Drone Wars Briefing



Chris Cole

Drone Wars UK

The Drone Wars Briefing was written by Chris Cole
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Abbreviations

AQAP	Al-Qaeda in Arabian Peninsula
CAA	Civil Aviation Authority
CAOC	Combined Air Operations Centre
IHL	International Humanitarian Law
ISAF	International Security Assistance Force
JSOC	Joint Special Operations Command
RPAS	Remotely Piloted Air Systems
UOR	Urgent Operational Requirement
UAV	Unmanned Aerial Vehicle
UAS	Unmanned Aerial System

Introduction

Ten years ago, the United States Air Force successfully launched a missile from a Predator drone for the first time at a test range in the Nevada desert.[1] While unmanned aerial vehicles (or drones as they are commonly known) had previously been used in military operations for reconnaissance, surveillance and targeting purposes, this was a significant point in the evolution of military drones.

Just months later, in the aftermath of '9/11', the first operational armed strike by a remote controlled unmanned drone took place in Afghanistan, when a CIA-operated Predator drone attacked al-Qaeda leader Mohammed Atef. According to media reports, Atef was killed along with seven other people.[2] Since that first attack, the use of armed drones has risen, slowly at first but more dramatically since 2009, to the point where at times drone strikes are almost a daily occurrence.

In 2011 the use of drones continued to rise with drone strikes in at least six countries (Afghanistan, Pakistan, Yemen, Somalia, Libya and Gaza).[3] While the vast majority of these strikes were carried out by the United States, the UK also uses armed drones, announcing in September 2011 that it had reached the 'landmark' of 200 drone strikes in Afghanistan; Israel continued to use armed drones in the Occupied Territories and the Italian air force flew Reaper drones during the Libyan conflict. With both the Unites States and the UK announcing that they are to double the size of their drone fleet, and with fifty countries reportedly developing or buying unmanned aerial vehicles, drone strikes can only increase.

As the use of drones expands however, controversy about their use also grows. Supporters of armed drones argue that their ability to loiter over a particular area together with their highly accurate sensors and cameras gives the ability to have increased control over when and where to strike, thus enabling greater accuracy and less 'collateral damage'. Opponents argue that by removing one of the key restraints to warfare – the risk to one's own forces – unmanned systems make undertaking armed attacks too easy and will make war more likely. The 'persistent presence' of drones over a particular area looking for suspicious behaviour and 'targets of opportunity' is also leading, it is suggested, to large numbers of civilian casualties, while legal experts and human rights organisations have condemned the rise in targeted extra-judicial killing enabled by the use of armed drones.

Despite the increased use of armed drones – and the controversy surrounding their use – accessible, accurate and reliable information about drones, about how they are being used and about future developments remains difficult to find. In

particular details of how armed drones are actually being used in conflict remain shrouded in secrecy. To counter this Drone Wars UK is publishing the *Drone Wars Briefing.*

In this first, of what we hope to be an annual publication, we have chosen to focus on, and review five particular issues:

UK drone operations
UK drone developments
US drone operations
Use of drones for targeted killing
A review of other issues in brief.

Each section starts with a short background summary before reviewing what has happened over the past twelve months . We also conclude the briefing with a short essay arguing – as we have done over the past two years – that there must be proper public accountability for the use of armed drones and an informed public debate on their future development and use.

2012 will be a busy year for the drone industry and drone campaigners. The British Watchkeeper drone will be deployed to Afghanistan sometime in the Spring; RAF pilots will begin piloting armed Reaper drones from RAF Waddington in Lincolnshire; a large thee-day UAV conference will be held in London in June; a go-ahead for the new UK/French drone is expected; and it is possible that drones will fly over London during the Olympics.

We hope that the *Drone Wars Briefing* will be a useful source of information for all those concerned about the increasing use of armed drones. Further information, updates and commentary can be found on our website: www.dronewars.net

Chris Cole
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Appeal for Funds

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UK Drone Operations

Background

Although some trace the origins of today's drones back to the use of hot air balloons ladened with explosives the middle of the 19th Century, the origins of the UK's use of drones lie in the development of unmanned, radio-controlled De Havilland Tiger Moths, which were used for target practice by the Royal Navy in the 1930's and 1940's.[4]

It was the US and later, Israel, who first began experimenting with using drones for surveillance and targeting purposes in military operations in the 1960's and 1970's. It was not until the 1980's that the UK issued a contract for a reconnaissance drone to be used in conjunction with its artillery systems . GEC-Marconi 's Phoenix drone won the contract but was plagued with problems.[5] It eventually managed to stagger into service in 1999 and saw limited service in the Kosovo war. A total of 198 Phoenix drones were delivered to the British army, each costing £1.5m each. [6] Phoenix suffered a high attrition rate in active service. Between March and April 2003, a total of 23 were lost in Gulf War where it was nicknamed the 'Bugger-Off' by British troops because they generally never returned from a sortie.[7] Introduced in 1998 and suppose to remain in service until 2013, it was retired from service in 2006.

In July 2005 the UK government announced that it was placing an £800m contract for the development of the Watchkeeper drone to provide surveillance, reconnaissance and targeting for the British Army's artillery regiment.[8] The Watchkeeper drone is based on the Israeli Hermes 450 drone and is being built by U-Tacs limited, a joint venture company owned by Israeli company Elbit Systems and Thales UK. The engines for Watchkeeper are being provided by UAV Engines of Shenstone, a wholly owned subsidiary of Elbit systems.[9]

In October 2008 the British Foreign Office discovered that early testing of the Watchkeeper drones was due to be carried out in the occupied territories. After objections the tests were moved within Israel.[10] It is understood that the first ten Watchkeeper drones were to be built in Israel with the production then switching to a purpose built facility at the Thales factory in Leicester. In April 2010 the first flight tests of Watchkeeper took place at the Parc Aberporth test centre in West Wales.[11]

In June 2007 UK forces began using Israeli Hermes 450 drones in Afghanistan as a stop-gap measure until the Watchkeepers were ready. Under an Urgent Operational Requirement (UOR) the UK has been renting a number of the Israeli drones in an innovative 'pay by the hour' basis through Thales and Elbit systems

RAF pilots began training to operate armed Reaper drones when the UK signed a deal to purchase three Reapers and two mobile ground control stations from General Atomics in October 2006.[12] The UK began using Reaper drones in operations in Afghanistan in October 2007,[13] with the first British Reaper drone strike taking place in June 2008.[14] A British Reaper crashed on operations in Afghanistan on 9 April 2008 reportedly due to mechanical failure.[15]

The RAF currently has five General Atomics MQ-9 Reapers operated by RAF 39 Squadron. Although the Reaper drones themselves are physically in Afghanistan (based at Kandahar Airport) they are controlled from Creech Air Force Base in Nevada, via satellite.[16] The Reaper drone, which can fly for around 18 hours and have a range of around 6000km, normally operates at around 25,000ft but can fly at twice that height. It carries up to four Hellfire missiles and two 500lb laser guided bombs.[17]

The UK Ministry of Defence has repeatedly refused to give details about the circumstances in which Reaper drones launch their weapons, arguing that the rules of engagement for unmanned drones are the same as those for manned aircraft. The rules of engagement however remain classified.

At the end of 2010, the UK Prime Minister David Cameron announced the purchase of a further five Reaper drones and associated ground control stations at a cost of £135m.[18] These additional drones are due to be operational in Afghanistan by 2013.

Developments in 2011

Watchkeeper and Hermes 450

While the Watchkeeper drone was originally suppose to be in service with UK forces in Afghanistan by February 2010, delays pushed back the in-service date until 2011 and then early 2012.[19] By early 2011 over 200 Watchkeeper test flights had taken place in Israel,[20] while test flights of the Watchkeeper continued at Parc Aberporth in West Wales throughout 2011 where by September 230 test flight had taken place.[21]

In January 2011, Amnesty International criticised the fact that British army personnel were in Israel being trained to use the Watchkeeper drone. Amnesty International UK Campaigns Director Tim Hancock told Sky News

"It would seem wholly inappropriate for UK forces to be trained in the use of drones by a country with a track record of applying this technology in grave abuses of people's human rights."[22]

In May 2011 British Army personnel also began training to use Watchkeeper at Boscombe Down in Wiltshire from where the aircraft will be flown in airspace specially allocated for UAV flying around the Salisbury Plain Training Area.[23]

Meanwhile use of the 'stop gap' Hermes 450 drone by British forces in Afghanistan continued with Thales announcing in September 2011 that over 50,000 flight hours had been achieved.[24]

Reaper

In May 2011, the British MoD announced that a second RAF squadron would be formed to 'fly' Reaper drones in addition to the RAF 39 Squadron, based at Creech USAF base in Nevada. The new RAF 13 Squadron will be based at RAF Waddington in Lincolnshire meaning that for the first time Reaper drones would be controlled from the UK.[25] It is thought that the RAF will also continue to control British Reapers from Creech in the US and may maintain a presence there in the long term.[26]

In July 2011 the Ministry of Defence confirmed that a British Reaper strike in March 2011 had mistakenly killed four Afghan civilians and injured two others.[27] The revelation came after a NATO ISAF investigation into the attack. Local reports suggest that children had been among the casualties but this has not been possible to confirm. At the end of July 2011 Armed Force Minister, Nick Harvey visited the RAF Reaper drone pilots in Las Vegas to congratulate them on their work.[28]

In September 2011 RAF Wing Commander Gary Coleman briefed defence industry delegates on Reaper operations at a UAV conference. His presentation,[29] obtained by Drone Wars UK under the Freedom of Information Act revealed that:

- From mid-2012 there will be 44 Reaper crews operating UK Reapers with three Reapers constantly flying 24/7
- Hellfire missiles are three times more likely to be used in British drones strikes than the 500lb Paveway bomb
- If "lower yield weapons" had been available more strikes would have been undertaken
- Reaper "mishaps" [i.e. crashes] happen approximately every 10,000 hours of flying
- There are "Fatigue and Psychological stressors" on personnel operating Reaper

A report on the conference by a journalist from the military press revealed that the stresses on drone pilots included the fact that Reaper crews were away from family and friends for a long times as they were deployed to Creech on three - year postings, as well as the fact that time differences meant that crews were operating Reaper drones on night shifts.[30] These factors may well have contributed to decision to control Reapers from the UK in future.

In April the MoD announced that it had reached a significant landmark in its operation of Reaper drones - 20,000 operational flying hours over Afghanistan.[31] In September another milestone was passed – the 200th British drone strike. As always details about the circumstances of the strike remain secret.

Comment

While there is a growing amount of information about the use of armed drones in Pakistan due to local media reports and information 'leaks' by intelligence personnel in the US, there is very little information about the way in which UK drones are being used and the circumstances of UK drone strikes in Afghanistan.

The UK MoD says that information about the UK drone strikes must remain secret as "there is a risk that it could be used by enemy forces to adapt their tactics to reduce the operational effectiveness of Reaper. This would increase the security threat to our own forces and those of our allies."[32] However the RAF seems to have no security fears when it releases selected information about UK drones strikes via its weekly RAF operational reports.[33]

Given there have now been over two hundred drone strikes by UK forces in Afghanistan, we believe that information and analysis of these strikes could safely be released without putting UK forces at risk.

Future UK Armed Drones

Background

The UK has two separate ongoing programmes to develop new armed drones. In December 2006, the Ministry of Defence signed a £127m contract with BAE Systems and others to design and build an experimental armed combat drone.[34] The product of this research and development is the one-off Taranis drone which was unveiled at BAE's Warton site in July 2010.[35] The government says that Taranis programme will

> *"address a range of technology issues including low observable signature technology integration, vehicle management (including autonomous operation), sensor and payload integration, air vehicle performance, command and control and communications integration. It should also help to provide an initial step-up to help UK industry develop a competitive edge in a potentially lucrative civil and military UAV market."*[36]

Separately from the Taranis programme, the UK and BAE Systems have been jointly funding the development of the Mantis drone since 2007. Mantis is an armed medium altitude, long endurance drone (MALE) similar to the Reaper. Unlike Reaper, however Mantis is not remotely controlled but flies autonomously following a pre-programmed flight plan. Mantis reached the end of its first stage of development when it flew for the first time at the Woomera range in Australia in October 2009.[37] There was concern amongst supporters of the programme that development would stall as many programmes were being put on hold in 2010 in the run-up to the Strategic Defence Review. However funding was found to "maintain momentum" on the programme.[38]

Officially, the programme to procure a new armed drone to follow on from the Reaper drone is known as the Scavenger programme, which is itself part of a wider military intelligence and surveillance programme called Solomon.[39] The Strategic Defence and Security Review (SDSR) re-affirmed investment in UAVs and in June 2010 it was revealed that the UK and France were undertaking a study into the possibility of working together to jointly develop a new armed drone.[40]

In November 2010 a significant step forward in the proposal to have a joint UK-France drone came when David Cameron and French President Nicolas Sarkozy jointly signed 'The Declaration on Defence and Security Co-operation', committing the two countries to work together on a number of military projects.[41] The treaty, dubbed by the tabloids as 'the entente frugale', contains two paragraphs on drones:

"Unmanned Air Systems have become essential to our armed forces. We have agreed to work together on the next generation of Medium Altitude Long Endurance Unmanned Air Surveillance Systems. Co-operation will enable the potential sharing of development, support and training costs, and ensure that our forces can work together. We will launch a jointly funded, competitive assessment phase in 2011, with a view to new equipment delivery between 2015 and 2020.

In the longer term, we will jointly assess requirements and options for the next generation of Unmanned Combat Air Systems from 2030 onwards. Building on work already started under the direction of the UK-France High Level Working Group, we will develop over the next two years a joint technological and industrial roadmap. This could lead to a decision in 2012 to launch a joint Technology and Operational Demonstration programme from 2013 to 2018."

Within hours of the signing of treaty, BAE Systems and Dassault Aviation had submitted a joint letter to the two leaders offering to work together to develop the new drone. BAE Systems told the *Financial Times* "Not only is this an important milestone in terms of the development of our unmanned aircraft capability, but it represents a significant investment in the future of our UK and French military aerospace capability."[42]

Developments in 2011

In February 2011 BAE Systems and French company Dassault Aviation signed a Memorandum of Understanding (MoU) to jointly propose to the UK and French Ministries of Defence "the design, development, production and support of a Medium Altitude Long Endurance (MALE) Unmanned Aircraft System (UAS)."[43] Although the joint proposal seems to be very much based on the Mantis drone, in early June, BAE and Dassault revealed that the proposed joint drone would be called Telemos.[44] There was some speculation - not least by BAE Systems – that the go-ahead to produce the drone would be announced at the Paris Air Show in June 2011.[45] It came as something of a surprise when Instead it was announced that a decision would not be made for another 12-18 months.[46]

The tie up between BAE Systems and Dassault and the seemingly inevitability that they would win any contract to develop a new UK-French drone infuriated the other European arms giant, EADS, who have developed their own armed drone called Talarion.[47] It seems that the US drone manufacturers, General Atomics, who make the Predator and Reaper drones, and Northrop Grumman, who make the Global Hawk, also wanted to bid for the contract.[48] Indeed US manufacturers

were given specific assurance that they would be able to bid for any UAV contracts after they complained to the MoD in 2010 that they were being excluded.[49] Interestingly General Atomics announced in March 2011 that they had opened an office in central London.[50] It is likely that this pressure from other drone manufactures to open up the competition, alongside budgetary pressures, has led to the delay in awarding the new drone contract.

While details of the exact requirement for the new drone have not been made known, some indication about the UK MoD's thinking on the numbers required and budget for the new drone were revealed in March:

> *"The aspiration is for a system to support 6 deployable task lines, which implies around 20 aircraft available for operational tasking and to support training. To cover an operational life of 15 years, it is likely that somewhere in the region of 30 airframes would be required... The whole life programme cost is expected to be around £2 billion."*[51]

Little is known about the ongoing development of the Taranis drone during the year. Taranis was expected to have its first flight in 2011 but if this has happened, it has not been publicised.

In March 2011 the UK Ministry of Defence published *The UK Approach to Unmanned Aircraft Systems,* a Joint Doctrine Note (JDN) that examines technological and scientific issues related to current and future use of armed and unarmed drones. It also set out, for the first time, what the MoD sees as the legal, moral and ethical issues that arise from using such systems.[52]

Arguing that unmanned aircraft now hold a central role in modern warfare, it states "there is a real possibility that, after many false starts and broken promises, a technological tipping point is approaching that may well deliver a genuine revolution in military affairs."[53]

While perhaps unsurprisingly the document sees no legal, moral or ethical issues in relation to current UK use of drones, it does raise questions about the growing autonomy of drones (discussed in section six below) and the future in general:

> *"One of the contributory factors in controlling and limiting aggressive policy is the risk to one's own forces. It is essential that, before unmanned systems become ubiquitous (if it is not already too late) that we consider this issue and ensure that, by removing some of the horror, or at least keeping it at a distance, that we do not risk losing our controlling humanity and make war more likely."*[54]

However, the document also argues that this negative must be "tempered" by the fact that "the use of unmanned aircraft prevents the potential loss of aircrew lives and is thus in itself morally justified."[55]

Comment

It is quite clear that senior British politicians and military commanders are committed to building new armed drones and are devoting scarce financial resources to their development. What is not clear is that there is public support for such a move.

The MoD document on unmanned aircraft systems released in March 2011[56] discusses some of the "moral, legal, and ethical issues" involved in the development of UK drones and argues that "what is needed is a clear understanding of the issues involved so that informed decisions can be made."[57] We would, of course support this point but would argue that in a democratic society it should not be for political and military leaders alone to make these important decisions. There needs to be genuine public debate about this matter, but such a debate cannot happen without information and understanding of the issues.

What is extremely worrying is that a whole new type of weapons system, which has the potential to change the way in which armed conflicts are fought, is being developed behind the scene with almost no public discussion or oversight.

US Drone Operations

Background

The United States is the leading user of armed drones and operates two separate 'fleets' – one controlled by US military forces and one by the Central Intelligence Agency (CIA).[58] The US first used unarmed versions of the General Atomics Predator drone in the Balkans war in 1995 and during the 1999 NATO bombing of Yugoslavia.[59]

Armed versions of the Predator were later developed with the first armed strike by a US Predator drone taking place in Afghanistan in November 2001.[60] The Reaper, a larger version of the Predator and able to carry more weaponry was introduced into service in 2007.[61] As of August 2011 the USAF has 268 Predator drones and 79 (of a planned 400) Reaper drones in service.[62] It is not known how many Predator drones are operated by the CIA.

While the Predator and Reaper drones themselves are physically located in or near the conflict area, they are flown remotely via satellite communication, from bases in the United States primarily Creech Air Force Base (AFB) in Nevada. A two-person crew controls the drone, operates the sensors, camera and weaponry, and is in touch with the "customers", that is ground troops and commanders in the war zone.[63] Intelligence analysts also monitor the live video feed and other information being beamed back from the drone.

Pakistan

Since 2004 the CIA have been undertaking covert drone strikes in Pakistan against so-called high value targets as well as groups of alleged militants. The number of strikes has increased dramatically in recent years. In the four years from 2004 to 2007 there were a total of 9 Predator drone strikes in Pakistan. In 2010 alone there were 118 strikes.[64]

While the US has never officially confirmed that they are undertaking the strikes, unnamed official sources regularly confirm the strikes to media organisations. The US argues that it has the approval of Pakistan's government to undertake the strikes but this is denied by Pakistan officials. However a US diplomatic cable released by Wikileaks quotes Pakistani Prime Minister Yousuf Gilani in relation to the drone strikes as saying "I don't care if they do it as long as they get the right people. We'll protest in the National Assembly and then ignore it."[65]

The number of civilian casualties attributed to the drone strikes has been fiercely contested with estimates of the numbers of people killed in drone strikes being civilians ranging from 90% and 10%.[66]

The strikes are hugely unpopular in Pakistan and there are regular protests and demonstrations against them. NATO supply routes to US forces in Afghanistan which traverse Pakistan have been blocked and convoys burned and destroyed. A number of suicide bombings carried out in Pakistan have reported to have been in response to the drone attacks.[67] Two attempted terrorist attacks in the US were also reported to have been in response to CIA drone shrikes in Pakistan.[68]

Yemen and Somalia

In August 2010, The Washington Post and the Wall Street Journal both reported that the CIA was redeploying some Predator drones from Pakistan to Yemen, Djibouti, Kenya and Ethiopia in order to "step up targeting of al Qaeda's Yemen affiliate, al Qaeda in the Arabian Peninsula, known as AQAP, and Somalia's al Shabaab."[69] Clearly opposing the idea, Yemen's ambassador to the United Nations, Abdullah al-Saidi, said CIA drones would be a "nonstarter," adding, "to even posit this theory about U.S. drones only builds support for radicalization."[70]

Yemen had previously seen US drone strikes. In May 2010 a drone strike killed a Yemeni mediator seeking to persuade al Qaeda members to surrender,[71] while a cable released by Wikileaks confirmed that it was a US drone strike that killed 41 people in December 2009, rather than a strike by Yemeni forces as was claimed at the time.[72] The cable quoted Yemeni President Ali Abdullah Saleh saying to US General David Petraeus: "We'll continue saying the bombs are ours, not yours."[73]

In August 2010 Amnesty International published a report on the human rights situation in Yemen criticizing both the Yemeni government and the US:

> *"The USA appears to have carried out or collaborated in unlawful killings in Yemen and has closely cooperated with Yemeni security forces in situations that have failed to give due regard for human rights."*
> *Amnesty urges Washington "to investigate the serious allegations of the use of drones by U.S. forces for targeted killings of individuals in Yemen and clarify the chain of command and rules governing the use of such drones".*[74]

Joint US/Yemeni citizen Anwar al-Awlaki, alleged to be a leader of AQAP and resident in Yemen was placed on a list of suspected terrorist to be target by US drone strikes.[75] Al-Awlaki's father and the US civil rights group ACLU attempted to have him removed from the list through the courts but failed.[76]

Developments in 2011

Pakistan

In January, CIA operative Raymond Davis was arrested in Karachi after shooting dead two men in disputed circumstances. A third man died after being run over by a car believed to be driven by CIA employees attempted to 'rescue' Mr Davies before he was taken into custody.[77] While Davis was held on murder charges, drone strikes were paused as part of the effort to get him released. After the payment of compensation to the families of the victims, Davis was released in March 2011.[78]

Within 24 hours of Davis' release a drone strike on a tribal gathering in Miranshah, North Waziristan killed at least forty people.[79] The gathering (Jirga) had been called to discuss the ownership of mineral rights, and a number of children attending with their families and several members of a pro-government militia were among the dead.[80] The deaths caused outrage in Pakistan with even Pakistan's army chief, General Ashfaq Parvez Kayaniv, publicly condemning the attack.[81]

Continuing drone strikes, and the US Special Forces raid to kill Osama bin Laden in late May, led to a further serious deterioration in diplomatic relations between the US and Pakistan. In June the *Wall Street Journal* alleged that "fissures" had opened within the Obama administration over the drone strikes. However the article admitted that while "a slowdown in drone strikes was debated" it was decided to continue the programme.[82]

Pakistani opposition leader and former cricketer Imran Khan, led huge two-day protests against the drone strikes in Peshawar and Karachi.[83] The British section of Khan's Movement for Justice party (PTI) organised demonstrations outside the US Embassy in London and at the House of Commons when President Obama addressed British MPs during his visit to the UK.[84]

In June John Brennan, President Obama's senior counter-terrorism advisor alleged that for the past year there had not been a single collateral death in Pakistan caused by "the US's counter operations" as he discreetly put it "because of the exceptional proficiency, precision of the capabilities that we've been able to develop."[85] The claims were ridiculed by many, not least an editorial in the New York Times.[86]

In August 2011 the British based Bureau of Investigative Journalist (TBIJ) released a detailed report examining civilian casualties caused by US drone strikes in Pakistan.[87] They found that 175 children were among at least 2,347 people reported killed in US attacks in Pakistan since 2004 with credible reports of at

least 392 civilians among the dead. In October TBIJ reported that according to their analysis the number of US drone strikes in Pakistan since 2004 had reached 300. Of those 300 strikes, 248 had taken place since the Barack Obama had been president and were occurring on average once every four days. [88]

In October , British human rights organisation Reprieve organised a meeting with tribal leaders in Islamabad on the issue of drone strikes, encouraging them to document strikes in their local area. Three days after the meeting, one of those attending , Tariq Khan, a 16 year old boy from North Waziristan, was killed along with his 12 year old cousin, Waheed Khan, in a drone strike.[89]

During the year there were conflicting reports about whether Pakistan had asked the US to leave the Shamsi Air Base in Balochistan Province, where it was alleged that the CIA drones that undertook the strikes were based.[90] It later emerged that that the base was actually owned by the UAE Royal Family and apparently leased by them to the CIA, although reports continue to be confused.[91] After Pakistani anger was again sparked following the mistaken killing of Pakistan solders in a NATO airstrike in November, the US has apparently vacated the Shamsi airbase.[92]

Yemen

In February 2011 a Predator drone crashed in Yemen's Abyan province. According to reports, as police transported the wreckage to a nearby police station, Al-Qaeda gunmen in cars intercepted the police and hijacked the wreckage.[93]

On 5th May two separate drone strikes attempted to kill Anwar al-Awlaki. Two Saudi brothers were killed in the strike but Al-Awlaki escaped.[94]

In June anonymous US officials briefed the New York Times that US drone strikes in Yemen would intensify as it was feared that it would be much harder to undertake the strikes if the Saleh regime fell due to increasing protests.[95] In September the Washington Post reported that according to senior Obama administration officials unlike strikes in Pakistan, drone strikes in Yemen and Somalia needed direct approval from the White House.[96] The Post article also reported that local Yemeni media was reporting several unconfirmed drones strikes each week.

In September the US revealed that they were constructing new bases for drones in Ethiopia and the Seychelles in order to conduct strikes inside Somalia and Yemen.[97] Drones would also continue to be flown from Djibouti.

On 30th September Anwar Al-Awlaki was killed in a US drone strike on a convoy 90 miles east of the Yemeni capital Sana'a.[98] Three other men also died in the attack including another US citizen, Samir Khan.[99] Two weeks later al-Awlaki's 16 year-old son, Abdul Rahman al-Awlaki was one of nine people killed in a US drone

strike near the town of Azzan in southern Yemen.[100] According to the boy's family Abdul Rahmann was on his way to dinner and was not at all involved in terrorism.

Elsewhere

In June, an unnamed US military official confirmed to the Washington Post that that the Joint Special Operations Command (JSOC) had carried out a a drone strike in Somalia, aimed at two senior members of al-Shabab.[101] Although Predator drones have previously been used for surveillance in Somalia, this was seemingly the first time that an armed drone had been used in the country. In September Reuters reported that a US drone had crashed near Somalia's southern port city of Kismayu.[102] From September 2011 there were numerous reports by the Tehran-based *Press TV* service of US drone strikes in Somalia resulting in hundreds of civilian casualties, however none were confirmed or reported by other news networks.[103] In December an investigation by the *Bureau of Investigative Journalism* found that the Press TV reports were fabricated.[104]

In April Defense Secretary Robert Gates announced that armed Predator drones had been approved for use in Libya.[105] Although the military refused to say from where the drones were flying, it was believed they based in Italy. In May, the US also dispatched "several" unarmed Predator drones to NATO war effort in Libya. A few months later NATO commanders requested more as, according to a senior NATO official, it was "getting more difficult to find stuff to blow up." [106] The US granted the request and sent two further unarmed Predators.[107] In October, at the end of 'hostilities' the Pentagon stated that their drones had launched total of 145 armed strikes in Libya.[108]

In November 2011 the USAF confirmed that it had moved four Predator drones from Iraq to the Incirlik Air Base in Turkey.[109] According to reports Turkey sought the deployment as a measure to be used against the Kurdish PKK.

Little information about the US (or for that matter, the UK's) use of armed drones in Afghanistan is available. However two US military investigation into tragic deaths in Afghanistan give some insight. In April 2011, the Los Angeles Times, reported that a US military investigation into the deaths of multiple Afghan civilians in a US attack on a convoy of trucks in February 2010 found that evidence that the convoy was not a hostile force was "ignored or downplayed by the Predator crew."[110]

In October 2011, the *LA Times* reported on a separate US military investigation into the deaths of two US servicemen, Jeremy Smith, 26, and Ben Rast, 23, mistakenly killed in a US drone strike in April 2011. While the 390-page Pentagon report has yet to be released, the *LA Times* states that the report blames "poor communications, faulty assumptions and a lack of overall common situational awareness."[111] The *LA Times* interviewed Jerry Smith, father of one of the victims after he had been briefed by US military officers and shown video images of the

attack taken by the Predator drone. He saw "three blobs in really dark shadows" — his son, Rast and the other Marine mistakenly identified by the Predator crew as Taliban. He said it was impossible to see uniforms or weapons. "You couldn't even tell they were human beings — just blobs," he said. An indication that the hi-resolution images that drones are supposed to provide may not be all they are supposed to be

In December 2011, Iran put on display a US RQ-170 Sentinel drone that it claimed it had brought down via electronic hijacking.[112] While the US initially denied knowledge of the drone and then claimed it had been lost over Afghanistan, the CIA eventually admitted, through the usual unnamed sources, that it had been operating over Iran.[113]

Comment

Over the past decade the US has developed its use of armed and unarmed drones around the globe. In 2011 it continued to invest heavily in their development, opened new drone facilities in Africa, extended their use to new conflicts and admitted to secretly operating drones over Iran.

While the US is currently at the forefront of using unmanned technology, both for surveillance and armed attack, it appears to feel that it can use drones whenever and wherever it likes. Although there have been some attempts through the courts, there is currently little sign that the US can be held accountable for its increasing use of drones. [114] However this must come. The US cannot continue to use drones at will in violation of international law and global public opinion.

Inevitably too, other nations will look to the example being set by the US and begin to use drones for cross border surveillance and to assassinate people they simply designate as terrorists.

Both within the US and globally, civil society must work to hold the US accountable for its actions.

Legal Issues – Target Killing

Background

There are a number of legal issues associated with the use of armed drones, not least whether they are in a category "so cruel as to be beyond human tolerance" in a similar way to cluster bombs and anti-personnel landmines.[115] However the space available here means that we will concentrate on the single issue of targeted killing.

The use of armed drones for the assassination of individual so-called 'high value targets' is a highly controversial legal issue.[116] The Laws of Armed Conflict, known formally as International humanitarian law (IHL) are made up of a number of internationally agreed treaties such as the Universal Declaration of Human Rights; the Charter of the United Nations; the Geneva Conventions, the Genocide Convention and what are called the 'customs of war', codified as the Nuremberg principles. Under IHL there are only two types of war – an international armed conflict which takes place between two or more states, and an internal conflict (sometimes called civil war) which takes place within a single state or territory.[117]

Under these terms many would argue that the attacks of 11 September 2011 and the global campaign against al-Qaeda should be viewed as a law enforcement issue, not as a matter of war.[118] However, the US insists that it is engaged in a non-international armed conflict. As senior US legal advisor Harold Koh put it

> *"As a matter of international law, the US is in an armed conflict with al-Qaeda, as well as the Taliban and associated forces, in response to the horrific 9/11 attacks, and may use force consistent with its inherent right to self-defense under international law."* [119]

A crucial element of IHL is to distinguish between combatants and civilians. However IHL has never recognized civilians who take up arms in a non-international conflict as combatants.[120] Civilians who are "directly participating in hostilities" may be targeted, but there is much debate about what 'directly participating in hostilities' constitutes and when individuals regain the protection afforded to civilians on ceasing to be directly participating in hostilities.[121]

In 2009 the International Committee of the Red Cross (ICRC) suggested that members of an organised, armed, non-state group should have what they call 'continuous combatant status', thus distinguishing them from civilian status.[122] The then U.N. Special Rapporteur on extra-judicial killing, Philip Alston, spoke out against the suggestion. Legal scholar Noam Lubell argues that the continuous combatant function approach "is, in effect, a form of having the cake and eating

it—the state can attack group members whenever it sees fit just as if they were combatants under the laws of international armed conflict, but is under no obligation to give them prisoner of war status upon capture."[123]

The lack of clarity around who may be targeted and when, combined with the secrecy surrounding drone strikes is extremely troubling. As Christopher Rogers writes:

> *"Residents of areas in which drones operate do not know what kind of conduct or relationships could put them at risk. Offering indirect support to militants such as food or quarter or political or ideological support would not formally qualify under international norms as "direct participation in hostilities." However, it is entirely possible that the US considers many people to be combatants, owing to their relationships to known militants, when they are legally civilians."*[124]

Overall command of NATO operations in Afghanistan – including that of US and UK drone strikes - is from the Combined Air Operations Centre (CAOC) at the al-Udeid airbase in Qatar. Military lawyers based at the CAOC advise on whether individual strikes comply with the laws of armed conflict, the various rules of engagement (i.e. British, US or NATO ISAF) and specific instructions (known as 'spins') set by commanding officers.[125] It is not certain where the CIA's drone strikes are controlled from but it is believed to be from Langley in Virginia.

Over the past two years there have been several legal cases aimed at challenging the CIA's use of drones for targeted killing, most prominently by the American Civil Liberties Union (ACLU) and the Centre for Constitutional Rights (CCR). In addition Mirza Shahzad Akbar, a Pakistan-based lawyer working with UK human rights group, Reprieve, filed a lawsuit against the CIA in Islamabad on behalf of victims of US drones strikes. The CIA station chief, Jonathan Banks, fled Pakistan after he was name in the lawsuit.[126]

2011 Developments

In February 2011, Newsweek interviewed John A. Rizzo, former CIA General Counsel about how he had approved lethal drone strikes against individuals.[127] In the remarkable interview he spoke of how he felt it important that he observe the killing of some of the high-level terrorism suspects via live footage shown in CIA offices. "I was concerned that it be done in the cleanest possible way," he explained. The Newsweek article continues: 'The cables that were "ready for prime time," as Rizzo puts it, concluded with the following words: "Therefore we request approval for targeting for lethal operation." There was a space provided

for the signature of the general counsel, along with the word “concurred.” Rizzo says he saw about one cable each month, and at any given time there were roughly 30 individuals who were targeted. Many of them ended up dead, but not all.” In July 2011 The Guardian reported that British human rights lawyer Clive Stafford Smith of Reprieve was seeking an international arrest warrant for Rizzo in connection with civilian deaths in Pakistan.[128] In November it was reported that Rizzo was being investigated by the US Justice Department for releasing classified information during the interview with Newsweek.[129]

In March, the American Society of International Law, the New America Foundation and others sponsored a major conference at the Arizona State University on the issue of drone warfare and the law. The event brought together international lawyers, journalists, military officers and others to discuss legal issues surrounding the use of drones and emerging military technologies. Videos of the sessions are available via the Drone Wars UK website.[130]

US Attorney General Eric Holder told Channel Four News in May 2011 that the use of drones was "totally consistent" with the law. He said: "Anybody who is the target of any of our military action is always thought to be somebody who is thought to be a threat to the US, so there is a basis to any of the action we take, on the battlefield, in the variety of ways that we do it."[131]

In August 2011 Radhika Coomaraswamy, the United Nations Special Representative for Children and Armed Conflict, called on all international forces to redouble their efforts to avoid killing civilians, particularly women and children in air attacks, including by unmanned drones. *Ms Coomaraswamy said:*

> *“Though we have consistently received reassurance that standard operating procedures exist to minimize civilian casualties in air operations, I still receive reports and allegations of casualties involving women and children.” [132]*

In September, a US federal judge dismissed an ACLU lawsuit that sought information about the use of unmanned drones to kill suspected terrorists. The CIA had earlier refused to admit or deny that it had any relevant records saying that merely confirming the existence of material would reveal classified information. The ACLU argued that it was common knowledge that the CIA undertook such strikes and indeed the CIA Director Leon Panetta had acknowledged the agency's use of drones in various press interviews.[133]

On 30 September, Anwar al-awlaki, an alleged leader of al-Qaeda in Arab Peninsula (AQAP) was killed alongside Samir Khan in a US drone strike in Yemen. Both men held US citizenship and neither was the subject of any criminal proceedings.[134]

Numerous political commentators and legal experts expressed serious disquiet about the killing, particularly as the pair held US citizenship and al-awlaki's father and the ACLU had previously attempted to ensure through the courts that he would not be assassinated. As Ben Wizner of the American Civil Liberties Union (ACLU) put it: "If the Constitution means anything, it surely means that the President does not have unreviewable authority to summarily execute any American whom he concludes is an enemy of the state."[135]

In October 2011, the existence of secret, 50-page memo written by the Justice Department's Office of Legal Counsel in June 2010, which justified the assassination of al-Awlaki was revealed to the New York Times.[136] While the contents of the memo itself remains secret, the New York Times was given (selective) reports of its contents by officials on condition of anonymity. According to the paper the memo "provided the justification for acting despite an executive order banning assassinations, a federal law against murder, protections in the Bill of Rights and various strictures of the international laws of war."[137] The ACLU amongst others is now calling for the memo to be made public.[138]

In October, the UN Special Rapporteur on Extra Judicial Killing, Christof Heyns, again criticised the growing use of drones for targeted killing:

> *"The use of such methods by some states to eliminate opponents in countries around the world raises the question why other states should not engage in the same practices... The danger is one of a global war without borders, in which no one is safe."*[139]

In December 2011, Reprieve wrote to the US Ambassador to Pakistan, Cameron Munter, seeking information about his role in the drone killing of two Pakistani youths. Reprieve say they plan to bring legal action against Mr Munter and others in order to hold them accountable for their actions in relation to drone strikes.[140]

At the same time, lawyers acting for Noor Khan, another victim of US drones strikes, are challenging the UK Foreign Secretary to clarify whether British intelligence has aided US drone strikes in Pakistan.[141]

Other Issues In Brief

Autonomy

While current armed drones are remotely controlled from the ground, the next generation will be much more autonomous. Drones now in development can take off by themselves, fly their pre-programmed mission, return and land, all without the intervention of a human pilot. Some argue that this is merely an extension of the 'auto-pilot' currently in use on most aircraft, while others see the growing autonomy of armed drones as a dangerous step towards autonomous weaponry.

The UK MoD have regularly stated that it "currently has no intention to develop systems that operate without human intervention in the weapon command and control chain" but they are "looking to increase levels of automation where this will make systems more effective." [142]

In the MoD document *The UK Approach to Unmanned Aircraft Systems* released in March 2011, the MoD takes what could be called a 'maxim' approach to the an understanding of autonomy. The document argues that machines or systems can only be called autonomous when they are self aware or their understanding is indistinguishable from humans:

> *"Autonomous systems will, in effect, be self-aware and their response to inputs indistinguishable from, or even superior to, that of a manned aircraft. As such, they must be capable of achieving the same level of situational understanding as a human."* [143]

This would be a substantially different definition of 'autonomy' than is being used by many scientists and companies involved in developing autonomous systems as the document itself recognizes.

There are very serious legal not to mention ethical issues raised by the prospect of unmanned systems deciding themselves whether to launch their weapons. Under international law, a human must be 'in the loop' when it come to launching weapons. The MoD's assurances that they are not *currently*, as they put it developing these systems, while at the same time blurring the distinction between 'autonomous' and 'automated' is unhelpful. This together with the fact that exploration into the "the technological challenge" to achieve such a capability appears to be continuing is extremely worrying.[144]

It would be helpful if the MoD simply, clearly and unambiguously ruled out the idea of humans being 'out of the loop' when it comes to launching weapons.

Israel and Drones

According to Jacques Chemla of Israel Aircraft Industries, Israel is the world's leading exporter of drones with more than 1,000 sold to numerous countries around the globe netting Israel around $350m a year. [145] Israel is keen to keep its lead in the export of drones with the head of Elbit, Joseph Ackerman, quoted as saying he wants to sell drones like a 'Sears and Roebuck' type operation.[146]

Israel's own armed forces uses drones, with its primary combat drones being the Hermes, produced by Israeli company Elbit Systems Ltd, and the Heron produced by Israeli Aerospace Industries. In 2011, the Israel Air Force marked 40 years of its first drone squadron.[147] According to Ed Kinkane "as far back as 1982 Israel used drones against Syria [while] in the early nineties Israeli drones were used in the Kosovo campaign and Israeli drones invaded the skies over Lebanon and patrol occupied West Bank and besieged Gaza".[148] A 2009 Human Rights Watch reports in great details about the use of armed drones by Israel in Gaza.[149]

In 2011, one of the diplomatic cables released by Wikileaks revealed that an Israeli drone strike in Gaza during Operation Cast Lead killed 16 civilians inside a mosque. The cable quoted an Israeli General as telling the then US Ambassador: "A UAV shot at two Hamas fighters in front of the mosque and 16 unintended casualties resulted inside the mosque due to an open door through which shrapnel entered during a time of prayer."[150]

Throughout 2011 Israel continued to use drones in Gaza both for surveillance purposes and for armed strikes.[151]

Civil Use of Drones

While military use of drones has soared over the past decade, the drone industry sees the civilian use of drones as a potentially huge and lucrative market. Within the UK, for safety reasons the Civil Aviation Authority (CAA) does not allow any unmanned aircraft to fly without specific permission and even then, with strict limitations.

Two areas within the UK have been set aside for testing of larger unmanned aircraft: one in West Wales and the other over Salisbury Plain.[152] Elsewhere permission has been given to drone manufacturer's to test drones that weigh under 150kg over Walney Island near Blackpool and West Freugh in Scotland, as well as Cardington in Bedfordshire.[153] Finally information from Freedom of Information requests by Drone Wars UK suggests that around fifty to sixty companies and public institutions have been given "blanket permission" to fly small drones weighing less than 20kg within the UK – although these drones must still remain under 400 feet and within 500 metres of the operator.[154] Although the names of the institutions and companies who have been granted permission to fly the drones has not been revealed the type of work being undertaken includes aerial photography and filming, surveying of buildings and land, emergency services work, and surveillance in support of law enforcement, data collection, evidence gathering and security.[155]

While a number of police forces in the UK have trialed the use of drones, recent reports seem to suggest that under current CAA regulations they have not been too successful .[156] However it is expected that drones will be used in London during the Olympic Games.[157]

The UK ASTRAEA programme aims to "enable the use of Unmanned Aircraft Systems in all classes of airspace without the need for restrictive or specialised conditions of operation".[158] It's an 'industry-led' programme to develop systems and technology to allow drones to fly in civilian airspace in the UK. The programme has a £62m budget and is 50% funded by the tax-payer and 50% by large military companies such as BAE Systems, Cassidian, Cobham, QinetiQ, Rolls-Royce and Thales.

Both within the EU, and specifically within the UK, drone manufacturers are working hard to get the "barriers [that] have hindered the development of the civil market" removed.[159] These 'barriers' as the UK CAA makes clear are mainly to do with safety. Speaking at the ASTRAEA annual conference in September 2011 Grp Capt John Clark from the UK CAA told the delegates "whatever you propose it must be safe….safety is paramount".[160]

The need for accountability and public debate

Many people around the world are extremely troubled by the growing use of unmanned systems to launch attacks at great distances. Traditionally, one of the key restraints on warfare has been the risk to one's own forces and, as the MoD themselves admit in their publication on UAV's, if this restraint is taken away, unmanned systems may make war more likely. The way that unmanned drones have enabled a huge increase in targeted killing is also causing deep disquiet amongst legal experts and scholars. Of particular concern is the way that the CIA is using such unmanned systems to undertake extrajudicial killings in Pakistan, Yemen and Somalia – countries with which the US is not at war.

However, perhaps the greatest concern relates to what is seen as one of the most important capabilities or characteristics of drones – their ability to loiter over an area for hours or even days. Evidence is beginning to emerge that it is the persistent presence of UAVs sitting over remote villages and towns simply looking for 'targets of opportunity' that may be leading to civilian casualties.

Despite growing public concern, the UK is to double the number of armed Reapers in operation by 2013 and is also pressing ahead with plans to develop a 'sovereign' armed UAV in conjunction with France.

An internal briefing on Remotely Piloted Aerial Systems (RPAS), as the British military prefer these systems to be called, stresses the need for the MoD to develop a "communication strategy" to win over public opinion in support of armed drones. As part of such a strategy, MoD Air Staff officer Wing Commander Chris Thirtle, one of the leading RAF staff officer working on the weapon system, urges the MoD to "stress the equivalence of RPAS to traditional combat aircraft."[161]

We are all for greater and better MoD communication in relation to both the wider strategic policy of using drones and their day to day use. What is worrying however is that MoD seem not to have gone into the business of communication, but rather into the business of *persuasion*, more commonly known as 'spin'. Rather than relating impartial information on the use of drones which would enable decision makers and the public to make up their minds carefully, we now have to decide if occasional piece of information provided by the MoD about Reapers is objective, or if it is primarily part of a 'communication strategy' meant to persuade us of the efficacy of using armed drones.

Equally worrying is the fact that when non-classified MoD material about Reaper drones is brought to the public's attention, it is suddenly withdrawn or simply disappears. When Drone Wars UK and the Guardian revealed that the MoD's Joint Doctrine Note, 'The UK Approach to Unmanned Aerial Vehicles' suggested

there were legitimate legal, moral and ethical issues with unmanned systems, the document was withdrawn from the MoD website, only returning to public view months later. More recently, we publicised on the Drone Wars UK website the MoD's 'Current Issues Briefing' on RPAS, it too has disappeared from the MoD website. Should the MoD really be involved in manipulating unclassified information in this way?

There are several 'fronts' in the on-going war over whether it is acceptable to use armed drones:

- Does the geographic and psychological distance between the operator and target make attacks more likely?
- Does using unmanned systems mean attacks happen more often?
- Does the supposed accuracy of drone sensors and cameras mean that commanders are more willing to undertake 'riskier' strikes (in terms of possible civilian casualties) than they would previously have undertaken?

All of these questions, and many more, need to be debated openly and honesty and require careful analysis and clear-headed judgement based on evidence. Unfortunately that evidence is being kept strictly under wraps. While it may be necessary to keep some information secret, we do not believe it is appropriate, or legitimate to refuse to disclose any and all information about the circumstances of the use of Reapers over the past three years. There is, at the very least, the sense that public discussion is being manipulated.

With the use of armed drones only set to increase, we need a serious, public – and fully informed – debate on all these issues and to ensure there is full public accountability for their use.

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