Convenient Killing

Armed Drones and the 'Playstation' Mentality

"Equally discomfiting is the 'PlayStation mentality' that surrounds drone killings. Young military personnel raised on a diet of video games now kill real people remotely using joysticks. Far removed from the human consequences of their actions, how will this generation of fighters value the right to life? How will commanders and policymakers keep themselves immune from the deceptively antiseptic nature of drone killings? Will killing be a more attractive option than capture? Will the standards for intelligence-gathering to justify a killing slip? Will the number of acceptable 'collateral' civilian deaths increase?"

Philip Alston and Hina Shamsi, 'A Killer above the law', The Guardian, 2nd August 2010[1]

Contents

Acknowledgements

Executive Summary

- The military use of unmanned aerial vehicles (UAVs), commonly referred to as drones, has grown rapidly over the past decade. While the majority of drones are used for surveillance and intelligence purposes, increasingly armed forces are using drones controlled via satellite communication to launch missiles and bombs, often at distances of many thousands of miles. Armed drones have been used by the US military in Afghanistan (since 2001), Iraq (since 2002), and Yemen (since 2002), by the CIA in Pakistan (since 2004), by the UK military in Afghanistan (since 2007) and by Israel in Gaza (since 2008). It is estimated that drones are being used or developed by over forty countries.

- Accurate and reliable figures for drone casualties are difficult to obtain, partly because drones are being used in remote areas and partly because of the secrecy surrounding their use. Nevertheless, a conservative estimate from the New America Foundation suggests that one third of the deaths resulting from drone attacks in Pakistan, for example, are civilian, while Pakistan Body Count's assessment is much higher at 50 civilians for every militant killed.

- Perhaps the core concern with regards to the use of armed drones is the "'Playstation' mentality" whereby the geographical and psychological distance between the drone operator and the target lowers the threshold in regard to launching an attack and makes it more likely that weapons will be launched. Operators, rather than seeing human beings, perceive mere blips on a screen. The potential for this to lead to a culture of convenient killing may well be reason to consider banning this new type of lethal technology.

- There is also serious concern about the use of armed drones in connection with targeted killings. Philip Alston, United Nations Special Rapporteur on extrajudicial, summary or arbitrary executions has challenged the US and the UK to explain the legal basis of using drones to target and kill individuals.

- Reports of costly technical failures, including the reality of 'rogue' drones and the vulnerability of network dependent weapons to hacking, suggest that armed drones are not the technologically slick solution they are hailed as by some. Far from resolving conflicts, their indiscriminate nature is fuelling further anger, mistrust and division between human communities and perpetuating cycles of violent conflict.

- The Fellowship of Reconciliation calls on the UK government to address the growing 'accountability vacuum' by making information public about the circumstances of armed drone attacks and the number of casualties incurred. We would urge that there is a serious, informed and open discussion about the use of armed drones by British forces.

Introduction

The purpose of this briefing is to provide information about the military use of armed drones and to encourage wider public debate on the issues that they raise. It is hoped that this will provoke and motivate others to continue research in this area, as well as to support the growing campaign to challenge the use of armed drones.

Information and research on armed drones is only just beginning to emerge in the public domain and there are still many facts that remain unclear. This briefing, compiled using desk research based on publically available sources, is a starting point from which it is hoped more detailed knowledge and understanding will flow.

The focus of this briefing is the military use of armed drones. The development and use of drones touches on a wide range of issues, many of which are outside the scope of this briefing. The emphasis in the briefing on the United States of America (US) and Israel partly reflects the availability of information, as well as the fact that the US is currently the primary user and Israel the primary exporter of armed drones. A key focus is also placed on what is currently known about the development, purchase and use of armed drones by the United Kingdom (UK).

This briefing provides an introduction to the historical development of armed drones, a snapshot of the current picture and an indication of likely trends. It highlights their deeply troubling impact in terms of innocent lives lost and the climate of fear, mistrust and anger that armed drones are breeding in conflict affected areas around the world. It also touches on questions regarding the legal status of armed drones as well as the legality of their use to carry out targeted killings. Information is provided on current drone production and potential proliferation, both globally and in the UK. Finally, this briefing challenges the idea that armed drones present a clean and tidy solution to human conflict, drawing attention to both their technical ineffectiveness and failure to address and transform the real causes of human conflict.

Artist impression of Taranis UAV in flight
(Picture: BAE Systems)

"The only game in town"
CIA Director Leon Panetta [2]

Background

What are drones?

Unmanned Aerial Vehicles (UAVs), or drones, are unmanned aircraft that are either controlled by 'pilots' from the ground or that fly autonomously, following a pre-programmed mission. The 'drone' nickname comes from the constant buzzing noise that some drones make in flight. There are many different types of military drones, but they fall into two main categories: those that are used for reconnaissance, surveillance and intelligence purposes (ISTAR in the military jargon)[3], and those that are also armed and can be used to launch missiles and bombs.

Armed Predator and Reaper drones deployed in Afghanistan by the US and UK are launched from Kandahar airbase and controlled by operators in the Nevada desert some 7,500 miles away. Initially, ground support troops launch the drones. Once they are airborne control is handed over to a crew of three operators, sitting in front of computer screens in specially designed trailers. One person 'flies' the drone, another controls and monitors the cameras and sensors which stream images back to the operator's screens in real time via satellite,[4] while a third person is in contact with the "customers", ground troops and commanders in the war zone. At the touch of a joystick button the operator can fire missiles or drop bombs on targets showing on a computer screen.

Drones: multiple functions

Armed drones appear to be being used in three different ways. Firstly, when ground troops attack, or come under attack, armed drones are called in and use bombs and missiles in a similar way to other military aircraft. Secondly, drones are on constant patrol in the skies of Afghanistan, observing the 'pattern of life' on the ground 24 hours a day – when operators see suspicious activity they can engage with bombs and missiles.[5] Thirdly, they are used in pre-planned missions to conduct targeted killings of suspected militants.[6]

Historical development of armed drones

Drones are not entirely new but were developed in the mid-twentieth century and used mainly by the military for surveillance. Surveillance drones were used extensively by NATO forces in the Balkans conflicts[7] and by the US in the Gulf War[8] in the 1990s. Israel used reconnaissance drones in Lebanon in 1982,[9] and again in 1996[10] to guide piloted fighter bombers to targets. It was during NATO's 1999 Kosovo campaign that according to Wing Commander Andrew Brookes (RAF Ret'd) "they started to think about the utility of strapping a missile to the UAV which led to the [Predator drone] armed with Hellfire missiles". [11]

RAF pilot controlling British Reaper drone from Creech AFB, Nevada
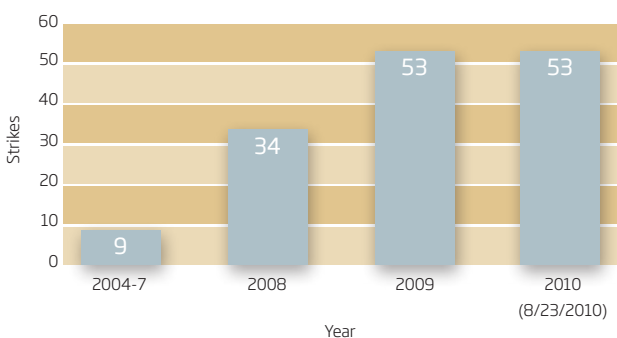(Picture: UK Crown Copyright)

By the time of the terrorist attacks in the US on 11th September 2001 (9/11), firing missiles from drones had only just become possible.[12] The first time a missile was fired from an armed drone in an attack was in Afghanistan, less than a month after 9/11.[13] In 2002 US drones were used to fire a missile at al-Qa'ida suspects in Yemen[14] and at targets in Iraq before the start of the war there.[15] In the last 10 years the production and use of drones has increased exponentially with around 40 countries now developing or using them according to Professor Dave Webb. [16]

Escalation in use since 2001

Precise information about how often armed drones are being used is hard to come by but it has certainly escalated over the last decade. Armed drones have been used by the US in Iraq (since 2002)[17] and Yemen (2002),[18] by the US and UK in Afghanistan (from 2001[19] and 2007[20] respectively), by the US Central Intelligence Agency (CIA) in Pakistan (2004)[21] and by Israel in Gaza (2008-09).[22] In 2010 the use of armed drones by the US in North West Pakistan has become particularly intense. Out of a total of 149 drone strikes by the CIA in Pakistan since 2004, over a third occurred in the first eight months of 2010.[23] Recently, war logs from Afghanistan leaked to *The Guardian* revealed how much Reaper is being used. According to the paper the Reaper drone "is increasingly the coalition's weapon of choice against the Taliban".[24] Although the US is currently in the driving seat with drone use, Britain is in no way uninvolved. According to *The Guardian,* up until July 2010 British Reaper drones have fired weapons 97 times in Afghanistan.[25]

Since 2006, the Pentagon's drones flights increased from about 165,000 hours to more than 550,000 now, with the annual budget allocation growing from $1.7 billion in 2006 to $4.2 billion in 2010. Over the same period, the US military's drone fleet has gone from just under 3,000 to more than 6,500, a number that Department of Defense officials expect to grow significantly over the next five years.[26]

Number of U.S. drone strikes in Pakistan

From Peter Bergen and KatherineTiederman 'The Year of the Drone: An analysis of US Drone Strikes in Pakistan, 2004-2010', *New America Foundation.* [27]

Military appeal: low cost, low risk

The use of drone technology is a 'no brainer' from the military's point of view. Compared with traditionally piloted aircraft, they are cheaper to make and carry an array of sensors and cameras that can watch both day and night. Without a pilot, drones can fly at altitudes of up to 33,000 feet without needing pressurisation and temperature control. The space and equipment saved means that enough fuel can be carried to keep it in the air continuously for up to 40 hours.[28] Unlike a pilot, a drone does not get tired or battle fatigued, and can record on video all that is happening on the ground below, relaying it back to ground personnel in real time. New generation armed drones flying at these altitudes cannot be seen and are silent, so the attack is completely unexpected. The drone operators themselves are in no danger, they simply shoot at blips on a screen, then clock off for lunch as someone else takes over the controls. Israeli military spokesperson Captain Gil said "The drone computer has no family to be upset if it's killed, so everything's fine."[29] The idea that drones offer a low cost, low risk solution to conflict is a seductive one in military circles.

The future: bigger, better, faster, more...and autonomous

Armed drones come in many shapes and sizes and with ever increasing sophistication. US Air Force's 'UAV System Flight Plan for 2008-47' envisages larger drones replacing bombers (even nuclear bombers) and fighter planes in the future.[30] The drive towards increasing reliance on drone technology was vividly summed up by 147th Reconnaissance's Wing Commander, Colonel Ken Wisian in 2010 "The demand for this kind of capacity is insatiable".[31]

Already envisaged, the next stage sees fully autonomous drones, able to take off, fly, and select and dispatch 'targets' without the need for human involvement, the so called man-in-the-loop. One such example is British BAE System's drone Taranis, named after the Celtic god of thunder. Taranis was unveiled in July, "Against a backdrop of strobe lighting, dry ice and to pounding music" according to *Flightglobal.*[32] *The Daily Mail* described it as looking like a space ship out of Star Wars.[33] Taranis will be virtually undetectable by radar, fast, able to carry and use a number of weapons systems and able to defend itself against manned and unmanned enemy aircraft. Professor Noel Sharkey of Sheffield University has written extensively on the issue of autonomy and argues that drone autonomy is not far off "It will not be too long before UAVs will decide for themselves which of them is going to strike which target."[34] It seems that a first step will be to move from 'in-the-loop' to 'on-the-loop', where operators monitor many drones rather than just one at a time.[35]

"You could see these little figures scurrying, and the explosion going off, and when the smoke cleared there was just rubble and charred stuff"

Anonymous former CIA officer[36]

The Human Cost

As the use of armed drones escalates, so too does the cost to ordinary people. Reports are increasing that drone strikes result in high levels of civilian deaths, including children. Their unpredictable and seemingly indiscriminate nature is also creating a climate of fear amongst the populations in targeted areas and stimulating a growing sense of grievance.

High civilian deaths

Civilian deaths resulting from drone strikes are very difficult to record with total accuracy. Nevertheless a picture is emerging of high civilian casualties. A conservative estimate of civilian deaths in Pakistan from a US think tank suggests that one third of the deaths from drone attacks are civilian,[37] but Pakistan Body Count assesses this as much higher at 50 civilians for every militant losing life.[38] In Gaza, Human Rights Watch reported that between December 27th 2008 and January 18th 2009 the Israeli military killed "Dozens" of Palestinian civilians in drone strikes.[39] Their report focuses on six Israeli drone strikes which together killed 29 civilians, eight of them children. Of civilian deaths in Afghanistan, Oxford Research Group said all they have is "A chaotic jumble of incomplete, contradictory and contested data."[40]

A climate of fear and grievance

The frequency and unpredictable nature of drone attacks mean that populations in targeted areas live in a constant climate of fear. In August 2009, a Norwegian doctor who had worked in Gaza City's main al-Shifa Hospital during the Israeli operation 'Cast Lead' said "Every night the Palestinians in Gaza relive their worst nightmares when they hear drones; it never stops and you are never sure if it is a surveillance drone or if it will launch a rocket attack. Even the sound of Gaza is frightful, the sound of the Israeli drones in the sky."[41] Dr David Kilcullen, a former Pentagon adviser to Commander General David Petraeus, called on the US House of Representatives' Armed Services Committee to stop drone attacks over Pakistan, as they are "Deeply aggravating to the population and they've given rise to a feeling of anger that coalesces the population around the extremists".[42]

● CASE STUDY North West Pakistan

Families traumatised

In May 2010, Kathy Kelly and Josh Brollier, co-coordinators of Voices for Creative Non-Violence reported accounts of drone strikes in Waziristan in North West Pakistan as told to them by an eyewitness:

The social worker recalled arriving at a home that was hit, in Miranshah, at about 9.00pm (May 2009)... The drone strike had killed three people. Their bodies, carbonized, were fully burned. They could only be identified by their legs and hands. One body was still on fire when he reached there. Then he learned that the charred and mutilated corpses were relatives of his who lived in his village, two men and a boy aged seven or eight. They couldn't pick up the charred parts in one piece. Finding scraps of plastic they transported the body parts away from the site. Three to four others joined in to help cover the bodies in plastic and carry them to the morgue. But these volunteers and nearby onlookers were attacked by another drone strike, 15 minutes after the initial one. Six more people died. One of them was the brother of the man killed in the initial strike.

● CASE STUDY North West Pakistan

Destroyed childhoods

The Khan family never heard it. They had been sleeping an hour when the Hellfire missile pierced their mud hut on an August night in 2008.

Black smoke and dust choked villagers as they dug through the rubble. Four year old Zeerek's legs were severed. His sister Maria, 3, was badly scorched. Both were dead. When their cousin Irfan, 16, saw them, he gently curled them in his arms, squeezed the rumpled bodies to his chest, lightly kissed their faces, and slid into a stupor.[43]

Source: Los Angeles Times, 2 May 2010

Muhammad al-Habbash holds the photos of his daughter Shaza and niece Isra, both killed by an Israeli drone-launched missile on January 4, 2009

● CASE STUDY Gaza City

al-Habbash family house

On January 4, at around 3pm, an Israel Defence Force (IDF) drone launched a missile at six children playing on the roof of the al-Habbash family home in the al-Sha'f area of Gaza City. The missile killed two girl cousins, aged 10 and 12, and injured three other children, two of whom lost their legs:

Human Rights Watch interviewed Muhammad al-Habbash, 16, one of those injured in the attack. "We were playing as we used to do every day, running around. There were drones flying overhead," he said. "We stood near the edge of the roof looking down to the street… I was thrown into the air and ran to the stairway amid the smoke."

Muhammad al-Habbash, the father of one of the dead girls, Shaza, and a science teacher at an UNRWA school, was downstairs when the missile struck. "We keep chickens on the roof and the kids were feeding them and playing," he told Human Rights Watch. "We heard the drone above, but it was always flying around."[44]

"The public has a right to know whether targeted killings being carried out in its name are consistent with international law and with the country's interests and values"

Jonathan Manes, American Civil Liberties Union[45]

Armed drones and international law

While some, including the Fellowship of Reconciliation (FoR), argue that lethal force can never be justified, at present international law permits its use in certain strictly controlled circumstances. Armed drones raise numerous questions in relation to international law, many of which are beyond the scope of this briefing. However, two key issues are the legal status of the weapons themselves and their use to conduct targeted killings.

Are drones uniquely dangerous?

Some, such as retired senior law lord Lord Bingham, have suggested that drones might, like cluster bombs and landmines before them, be banned on the basis that the high civilian casualties associated with their use, make them "So cruel as to be beyond the pale of human tolerance". [46] In his May 2010 report to the UN Human Rights Council, Philip Alston the UN Special Rapporteur on extrajudicial, summary or arbitrary executions notes in regard to their current legal status that "A missile fired from a drone is no different from any other commonly used weapon" and that "The critical legal question is the same for each weapon: whether its use complies with International Humanitarian Law"[47] enshrining the principles of discrimination (between combatants and civilians), proportionality, necessity and precaution in the use of lethal force in armed conflict. However, Alston has also made the point that unique to drones "There is a risk of developing a 'Playstation' mentality to killing" due to the low risk to the forces operating them.[48] As Alston has said "The greater concern with drones is that because they make it easier to kill without risk to a state's forces, policy makers and commanders will be tempted to interpret the legal limitations on who can be killed, and under what circumstances, too expansively."[49] For example, a recent US military enquiry into an attack on a convoy in Afghanistan in February 2010, in which 23 civilians were killed, reported that drone operators "Downplayed" the presence of civilians as they wanted an attack to go ahead.[50] Added to this, the developing potential for drones to fly fully autonomous missions opens up major and as yet unresolved legal questions about who would be held accountable for the lethal impact of autonomous armed drones.[51]

The specific weapons fired from armed drones may not be currently illegal. However, taken as a whole, the drone weapon system – both as it operates now and its future potential for autonomous killing – may well be uniquely dangerous and a candidate for banning.

Targeted killings

Beyond the question of the legal status of the weapon itself, the use of drones to conduct 'targeted killings' has given rise to significant legal concerns. In his report Philip Alston draws attention to the rise over the last decade of either open or implicit targeted killing policies by states such as Israel, the US and Russia,[52] whereby specific individuals are intentionally targeted and killed. As he notes "Such policies have been justified both as a legitimate response to 'terrorist' threats and as a necessary response to the challenges of 'asymmetric warfare'".[53] According to Alston, the legality or otherwise of a particular targeted killing depends on the legal context in which it is conducted, whether in armed conflict, outside armed conflict or in relation to the interstate use of force.[54] In particular, the US targeted killing policy in Pakistan (by the CIA) is causing significant controversy. According to Amnesty International's report, 'As If Hell Fell on Me: The Human Rights Crisis in North West Pakistan', the limited legal rationale offered thus far by the US administration, the so called 'global war on terror' has "No basis in international humanitarian law and human rights law."[55]

Alston issues a salutary reminder that "To the extent that customary law is invoked to justify a particular interpretation of an international norm, the starting point must be the policies and practice of the vast majority of states and not those of a handful which have conveniently sought to create their own personalised normative frameworks."[56] Both Alston's report and Amnesty International's report emphasise the failure of states to make information publically available about their use of armed drones and what, if any, procedural safeguards exist to ensure compliance with the relevant international legal frameworks. This lack of transparency is leading to what Alston has termed an "Accountability vacuum" that is in violation of both international humanitarian law and human rights law.[57]

Production and Proliferation

In comparison to its potential for expansion, the drone industry is still in its infancy. However, there is evidence of a push by many nations to purchase drones or to develop their own indigenous version, often with the assistance of one of the two main producers: Israel and the US. Evidence suggests that "Drones are being used or developed in over 40 countries (including Belarus, Colombia, Sri Lanka and Georgia) for a variety of activities."[58]

In its latest report on the worldwide drone market, market analysis firm Visiongain say "The US dominates the UAV market as it integrates these systems into all its armed services and at different levels [while] Israel is both a leading exporter of UAVs and a key market. Although not as big as the US market, there is robust demand worldwide from countries in Europe, particularly the UK, France and Germany. There are also comprehensive plans for UAV purchases by a number of countries in the Pacific such as China, India, Japan and South Korea".[59] Visiongain goes on to estimate that the cumulative drone market will total nearly $71bn (£46bn) between 2010-2020. According to state-owned Israeli Aircraft Industries "Israel is the world's leading exporter of drones, with more than 1,000 sold to different countries netting Israel around $350m a year."[60]

● TABLE 1 Main drones currently in production[61]

Drone	Company	Armed	Exported to
Desert Hawk	Lockheed Martin (US)	No	UK
Harpy	Israel Aerospace Industries	Yes	China, South Korea, India, Chile, Turkey
Harop	Israel Aerospace Industries	Yes	Turkey, India, Germany
Hermes 450	Elbit Systems Ltd. (Israel)	Yes	Georgia, Mexico, Singapore, US, UK
Heron	Israel Aerospace Industries	No	France, Turkey, Brazil and India
Niti	Armstechno (Bulgaria)	No	Indonesia, Turkey
Predator	General Atomics (US)	Yes	UK, Italy, Turkey
Ranger	RUAG Aerospace (Switzerland)	No	Finland
Reaper	General Atomics (US)	Yes	UK, Italy, Turkey
Searcher	Israel Aerospace Industries	No	Thailand, Turkey, Singapore, Republic of Korea, India
Yarara	Nostromo Defensa (Argentina)	No	US

"Drones and robotic warfare are actually normal now. We've gone from using a handful of these systems to having around 7,000 in the air"

P.W. Singer, drone expert[62]

● **TABLE 2** British drones in service and development

Drone	In service	Armed	Notes
Desert Hawk III (Lockheed Martin)	Yes Operated by Royal Artillery	No	Hand launched, the Desert Hawk III is small enough to be thrown into the air. It then beams back video to a mobile ground station. It is used for short-range intelligence-gathering and surveillance. The UK bought a number between 2006 and 2008 for just over £8m.[63] A total of 23 have been deployed by the UK in Iraq and Afghanistan.
Hermes 450 (Elbit)	Yes Operated by Royal Artillery	No	Since July 2007 the UK has been leasing Israeli Hermes 450 in an innovative 'pay by the hour' contract for use in Afghanistan. By April 2010, the leased drones had flown more than 30,000 hours over Afghanistan. They are due to be replaced by Watchkeeper (see below) in 2011.
Herti (BAE Systems)	No Has reached production stage but is not in production	No	Developed by BAE Systems from an airframe supplied by Slingsby, Herti is a small drone. A pre-production version was trialled in Afghanistan in 2007 but details remain classified. An armed version, Fury, was developed but details remain scarce. It seems to have been superseded by Mantis.
Mantis (BAE Systems)	In development at BAE Systems	Yes	Designed to carry 12 air-to-ground missiles, Mantis had its first test flight in Australia in November 2009. Currently awaiting outcome of UK's 2010 Strategic Defence Review to see if it will receive further MoD funding.
Reaper (General Atomics)	Yes Operated by RAF 39 squadron	Yes	Reaper is armed with 500lb bombs and Hellfire missiles. UK currently has three in operation in Afghanistan but wants to purchase more.
Taranis (BAE Systems)	In development, funded by BAE Systems and MoD	Yes	Taranis was unveiled in July 2012.
Watchkeeper (U-TacS)	In production due to enter service in 2011	No	Watchkeeper is being developed by U-TacS, a jointly owned Israeli/UK company. The UK is purchasing 54 Watchkeepers at a cost of £860m.[64] The first ten will be built in Israel and then production will transfer to a specially built facility in Leicester.[65] Watchkeeper is currently being tested at ParcAberporth, Wales (2010) and due to enter service in 2011.
Zephyr (QinetiQ)	In development	No	Zephyr is a solar-powered surveillance drone which has set the world record for continuous flight (July 2010), flying non-stop for 14 days.

The UK and Drones

The UK currently has three drones in service in Afghanistan and several drones in development (for details see Table 2). The UK began using armed drones in Afghanistan in October 2007[66] after purchasing three Reapers from General Atomics at a cost of £6m each.[67] The Ministry of Defence (MoD) confirmed in June 2008 that a British Reaper had fired its weapons for the first time, but refused to give any details.[68] By the summer of 2010 British drones had launched weapons 97 times.[69] While the British Reapers are physically located in Afghanistan, they are operated via satellite communication from Creech US Air Force (USAF) base just outside Las Vegas in Nevada.[70] The British Reapers are operated by the 90-strong RAF 39 Squadron.

Sovereign drones

While the British government is buying and renting US and Israeli drones, it is very keen to develop its own 'sovereign'[71] drones made by BAE Systems, Britain's largest arms manufacturer. BAE have been developing several drones since 2002.[72] The most likely to reach production stage are Mantis and Taranis.

Mantis began life in mid-2007 as a BAE funded technology demonstrator and was awarded £124m by the MoD in July 2008 for its development. Mantis is an autonomous drone – it is not 'piloted' via a video screen like the Reaper – instead a flight-pattern is pre-programmed into the aircraft that can carry 12 air-to-ground missiles.[73] In early 2010 the first stage of Mantis' development came to an end with the completion of the test flight programme at the Woomera test range in Australia. Asked what Mantis has that other drones do not, Steve Wright from BAE Autonomous Systems said "sovereignty".[74]

Taranis is not quite so far ahead in its development and details of the project remain mostly undisclosed although the drone was unveiled to journalists in July 2010.[75] Taranis, like Mantis, is designed to fly following a pre-programmed mission rather than being flown remotely via satellite. To make the aircraft 'more stealthy', meaning invisible to radar, the drone's bombs and missiles are carried internally.

BAE Systems unveils
Taranis drone, July 2010
(Picture: BAE Systems)

> "If we want to strengthen our friends and weaken our enemies in Pakistan, bombing Pakistani villages with unmanned drones is totally counterproductive"
> Dr. David Kilcullen, former special advisor to US State Department[76]

The myth of effectiveness

Proponents of armed drones argue that their ability to operate in, what are dubbed '4D environments' (Dangerous – tasks which carry a high degree of risk, Deep – tasks which are beyond the range of tactical manned platforms, Dirty – carried out in hazardous environments, and Dull – requiring persistence or repetition over days, weeks or months) makes them an effective tool for increasing global peace and security.[77] In a rare interview on the use of armed drones, CIA Director Leon Panneta, described them as "Very effective" and "The only game in town"[78] while Stanley McChrystal, the then Commander of US and NATO forces in Afghanistan, described drones as "Extraordinarily effective."[79] However, there is good reason to question this myth of effectiveness, both from a technical point of view and from the perspective of effective conflict transformation.

Technical problems – crashes, rogues and hackers

Although drones are hailed as the latest super-weapon there are regular and reliable reports of continued technical difficulties. In July 2010 the *Los Angeles Times* revealed that Pentagon accident reports showed that thirty-eight Predator and Reaper drones have crashed during combat missions in Afghanistan and Iraq and nine more during training on bases in the US, with each crash costing between $3.7m and $5m. Altogether, the US Air Force says there have been 79 drone accidents costing at least $1m each.[80] In addition the British MoD reported that one of its Reaper drones crashed in Afghanistan in 2008 but no further details were given.

A week after the US customs deployed Predator drones over the US-Mexico border in June 2010, flights were temporarily halted after a Predator drone 'went rogue', the term used when the remote control of a drone is lost.[81] Apparently a short loss of communication between drones and their remote pilots is not unusual but when it is for an extended period of time, panic ensues. In September 2009 the US Air Force had to shoot down one of its own drones in Afghanistan when it went rogue with a full payload of weapons and threatened to leave Afghan airspace.[82] Perhaps the most famous 'rogue drone' story concerns a smaller Israeli-made Orbiter drone, being used by Irish peacekeepers in Chad in 2008 which, after a communication loss decided to head home to Ireland, some 5,000 kilometers away.[83] Needless to say it did not make it and crashed.

Finally, systems that depend on network technology are vulnerable to exploitation through, for example, hacking. *The Wall Street Journal* reported that insurgents in Iraq were able to use commercial software to hack into a drone's live video feed, allowing them to see what the military was seeing. [84]

Breeding anger and frustration

In Pakistan the use of armed drones is breeding anger and frustration and leading to a backlash against the Pakistani and US governments in particular and against the West in general.[85] Several recent high-profile terrorist attacks in Pakistan and beyond have been carried out in direct response to the drone attacks, including a number of suicide attacks in public places in Pakistan, a suicide attack on a police academy in Lahore which killed 18 people,[86] a suicide attack on Forward Operating Base Chapman in Afghanistan in which seven CIA officers and contractors were killed[87] and the planting of a bomb in Times Square.[88] US Secretary of State, Hillary Clinton faced several noisy protests against the drone strikes when she visited Pakistan in September 2009.[89] While Pakistan officially protests the strikes, it is widely believed that they allow the CIA to undertake the attacks.

Mahmood Shah, a Pashtun retired brigadier from the Federally Administered Tribal Areas (FATA) in North West Pakistan where many of the drone strikes have been taking place, says that the families of drone victims are required under tribal code to seek revenge, which makes them ideal recruits for militant leaders like Baitullah Mehsud, the Pashtun commander of the Pakistani Taliban. Mehsud, who himself was killed in a US drone strike, liked to boast that each drone attack brought him three or four suicide bombers.[90]

Drone strikes are even worrying some members of the CIA who say that they allow the Taliban to portray Americans as cowards who are afraid to face their enemies and risk death.[91] Far from being a tool to create peace and security drone strikes are fuelling further anger and hatred.

Effective conflict transformation

For decades the discussion on how to achieve peace and security has been dominated by proponents of the 'might is right' model, arguing that national self-interest and the protection and security of others can only be achieved by military means, with ever more deadly weapon systems like armed drones. The stark reality is that real peace and security is not built by using armed drones but by a model of sustainable human security that puts people – and especially the poorest and most vulnerable – at its core.

The corner of the 'Allaw family house where 10-year old Mu'min 'Allaw was killed by an IDF drone-launched missile on January 5, 2009

● CASE STUDY Gaza

The 'Allaw Family

On January 5th, around noon, an Israeli Defence Force drone launched a missile at members of the 'Allaw family who were on the roof of their home… The missile killed a young boy (Mu'min Mahmoud 'Allaw, 10) and injured his brother and sister (Muhammad 'Allaw, 13 and Iman 'Allaw, 8). Their mother Nahla 'Allaw told Human Rights Watch:

We were sitting on the roof. It was cool and there was good weather. After five minutes I told my son I will just sit in the sun and went to the other end of the roof and sat down. Suddenly there was a powerful explosion. The roof was covered in white dust and smoke. I saw Mu'min on the bicycle. His legs were crushed, his chest had tiny holes in it and blood poured from them. I carried him, crying. I ran to the stairway. He was breathing his last breath. I talked to him saying, 'It's alright my dear'. [92]

Source: Human Rights Watch Report - Precisely Wrong: Gaza Civilians Killed by Israeli Drone-Launched Missiles, June 2009.

Conclusion

Although the use of armed drones is still relatively new, there are a number of serious concerns about their use. Firstly, there is a picture emerging of high civilian casualties from drone strikes. While reliable and accurate figures are difficult to obtain, persistent press and NGO reports seem to support this.

In addition, the UN's Special Rapporteur on extrajudicial, summary or arbitrary executions, Philip Alston, has repeatedly asked the US to explain how they justify the use of drones to target and kill individuals under international law. He has said the US government (and by implication the UK government) "Should specify the basis for decisions to kill rather than capture particular individuals... ensure in advance of drone killings that they comply with international law, and... make public the number of civilians collaterally killed as a result of drone attacks, and the measures in place to prevent such casualties".[93] Fellowship of Reconciliation echoes Alston's call for transparency both in regard to the use of drones in targeted killings and the level of civilian casualties arising from their use.

A further serious ethical question is the extent to which armed drones will become autonomous in the future. While politicians and defence officials issue assurances that armed drones will always have a 'man-in-the-loop' to give the go-ahead before an attack,[94] the military industry seem to be researching and exploring the development of drones that have the capacity to launch weapons autonomously.[95]

Finally, the extent to which drone operators can become trigger happy with drone weaponry is a matter of real concern. As US army chaplain and ethics instructor, Keith Shurtleff, has said "As war becomes safer and easier, as soldiers are removed from the horrors of war and see the enemy not as humans but as blips on a screen, there is a very real danger of losing the deterrent that such horrors provide."[96] Drone operators, watching video screens for many hours may well, as Alston puts it, be prone to a "'Playstation' mentality" that lowers the threshold in regard to launching an attack.

The Fellowship of Reconciliation advocates nonviolent conflict transformation and opposes the growing use of armed drones. Drones are the latest in a long line of new 'super' weapons developed and used in the mistaken belief that they will provide a clean and tidy solution to human conflict. Time and again history has proved that this is a myth.

FATA

DIALOGUE

NOT

DEATH

CCP

DIAL

NO

EATH

Arif Ali/AFP/Getty Images

Resources

Further Reading

Philip Alston (2010) '*Targeted Killings: Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions, Philip Alston*' United Nations General Assembly, Human Rights Council, Fourteenth Session, Agenda item 3, 28th May 2010, ref: A/HRC/14/24/Add.6

Peter Bergen and Katherine Tiedermann (2010) 'The Year of the Drone: An analysis of US Drone Strikes in Pakistan, 2004-2010', *New America Foundation,* http://counterterrorism.newamerica.net/drones

Human Rights Watch (2009) '*Precisely Wrong: Gaza Civilians Killed by Israeli Drone-Launched Missiles*' New York: Human Rights Watch.

Peter W Singer (2009) *Wired for War: The Robotics Revolution and Conflict in the 21st Century*, Penguin:USA

Dave Webb, Loring Wirbel and Bill Sulzman (2010) 'From Space, No One Can Watch You Die' *Peace Review: A Journal of Social Justice*, January 2010, Vol. 22, Issue 1, pp31-39

Campaign Groups

International

International Committee for Robotic Arms Control (ICRAC)
www.icrac.co.cc
Concerned about the dangers that military robots pose to peace and international security and to civilians in war.

Pakistan

Pakistan Body Count
www.pakistanbodycount.org
Pakistani body count which includes casualties from drone strikes.

United States

American Civil Liberties Union (ACLU)
www.aclu.org
Legal challenge against US government and their policy of 'targeted killings' anywhere in the world.

Voices for Creative Non-Violence (VCNV)
www.vcnv.org
Kathy Kelly and Josh Brollier toured Pakistan and Afghanistan and report on the effects of drone strikes.

Columbia River Fellowship for Peace (CRFP)
www.colombiariverpeace.org
A coalition of NW American peace groups, working to increase dialogue regarding drones.

UK

Fellowship of Reconciliation
www.for.org.uk
Nonviolence organisation campaigning to challenge armed drones. Publish briefings and facilitate talks and conferences.

Drone Wars UK
www.dronewarsuk.wordpress.com
Blog monitoring news updates on armed drones.

Bro Emlyn for Peace and Justice (BEJP)
www.bejp.org.uk
Campaigns on Peace and Justice issues including drone testing area at ParcAberporth

References

1. Philip Alston and Hina Shamsi, 'A Killer above the law', The Guardian, 02.08.10 http://www.guardian.co.uk/commentisfree/2010/feb/08/afghanistan-drones-defence-killing accessed 01.09.10

2. CNN 'CIA Chief acknowledges, defends Pakistan strikes' CNN Wire, 18.05.09 http://cnnwire.blogs.cnn.com/2009/05/18/cia-chief-acknowledges-defends-pakistan-strikes/ accessed 23.08.10

3. ISTAR stands for Intelligence, Surveillance, Target Acquisition, Reconnaissance

4. Jonathan Amos 'UK Skynet military satellite system extended' BBC News online, 9th March 2010 http://news.bbc.co.uk/1/hi/8556585.stm accessed 2nd August 2010

5. David S. Cloud, 'CIA drones have broader list of targets', Los Angeles Times, 5th May 2010 http://articles.latimes.com/2010/may/05/world/la-fg-drone-targets-20100506 accessed 26.08.10

6. Tom Chivers 'Farnborough Air Show 2010: Watchkeeper Drone can detect footprints from above the clouds' The Telegraph, 21.07.10 http://www.telegraph.co.uk/finance/newsbysector/transport/farnborough-airshow/7902988/Farnborough-Airshow-2010-Watchkeeper-drone-can-detect-footprints-from-above-clouds.html accessed 02.08.10

7. Nick Turse, 'The Forty-Year Drone War' TomDispatch.com 24/01/10 http://www.tomdispatch.com/archive/175195/nick_turse_the_drone_surge accessed 23.08.10

8. Peter W Singer, 'Military Robots and the Laws of War', Brookings, Winter 2009 http://www.brookings.edu/articles/2009/winter_robots_singer.aspx accessed 23.08.10

9. Mark Daly, an expert on unmanned aircraft at Jane's defense publications in London, cited in Goldenberg, Tia 'Israel unveils new drone fleet that can reach Iran' Washington Examiner 22nd February 2010, http://www.washingtonexaminer.com/world/israel-inaugurates-new-fleet-of-large-drones-that-can-fly-as-far-as-iran-84907432.html

10. Robert Fisk 'Massacre film puts Israel in the dock: UN soldier's video reveals reconnaissance plane was over Qana as shelling killed 100 refugees' The Independent, 6th May 1996. http://www.independent.co.uk/news/massacre-film-puts-israel-in-dock-1345897.html accessed 28.07.10

11. Andrew Brookes, 'Grim Reaper: USAF & RAF UCAV operations in SW Asia', a presentation by Wing Commander Andrew Brookes (RAF Ret'd) to the 8th Conference held by DefenceIQ June 22nd to 23rd 2009, Le Meridien, Piccadilly, London UK. Audio recording and power point images: http://ucavconference.com/Event.aspx?id=297324 accessed 10.06.10

12. Chin and Victor Chua Yung Sern 'The New Era – Evolution of Unmanned Aircraft – Part I' Singapore Government's Defence Science & Technology Agency (DSTA) and Military Technology (MILTECH) reprinted in Defence Professionals, 29.09.09. http://www.defpro.com/daily/details/412/

13. Andrew Brookes, see note 11

14. Bobby Ghosh and Mark Thompson, 'The CIA's Silent War in Pakistan' Time Magazine, Monday, June 01, 2009, http://www.time.com/time/magazine/article/0,9171,1900248,00.html

15. Keith Somerville, 'US drones take combat role' BBC News online, 5th November 2002, http://news.bbc.co.uk/1/hi/in_depth/2404425.stm accessed 28th July 2010

16. Dave Webb, Loring Wirbel and Bill Sulzman (2010) 'From Space, No One Can Watch You Die' Peace Review: A Journal of Social Justice, January 2010, Vol. 22, Issue 1, pp31-39

17. Keith Somerville 'US drones take combat role' see note 15

18. The Tech online edition 'US Citizen Among Those Killed In Yemen Predator Missile Strike' The Tech online edition, Volume 22, Issue 54, Friday November 8th 2002, http://tech.mit.edu/V122/N54/long4-54.54w.html

19. Andrew Brookes, see note 11

20. Letter from the Ministry of Defence to Chris Cole, Director, Fellowship of Reconciliation, England in response to a Freedom of Information request dated 8th April 2010.

21. Peter Bergen and KatherineTiederman 'The Year of the Drone: An analysis of US Drone Strikes in Pakistan, 2004-2010', New America Foundation at http://counterterrorism.newamerica.net/drones accessed 23.08.10

22. Human Rights Watch, 'Precisely Wrong : Gaza Civilians Killed by Israeli Drone-launched Missiles', Human Rights Watch, June 2009

23. Peter Bergen and Katherine Tiedemann, see note 21

24. Rob Evans and Richard Norton-Taylor 'Afghanistan war logs: Reaper drones bring remote control death' Guardian online 25.07.10 http://www.guardian.co.uk/world/2010/jul/25/reaper-drone-missions-afghanistan-flights accessed 02.08.10

25. Rob Evans and Richard Norton-Taylor, see note 24

26. Lindsay Wise, 'Fighting a real war in a virtual cockpit: Drones in Houston help troops fight Iraq, Afghanistan wars' Chron: Houston and Texas News, June 27th 2010, http://www.chron.com/disp/story.mpl/metropolitan/7083250.html accessed 28.06.10

27. Peter Bergen and Katherine Tiedemann, see note 21

28. Airforce-technology.com 'Hermes 900 Unmanned Air Vehicle (UAV), Israel' http://www.airforce-technology.com/projects/hermes-900/ accessed 29.07.10.

29. Webcastr, 'Israel's moneymaking fleet of drone aircraft' webcastr.com, July 2nd 2010 http://www.webcastr.com/videos/news/israels-moneymaking-fleet-of-drone-aircraft.html accessed 7th July 2010 and Youtube: http://www.youtube.com/watch?v=-eJtkvmYhyA accessed 07.08.10

30. Dave Webb et al, see note 16 and Nick Turse, see note 7

31. Lindsay Wise, see note 26

32. Craig Hoyle, Farnborough: UK's Taranis UCAV breaks cover' Flightglobal, 19th July 2010 http://www.flightglobal.com/articles/2010/07/19/344439/farnborough-uks-taranis-ucav-breaks-cover.html accessed 02.08.10

33. Daily Mail 'Taranis: The £143million unmanned srealth jet that will hit targets in another continent' Mail online, 13th July 2010 http://www.dailymail.co.uk/sciencetech/article-1294037/Taranis-The-143million-unmanned-stealth-jet-hit-targets-continent.html accessed 02.08.10

34. Quoted by Sue Corbett 'Can you give a drone a conscience' The Times, 17.10.09 http://www.timesonline.co.uk/tol/life_and_style/court_and_social/article6878373.ece accessed 23.08.10

35. Sue Corbett, see note 34

36. Quoted by Jane Mayer, 'The Predator War', The New Yorker, 26 October 2009, http://www.newyorker.com/reporting/2009/10/26/091026fa_fact_mayer

37. Peter Bergen and Katherine Tiedemann, see note 21

38. Pakistan Body Count http://pakistanbodycount.org/drn.php accessed 10.08.2010

39. Human Rights Watch, see note 22

40. Oxford Research Group, Recording Casualties of Armed Conflict Programme http://www.oxfordresearchgroup.org.uk/projects/recording_casualties_armed_conflict

41. Stefan Christoff 'Medical solidarity with Gaza: in conversation with Mads Gilbert' The Electronic Intifada, 19 April 2010, http://electronicintifada.net/v2/article11212.shtml

42. Alex Spillius 'US considers halting drone attacks on Pakistan' The Telegraph online, 5 May 2009, http://www.telegraph.co.uk/news/worldnews/asia/pakistan/5279815/US-considers-halting-drone-attacks-on-Pakistan.html accessed 10.08.2009

43. Alex Rodriguez and David Zucchino 'US drone attacks in Pakistan get mixed response' The Los Angeles Times, May 2nd 2010 http://articles.latimes.com/2010/may/02/world/la-fg-drones-civilians-20100502 accessed 02.08.2010

44. Human Rights Watch, see note 22

45. Stephen Webster, ACLU sues to obtain basic data, legal justification for Predator drone program, The Raw Story, 16 March 2010, http://rawstory.com/2010/03/aclu-forced-sue-obtain-legal-basis-predator-drone-program

46. British Institute of International and Comparative Law, 26.08.09, interview by Joshua Rozenberg with Lord Bingham. Full transcript http://www.biicl.org/files/4422_bingham_int_transcript.pdf accessed 23.08.10

47. Philip Alston, Targeted Killings, Report of the UN Special Rapporteur on extrajudicial, summary or arbitrary executions, United Nations General Assembly, Human Rights Council, Fourteenth Session, Agenda item 3, 28th May 2010, ref:A/HRC/14/24/Add.6, p24 http://www2.ohchr.org/english/bodies/hrcouncil/docs/14session/A.HRC.14.24.Add6.pdf accessed 15.06.2010

48. Philip Alston, p25, see note 47

49. Philip Alston, p25, see note 47

50. Dexter Filkins 'Operators of Drones Are Faulted in Afghan Deaths' New York Times, 29.05.10 http://www.nytimes.com/2010/05/30/world/asia/30drone.html?_r=1 accessed 25.08.10

51. Peter W Singer, Wired for War - The Robotic Revolution and Conflict in the 21st Century, Penguin, 2009

52. Philip Alston, p3, see note 47

53. Philip Alston, p3, see note 47

54. Philip Alston, p3, see note 47

55. Amnesty International, As If Hell Fell on Me: The Human Rights Crisis in North West Pakistan, June 2010

56. Philip Alston, p3, see note 47

57. Philip Alston, p3, see note 47

58. Dave Webb et al, see note 16

59. Visiongain 'The Unmanned Aerial Vehicles (UAV) Market 2010-2020: Technologies for ISR and Counter-Insurgency' Visiongain, 21.06.10 http://www.visiongain.com/Report/486/The-Unmanned-Aerial-Vehicles-%28UAV%29-Market-2010-2020-Technologies-for-ISR-and-Counter-Insurgency accessed 23.08.10

60. Charly Wegman 'Spy in sky rakes in millions for Israel' DAWN.COM, 02.07.10 http://dawnnews.tv/wps/wcm/connect/dawn-content-library/dawn/the-newspaper/international/spy-in-the-sky-rakes-in-millions-for-israel-270 accessed 23.08.10

61. There are many other UAVs in development, nor have we included mini-UAVs.

62. Quoted from Marc Pitzke, 'The Soldiers Call It War Porn', Spiegel Online, 12 March 2010, http://www.spiegel.de/international/world/0,1518,682852,00.html

63. Quentin Davies, Hansard, 26 Jan 2009 : Column 40W http://www.publications.parliament.uk/pa/cm200809/cmhansrd/cm090126/text/90126w0009.htm accessed 23.08.10

64. The Register, 26th November, 2008, 'UK's Watchkeeper drone in first autonomous flight over Israel' http://www.theregister.co.uk/2008/11/26/watchkeeper_autonomous_flight/

65. House of Commons Defence Committee 'The Contribution of Unmanned Aerial Vehicles to ISTAR capability: Government response to the Committee's Thirteenth Report of Session 2007 – 08'; HC1087, 21 October 2008, p7 http://www.publications.parliament.uk/pa/cm200708/cmselect/cmdfence/1087/1087.pdf accessed 23.08.10

66. Craig Hoyle 'UK cheers the Reaper UAV' Flight International 16.06.08 http://www.flightglobal.com/articles/2008/06/16/224622/uk-cheers-the-reaper-uav.html accessed 23.08.10

67. Peter Almond, 'Meet the RAF's newest combat group: pilotless planes flying crack missions in Afghanistan from 8,000 miles away', The Daily Mail, 7 July 2008, http://www.dailymail.co.uk/news/article-1032376/Meet-RAFs-newest-combat-group-pilotlessplanes-flying-crack-missions-Afghanistan-8-000-miles-away.html, accessed 26.08.10

68. RAF Reaper fires weapons for first time, MoD website, Defence News, 6 June 2008 http://webarchive.nationalarchives.gov.uk/tna/+/http://www.mod.uk/DefenceInternet/DefenceNews/EquipmentAndLogistics/RafReaperFiresWeaponsForFirstTime.htm accessed 23.08.10

69. Rob Evans and Richard Norton-Taylor, see note 24

70. Peter Almond, see note 67

71. Speech by Lord Drayson at BAE Systems, Warton, https://ktn.innovateuk.org/c/document_library/get_file?p_l_id=55314&folderId=188248&name=DLFE-2116.pdf accessed 25.08.10

72. Craig Hoyle 'BAE Systems grows into UAVs' Flightglobal, 03.08.09 http://www.flightglobal.com/articles/2009/08/03/330420/bae-systems-grows-into-uavs.html accessed 23.08.10

73. Daily Mail 'RAF show off 'killer' drone aircraft which will help protect major dam in Afghanistan' The Daily Mail 07.09.08 http://www.dailymail.co.uk/news/article-1053180/RAF-killer-drone-aircraft-help-protect-major-dam-Afghanistan.html#ixzz0xdIqrAWV accessed 25.08.10

74. Douglas Barrie 'BAE Systems looks beyond Mantis Spiral 1' Aviation Week 22.02.10 http://www.aviationweek.com/aw/generic/story_channel.jsp?channel=defense&id=news/awst/2010/02/22/AW_02_22_2010_p48-204357.xml&headline=BAE%20Systems%20Looks%20Beyond%20Mantis%20Spiral%201

75. Ministry of Defence 'New Taranis combat aircraft thunders into view' Defence News 12.07.10 http://www.mod.uk/DefenceInternet/DefenceNews/EquipmentAndLogistics/NewTaranisCombatAircraftThundersIntoView.htm accessed 25.08.10

76. Noel Shachtman, 'Call Off Drone War, Influential U.S. Adviser Says', Wired News, 10 February 2009, http://www.wired.com/dangerroom/2009/02/kilcullen-says/#ixzz0xjLROpHJ, accessed, 26.08.10

77. House of Commons Defence Committee 'Contribution of Unmanned Aerial Vehicles to ISTAR capability: Thirteenth Report of Session 2007-08', 5th August 2008, p10 http://www.publications.parliament.uk/pa/cm200708/cmselect/cmdfence/535/535.pdf accessed 23.08.10

78. CNN, see note 2

79. Spiegel Online 'Accident Prone Wonder Weapons: Afghanistan War Logs Reveal Shortcomings of US drones' Spiegel Online 27.07.10 http://www.spiegel.de/international/world/0,1518,708729,00.html accessed 23.08.10

80. Los Angeles Times 'War zone drone crashes add up' LA Times online, 06.07.10 http://www.latimes.com/news/nationworld/world/la-fg-drone-crashes-20100706,0,1508593.story accessed 23.08.10

81. Mike Ludwig 'Government Deploys Drones to Patrol US-Mexico Border' truthout 11.06.10 http://www.truth-out.org/drone-prone60335 accessed 23.08.10

82. Jeremy Hsu 'Air Force Shoots Down Runaway Drone Over Afghanistan' POPSCI 14.09.09 http://www.popsci.com/military-aviation-amp-space/article/2009-09/when-drones-go-wild-air-force-shoots-them-down accessed 23.08.10

83. Strategy Page 'The homesick UAV' Strategy Page 29.12.08 http://www.strategypage.com/htmw/htairfo/20081229.aspx accessed 23.08.10

84. Siobhan Gorman, 'Insurgents Hack U.S. Drones', Wall Street Journal, 17th December, 2009 http://online.wsj.com/article/NA_WSJ_PUB:SB126102247889095011.html, accessed 23.08.10

85. Danger Room 'Washington Finally Feeling Drone War Backlash' Wired 10.05.10 http://www.wired.com/dangerroom/2010/05/washington-finally-feeling-drone-war-backlash/ accessed 25.08.10

86. Peter Bergen and Katherine Tiedemann, see note 21

87. Siobhan Gorman 'Suicide Bombing in Afghanistan Devastates Critical Hub for CIA Activities' Wall Street Journal, 01.01.10 http://online.wsj.com/article/NA_WSJ_PUB:SB126225941186711671.html accessed 23.08.10

88. The Washington Post 10 May 2010, 'U.S. blames Pakistani Taliban for Times Square bomb plot', http://www.washingtonpost.com/wp-dyn/content/article/2010/05/09/AR2010050901143.html accessed 25.08.10

89. The Washington Times 'Pakistanis confront Clinton over Drone Attacks' The Washington Times 30.10.09 http://www.washingtontimes.com/news/2009/oct/30/clinton-rebukes-pakistan-over-al-qaeda-failure/ accessed 25.08.10

90. Bobby Ghosh and Mark Thompson, see note 14

91. The Express Tribune 'CIA Officers against drone strikes' The Express Tribune, 27.04.10 http://tribune.com.pk/story/19725/cia-officers-against-drone-strikes/ accessed 23.08.10

92. Human Rights Watch, see note 22

93. Philip Alston, Mission to the United States of America, Addendum to UN Human Right Council Report, 28th May 2009. http://www2.ohchr.org/english/bodies/hrcouncil/docs/11session/A.HRC.11.2.Add.5.pdf,

94. Defence Managment Journal, 'The future of UAVS', 20th May, 2010, http://www.defencemanagement.com/feature_story.asp?id=14184, accessed 26.08.10

94. Park Marks, 'Warning sounded over British dogfighting drone, New Scientist, 12 July 2010, http://www.newscientist.com/article/dn19162-warning-sounded-over-british-dogfighting-drone.htm

96. Quoted by P.W Singer, see note 8

The Fellowship of Reconciliation is an international, spiritually-based movement of people who, from the basis of a belief in the power of love and truth to create justice and restore community, commit themselves to active nonviolence as a way of life and as a means of personal, social, economic and political transformation.

The Fellowship of Reconciliation, England
19 Paradise Street,
Oxford,
OX2 1LD

Tel: 01865 250781

Email: office@for.org.uk

Web: www.for.org.uk

Registered charity number 207822

£3.00

9 780900 368431 >