BACKGROUND REPORT

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SUMMIT

NATO
Modern Warfare
and Unmanned Aerial Vehicles

Modern Warfare and Unmanned Aerial Vehicles

1   Introduction

Ever since people started forming civilizations, the disputes, armed conflicts and wars have started occuring. The cause could be disagreement on territory ownership, attempt to claim natural resources, difference in people's opinions and other reasons. But the entire time the need to possess with better weapons and technologies have existed for almost all participating parties. And if not, the probability of being on the failing side rapidly increased.

It is no secret that one of the most important driver for scientific and technological advance is the human will to wage war, or to feel safe with appropriate defense mechanisms. A good few of the scientists are aware of this fact just like the economists do.[1]

One could wonder what was invented during the World War I, World War II and Cold War that we consider today matter of daily routine of our consumer lifestyle. It could be surprising for some that the most common product of war is the tampon or feminine pad, which was firstly used during World War I to clean soldiers' injuries but proved to be useful by hospital nurses for slightly different purpose. Similar story applies to the twinkies invented due to fruits rotting fast in World War II, Tabasco Sauce from The Civil War and Nylon Stockings coming in World War II as well.[2]

But what about the technology used only just for the armed conflicts as weapons and weapon support? One of the most common materials which can be found in any household is polytetrafluoroethylene. Wonder what that is? Well do be sure that it is just the material which was used in the Manhattan Project as valves coating and pipes sealing and was used for the first time in 1954 to produce modern pan under more common name "Teflon". Similar inventions can be found in far more industries like pharmaceuticals, air traffic, data security etc.[3] It would be easy to find loads of evidence to prove how important is war as the driver for future technological development.

2   Defense Advanced Research Projects Agency

Organization usually abbreviated as DARPA is part of the United States Department of Defense, which is responsible for the development of new technologies for military use. It was formed in 1958 by President Eisenhower to interconnect science with army. As of today, there are many products of this organization we use every single day.

For example the internet started about 1962 under the name of Arpanet. The idea was to create a network of connected Department of Defense computers at separate locations. The first host-to-host connection was established on 29 October 1969, resulting in the world's first fully operation packet-switching

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[1](Strickland, 2010)
[2](Mendoza, 2010)
[3](Rhodes, 2012)

network. Afterwards, the first e-mail was sent across the network in 1972. Google Street View does really provide us with tremendous option to experience distant locations. But the idea was first actually realized in 1979 as the Aspen Movie Map. The interactive map could have been used for travelling through the Colorado city, while entering selected buildings and even switching in different historical times. Then a Google-alike car was used to capture the images of the surroundings.

Very well-known voice recognition system distributed under the name of Siri, which is implemented in iPhones, could be thought to be the product of Apple Corporation. Nevertheless, the so-called Personalized Assistant that Learns program has been carried out by DARPA since 2003.[4]

3   Weapons develop, do we?

For many purposes, measuring is just the tool that provides comparison instruments and enables us to see things in numbers. As for the weapons this could be achieved through so-called Lethality Index, which is calculated as combination of variables including weapon's range, mobility and rate of fire.

E.g. the javelin, which had been used for thousands of years before the civilizations started to develop, is rated with lethality index of 18. Little bit more advanced longbow is rated with value of 34. If we move further to the medieval ages, flintlock musket from eighteenth-century is rated with 47. Mid-nineteenth-century rifle with bullet of conoid shape has lethality index of 154. Moving closer to present times, the World War I machine gun is rated with respectable 12,730 and yet it is incomparable with World War II medium tank which is rated with 2,203,000. Nevertheless one of the ultimate winners is the 20 KT nuclear airbust with lethality index of unbelievable 48,550,000.[5]

It is absolutely evident the weapons do develop and each new generation of technological weapons is many times more devastating than the preceding one. But the very important thing to realize is the fact that if one of the belligerent sides possess with weapons of one generation ahead of others, it has incomparably more strength than the opponents, which on the other side doesn't necessarily has to mean clear victory in advance. The Nazi invasion of France in 1940 proves this fact well, when Germans found out the Flak 88, anti-aircraft weapon, could be used against enemy tanks, thus becoming the prevailing weapon in the conflict.[6]

On the other side, just as we focus on the role of technology in warfare, the role of the factor of human qualities must be considered as well. There is a lot of evidence proving the influence of strategy and war leaders' deviousness remains the same. For example the Russians have defeated the enemies several times mainly due to resistance during cold Russian weather combined with other strategic movements, as can be deducted from French invasion of Russia in 1812 or surrounding of German 6th army in the Russian Winter during World War II. It is important to bear in mind that the weapons are just the tools which develop, but every weapon has a trigger which is controlled by man, just like every army has its human leader.

4   Unmanned Aerial Vehicle (UAV)

One of the most discussed technological weapon lately has been the UAV. Definition identifies Unmanned Aerial Vehicle as an aircraft without a human pilot on board. This does apply for whole industry of robotized warfare. However, the UAVs went through a development ever since 1916, which was the year of first

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[4](Winder, 2012)
[5](Defense Technical Information Center, 1964)
[6](War Department of Third Reich, 1943)

attempt of construction of such technology. Nevertheless, the first usable army drones were created in 1959, when United States Air Force officers were concerned about losing pilots over hostile territory.

As for the United States, which are generally considered to be the typical representative of frequent drone user by the public, there are two prominent programs concerning UAVs to this day. That of the Central Intelligence Agency, which is covert, meaning the missions do not always occur where U. S. soldiers are deployed. On the other side, the military program is overt, meaning it always occurs in the territory of deployment.

The first practically used UAV as we know it today, called the Pioneer, helped to identify artillery and boats, and was used in 2007. Since then, there have been more than 5.000 deployed units, which is twice the number of manned planes. The most famous model is the Predator which is equipped with Hellfire missiles for the purpose of possible intervention or even termination of the located target. Despite all the automatization and robotization of UAVs, the Predators are controlled remotely by real pilots from distance of more than 12.000 kilometers. On the other side, the Global Hawk model is capable of virtually autonomous operation.

Last but not least, so-called Raven type of the UAV is characteristic with a very small size and is capable of landing off-hand and maneuvering through the streets. These are useful especially for urban areas, such as Iraq.

Generally, UAVs are divided into six functional categories - the target and decoy (ground and aerial gunnery for a target that simulates an enemy aircraft or missile), reconnaissance (battlefield intelligence), combat (attack capability), logistics, research and development and civil and commercial UAVs. The altitude reachable by UAVs varies from 600 m up to over 9 km. For example NATO type is generally able to climb up to 3 kilometers with effective area of range of 50 kilometers. The variety of functions provided by UAVs includes - remote sensing, commercial aerial surveillance, domestic policing, resources exploration, transport, research, armed attacks, search and rescue, conservation, forest fire detection, or many other purposes.

5   The ethics behind the curtain

As much as the drones are both effective and efficient for killing undesired persons, problems with ethics of such usage arise. Just as always, there are two sides to the dispute, one defending with the drones as the only way to get corresponding things done, the other highlighting civilian casualties resulting in their operation. Let's get deep into it.

As for Pakistan, statistics of the New America Foundation, an independent think-thank, show that massive increase in amount of drone attacks has occurred after the change from Bush administration to Obama's one, when the number more than doubled from 54 to 122 per year. However, since then the amount has

been decreasing slightly each year down to 48 in 2012. As of 8th June 2013, there have been 357 attacks in total with 2,224 militants killed along with 286 civilians and 270 persons of unknown identity. The Bureau of Investigative Journalism provides slightly different numbers. According to their statistics there have been totally 370 strikes as of July 2013, which resulted in 2,548-3,549 total kills including 411-890 civilians, out of which 168-197 were children. Absolutely different numbers origin in the statistics of Government of Pakistan for the last five years, which mention 333 attacks resulting in 47 militants killed along with 1500 civilians. One could wonder about the differences in statistics that are usually considered to be something relatively easily quantifiable and deterministic. It is without doubt that the numbers do not differ due to mathematical error but were subjected to manipulation, no matter the side involved.[7]

The reason to use drones instead of cruise missiles or jet fighters is obvious. The enemy being fought today is not one of forces concentration and heavy weapons on open ground. It is the war among people, in cities, markets and other public areas. For this reason, the drones are usually capable of maneuvering over a selected area for more than 18 hours, providing its pilot to choose the best moment to perform the attack, which could lead to minimizing civilian casualties. Therefore the drones are considered to be the best tool to track down and eventually take down the terrorist units and high-profile targets with incomparably lesser costs.

Guns don't kill people, people kill people. This famous quote best fits the situation about drones. One of the top arguments mentioned by drone opponents is that they are controlled by a pilot located thousands of miles away, which results in depersonalization of the act of killing. It might seem just like playing a game, which is unfortunately actually happening in real somewhere far away. Corresponding questions must arise. Is the drone operator, who goes home after a daylong shift, a soldier involved in military conflict, thus a legitimate target for the enemy? Doesn't the lack of risk for the drone operator result in more injudicious actions? As it is hard to unanimously answer these questions, it is sure the drones are not that autonomous and self-decision tools as some could think, as the Predator has to be serviced and run by a team of about 180 people. Nevertheless, asking so many theoretical questions and mentioning hypothesis must be followed by practical experience as well. The drone operators actually do suffer from post-traumatic stress disorder even more than those involved in the action in person. The operation for example includes surveillance for an "after-action report", when the operator is forced to watch the real impact of his own strike or seeing brutal scenes of hostage executions from above, in absolute anonymity and while undetected.[8]

Another empirically based argument mentions that the drones are used to execute U. S. civilians without a trial, as the case of killing Anwar al-Awlaki, who was thought to be important operational leader for al-Qaeda, proves. One of the leading critics of drone usage is Republican senator Rand Paul, who in 2013 inquired whether President Obama could legitimately let an American citizen not involved in combat situations with a drone on American soil killed. After negative answer Mr. Paul demanded to know what authorizes the US to do such things in territories of other states.[9] However, 83 % of Americans support the use of drones according to survey performed in February 2012.[10]

Last but not least is the possible inadequate evaluation of certain situations, mainly in terms of so-called "signature attacks". These are performed based on the analysis of group behavior, which could be evaluated as terrorist gathering. For example people in Afghanistan and Pakistan often bring weapons to weddings to fire to the air to celebrate, which might be evaluated as the signature of terrorism, due to many guns in one area, thus resulting in attack on innocent people's gathering. The drones are also sometimes used to do double taps where first-responders and people trying to help the wounded are killed, which could be considered a war crime.

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[7](New America Foundation, 2013), (Serle, et al., 2013)
[8](Ingersoll, 2013)
[9](Wolf, 2013)
[10](Wilson, et al., 2012)

6   The Pakistani opinion

Deduction from previous information could lead to the absolute banning of drone attacks from the Pakistani side. Nevertheless, the stance of Pakistani government is somewhere on the border of the two opposing views at the situation. The attacks are basically supported by Pakistanis with exception that the selection of targets should go through greater control from the side of Pakistan. The reason beyond could be in the desire of punishing internal enemies as well as protection of militants with good relations or support from the military. Until November 2011, when NATO air raid killed 24 Pakistani soldiers, the cooperation between Washington and Islamabad went well.[11]

However, the public position of Pakistan remained the same, when the government considered such attacks an infringement of its sovereignty, due to the anger of the Pakistani population caused by civilian casualties. In November 2008 the US general responsible for drones operation David Petraeus was told these strikes were unhelpful. Nevertheless, this was preceded by a secret deal between the US and Pakistan allowing such strikes, which was later denied to be true by Pakistani foreign minister Shah Mehmood Qureshi.[12]

The Pakistani President Asif Ali Zardari continued repeating his requests to stop drone attacks in public, while the Pakistani intelligence secretly provided information to the US on leading militant Baitullah Mehsud and his combatants. 2009 Lahore police academy attack involving capturing the building and killing several employees and students was claimed to be the payback for such behavior.[13]

An analysis performed by Daily Times on 2 January 2010 shows that the view of the local people of Waziristan region, which is bordering Afghanistan, is relatively positive as for the drone attacks. Personal interviews showed that the drones are viewed as liberators from the clutches of Taliban and Pakistan's Intelligence agencies. Resulting thoughts of this evaluation would be the people did not care who would perform such operations, whether Americans, Israelis or whoever, as long as it would get them rid of Taliban and al Qaeda. The call for more drone attacks has been made by the originators and sympathizing groups.[14]

In December 2011, the Pakistani leaders of the army ordered their subordinates to shoot down any object entering the air space, including U.S. Drones. As a result of from this directive, but not limited to it, the US government officials would send notifications to Pakistan's Inter-Services Intelligence agency the dates and areas of drone attacks operations ahead.[15]

In May 2013 the Pakistani Peshawar High Court stated that the drone strikes perpetrated by CIA are considered illegal.[16] Furthermore, the use of corresponding force would be necessary to enforce such policy. This was followed by Taliban's withdrawing the offer of peace talks after their deputy leader being killed by a drone strike.[17] The same year the freshly elected Pakistani Prime Minister Nawaz Sharif called for an end for the drone strikes.[18]

The findings of a Center for Naval Analyses study which was based on classified US military documents showed that the drone strikes were 10 times more likely to cause civil casualties than bombs or missiles. The drone attacks have been scaled down due to Pakistani military pressure.[19]

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[11](Dilanian, 2011)
[12](Perlez, 2008)
[13](BBC, 2009)
[14](Taj, 2010)
[15](NBC News, msnbc.com staff and news service reports, 2011)
[16](Ross, 2013)
[17](Ross, 2013)
[18](BBC News, 2013)
[19](Briggs, 2013)

7 North Atlantic Treaty Organization

It is absolutely essential for NATO to keep up with the speeding pace of technological development of warfare. Furthermore, the NATO forces are generally believed to be technologically advanced compared to the rest of world's army forces, which has to be sustained for the superiority of peace-keeping organization. The need to invest in such project should be the core for future development of the NATO.

As for the NATO drone project specifically, the organization possesses with about eight pieces of Northrop Grumman RW-4 Global Hawk drones[20] designed for surveillance operations. Members of NATO usually have their own drone program. For example Czech Republic posses with AeriVironment RQ-11 Raven, Slovakia with Elbit Skylark and Poland with Boeing Insitu ScanEagle, which all serve for tactical surveillance. It is no surprise that out of European countries, Germany is the most active member with its own Northrop Gunnman RQ-4 Global Hawk drones for strategic surveillance and IAI Hadrop for strategic and tactical bombing.

8 Conclusion

Just like the time goes on the inevitable development takes its logical place and so the weapons, which are primarily just the tools for the men to wage war, have to get better and better. For the organization, which provides military support for its members, it is absolutely essential to keep up with the pace of the changing world- in order not to be left behind a powerful enemy capable of overpowering the democratic world.

Then there are the drones, the core of many ethical problems as opposed to their effectiveness and efficiency. The history shows that these attacks, no matter how unpopular may be with the public, do provide visible results and are broadly supported by governments. Their almost risk-free deployment is then counterbalanced by the civilian casualties involved. It is necessary to find appropriate consensus in their usage with regards to the point of view of all states involved.

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[20](Hasselbach, 2013)

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