraft. But the development of civilization also leads to attempts of governments all over the world to try to reduce costs of equipping and serving modern armies.

So, contemporary theorists have a challenging task to set scales of needs and opportunities in selection of any means of military technology, especially very expensive aircraft. Most of them choose multirole platforms, capable of performing plentiful different kinds of missions, but unfortunately not always in the best manner. One cannot design aircraft excellent in all possible roles. But for counterinsurgency role we need nothing but the best. What is more, sometimes simplicity can be more effective than overpriced electronic masterpiece. The essay broaches this issue.

### Insurgency

Numerous forms of insurgencies have been employed since the beginning of turbulent human history and insurgencies are as old as a conflict. Basically, they are movements organized to take over an established government through destabilization and armed conflict. All available options including psychological, political and religious are used to alienate the population from the state. Insurgency can be defined as [...] *an organized, protracted politico-military struggle designed to weaken the control or legitimacy of an established government, occupying power, or other political authority while increasing insurgent control and counterinsurgency as military, paramilitary, political, economic,*

*psychological, and civic actions taken by a government to defeat insurgency*<sup>1</sup>.

All wars lead to certain civilian casualties. But in conventional forms of war, in which front lines are clearly marked numbers can be reduced. The aim of military forces engaged in a conventional conflict is to destroy the military capabilities of the opponent or to gain control of territory, and often both. Enemy forces, infrastructure, communication links, economic and industrial assets and even leadership as well as non-combatants become targets. Supreme use of available force is employed to achieve a rapid victory while diminishing damage to own assets and population.

Insurgency, however, is a form of war of rebellions that implicates civilians more directly in the process of warfare than conventional forms. They are trying to cut benefits of regular well-equipped governmental armed forces through involving local population and limiting capability of using large power. Insurgents attempt to organize the civilian population, mainly in the countryside, as a means to gradually build up forces sufficient to take over a state or to detach some portion of its territory. For them civilian population at the beginning is a very good way of providing logistics but civilians are nevertheless the key factor for achieving the final goal.

The aim of insurgents is to dismantle the control of the state over an area and more specifically, over the population in that area. Once this is done, the insurgents create the *de facto* state. This is achieved by subverting the authority of the state by political and mass agitations, destroying the infrastructure and then blaming the state for the lack of it, using armed action to 'liberate' both the area and the population and then assume the full functions and powers of the failed state. Provoking the state to use excessive force which results in damage and casualties to non-combatants is a method effectively used by insurgents.

Usually a government tries to counter an insurgency by political, economic, psychological and civic actions as precursors. If they do not produce desirable effects there is shift to paramilitary and finally military means of counterinsurgency (COIN) actions. Counterinsurgency operation's aim is to degrade the military capabilities of insurgents and either eliminate or win over their cadres with minimum destruction of infrastructure and loss of life in areas of operation. A military action is extremely selective. Unfortunately the training, ethos and equipment of regular military forces as well as the mindset of military commanders often run counter to these tenets with disastrous results. The use of weaponry has to be decided upon not with their effectiveness against opposing

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<sup>1</sup> *Field Manual 3-24. MCWP 3-33.5. Insurgencies and countering insurgencies*, Department of the Army, Washington D.C., 2014, p. 2.

forces alone but after considering the far reaching implications of their use against what are, more often than not, one's own people.

This is why counterinsurgency operations differ from conventional military operations. The military aspect is possibly the least important and is limited to facilitate the other organs of the state to restore regularity. In conventional warfare, destruction of opposing regular forces and boots on the ground in an enemy territory result in military victory. Whether it will guarantee the achievement of all the aims for which the war started, is another story. It is clear that weaponry alone cannot prevail<sup>2</sup>.

Nevertheless, in counterinsurgency operations physical destruction of the enemy still has an important role to play. A degree of attrition will be necessary, but the number of insurgents killed should be no more than is absolutely necessary to achieve the success.

Minimum necessary force is a well proven counterinsurgency lesson. In an era of intense media interest and one in which legality (both domestically and in the international arena) will become even more important, sound judgment and close control will need to be exercised over the degree of physical destruction, ever it is possible, necessary, or desirable to inflict. For example, the killing of a teenage gunman could be justifiable in military terms but its possible impact on his community could jeopardize a potentially far more significant though less spectacular Hearts and Minds operation.

Counterinsurgencies call for a different mindset and military strategy, although basic principles of war remain valid. They also require the concerted application of the diplomatic, informational and economic instruments of power to a much greater degree than military instrument. Therefore, policy makers, planners and commanders must comprehensibly understand the nature of the warfare before developing the operational design that sees objectives linked to a coherent national strategy.<sup>3</sup>

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<sup>2</sup> B. Menon, *Employment of Helicopters in Counterinsurgency Roles*, Indian Defence Review, vol. 29.2, Apr-Jun 2014, <http://www.indiandefencereview.com/news/employment-of-helicopters-in-counter-insurgency-roles/> [access: 05.05.2016].

<sup>3</sup> A. M. Maguinness, *Counterinsurgency: Is Air Control the Answer?*, Small Wars Journal, June 18, 2009, <http://smallwarsjournal.com/jrnl/art/coin-is-air-control-the-answer> [access: 05.05.2016].

## **The role of Air Force in COIN**

Offensive air power has much strength in modern warfare, but its utility in counterinsurgency warfare is not well understood. Many of air power's traditional strengths, such as far-reaching and decisive strategic strike, have a limited use in a counterinsurgency warfare environment. In fact, employing offensive air power in a traditional manner may even undermine the effects being sought. Warfighters and planners must understand the fundamentals of counterinsurgency warfare in order to employ offensive air power effectively within the context. To ignore these fundamentals is to place at risk the broader outcome of the campaign<sup>4</sup>.

The role of airpower in COIN is generally seen as providing airlift, ISR (intelligence, surveillance and reconnaissance) capabilities, and precision strike. This old-fashioned paradigm is too narrowly focused and demotes airpower to a supporting role while ground forces do the 'real' work. Worse, marginalizing airpower keeps it in support of ground-centric strategies that have unfortunately proved unsuccessful<sup>5</sup>. Only understanding the requirements for effective COIN and the historical lessons from the implementation of air force in it can develop an appropriate strategy of using air power. An obvious example of unsuccessful use of air power is indiscriminate mass bombardment during Vietnam War which undoubtedly provoked contra effect resulting in strengthening insurgent's support and will to fight. It is interesting that prominent modern airpower theorists would offer air force as an alternative to large ground forces in COIN strategy. They further contend that air power is more politically acceptable to governments than large ground forces in modern COIN. Yet, the real question is whether air power, unaccompanied, can achieve objectives and strategic end states. So, usually the joint effort of air power and land forces is required to perform an effective counterinsurgency operation.

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<sup>4</sup> G. Beck, *Offensive Air Power in Counter-Insurgency Operations: Putting Theory into Practice*, Royal Australian Air Force Air Power Development Centre, Working Paper 26, <http://airpower.airforce.gov.au/Publications/Details/56/26-Offensive-Air-Power-in-Counter-Insurgency-Operations-Putting-Theory-into-Practice.aspx> [access: 05.05.2016].

<sup>5</sup> S. Meilinger, *Counterinsurgency from Above*, Air Force Magazine, 2008, p. 36-39, <http://www.airforcemag.com/MagazineArchive/Pages/2008/July%202008/0708COIN.aspx> [access: 05.05.2016].

## Lessons from the past

During stormy history of the mankind we can find many cases of use of air power in counterinsurgency. One of first significant usages appeared in 1920 when British RAF flew missions during Iraqi revolution totaling more than 4 000 hours, dropped almost 100 tons of bombs and fired 200 000 rounds. The benefits offered by even a single aircraft in tasks of attacking small groups of individuals proved immeasurable. Even then aircraft succeeded in stripping away many of the advantages that traditional insurgents had held. It also offered a way of inflicting direct and cost-effective retaliation on the communities that supported the insurgents<sup>6</sup>. Afterwards, French air operations during Algerian War by the late 1950s were also counterinsurgent in nature. France used helicopters as attackers to eliminate insurgents on inaccessible mountain areas.

Even in the Vietnam War, still especially COIN designed airplane was not developed, but counterinsurgency missions were flown by existing airplanes and helicopters hastily adapted for the role. After reconsideration of the usage of adopted, previously designed for other tasks, air platforms eventually, dedicated specialized counterinsurgency aircraft began to be produced. Lessons identified from earlier engagements doubtlessly determinate very important requirements and characteristics for air platforms which are specialized for counterinsurgency fight. Modern COIN aircraft should have all or almost all of the following features<sup>7</sup>:

### 1. Long prowling capability.

This basically means that it should be able to loiter for a long time above the battlefield in order to accomplish identification and attack of chosen targets and provide close air support to ground troops.

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<sup>6</sup> J. Glancey, *Our last occupation – Gas, chemicals, bombs: Britain has used them all before in Iraq*, The Guardian, 19 April 2003, <https://www.theguardian.com/world/2003/apr/19/iraq.arts> [access: 05.05.2016].

<sup>7</sup> A. Davis, *Back to the Basics: An Aviation Solution to Counterinsurgent Warfare*, Wright Flyer Paper No. 23, Air University Press, Maxwell AFB 2005, pp. 17-18.

2. Precision fire.

This kind of aircraft must be capable of delivering accurate fire at primary targets in order to avoid any non-necessary casualties and collateral damage which can cause undesirable effects for the final outcome.

3. Short take-off and landing capability and ability to use unpaved airfields.

In order to be able to provide forehand and continual effects and adequate close air support COIN aircraft has to accompany land forces as much as it can. Since in the battlefield we usually cannot provide modern, long paved runways it should be ready to adopt field circumstances.

4. Good pilot visibility and navigation system.

It is not so rare that information obtained by intelligence services does not refer to real-time situation so it is often important to have a good and constant visual contact with potential target. Also most of friendly fire incidents, especially in close air support, are derived as incapability of proper determination friend or foe.

5. Various weapons-carrying capability.

To be ready to neutralize different categories of targets particularly in prowling missions. Variety of weapons such as guns, cannons, rockets and bombs loaded increase number of potential targets and enlarge power readiness.

6. Maneuverability and wide range of air speed in low and medium heights.

Most of COIN operations demand low height attacks in which we need nimble aircraft ready for fast reaction and quick flight parameter changes. Also it has to be able to slow down, to optimize determination of precise and undoubted target (low and slow). On the other hand, it should be quick enough to engage and obviously to retreat opportunely.

7. Survivability.

Since it flies low and slow it is highly exposed to enemy air defense assets so the pilot and all vital elements have to be armored in order to absorb ground fire with a high degree of survivability.

## 8. Cost-effective characteristics.

Last but not the least feature, undeniably the price of development and operational costs are very important and usually expensive highly sophisticated apparatus are extremely demanding considering exploitation and handling, which is not so suitable for battlefield conditions where COIN aircraft is operated in.

There are many different views about a selection of proper air platform which will be able to fulfill all requirements. We will see few alternatives which can satisfy all or almost all needs for successful counterinsurgency campaign.

### **Unmanned aerial vehicles**

Unmanned aerial vehicles (UAVs) or simple drones are an obvious example of incredible development of aviation. Only slightly more than a century passed since December 17<sup>th</sup> 1903, when Orville Wright piloted the first powered airplane in Kitty Hawk, North Carolina and now we are able to fly missions a few thousands kilometers far without even gentle feel of wind in our hair. UAVs are really a miraculous accomplishment of modern technology and for sure they are the future of aviation. Some might even say that the last pilot was already born. But, even UAVs are not perfect. In order to evaluate this imperfection, especially for COIN missions, I will present MQ-9 Reaper, one of the best UAVs in the world.

First of all, I would like to discuss the term Unmanned Aerial Vehicle. Are they really unmanned since, for example, one Reaper unit, which consists of four aircraft, requires at least 171 personnel? These include 43 mission control personnel (including seven pilots and seven sensor operators), 59 launch, recovery and maintenance personnel (including 6 more pilots and sensor operators), 66 Processing Exploitation Dissemination personnel for Intelligence and its support and 3 'other equipment' personnel<sup>8</sup>. So, Remotely Piloted Vehicle seems to be the most accurate term.

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<sup>8</sup> W. Wheeler, *The MQ-9's Cost and Performance*, The Time, 28.02.2012, <http://nation.time.com/2012/02/28/2-the-mq-9s-cost-and-performance> [access: 05.05.2016].

The Reaper has been employed in combat since October 2007 and ever since it was quite successful in its missions. Long prowling capability is the definitely huge advantage for Reaper. It can stay in the air up to 42 hours (with wingspan increased to 27 m) with two additional fuel tanks and 450 kg of ammunition or 14 hours with typical munitions. Less stressed environment, since the operator is not located in danger zone, allows much better decision making regarding selection and acquiring targets.



Length	11 m
Wingspan	20 m
Height	3.81 m
Empty weight	2,223 kg
Max take-off	4760 kg
Fuel capacity	1,800 kg
Max speed	482 km/h
Cruising speed	313 km/h
Stall speed	100 km/h
Range	1 852 km
Service ceiling	15 240 m
Endurance	14h fully loaded 42
Runway	1 500 m paved
Engine	Turboprop 900 hp
Armament	7 hard points
Payload	1 700 kg
Price	\$76.2 M fiscal )

Source: *General Atomics MQ-9 Reaper*, <http://immortaltoday.com/military-drone-aircraft/>, [access: 05.05.2016]

**Figure 1. MQ-9 Reaper**



On the other hand, Reaper requires a paved runway, at least 1500 m long, which is not affordable in COIN aircraft area of operations however its long endurance and range, allows it to execute missions from distant airfields, if available. Another disadvantage is visibility for a pilot (operator). Embedded with a modern camera and sensor system which provides high resolution image, the pilot is yet limited to a very narrow line of site and is not totally aware of the situation around the aircraft. In spite of modern technology not a single case of misfire occurred during its combat history. A lack of mounted cannon and/or gun is considered to be a minus for Reaper, especially in close support COIN mission. Moreover, maneuverability as well is not a strong suit for Reaper. A very wide wingspan does not allow more than two G maneuvers. Nor the high angle flying is permitted due to possibility to lose its link to satellite and ground control. Maximum speed of less than 500 km per hour is a restriction which cannot be neglected. Reaper is not constructed for usage below 3 000 m due to low-level survivability and absence of any armor to survive a hit.

Finally, one single Reaper unit with encounter four vessels and associated ground equipment costs almost \$64.2M (fiscal 2006) or \$76.2M (fiscal 2016). That is a very large amount of money to be endangered in a COIN mission with high risk to be brought down by a low budget weapon or even a single bullet. So, maybe Reaper should be preserved for other types of missions and leave COIN for other platforms to deal with.

## **Rotary wing aircraft**

Rotary-wing platforms or more popular helicopters had first military usage in the Second World War and ever since they have been playing an irreplaceable role in all conflicts. They have huge utilization for transport, reconnaissance and of course for medical evacuation but since the War in Korea their close air support and attack feature have begun to prevail. One cannot even imagine any kind of military action without helicopters. They seem to be an essence of air power especially for land forces. And among a variety of different options AH-64 Apache appears to be the best specimen of all Western Rotarians. This contemporary knight is able to accomplish almost all kinds of attack missions, but let's evaluate if it is versatile enough to be used as ultimate COIN platform.



Source: AH-64 Apache,  
[http://www.helis.com/70s/AH-64\\_Apache.php](http://www.helis.com/70s/AH-64_Apache.php) [access:  
 05.05.2016].

**Figure 2. AH-64 Apache**

AH-64, with slightly more than three hours of loitering capability can provide fire from variety of weapons. Different kinds of very accurate guided missiles and powerful 30mm gun can be very useful for counterinsurgency action but vertical take-off and landing is the Apache's best feature which puts it in the front rows of battlefield. Good visibility for both a pilot and gunner and ability to literary stop in the air in order to locate and clarify the target are very important for these missions but makes it highly vulnerable for opponent's air defense. That's why cockpits, rotor blades and vital parts are shielded to sustain 23mm hit. But what if the enemy uses simple shoulder fired MANPADS (man-portable air-defense systems)?

A very slow maximum speed and inability to seek for shelter at higher altitudes are its great disadvantages. The capability to cope with extreme weather is not as good as fixed-wing aircraft. The service ceiling of more than 6 000m seems quite enough but performance degradation with increasing height are very severe so rotary-wings are not so good for counterinsurgency actions in mountains. Less than 300km/h maximum speed increases the response time to engage which is proven to be essential since sometimes the target (individual person) in such actions is exposed for a very short period of time. The cost of more than \$20M for AH-64A and \$65M for AH-64D can also be a repellent factor.

Lenat	17.37 m
Rotor	14.63 m
Height	3.81 m
Emptv	5 165 kg
Max	10 433 kg
Fuel	max 3 700 kg
Max	293 km/h
Cruisi	265 km/h
Stall	0 km/h
Ferrv	1 900 km
Comb	476 km
Servic	6 400 m
Endur	max 3 h 9 min
Landin	50 m diameter
Engin	2xturboshafft1 890 h
Arma	30 mm Cannon 1200
Pavlo	770 kg
Price	\$23-71 M fiscal

## Fixed wing aircraft

### A-10 Thunderbolt II

When the US Air Force in the late 1960s, wrote requirements for new Close Air Support aircraft, demanding long loiter time, low speed maneuverability, massive cannon firepower and extreme survivability, they were not aware what kind of perfection will be achieved. The new everlasting star was born. A-10 Thunderbolt II or the Warthog. A-10 is probably the best Western aircraft ever built and the best close air support aircraft. It fulfilled all demands of USAF and one can say that it even overcame most of them and became the etalon for a successful attack plane.

Designed with large, straight, high aspect ratio wing and large ailerons, Warthog has superior maneuverability at low speeds and altitudes and short takeoffs and landing capabilities. It can use austere air fields 1 200 m long. It can loiter over the battle zone, at low altitudes more than two hours which provide effective targeting and weapon delivery over all types of terrain.

The A-10 is many sided aircraft with extremely high survivability, very popular with pilots for the best “get home” effectiveness. The cockpit and all vital flight-control system parts are protected by 540 kg of titanium aircraft armor. It is able to survive 23 mm direct hits. Double redundant hydraulic system, additional mechanic flight system and ability to fly with one engine, one half of the tail, one elevator and half of a wing missing make it the toughest one in the air. Turbofan engines with small infrared signature, mounted with exhaust straight over the tail which provide further shield for detection by infrared guided missiles improve counter air defense measures.



Length	16.26 m
Wingspan	17.53 m
Height	4.47 m
Empty weight	11 321 kg
Max take-off	23 00 kg
Fuel capacity	4 990 kg
Max speed	706 km/h
Cruising speed	560 km/h
Stall speed	220 km/h
Ferry range	4 150 km
Combat range	460 km
Service ceiling	13 700 m
Endurance	2 h fully loaded
Runway	1 200 m prepared
Engine	2x Turbofan
Armament	30 mm Cannon
Payload	7 260 kg
Price	\$19 M fiscal 2016

Source: *A-10 Warthog proposed, again, as an air tanker*, <http://fireaviation.com/tag/a-10/>, [access: 05.05.2016].

### Figure 3. A-10 Thunderbolt II

More than seven tons of variety of precision weaponry can be attached to eleven hard points under its wings and fuselage. And of course one 30 mm GAU-8/A Avenger Gatling Cannon with 1.174 of very accurate rounds and 14 times the kinetic energy of ordinary 20 mm guns.

A-10 is designed exclusively for ground attacks against tanks, armoured vehicles and installations, and close air support of ground forces but during its operational history it emerged to be the best COIN platform. This piece of equipment costs less than \$19M, and according to *www.Nation.time.com* flight hour costs \$17.716 which even is not too expensive<sup>9</sup>. And maybe it would be better if it could loiter more than two hours, or if its stall speed was lower, or if it could take off vertically, but those are not so important disadvantages. The USA tries to find a replacement for this more than 40 years old miracle since it is getting older and more expensive to maintain. And for the rest of the world the main disadvantage is the inability to buy it as the A-10 is not made for export.

So, a suitable substitution has to be found. And that is not an easy thing to do. In most cases when a problem with insurgents appears air forces try to use off the shelf platform and usually it shows as inadequate, but then later that issue is put aside again. So, Brazilians seized the opportunity and tried to solve that problem. They had a problem with drug trafficking and illegal logging and mining in remote areas and not appropriate air solution was available, so they decided to improve EMB 312 Tucano, basic trainer already operated in Brazilian Air Force and create advanced and more suitable EMB 314 Super Tucano. And they did a good job.

#### A-29 Super Tucano

Super Tucano or A-29 is an agile single turboprop engine, COIN and Close air support aircraft also very good in training role designed to operate in demanding South America's conditions. It provides the superb operational characteristics in different types of air to ground missions as well as air to air missions against helicopters and light aviation. Its high maneuverability, modern avionics and weaponry makes it adequate for counterinsurgency missions. Very long loitering capabilities allows it to stay in a required area for a long time, performing reconnaissance. Low stall

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<sup>9</sup> M. Thompson, *Costly Flight Hours*, The Time, 02.04.2013, <http://nation.time.com/2013/04/02/costly-flight-hours/> [access: 05.05.2016].

speed and tight turning radius meant pilots could maintain a constant visual contact with a target and instantly shift from surveillance to attack.

Based on its reliable predecessor, as Tucano is, and additionally improved, Super Tucano became desirable for many Air Forces all over the globe, including the most equipped USAF. A highly efficient turbo prop engine allows Super Tucano to stay above the battlefield for almost three and a half hours; fully armed using only internal fuel and more than eight hours with external fuel tanks which is essential for COIN missions since this prolongs combat readiness. The ability to use short unpaved airfields is equally important. A variety of different kinds of modern missiles and bombs attached at 5 hard points beneath its wings and fuselage, supported by number of guns and cannons can provide accurate and lasting firepower against selected targets. Probably not as much as modern jets can but as accurate for sure. Extraordinary visibility allows pilots to make clear decisions engaging selected targets and avoid any collateral casualties and friendly fire.

This nimble aircraft possesses much better maneuverability at low heights and speed, which is a natural environment for COIN missions, than any contemporary jet and that is its most important characteristics. The crew survivability is ensured through cockpit Kevlar armor protection supplemented with modern Missile Approach Warning System and Radar Warning Receiver in addition to chaff and flare dispensers incorporated with low heat signature prop engine.



Length	11.38 m
Wingspan	11.14 m
Height	3.97 m
Empty	3 200 kg
Max take-	5 400 kg
Fuel	563 kg
Max	590 km/h
Cruising	520 km/h
Stall	148 km/h
Ferry	2 855 km
Combat	550 km
Service	10 668 m
Endurance	Max 8 h 24 min
Runway	550 m austere
Engine	Turboprop
Armament	2x12.7 mm guns
Payload	1 550 kg
Price	\$9-14 M fiscal

Source: *EMB-314 (A-29) Super Tucano*, <http://militaryedge.org/armaments/emb-314-a-29-super-tucano> [access 05.05.2016].

#### **Figure 4. A-29 Super Tucano**

Apart from its combat use the Super Tucano is also a very good trainer. The total cost of single one is \$9-14M, depending on weaponry. One flight hour costs round \$1 000. It does not require fancy maintenance and rocket scientists to repair it and it is easy to use. This is why 20 countries, so far, all over the world have chosen this plane. Even former Blackwater Company uses it. Super Tucano successfully has flown in many various missions accumulating more than 23 000 combat hours. So it could be said that it is an effectual successor of A-10 in its COIN role and its worthy replacement.

### **Conclusions**

Counterinsurgency actions are very delicate to perform. First of all, they have to be done as a joint effort of number of participants. Air force is only a single, but very important, wheel in that machinery. A final goal cannot be achieved without an adequate selection of targets. So, intelligence has to choose specified and unquestionable targets, which will lead to accomplishing of ultimate objectives. Then an air power should only take a suitable action. It sounds so easy but actually it is very demanding. The right amount of extremely accurate fire power has to be delivered to, in most occasions, very small target, or even a single individual. Of course, without any collateral damage. It can be done in many different ways, but the most effective one has to be chosen. In this essay, I tried to offer four different platforms to deliver a requested action. Each type of aircraft is presented by its best or one of the best, representative of Western technology.

Heavy/Combat UAVs are really very respectable aircraft but not so suitable for counterinsurgency. They require quite a long paved runway and expensive supporting equipment. High vulnerability and fragility force them away from the target which can lead to impossibility to perform accurate and casualties-free engagement. Among all other disadvantages we should not neglect cost-effectiveness. So, in my opinion, they should be preserved for other kinds of engagements.

Helicopters are proved to be very important for contemporary warfare. The main limits for them are very slow maximum speed and low service ceiling altitude. Absence of quick reaction can be a problem in counterinsurgency. Limitations in high mountain areas make them not so worthy and we should try to find more appropriate piece of equipment for COIN.

Fixed wing aircraft are the most appropriate part of modern air force for this task. Especially airplanes specifically designed as attackers. Expensive modern multi role aircraft were not even mentioned due to their inability to perform COIN actions in a desirable way. It is much better to leave them up in the sky where they belong and leave this assignment to genuine knights. A-10 is for sure one of them, in really shining armor. It is almost perfect for the job. But, unfortunately it is getting older, very expensive to operate, and limited only for Americans.

Consequently, that's where aircraft like Super Tucano, T-6, PC-21, KAI KT-1, PZL-130 or Utva Kobac jump in. Highly maneuverable, relatively fast, easy to maintain, heavily armed and cost-effective platforms capable to deliver significant amount of accurate air power where it is necessary and then just slip out. They are not too demanding regarding quality or size of runway, easy and fast to maintain, in slightly more than 30 min ready to fly again. They can stay in a range of less than one kilometer around a target if it is necessary and then when they get clearance strike down with great vengeance and furious anger against it.

These are also remarkable close air support air platforms capable of providing real close support. Not 1km close but 100m close or even less if it is equipped with accurate guns and cannons operated by a skilled pilot. Once again this is why land forces prefer this kind of aircraft to multirole fighters. They want to be sure that a pilot actually can establish eyeball to eyeball contact with enemy in order to avoid friendly fire and not to deliver some kind of high precision weapon from 5.000 m. This is a lesson learned from many previous friendly fire incidents occurred in actions.

Using of this kind of airplanes exclude needs for a separate trainer since they can play even that role. In fact, most of them are built first as a trainer and then developed to COIN aircraft. Followed with a relatively low price of purchase and very cheap flight hour cost makes this kind very desirable.

In my opinion the main problem for them is neither their efficiency nor costs. The main problem is their unattractiveness. They look and sound as World War II legacy. And for the contemporary theorists that is unacceptable. *Who needs cheap, "outdated", propeller powered airplane in 21<sup>st</sup> century?*, they ask. Modern armed forces do.

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## **COUNTERINSURGENCY AIRCRAFT. PILOT'S PERSPECTIVE**

*Abstract:* The aim of this paper is to present a pilot's perspective of Counterinsurgency Aircraft as a tool of modern warfare. The first part introduces the concept of insurgency and the role of the Air Force in counterinsurgency. Furthermore, on the basis of the lessons from the past, the author determines requested features for COIN aircraft. The following sections refer to different air platforms capable to be used as COIN aircraft. One representative of each platform is used to show both its advantages and disadvantages. Finally, in conclusion, the paper discusses COIN aircraft from the pilot's perspective.