BACKGROUND NOTE PSYCHOLOGICAL IMPACT OF DRONES.

Introduction.

The justifications and motivations for the use of armed unmanned aerial vehicles, or drones, are contested. The Ministry of Defence (MoD) in their *Joint Doctrine,* point to their: "desire to deliver new or enhanced capability by embracing new technology while reducing costs and the threat to personnel".[1] A sentiment echoed in the *Strategic Defence and Security Review* (2011), which argued for "a range of unmanned air systems to complement our strategic ISTAR assets and reduce the risk to our forces of operating over hostile territory"[2], and in recent Parliamentary Questions.[3] This narrative values terms such as precision, clinical, accurate and discriminate. These positive assertions are countered by those opposed to the use of this technology. The emphasis here is on the number of civilian casualties, the contribution made to radicalisation and further violence, the proliferation of conflict and the negative impact on international legal frameworks, among other issues.[4] Recently, there has been growing concern at the psychological impact of this technology on both civilian populations and those who operate it. A number of questions have been asked as to the impact of drones use on drone operators.

The psychological impact on drone operators.

There is limited evidence based research on the psychological impact of drones upon those who operate them. The Ministry of Defence made reference to the need to consider this issue within their broader examination of the legal, moral and ethical consequences of drone use in their *Joint Doctrine*, where they questioned, "do we fully understand the psychological effects on remote operators of conducting war at a distance?"[5] This issue was further highlighted in a response to a Parliamentary Question from Mark Pritchard MP on 15 November 2010, where it was stated that the MoD was undertaking a local psychological study of the impact of combat drone use on drone pilots.[6] The response also noted that "Historically, the RAF Medical Services have not detected any instances of acute stress reaction in any pilot responsible for the operation of UAVs".

In the autumn of 2012, a Freedom of Information request was submitted asking for a copy of an RAF study into the psychological health of drone pilots. After substantive delay, a response was received from the Ministry of Defence. This response stated that the study was undertaken in conjunction with another government and that the copyright of the report remained with this other government, prohibiting the MoD from providing the APPG with a copy. A further request has thus been submitted to the MoD to ask them to apply for permission from this unnamed government.

In December 2012, the Minister for Defence Personnel, Welfare & Veterans stated that:

> Regarding psychological considerations, experience of operating the Reaper Remotely piloted Aircraft System (RPAS) suggests that far from being detached from the reality of the situation, Reaper aircrew are just as, if not more,

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1 Ministry of Defence, Joint Doctrine Note, 2/11: The UK Approach to unmanned aircraft systems, (JDN 2/11), dated 30 March 2011, p. 1-2.

2 Cabinet Office, Strategic Defence and Security Review (2011), p. 26.

3 Hansard, 29 January 2013, Column 739W.

4 See, for example, research by Drone Wars UK; Bureau of Investigative Journalism; Reprieve and others.

5 Ministry of Defence, *Joint Doctrine Note 2/11 The UK approach to unmanned aircraft systems* (March 2011), p. 5-8.

6 Hansard, 15 November 2010: Column 564W.

> connected to the situation on the ground as compared to operators of other aircraft types. ...[7]

Though there was no comment on the impact or consequences of this experience on drone operators within this answer. However, in response to a further question by David Anderson MP, it was noted that,

> The RAF Reaper Remotely Piloted Air Systems (RPAS) force, alongside other frontline forces, has robust Trauma Risk Management strategies in place to ensure this is continually monitored. The RAF Medical Services have not detected any adverse psychological and physical trends for RAF pilots of RPAS.[8]

Some research has been undertaken in the United States by the USAF School of Aerospace Medicine. However, all of this research is focused on those operating drones for the US military rather than the CIA, which is the organisation currently undertaking drone strikes in Pakistan, Yemen and Somalia. A 2011 study entitled *Psychological Health Screening of Remotely Piloted Aircraft (RPA) Operators and Supporting Units* examined significant numbers of Predator/Reaper operators, Global Hawk operators and non-combatant airmen supporting drone operations for 'burnout'.

> The results of the study revealed the main sources of occupational stress were operational (i.e., long hours, low manning, shift work, human-machine interface difficulties, geographical location of work, concerns regarding career profession and incentives). Compared to noncombatants, Predator/Reaper operators had a higher incidence of emotional exhaustion while levels of cynicism (negative work attitude) and professional efficacy were lower. … The results of this study suggest there is a high incidence of emotional exhaustion/fatigue among RPA operators as a group in comparison to noncombatant airmen. Efforts to reduce occupational burnout should focus on operational stressors and be equally devoted to weapon and nonweapon-deploying RPA operators.[9]

A second study which surveyed 426 officer and enlisted operators (pilots and sensor operators), between 2010 and 2011 found that:

> Although a wide range of stressors may contribute to elevated levels of burnout, the majority of occupational stress was reported to stem from operational stress and not exposure to combat (e.g., live video feed regarding the destruction or death of enemy combatants and ground forces). In general, the results revealed that active duty operators are more than twice as likely to suffer from the facets of occupational burnout involving emotional exhaustion and cynicism. Active duty as well as National Guard/Reserve operators attributed shift work, shift changes, hours worked, and simultaneously serving as a warfighter in theater while returning home and managing domestic roles and responsibilities at home to their burnout levels. Aeromedical recommendations include reducing operational hours, reducing frequency of shift changes, reducing the length of assignments, providing clear guidance and opportunities for competitive career

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7 Hansard, 6 December 2012: Column 901W.

8 Hansard, 25 February 2013: Column 38W.

9 Wayne Chappelle, Psy.D., ABPP; Amber Salinas, M.A.; Kent McDonald, LtCol, USAF, MC, FS : USAF School of Aerospace Medicine, Psychological Health Screening of Remotely Piloted Aircraft (RPA) Operators and Supporting Units, *Psychological Health Screening of Remotely Piloted Aircraft (RPA) Operators and Supporting Units,* (2011), p. 19-11

> progression, improving human-machine interfacing within the ground control station, marital and family enrichment opportunities, as well as periodic psychological health assessments to mitigate the risk of burnout among RPA operators.[10]

This research indicates a relatively negligible impact on those involved in their use. In other words, it is the conditions of employment, rather than impact of using drones per se which seem to be problematic.

However, this view is challenged, on an anecdotal level, by an article in December 2012 in *Der Speigal* magazine which interviewed a US drone pilot who had subsequently developed PTSD as a result of his experiences.[11] Most recently, media coverage of a forthcoming study from the US Department of Defence, indicates that rates of conditions such as anxiety disorder, depressive disorder, post-traumatic stress disorder, substance abuse and suicidal ideation were the same as for pilots of manned aircraft, deployed in Iraq or Afghanistan.[12] This report will be published at the end of March 2013. However, there are more subtle aspects to drone use which resonates with questions such as what it means to participate in conflict, how the armed forces construct their identity and their role in society, both nationally and internationally. As noted in the RAF Directorate of Defence Studies' examination of Unmanned Aerial Vehicles:

> To be humanistic, war and warriors must respect the enemy; not necessarily their ideas or methods, but their humanity. Yet respect requires personal engagement at some level…. This raises the question of whether unmanned vehicles, whose operators can only experience war through a datalink, are in any meaningful sense involved in a "dialogue" with their adversary. Does the UAVs inherent lack of personal engagement encourage a lack of respect for one's enemy and through that, a dangerous degree of detachment?[13]

A Medact report, published in 2012, on the physical and psychological implications of drones, further acknowledged this idea:

> All the aspects of battle, which normally enhance self-esteem and engender the esteem of others, are absent and there is the potential for this work to erode the self-image of the drone operator as well as the image of the war hero in the public mind."[14]

In this respect, the rise of the concept of drone pilots as suffering a 'playstation mentality'[15] assisted by a US recruitment campaign for drone pilots which uses a

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10 Joseph A. Ouma, Lt Col, USAF, MC, FS ; Wayne L. Chappelle, Psy.D., ABPP ; Amber Salinas, M.A.*; Facets of occupational burnout among US Air Force Active Duty and National Guard/Reserve MQ-1 Predator and MQ-9 Reaper operators*, (2011), p.14.

11 Nicola Abe, Dreams in Infrared: The Woes of an American Drone Operator, Der Speigel, 14 December 2012, http://www.spiegel.de/international/world/pain-continues-after-war-for-american-drone-pilot-a-872726-3.html

12 James Dao, *Drone Pilots are Found to Get Stress Disorders Much as Those in Combat Do*, New York Times, 22 February 2013.

13 Ed Owen Barnes, *Air Power. UAVs: the Wider Context*, http://www.airpowerstudies.co.uk/UAV-Book.pdf, p. 95

14 Medact, *Drones: the physical and psychological implications of a global theatre of war,* (2012), p 8.

15 See, Drone Wars UK, *Convenient Killing: Armed Drones and the 'Playstation' Mentality*, (2010).

simulated computer game to attract candidates[16], can only undermine the professional standards upon which the RAF pride themselves and which is central to their public standing.

Taken further, the perception of the drone has an impact on how the US and UK are seen in the countries in which this weapon is used; a consideration examined the MoD's *Joint Doctrine*.

> The counter-insurgency operation must be perceived as ethically sound, above reproach, and the ill-considered use of armed unmanned aircraft offers an adversary a potent propaganda weapon. This enables the insurgent to cast himself in the role of underdog and the West as a cowardly bully – that is unwilling to risk his own troops, but is happy to kill remotely.[17]

This is particularly significant from the perspective of winning "hearts and minds" in Afghanistan and making a positive contribution to the stabilisation of the state, and the region more broadly. Aliya Robin Deri, in her paper *"Costless" War: American and Pakistani Reactions to the U.S. Drone War* explored the concept of honour and the negative relationship this concept has with use of drones. Drone operators are devalued and the local perception of the United States is undermined, making intervention in Pakistan to inhibit terrorist activity, counter-productive.[18]

The impact of UK drone use on civilians.

The research presented to the APPG focused on the use of Predator drones by the United States. However, consideration must also be given to the use of Reaper drones by the UK, in Afghanistan and elsewhere, and any negative psychosocial impacts which may occur as a result of this use.

In response to a Parliamentary Question, querying the assessment made by the Ministry of Defence of the impact of unmanned aerial vehicle strikes on the mental health and wellbeing of civilians in Afghanistan, the Minister for Defence Personnel, Welfare & Veterans, Andrew Robathan, stated that

> We have no reason to believe that aerial strikes from whatever platform have had an adverse effect in general on the mental health and wellbeing of civilians in Afghanistan. Weapons released by the UK's Reaper Remotely Piloted Aircraft System are no different to those from other airborne platforms. Attacks are carried out under the command of a pilot bounded by Rules of Engagement which are no different to those used for manned combat aircraft. Targets are always positively identified as legitimate military objectives and strikes are prosecuted in accordance with the Law of Armed Conflict and UK Rules of Engagement.[19]

A subsequent question by Lord Hylton requesting an assessment of the impact of frequent drone flights on the civilian populations of parts of Pakistan and Afghanistan,

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17 See, for example, http://www.aolnews.com/2010/08/19/air-force-working-on-video-game-to-recruit-drone-pilots/

17 Ministry of Defence, *Joint Doctrine Note, 2/11: The UK Approach to unmanned aircraft systems*, (JDN 2/11), dated 30 March 2011, p. 5-10.

18 Aliya Robin Deri, "*Costless War": American and Pakistani Reactions to the U.S. Drone War,* Intersect: Stanford Journal of Science, Technology and Society, Vol 5, 2012.

19 Hansard, 18 December 2012, Column 707W.

particularly on children, elicited a similar response.[20] This emphasis on the Rules of Engagement, while potentially positive from the perspective of the legitimacy of the use of the force, belies consideration of the broader, less violent, impact of this technology. This may be, in part, a result of the limited available information due to the inherent difficulties in data collection.

However, this approach seems to be at odds with the more strategic conception of the UK's use of this technology. For example, as outlined by the RAF's *British Air and Space Power Doctrine*, "Air power is essential in underpinning the moral component of the Joint Force's fighting power, particularly because of its psychological impact"[21] and provides "a very effective lever against an opponent's cognitive domain."[22] Further:

> "The psychological impact of air power, from the presence of a UAV to the noise generated by an approaching attack helicopter, has often proved to be extremely effective in exerting influence, especially when linked to information operations."[23]

According to the MoD website, the Reaper is: "Capable of providing a persistent presence over an area of interest ….. and powered by a Honeywell engine that offers a **low noise signature** for discreet operations,"[24] (emphasis added). To improve assessment, it would be useful to know how the concept of 'low noise signature' is defined and how it compares to the sound of the Predator drone used in Pakistan and Yemen. However, it may well explain why the sound impact of drones used by the UK may be hard to establish. A journalist for the *Daily Telegraph*, who heard UK drones at base in Khandahar, Afghanistan, described the sound as "high-pitched whirr" providing "constant white noise" for local residents.[25] However, again there was no indication on the volume of this noise or the impact on daily life.
In contrast, there have been ongoing complaints about noise by residents living close to the West Wales UAV Centre at Parc Aberporth, where Watchkeeper drones are currently being tested.[26] The Centre provides, according to its website, 500 square miles of airspace for development and demonstration flights of drones.[27] However, media coverage has indicated that such testing has a negative impact on local residents. For example,

> Llangoedmor resident John Jones said "The noise was quite frightening. At 3.30am I jumped in my car … where I saw a drone landing – there was a hell of a

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20 Hansard, 8 January 2013, Column WA18.
21 Royal Air Force, British Air and Space Power Doctrine, AP3000, 4th Edition, http://www.raf.mod.uk. p. 26.
22 Ibid. p. 54.
23 Ibid. p. 55.
24 See *UAVs reaping benefits in Afghanistan,* 25 October 2011, https://www.gov.uk/government/news/uavs-reaping-benefits-in-afghanistan
25 Rob Blackhurst, *The air force men who fly drones in Afghanistan by remote control*, Daily Telegraph, 24 September 2012, http://www.telegraph.co.uk/news/uknews/defence/9552547/The-air-force-men-who-fly-drones-in-Afghanistan-by-remote-control.html
26 See, for example: Ian Drury, *The drone zone: Seaside town's peace is shattered by the testing of unmanned aircraft used to tackle the Taliban*, Daily Mail, 16 February 2013, http://www.dailymail.co.uk/news/article-2279491/The-drone-zone-Seaside-towns-peace-shattered-testing-unmanned-aircraft-used-tackle-Taliban.html#ixzz2M6HKrs6a and Jerome Taylor, "Waziristan? No, it's west Wales...", The Independent, 1 November 2012, http://www.independent.co.uk/news/uk/home-news/waziristan-no-its-west-wales-8269782.html
27 See http://www.wwuavc.com/ for more details.

noise. It's bad enough having to put up with trials during daytime but it's far worse at night."[28]

Further concerns were recently raised during a debate in Westminster Hall on Brechfa West Wind Farm on 6 March 2013, particularly around the fact that MoD had warned that these wind turbines could cause interference to range-control radar at Parc Aberporth.[29] This raises questions as to the safety of local residents living close to this testing area.

There are complex legal, moral and ethical dilemmas associated with the use of drones. While, quite correctly, much of this focus has been on the ability of this weapon to kill and the legal frameworks (or lack thereof) governing their use, there needs to be further consideration of the impact of its other functions, namely how its use is experienced by those living under it, not just in Afghanistan, Pakistan, Yemen and Somalia but also Wales. More robust and effective data collection mechanisms need to be put in place to assess the psychological impact of this weapon. Further, attention needs to be paid to those in the RAF operating this technology, to ensure that the use of drones is not simply replacing the reduction of risk for those on the ground in Afghanistan with a rise in mental health challenges for the RAF.

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28 *Concern over UAV night flights*, Tivyside Advertiser, 7 August 2012, http://www.tivysideadvertiser.co.uk/news/9858213.Concern_over_UAV_night_flights/

29 Hansard HC Deb, 6 March 2013, c269WH.