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**Submission of Evidence to the All Party Parliamentary Group Drones:
How are RAF Reaper (drone) operators affected by the conduct of recent and
ongoing operations?**

1. Summary

a. In March 2017 I received a request from the All Party Parliamentary Group on Drones to provide a submission on the impact remote warfare has on RAF Reaper drone pilots. The following submission is based on preliminary observations which have emerged in my recent and ongoing research with members of the Royal Air Force Reaper (drone) community. However, since the Reaper is operated by a three-person crew my observations relate to all three categories of operator: pilots, sensor operators and mission intelligence coordinators. The research participants I have interviewed so far include predominantly currently serving Reaper personnel, previous Reaper crew members, and spouses and partners of past and present Reaper personnel.

b. I set out below some initial observations from the data gathering phase of my research project, which is now drawing to a close. A number of themes have emerged strongly and consistently, though it is impossible at this early stage to identify specific reasons why some Reaper crew members appear to be more susceptible to mental trauma than others within the same squadrons. However, I anticipate that in due course some indications will emerge from detailed analysis of my research data. Note: the study is focused on RAF Reaper personnel and is not making comparisons with individuals from other RAF, Navy or Army units.

c. The Royal Air Force granted permission for this current project in 2015 and Ministry of Defence research ethics approval was granted on 1 July 2016.¹ Throughout, personnel and commanders at every level in the Reaper Force – as well as senior officers in the Air Staff – have provided me with unparalleled research access as I seek to capture key insights into the human dimension of this new way of deploying air power. I have made two specific research ethics undertakings. First, to ensure that any research participant who becomes distressed during the research process is directed to appropriate psychological support. Second, to make the RAF ISTAR Force Commander aware if I identify or suspect any procedural or systemic factors that have a negative effect on the research participants. Such observations will feed into ongoing work by The Force Commander, informing his actions, decisions and planning as they relate to Reaper Force personnel. I have recently made recommendations to the ISTAR Force Commander, through the RAF Waddington Station Commander, on that basis and they are included in the final section of this submission.

d. In July 2016 I spent a week with No. 39 (Reaper) Squadron at Creech Air Force Base, Nevada and in August 2016 spent 2 weeks with No. XIII (Reaper) Squadron at RAF Waddington, Lincolnshire, conducting embedded field research. I spent days sitting in Ground Control Stations alongside the 3-person crews, taking notes and observing as they

¹ Ethnographic Study, 'Royal Air Force Reaper: 21st Century Air Warfare from the Operators' Perspective', University of Portsmouth Research Ethics Committee Protocol E365, approved 21 October 2015; Ministry of Defence Research Ethics Committee Protocol 707/MODREC/15, approved 1 July 2016.

carried out Intelligence, Surveillance and Reconnaissance (ISR) operations, and also conducted real-time, lethal missile strikes. In addition, between July 2016 and May 2017 I have interviewed 76 members of the RAF Reaper community. This has resulted in more than 80 hours of recorded audio interview material.

e. The transcribing, analysis, writing up and publication of findings from this data will take 2-3 years to complete alongside my other academic responsibilities. Regretfully, given the potential significance of the subject matter, I have been unsuccessful in my attempts to secure the research funding that would release me from some of those duties to complete the research and publications over the next 1-1½ years.

2. Author

I have been involved in drones-related research since 2011, with a particular interest in the human dimension of Royal Air Force Reaper drone operations. This includes the personal ethics and ethos of the operators and the collective ethos of the, now two, RAF Reaper squadrons. Since the publication of my first journal article on the ethics and ethos of military drone operations in Spring 2012 my related activities in this field – nationally and internationally – have spanned academic, military, media and public domains. In several articles and book chapters I have consistently argued for the moral utility of the Reaper drone: *when it is used proportionately, discriminately and in accordance with the Geneva Conventions*. My research and this submission focuses solely on the UK and RAF operators. I have contributed to more than 30 Drone/UAV/RPAS-themed² conferences in the UK and beyond; university debates; numerous radio and TV discussions; and from July 2015-June 2016 I sat as an ethicist on the Department for Transport Oversight Committee for the *Sciencewise* public dialogue on ‘The Use and Development of Remotely Piloted Aircraft Systems and Small Drones in the United Kingdom’. Prior to my academic career, from 2001-2008 I served as a Royal Air Force chaplain. My experiences with battlefield casualties from the Iraq 2003 War prompted my PhD which explored just war ethics in the King’s College London War Studies Department. In 2012 I published *Blair’s Just War: Iraq and the Illusion of Morality* and in 2015 published *Truth Wars: The Politics of Climate Change, Military Intervention and Financial Crisis*, both with Palgrave Macmillan.

3. Current research project

In 2014 I conducted a qualitative, questionnaire-based study with the RAF Reaper squadrons entitled, ‘Exploring the roles of personal ethics, individual identity and operational practices in the formation of a collective ethos in RAF Reaper squadrons.’³ Twenty-five Reaper personnel responded to the questionnaire and provided a total of almost 40,000 words of written reply. It became clear that in order to do justice to the subject matter a book would need to be written which, in turn, would require further research. I requested access from the Royal Air Force in 2015 to conduct further research with the two Reaper squadrons for a book provisionally entitled, *Royal Air Force Reaper: 21st Century Air Warfare in the Words of the Operators*. The forthcoming book based on my research is now under contract with John Blake Publishing for publication in 2018. In addition, the research data will be used as the basis of a planned series of scholarly journal articles on the following themes:

- Ethical Decision Making
- Cognitive Dissonance

² UAV: Unmanned Aerial Vehicle; RPAS: Remotely Piloted Air(craft) System – the official term of the international air traffic control organisations like EUROCONTROL.

³ MOD Research Ethics Committee Protocol 423/MODREC/13, approved 22 December 2013.

- The Emotional Landscape of Drone Operators
- Why Drone Operations are Not Video War Games
- Institutional Culture and the Challenges of Sustainable Remote Air Warfare

4. Methodology

I must stress that I am conducting qualitative research that seeks to *understand* the breadth of attitudes, experiences, ideas and challenges raised by sustained RAF Reaper operations. It is not a quantitative study that seeks generalizable results based on statistical probabilities that scientifically *prove* or *predict* specific outcomes. A narrative life history approach has been used in the semi-structured interviews which, on average, have lasted for around one hour. Furthermore, the sample of research participants is not 'controlled' for specific weightings: participation is voluntary and participants are self-selecting. Crucially and most obviously, participants also decide what they will or will not divulge. Consequently, the points I raise below will be limited in scope and I do not offer specific percentages in relation to what are only initial observations during the research phase. Of the 19 interview questions, the following three are most relevant to this submission:

1. How well prepared were you for Reaper operations and operational tempo?
2. To what extent does the conduct of ongoing Reaper operations impact upon your family and personal life?
3. To what degree, if at all, have you been changed by your experiences on Reaper operations?

Interview breakdown:

<u>Category</u>	<u>Number</u>
Currently serving RAF Reaper crew members	42
Former RAF Reaper crew members	16
Spouses/partners of current or previous RAF Reaper crew members	<u>18</u>
Total	76

5. Contextual information

a. An RAF Reaper (drone) is crewed by three people: the pilot, the sensor operator, and the mission intelligence coordinator. Women and men serve in all three crew positions. The crew is continually observed by a duty Authorising Officer and duty Senior Mission Intelligence Coordinator in the Operations Room of each squadron. The Reaper is used to carry out Intelligence, Surveillance and Reconnaissance activities, as well as missile or bomb strikes when required.

b. There are three flying phases in any Reaper flight: take off, mission phase, and landing. The actual Reaper aircraft is physically located at an air base in the Middle-East – and previously in Afghanistan – where take-offs and landings are carried out by a Launch and Recovery Element.⁴ Once the Reaper is airborne, control of the aircraft is passed by satellite link-up from the Launch and Recovery Element (which will also land the aircraft at the end of a sortie) to the UK or US-based crew.

⁴ Engineers service and prepare the aircraft for each flight before towing it to the end of the runway. The Launch and Recovery Element launches the aircraft in much the same way as model remote control aircraft have been launched for decades, except the Reaper has a 66-foot wing span.

c. Pilot

The pilot then remotely flies the Reaper aircraft from a Ground Control Station (a shipping container-sized unit), currently located at either RAF Waddington, Lincolnshire or Creech Air Force Base, Nevada. (S)he will, when required, fire a 100lb Hellfire laser-guided missile or release a 500lb GBU-12 laser guided bomb. Reaper pilots past and present have been drawn from other aircraft fleets – for example, Harrier or Tornado fast jets, Hercules multi-engined transport aircraft, Nimrod maritime patrol aircraft, or helicopters – or they can be directly recruited and trained to fly the Reaper (known as the RPAS(P)).⁵ All pilots are currently commissioned RAF officers.

d. Sensor Operator (SO)

Sensor operators are primarily responsible for ensuring that the aircraft camera and other electronic sensing equipment are used for intelligence gathering, surveillance and reconnaissance to meet particular operational requirements. In addition, when a weapon is fired by the pilot the sensor operator is responsible for ensuring it hits the specified and authorised target. The sensor operator has two main controls which determine the direction and magnification of the camera or infra-red sensor. A joystick is also used in conjunction with the cross-hairs on the sensor operator's screen to laser guide the missile or bomb onto a target. Sensor operators can be either officers or non-commissioned officers. Sensor Operators past and present have been drawn, like pilots, from other aircraft fleets and roles. These include: Tornado fast navigators or weapon systems officers/operators; Hercules, Nimrod and other multi-engined aircraft Air Electronics Operators/Officers; C-17 Air Loadmaster; and helicopter rear crew.

e. Mission Intelligence Coordinator (MIC)

Mission intelligence coordinators all come from a military intelligence background and have specialist image analyst skills. They provide continuous information to the pilot and sensor operator and are in constant communication with external intelligence sources to check information and confirm identifications of targets. Mission Intelligence Coordinators are all Military Intelligence specialists, with an emphasis on image analysis. They are predominantly RAF personnel – commissioned and non-commissioned – but have also been drawn from the Navy, Marines and Army.

f. Authorising Officer and Senior Mission Intelligence Coordinator (SMIC)

An Authorising Officer (experienced Reaper pilot or sensor operator) and a Senior Mission Intelligence Coordinator (experienced Reaper mission intelligence coordinator) are continually available in each squadron Operations Room to provide advice and backup as required to the duty crew(s). They watch the same live, full motion video feed that the crew sees inside the Ground Control Station. In addition, a senior designated officer at the appropriate command centre – say, in the Middle East – provides authorisation for each weapon release. Legal approval is incorporated into this authorisation but specific legal advice is available any time to a crew that requests it. A crew is not compelled to fire a weapon even if they are authorised to do so. Pilots can, and have, aborted authorised weapon releases. Any member of the crew can call for a strike to be aborted, even after a bomb or missile has been fired: right up until the last few seconds before impact. Once a weapon has been released, a strike is most likely to be aborted if circumstances on the ground change during the half-minute or so that the weapon is in the air. For example, a civilian walking or driving into the planned blast zone.

⁵ RPAS(P): Remotely Piloted Aircraft System (Pilot).

6. The impact remote warfare has on RAF Reaper crews

a. Observations throughout the interviewing process suggest that there are two key elements of RAF Reaper operations that combine to have a direct effect on the crews involved. First, the physical fatigue from the relentlessness of sustained operations over years at a time; and second, the nature of Reaper operations, especially witnessing distressing events on the ground, and killing distant enemies: all in increasingly close up detail. In addition there are the indirect effects: the impact of the Reaper Force lifestyle on immediate family and other relationships; and the negative effects on morale brought on by the ways in which they are perceived and represented in public discourse. A third factor that has shaped the responses of a small number of interviewees to their involvement in Reaper operations is having previously experienced traumatic events prior to joining the Reaper Force. This is most likely to affect personnel who have served on military operations in Afghanistan or Iraq prior to joining the Reaper Force.

b. The most important observation to highlight is that there is no single way that Reaper operators are affected by the work that they do. At the extremes, a small number have experienced PTSD and significant mental trauma, while colleagues on the same squadron appear to be minimally affected by their work and find it highly energising and professionally fulfilling. The majority of individuals I have interviewed sit somewhere between these two positions; they consider themselves to be professionals and just want to do their job well with minimum fuss and attention.

c. Of the 18 couples I have interviewed (Reaper crew member and their partner/spouse) there is a universal theme. The operators' self-assessment of their tiredness levels or the extent to which they are affected by Reaper operations are – without exception – lower than that described by their partners/ spouses.

d. Fatigue.

i. The most common feature of every discussion about how Reaper operations affect the personnel involved is fatigue. The RAF Reaper Force shift pattern of 6 days on/ 3 days off has been used for most of the past decade. During the 6 days on duty, most personnel could find themselves regularly working 10-12 hours per day. Instructors and squadron Executive Officers with additional responsibilities describe working even longer. Break times and lunch times are commonly used more for carrying out other non-flying activities than for eating and taking a rest.

ii. In 2016 the Reaper Harmony initiative was introduced by the RAF to improve the quality of life and professional environment of Reaper personnel. Elements of the initiative include: ensuring that personnel are able to take their full Leave allowance; attendance on training courses to support career progression; reducing GCS (flying) commitment for squadron executives and instructors; an 'office day' in each block of 6 working days. This has been regularly reported in interviews as being a positive development. However, for comparison, the total number of hours worked by many squadron personnel would equal or surpass the limits of the European Working Time Directive [Note: the MOD is exempt from the EWTD – this is just a point of comparison]. Some individuals would significantly surpass the aggregate EWTD hours. Commanders have sought to ease workloads where possible – while still maintaining operational effectiveness – but acknowledge that more needs to be done in the area of sustainability and are working to address the matter.

iv. The issues of fatigue and sustainability of operational tempo are significant because Reaper crew members regularly take life and death decisions, and on some

occasions do so at times during a 24-hour period when the body has low energy levels. One spouse observes:

“[My husband and I] have talked about it and think fatigue is a big factor but I think there must be something more. I've talked to their spouses about it and they say the same thing, grumpy, irritable, lack of patience a lot of the time. It's is such a high tempo, stressful job with an awful lot of responsibility so I am not surprised about these changes.”

v. While the above words could be said of many highly pressured jobs and lifestyles, my data analysis will attempt to identify if there is ‘something more’ (the inference is that it has something to do with killing), what form it takes, and how it affects people. Separately and without exception, all 16 of the former members of the RAF Reaper Force I have interviewed – including some who left as recently as 2016 – describe leaving in various states of exhaustion. Further, several of the former crew members have stated in interview that they would consider returning to the work, but not to the draining lifestyle.

e. Witnessing distressing events and killing distant enemies.

i. Killing by Reaper is unusual in military history for the extent to which individual enemy personnel can be intimately observed for hours, days and weeks before that person is killed. One commonly propagated and perpetuated assumption surrounding drone operators is that physical distance from their targets gives them psychological distance as well, their emotions detached from the deadliness of their actions. However, even at this early stage of my research it is clear that the mental processes involved are more complicated.

ii. In 2017, one former Reaper pilot recalled an experience from 2011. A Taliban bomb-maker was closely observed for weeks to build up an intelligence picture around him, his activities and his contacts. He always had one or more of his children with him. The Reaper crews became intimately familiar with the lives of those they were watching and gave each of the children names by which they could be identified. After several weeks the time and opportunity arrived to kill the bomb-maker when there was no-one near him. That familiarity “made it harder to kill him”, said one of the crew members involved, “but we did.” The pilot’s ability to remember the ‘names’ of the children so many years later is typical of numerous events that Reaper operators recall with great clarity.

iii. Another Reaper pilot describes a separate event, which also points to emotional engagement rather than disengagement:

“We may watch “target A” for weeks, building up a pattern of life for the individual, know exactly what time he eats his meals, drives to the Mosque, uses the ablutions – outdoors of course! What we also see is the individual interacting with his family – playing with his kids and helping his wife around the compound. When a strike goes in we stay on station and see the reactions of the wife and kids when the body is brought to them. You see someone fall to the floor and sob so hard their body is convulsing.”

iv. This and many similar events are easily recalled by pilots, sensor operators and mission intelligence operators. The intimacy of observing distant targets and their deaths does not necessarily lead to mental burden or guilt, though for some it does. One sensor operator, after watching jihadists committing atrocities on the ground, described Islamic

State as “the easiest enemy I will ever fight against,” for what they were doing to ordinary people around them. In that regard, and against that particular enemy, I came across a very strong sense of purpose on both Reaper squadrons. One recent departee says: “I miss it, even with all the aggravation – it is the most important thing I have ever done. I felt like I was really making a difference.” But he will not return because now, “it is my family’s turn.”

v. There is a spectrum of mental and emotional reactions to Reaper operations: at one end of the spectrum are a small number of individuals who experience clear mental trauma, and PTSD cases have been identified. Some individuals have withdrawn themselves from active operations: specifically, the firing of weapons and killing. At the other end of the spectrum are a small number of individuals who appear to be able to efficiently compartmentalise the killing process and sustain a high performance level over several years. The majority of crew members sit between those two positions – willing to fire weapons where necessary and for the most part “just doing my job.”

vi. My 7 years as a Royal Air Force chaplain between 2001 and 2008 included 3 years as chaplain to a Harrier squadron during wartime. I also spent a year in the Falkland Islands in 2004-5 where I conducted two dozen private memorial services for – and provided pastoral support for – returning veterans of the 1982 conflict. Many of the latter were suffering from combat stress or PTSD that did not emerge for a long time after the conflict, and their return to the Falklands was for therapeutic purposes. Given my previous pastoral experience with war veterans, I would caution against assuming that Reaper personnel who currently seem to be unaffected or minimally affected will always remain that way. Separately, despite my previous experience, emotional reactions of RAF aircrew – which includes Reaper crews – are still difficult to gauge. RAF aircrew culture – refined over a century – is one of trained or acquired insouciance, the external presentation of an apparent calmness and lack of concern under pressure that is unlikely to be matched by internal emotions.

vii. For example, one very experienced research participant has conducted more than 5 years of continuous Reaper operations, which includes dozens of lethal weapon strikes. He describes himself as able to compartmentalise his work and home life very well. In a separate interview, his wife confirmed this ability to mentally compartmentalise his commitment to his work on the Reaper Force and the challenges of sustaining a work-life balance for their children: “He conceptualises it into boxes,” she observed. He talked at length about his experience, in which he takes great pride and to which he expressed an almost overwhelming commitment. When probed about how it impacted on other aspects of his life it therefore came as much a surprise to me as it did to him when tears began to roll down his face. At the end of the conversation he went back to his duties (the interview took place inside a squadron building during working hours), as calm and seemingly unflustered when he left as when he arrived. Within a short time he had killed again. If he had any concern for his own mental wellbeing I would summarise it as being situated below his sense of responsibility to colleagues, a desire to do his duty well, a determination to do what he could personally do to stop the advance of ISIS, and to being a “good husband and dad.” In other words, pretty much the same as every veteran I have ever spoken to, across all of the services, from those who served in World War II through to those who are currently serving. It was also one of many interviews where I felt a blurring of personal boundaries between being an academic researcher and being the former chaplain with pastoral concern for his subjects.

viii. Another highly experienced operator states:

“I’ve found that I’ve become much more fatalistic about life since doing this job. When I started 6 years ago, I had yet to see a dead body let alone contribute to somebody’s death. That’s not to say that I feel bad about the lives I have taken. Of course we get frustrated being tarred with the brush that we’re young. We’re much, much older on average than ‘The few’ in the Battle of Britain and Bomber Command [in World War II]. It also frustrates me that when the MoD speaks the truth that we don’t kill civilians, that immediately is assumed to be a lie by those whose mantra is unable to accept the paradigm shift that we genuinely don’t kill non-combatants.”

This contradiction between how Reaper personnel see their work and how it is perceived and represented from the outside is a commonly recurring theme. It is compounded by two further dynamics: the inability to respond directly to criticism; and the lack of legitimation that would come from medallic or other official recognition.

f. Civilian casualties.

i. The Geneva Conventions permit the killing (though not the deliberate targeting) of civilians, as long as the numbers involved are not ‘excessive in relation to the concrete and direct military advantage anticipated’.⁶ Just war ethics have also reluctantly permitted the incidental killing of civilians through the ‘doctrine of double effect’ for several centuries.⁷ However, the RAF Reaper Force has operated within a stricter, ‘zero civilian casualties’ imperative since 2011 (when civilians were killed in a strike in Afghanistan). Several years of research engagement with the Reaper Force has shown this imperative to be deeply embedded in its culture and in the personal ethos of its crew members. This ‘zero civcas’ imperative goes beyond what conventional just war ethics and International Humanitarian Law have traditionally demanded. It has been raised formally and informally by many research participants as an important principle that shapes their own willingness to shoot, as well as the ability (compulsion) to *not shoot* when civilians might be harmed. Further, the principle is so deeply embedded that any change to adopt ‘normal’ military legal and ethical practices could have a deleterious effect on morale and performance. Observations on the importance of pursuing a zero civilian casualty (zero civcas) policy are provided by a current crew member with more than 5 years’ experience:

“We follow LOAC [Law of Armed Conflict] to the letter. Specifically, I talk of distinction and proportionality. Throughout Operation HERRICK [Afghanistan] and Operation SHADER [against ISIS], the RF [Reaper Force] have been living under the comfortable blanket that we would not accept civcas [civilian casualties] in our engagements. Many, many strikes have had to abort or shift cold⁸ to avoid that circumstance. If you picked up the UK Reaper Force and put them in a situation where it was appropriate to ‘accept’ civcas for valid military targets – ie. Legal strikes where the taking of civilian life is unavoidable – I believe we would lose several personnel for mental health issues. I also believe some would refuse to carry out

⁶ International Committee of the Red Cross, ‘Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977, Article 51 (5.b)’, located at <https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/INTRO/470>, accessed 7 May 2017.

⁷ The doctrine of double effect as it is applied in just war theory was derived from Aquinas’s writings on homicidal self-defence in the thirteenth century. See Thomas Aquinas, *Summa Theologica*, Trans. Fathers of the English Dominican Province, Rev. Edn., Benzinger Brothers, 1948 (Reprinted Westminster, MD: Christian Classics, 1981), II-II, Q. 64, A. 7, p. 1961.

⁸ The ‘shift cold’ occurs when a missile has already been launched but before it strikes its designated target. Right up to the final seconds before impact the sensor operator can use her laser pointer to ‘drag’ the missile into a pre-designated safe blast zone away from humans.

certain strikes to protect their own psyche. The thing that has me worrying at night is considering intervention against child soldiers murdering civilians. I know I would carry out the strikes, but I don't know what would become of my mental state after.”

ii. Finally, some observations from a relative newcomer to the Reaper Force who describes his difficulty in adjusting to a lethal strike role:

“I found during the days following the strikes I had issues, I felt depressed, nervous, anxious and slightly withdrawn. I was acting differently with my family and found myself losing my cool with my children over the most stupid things. I am generally a very laid back guy and my children can be jumping on me and messing about I never have an issue (to put that in context). I found it hard to sleep for a couple of weeks with the IR [infra-red] images of the strikes being extremely vivid when closing my eyes.”

iii. This tiny number of examples from my research data begins to point to the diversity of the lived experience of Reaper pilots, sensor operators and mission intelligence coordinators, and the impact of continuous operations upon them. It is my hope – expectation – that fine-grained analysis of my data over the coming years will highlight trends or common themes that can be researched further.

7. Spouses/partners perspectives

a. The most distinctive social and psychological aspect of a Reaper squadron is the daily juxtaposition of work and home life. Life at work can involve the witnessing of gruesome acts on the ground, such as Islamic State jihadists committing atrocities or the aftermath of a roadside bomb. It can also involve the killing of distant enemies which, as well as any inherent mental cost, raises the question of how much information can or should be shared with partners/spouses within a personal support system. The latter question is dealt with individually within each relationship. Across a whole fluid spectrum of approaches five broad categories stand out:

- i. Full transparency. I estimate that a small minority of couples take a full transparency approach where the partner is a crucial part of the Reaper operator's personal support system and every gruesome detail is shared – even to the extent of breaching protocols. In my judgement, couples in this group generally (but not definitively) appear to have the highest individual and relationship wellbeing. However, a few couples have opted for this approach only after some form of individual or relationship crisis.
- ii. Withholding of information. Some operators take the opposite approach and share no information at all, seeing it as 'protecting' their partner from things they are expected not to want to know. Some partners take this badly.
- iii. Limited sharing. The operator mentally edits what information (s)he shares at home.
- iv. Non-receptiveness. Some partners do not want to think that their loved one is capable of, let alone involved in, the deliberate killing of others. They want no engagement with squadron life and want to hear nothing about the squadrons do.
- v. Non-availability or limited availability of emotional support. Some crew members are single and live in a single room in service accommodation with no substantial and available emotionally intimate relationships, and the support it can offer. Some partners/ spouses live a long way from the squadrons; the serving crew member lives in the Mess during duty days and only returns home for days off.

b. The categories set out above are indicative, flexible and blur into one another. A very small selection of comments highlight the breadth of perspectives, positive and negative, of spouses and partners, and identify areas I will be exploring in my research:

- i. “I am grateful he’s not away on detachment. It is still better than the alternative [him being away flying a fast jet on operations].”
- ii. “There is no recognition of the personal and family effort over extended periods of time, including the psychological cost of the type of warfare they conduct. This includes medal awards.”
- iii. “Why am I lying about what he does?”
- iv. “We are like a dirty little secret. It is demoralising not to be able to say what he does...we would like to tell people what he does but there is a security problem and a perception problem.”
- v. “I think it has done good for his confidence because he is good at it.”
- vi. “It has changed him, but I wouldn’t necessarily say for bad, forever. He’s got a shorter fuse now, with the kids and stuff. He hasn’t got the patience he used to have. And it’s completely understandable. I haven’t either, having said that [Partner 15 laughs at herself as she says this]. You can just see. You wait for him to come home and you’re thinking, ‘If he goes straight for a beer, then it’s been a bad day.’ Before he even comes in to say hello, if he’s got a beer in his hand I’m not even going to ask how your day was. There’s no point. But he will tell me. I don’t have to, you know, [ask]. Which I think really helps from a relationship point of view, because I can understand why he’s being like that. I think I’d get very frustrated if I just got a moody guy home, with no explanation. I like to know! I like information!”
- vii. “They don’t readapt when they come home. They put on their ‘home face’.”
- viii. “If his six days on [duty] starts on a Sunday then he can go a whole school week without seeing the children awake.”
- ix. “He will need to get his head straight and leave it behind; leave the Reaper behind and move on. I think he will struggle with that.”
- x. “As a spouse it can be quite lonely doing the afternoon/ evening alone with the kids and then spending the evenings alone. Choosing to work...I don’t have the luxury of spending the day with him like other families do but the three days off give us a nice amount of family time.”

8. Recommendations

Despite this submission being based on preliminary observations, some themes have emerged consistently and strongly. Consequently, and in line with my aforementioned research ethic commitments, I felt confident in making recent corresponding recommendations to the RAF ISTAR Force Commander at this early stage of my project. My recommendations are now being considered by the relevant working group within the RAF and I include them below for the APPG.

a. Mandatory psychological support: Every Reaper crew member should have a mandatory session with a psychologist at regular intervals throughout the year. Once every 3 months or 6 months, but possibly more frequently. This would be consistent with other professions that mentally ‘unload’ in a structured and psychologically way, such as the professional support psychologists themselves receive. Further, if psychological support is provided to help athletes cope in apparently high stress fields like professional sport, I suggest that it is even more urgent when life and death decisions are being taken by Reaper personnel. In addition, it would be consistent with annual military medical and dental checks, physical fitness tests, and the provision of specific physical therapy support to Typhoon pilots.

The RAF put in place a psychological support system for the Reaper Force several years ago: ‘Trauma Risk Management’ (TRiM). Trained (non-professional) practitioners on each squadron provide a gateway to professional psychological support, the latter being directly available if requested. In addition, chaplains are on call for personnel who wish to speak to them. However, while several interviewees have described being well supported through the system, a greater number have referred to its limitations since it is a voluntary system. There are still elements of ‘macho’ or ‘alpha’ military culture on the Reaper Force, even if it is less obvious than in other parts of the RAF or the armed forces more generally. Mandatory conversations with a psychologist at designated intervals would de-stigmatised the seeking of help: for the most junior and inexperienced personnel and the most experienced personnel alike. Acknowledging the budgetary constraints facing the armed forces, in crude financial terms, if a psychologist enables one operator – in a year – to overcome a difficulty that enables him or her to be operationally effective rather than leave the Reaper Force, the cost will be repaid. That is before any wider performance or personal morale improvements are taken into account. Psychologists and professionals in other fields that deal with physical and mental trauma are professionally *required* to engage with mandated, structured psychological support. And they do not kill people for a living, in close up detail and over many years.

The unique nature of RAF Reaper operations and the way in which they have been continually sustained for a decade are asking new questions about mental health, resilience, and the moral component of delivering air power at a distance. Ground forces (British or allied) are exposed to physical danger in ways that Reaper crews are not; Intelligence Branch image analysts are exposed to the same video footage and still photos of atrocities that Reaper operators see; fast jet crews also kill people from the air. What is unique is the *combination* of these operational and personal activities on the Reaper Force: sustained exposure to hostilities, including traumatic events on the ground; killing in an intimate, sensory immersive way; close observation of the aftermath of lethal strikes; plus the dissonance of work and home life over several years.

In addition, there is little or no declared public support for what they do, with much public discourse being negative, critical and based on the actions of drone operators in other countries. Formal official recognition (by way of medals or commendations – see next point) of the mental, emotional and physical effort of sustained Reaper operations – together with the impact on wider personal and family relationships – is denied. This at a time when mental health is receiving considerable publicity and support in the political domain. The MOD, RAF and the Reaper Force has the opportunity to embrace a new paradigm in military mental health awareness and promotion. The government has the opportunity to formally recognise mental health risk as one element of public recognition of the toll of Reaper operations.

b. Medals and awards: The subject of medals and awards for Reaper personnel should be revisited as a matter of urgency. This might be more of a Parliamentary-level consideration but I include it here. These would not be for conventional acts of gallantry in the face of enemy fire but for meritorious service that has significant tactical or operational impact and which incurs significant mental and social costs to the personnel and families involved.

British society is slowly but surely beginning to recognise and respond to the seriousness of mental illness, stress, and poor work-life balance, as well as the importance of sustaining good mental health. Lt Gen Richard Nugee, Chief of Defence People, stated in May 2017: ‘Promoting a positive culture for mental health is something we can all contribute to within Defence, particularly those of us who are leaders or managers.’⁹ He reflects the national mental health strategies of England and Scotland which state: ‘We must provide equal status to mental and physical health,’¹⁰ and, ‘we must prevent and treat mental health problems with the same commitment, passion and drive as we do with physical health problems.’¹¹ However, these governmental strategies, and the positive attitudes to mental wellbeing that underpin them, are contradicted by the lack of medallic or other public recognition of the mental and relationship costs of sustained Reaper operations. Physical risk and physical harm in the line of duty is still considered heroic. Mental health risk and harm, on the other hand, is not taken as seriously, while mental trauma is still commonly thought to be – though fewer people will state this out loud – a sign of weakness. Even where mental illness is accepted, many sufferers perceive themselves as weak and consider that other people will judge them similarly. In recent years, there has been a real but very small physical risk to British fast jet crews operating over Afghanistan, Libya, Iraq and Syria. They are valorised in the media as ‘brave’, ‘courageous’, ‘heroes’. In contrast, long-term, sustained Reaper operations almost guarantees some mental effects and the main questions are about how severe and how long-lasting they will be.

c. Workload, lifestyle and sustainability assessment: The RAF Reaper came into service as an Urgent Operational Requirement and its operational practices were rooted in the need for maximum effect against the Taliban and Al Qaeda in Afghanistan. It is now embedding as a Core Capability. Ongoing and future planning should put personnel sustainability at the heart of future staff level planning and operational practices for the Reaper and its successor, Protector.

It is clear that the majority of Reaper pilots, sensor operators and MICs I have interviewed get significant professional challenge and satisfaction from their work in the Ground Control Stations. For some it is the professional highlight of their lives. BUT, I can recall only one interviewee stating that he wanted to stay in his current job until “they kick me out.” Everyone else is acutely aware of their end date [date when their tour of duty on Reaper is due to end] and some are desperate to reach it. The level of fatigue I have encountered across my many interviewees, and the quality of work-life balance, suggests a lack of sustainability. The RAF, through the recent Reaper Harmony initiative, is taking steps to address the problem, to improve quality of life and personal and professional

⁹ Military News, ‘Today Starts ‘National Mental Health Awareness Week’’, <https://militarynews.co.uk/2017/05/08/today-starts-the-national-mental-health-awareness-week/>, accessed 12 May 2017.

¹⁰ Independent Mental Health Taskforce to the NHS in England, ‘The Five Year Forward View for Mental Health’, p. 5, <https://www.england.nhs.uk/wp-content/uploads/2016/02/Mental-Health-Taskforce-FYFV-final.pdf>, accessed 7 May 2017.

¹¹ Scottish Government, ‘Mental Health Strategy: 2017-2027’, p. 2, <http://www.gov.scot/Resource/0051/00516047.pdf>, accessed 7 May 2017.

development on the Reaper Force, while commanders are actively exploring avenues for further improvements.

The RAF will have quantitative metrics for measuring the scale of the challenge (which I have not seen) regarding personnel retention and sustainability. This will include information about the number of Reaper crew members leave at the end of their first tour or the end of their second tours; or the number who volunteer to stay on, or return to, the Reaper Force without additional incentives (promotion, professional advancement or posting to 39 Sqn in Nevada). As an interesting, though perhaps unfair, question of comparison: why are vacancies in civilian Fire Brigades hugely oversubscribed when the job can be dangerous, firefighters witness horrific events on a regular basis, some suffer from PTSD, and pay is modest? In my view, the Reaper Force needs a sustainability approach that is not merely a minor adaptation of what 'works' elsewhere in the RAF or what has 'worked' until now. I hope that these observations prove useful to the planners who are already working in this area.

d. Specific ethics induction for remote operations. Upon joining the Reaper Force – and perhaps even at the recruitment/ enquiry stage – I recommend that all personnel should undergo an introduction to remote warfare ethics. I have discussed the importance of suitable selection and induction of personnel with the squadron commanders. I am convinced – based on my interviews – that appropriate ethics education at an early stage can and will help potential Reaper crew members to clearly understand the nature of Reaper operations, the responsibilities that will be laid upon them, and improve the likelihood that they will make informed and sustainable decisions about whether they can do the job or not.

Almost every interviewee raised ethical considerations in relation to their work on Reaper operations. Some of the more experienced and informed interviewees can call upon a reasonable ethics vocabulary and conceptual framework with which to reflect upon events or share their thoughts. However, others do not have this understanding and a few consequently struggle with vague notions of 'fairness': the closest to an ethical evaluation they are able to articulate. The latter group in particular would benefit from an early ethics induction that specifically incorporates the distinctive aspects of remote warfare.

Drawing upon my research with the Reaper Force, I have offered to prepare – at no cost – a bespoke 60-90 minute seminar that includes an audio-visual presentation, accompanying notes, appropriate reading materials pitched at a suitable level for squadron members, and teaching induction so that the material can be delivered by appropriately educated and experienced squadron personnel in the future. This is my specialist area of academic interest, within the broader field of the ethics of war, and the reason I began researching with Reaper personnel. I therefore acknowledge my bias on this point.

Remote warfare asks new questions of conventional war ethics and Reaper personnel should, from the outset, fully understand the practical and ethical demands of their roles. Throughout history the introduction of the longbow, the rifle, the artillery canon, aerial bombing and the ballistic missile each brought its own new ethical considerations. They each increasingly distanced the user from their enemy. To that end the Reaper is the fulfilment of an historic quest for military lethality at a safe distance for operators, not an aberration. However, despite the physical distances involved, new technologies provide a visual proximity for those same operators bring them back to a range between close quarter combat and the longbow. Basic war ethics are discussed at different levels and at different stages of the careers of officers and personnel of other ranks. A bespoke ethics

package for the Reaper Force would provide common language, concepts and expectations from the outset of an individual's involvement.