Military Risk Assessment in Counter Insurgency Operations: A Case Study in the Retrieval of a UAV, Nr Sangin, Helmand Province, Afghanistan, 11th June 2006

Chris. W. Johnson

Department of Computing Science, University of Glasgow, Scotland, UK, Johnson@dcs.gla.ac.uk

Keywords: UAV, UAS; risk analysis; military safety.

Abstract

Risk assessment has been advocated as a principle means of improving military safety. For instance, the US Army's Composite Risk Management urges personnel to assess the likelihood and consequences of potential hazards before making strategic, tactical and operational decisions. The British army advocates risk assessment as a means of guiding both tactical planning and force protection. However, it can be difficult to apply civilian risk assessment techniques to guide counter insurgency operations. It is extremely hard for troops to apply concepts such as 'risk exposure' to the uncertain and dynamic threats that face them in many different operational environments. The following pages use a case study to illustrate the practical and theoretical barriers to military risk assessment. In particular, a number of problems are identified in assessing the risks that threatened the retrieval of a UAV during counter insurgency operations near Sangin in Helmand Province, Afghanistan.

1. Introduction

A number of armed forces have developed risk assessment techniques to help reduce the hazards associated with military operations. For example, British Army doctrine advocates risk assessment techniques as a cornerstone of Tactical Planning, for risks associated with enemy action, and of Force Protection, for all other hazards associated with military life (see for example, MoD Health & Safety Handbook JSP 375 Volume 2). Similarly, the US Army Composite Risk Management program is intended to increase operational effectiveness and reduce mishap rates by encouraging all military personnel to consider the likelihood and consequences of potential hazards (see for example, US Army Field Manual 5-19).

Military operations inevitably involve hazards that do not arise in many civilian occupations [1]. The need to conduct complex, multi-agency operations, often at night and to tight deadlines creates pressures that have few parallels. The actions of conventional and insurgent forces create active threats that must be considered in military strategic, tactical and operational decision making. The constraints imposed by different rules of engagement limit the actions that teams may take to mitigate these threats. Local terrain, meteorological and climatic features all complicate military actions. Limited knowledge, contradictory information, the need to provide flexible orders and also allow for local initiative creates further challenges. It can be difficult to account for risk exposure in military operations. For example, leaders must assess the trade-offs that exist between a short period of extreme risk during a bridge crossing or a more sustained exposure to lower risks when moving over a longer distance to cross at a ford. Subjective decisions, such as the justified desire to retrieve a fallen comrade, cannot easily be informed by the processes that govern risk-based decision making in civilian industries. Similarly, it has proven extremely difficult to overcome the natural enthusiasm of many units to 'get the job done' even in those situations where risk assessments unequivocally advocate more cautious approaches.

The problems of military risk assessment are compounded by the need to integrate increasingly complex command and control (C2) technologies and innovative weapons systems into many operations. Vendors, politicians and military planners are often motivated to deploy technologies before they are fully mature. These decisions are justified by the need to maintain an 'edge' over opposition forces and hence reduce the risks to individuals in the field. However, they act as a forcing function that reveals underlying weaknesses in the composition and resourcing of military units. In consequence, personnel have to develop coping strategies and 'work arounds' when new technologies fail in unpredictable ways. This process of 'making do' exposes forces to increased levels of risk that are often not appreciated by the advocates of innovative C2 infrastructure or weapons platforms. The following pages illustrate this argument by analysing the retrieval of a British Unmanned Airborne Vehicle (UAV) from Helmand Province in Afghanistan in June 2006. During this operation, a member of the UK armed forces was killed by a single bullet wound to the head.

2. Initial Events in the Retrieval of a UAV

In October 2005, the 18th Battery of the 32nd Royal Artillery Regiment in the British Army were tasked to conduct an operational trial of the Desert Hawk miniaturised UAVs, having previous operated Phoenix systems in Iraq. This trial led to the purchase of the Desert Hawk and to the deployment of the 18th Battery to Afghanistan in 2006 with elements of the 16th Air Assault Brigade. The intention was to provide UK forces with a

'step-change in tactical situational awareness' and to improve force protection for deployed troops.

On the afternoon of the 11th June 2006, the 18th UAV Battery was using the Hawks to observe a suspected Taliban position near Sangin in Helmand. Shortly before 17:00, the operator reported that the UAV had 'fallen out of the sky for some reason' [4]. The Battery commander reported to the Ops Room at the Combat Outpost near Sangin and requested that a patrol be dispatched to recover it. The cost of each UAV is relatively low, new bodies for the air vehicles are around $300 each. The payload and platform also had a relatively low security classification. However, the operators were anxious to know the reasons why the Hawk had come down. The recovery task fell to members of an Operational Mentoring and Liaison Team (OMLT) assigned to work with the Afghan National Army at the Combat Outpost. Opinions varied amongst the OMLT as to whether or not the recovery mission was necessary. The Major in command of the outpost recognised the low security classification; "their loss wasn't going to be particularly painful or a real drama but it was my understanding if one went down we should try, within reason, to bring it back". A copy of the Standard Operating Procedures (SOPs) for the Desert Hawk UAV on the wall in the OPS room in the Combat outpost stated that 'if a UAV ditches or lands short of the recovery point it should be recovered' it also warns that 'the recovery of a UAV should not be attempted if there is a risk to live'. Other members of the OMLT were under the impression that the UAV should be retrieved wherever it had landed. There appears to have been a verbal understanding between the 18th Battery and the OMLT that the UAV should be recovered. It was still in its test phase and there were concerns that the insurgents should not discover the capabilities of the vehicle should one be lost.

The apparent confusion over whether or not the UAV had to be retrieved illustrates the difficulties that arise in military risk assessment. Although British Army doctrine promotes the use of risk assessment for tactical planning and force protection, the SOPs focused on potential consequences. The UAV should be retrieved but without 'a risk to life'. It is difficult or impossible for unit leaders to absolutely guarantee that any counter insurgency operation can be conducted without 'a risk to life'. Nor did the SOPs provide more specific guidance on how to conduct such an assessment. In these circumstances it is hardly surprising that the units in the field reached different interpretations of whether or not a mission should be conducted to retrieve the missing Desert Hawk.

The Major in charge of the Combat Outpost approved the redeployment of a Patrol to help retrieve the UAV using 4 lightly armoured Snatch Land Rovers and a Weapons Mounted Installation Kit (WMIK) Land Rover equipped with a General Purpose Machine Gun. Afghan soldiers were carried in Light Transit Vehicles. These initial units carried Bowman High Frequency radio systems. They left the Outpost at 18:07 with last light around 19:00. This was the first time that the unit had deployed on patrol together and the first time that any Patrol from the OLMT had crossed the Helmand River. However, the participants were eager to conduct the operation and there is evidence to suggest that the risk of insurgent operations in the area was relatively low, the only previous incident had been the discovery of an Improvised Explosive Device close to the local Police post [4]. This again illustrates the complexity of military risk assessment. If the reports of Taliban activity were correct then the relatively low initial risk assessments should have been revised. Without information from the UAV, however, it was impossible for units in the field to be sure that insurgents were operating in the area.

The retrieval patrol eventually chose a route used the same crossing point for the river that the Desert Hawk had been monitoring for Taliban activity. This provides a specific example of the problems associated with assessing risk exposure in military operations. Alternate routes would have significantly delayed the operation. These delays would have enabled insurgent to mass their forces and provide an opportunity to prepare for the patrol when it eventually arrived at the crash site.

The vehicles were unable to cross the Helmand River. 15 troops were left behind as a rear party while 21 members of the retrieval patrol continued on foot. When they reached the suspected crash site, locals informed them that the UAV had been driven off in a pick-up truck. The advance group conducted a cursory search of nearby compounds and moved back across the river. They then began to receive reports on the Bowman HF radios that the Taliban were massing in the bazaar in Sangin. They collected the vehicles and began to return along the same route that they had followed to the crash site. As before, this involved a difficult judgement call about the risks associated with repeating the direct route back to the Combat Outpost or using a less direct route than might in any event have led them back close to where reports were identifying the insurgent activity.

Around 20:12, the retrieval patrol came under attack from small arms fire and rocket propelled grenades. The Bowman was used to inform the Ops Room at the Outpost; 'Contact, Wait'. After receiving the contact report a Quick Reaction Force was told to 'Stand To' [4]. When the Major arrived in the Ops Room, he initially considered making a formal request for support to the Helmand Reaction Force but instead decided to support the patrol with the resources at his disposal. In retrospect, this decision can be questioned. Any risk assessment can be criticised if it ultimately results in an adverse event. Such criticisms are often based on hindsight. They rely on information that was not available at the time of the incident. It is less clear whether others would have responded differently in the same situation. For example, the initial reports from the retrieval patrol did not immediately request any support from either the Combat Outpost or from the Helmand Reaction Force.

The Bowman radios were then used to inform the retrieval patrol that a Quick Reaction Force (QRF) was en route. The QRF consisted of just less than 50 troops from the UK, US and Afghan armies in nine vehicles. These included two WMIK's with General Purpose Machine Guns and two HMMWVs with a .50 calibre machine gun and the other with an M240 Medium Machine Gun. The QRF members carried an SA 80 (A2) rifle, except for one sergeant who took a General Purpose Machine Gun (Light Role). Six members of the group had night vision equipment. All wore helmets and body armour. Many carried short range Personal Role Radios; however, in the haste to deploy the vehicles were not equipped with the Bowmans. These had to be retrieved from a secure store before being installed. The Major in charge stated to the subsequent Board of Inquiry 'I was just going to take that risk and get out there rather than just faff around' [4]. This response illustrates the time pressures that complicate military risk assessment; it can be difficult to persuade personnel of the need to consider potential hazards on any mission, especially when comrades may be in danger. However, the Major's comments also illustrate particular problems for risk assessment in counter insurgency operations. As mentioned before, **there are strong reasons to act as swiftly as possible because the threats posed by the massed forces of insurgent groups can quickly rise the longer a unit is exposed to their fire**. In other words, additional delays provide insurgent groups with the opportunity to deploy more of their forces into the field.

The perceived need to provide prompt assistance was complicated by the fear that the route followed by the original Patrol was now covered by insurgent fire. Alternate routes through Sangin added a considerable distance to the journey; there were further concerns that the Taliban were massing there. The Major therefore set off along the original route with an initial plan to negotiate contact with the retrieval patrol using the personal radio systems. This decision reiterates previous points about the difficulty of accounting for risk exposure in military decision making, in this case preferring the hazards associated with a known route to the potential risks of a longer journey close to areas that were feared to be a centre of insurgent activity.

Risk assessment techniques encourage military personnel to consider the potential hazards that could complicate particular operations. However, the initial briefing of the QRF did not discuss what might go wrong nor did it propose any contingency plans. Some members even set off without any idea of where they were going. The rush to assist the retrieval patrol partly explains why the driver of one of the HMMWV's set off with the ignition keys for two of the other vehicles in his pocket. The HMMWV became entangled in barbed wire as it left the Combat Outpost. The driver eventually returned with the keys. In the meantime, the other HMMWV, two of the Snatch Land Rovers and two Afghan National Army vehicles left without noticing that the other vehicles had been delayed. This illustrates a 'Catch—22' problem for risk assessment in counter insurgency operations. The need to provide a prompt response and the difficulty of operating at night arguably increased the risks associated with the QRF's mission. These factors also made it more difficult for unit leaders to conduct any form of objective risk assessment. They chose to focus their attention on coordinating their response before additional insurgent forces could be deployed.

This first group of the Quick Reaction Force (QRF1) eventually turned onto a track where they were forced to stop around 20:50-21:00. There were relatively good ambient light conditions. The members of QRF1 dismounted and discovered that some of the vehicles were missing. The briefing lasted about two minutes and established the Order of March. One person from each vehicle remained to protect them. The rest set off along a foot path bordered by drainage ditches. A young man on a motorbike was stopped and sent to the back with Afghan National Army soldiers; however, he claimed not to have seen anything and the relative quiet of the march led the Major to assume that the insurgents had begun to withdraw. Shortly afterwards the forward members of the team noticed three men acting suspiciously. Two moved into the wood line and the third seemed to take cover behind a hay bale. One was observed to use a radio. The men moved off into a farm compound and QRF1 resumed their patrol. These events might have urged a more cautious approach, for example, by changing the Order of March to ensure that the General Purpose Machine Gun (Light Role) could be used effectively and that the unit leader was able to gain an overview of the rest of the patrol. However, they continued as before. This may again reflect a desire to 'press on and make contact'. It may also reflect the OMLT's lack of experience in counter insurgency operations. The specialised nature of these tasks suggests that considerable training may be required before unit leaders are in a position to conduct the detailed risk assessments that might have informed the deployment of QRF1 as it searched for the original patrol.

The track was bordered by a drainage ditch inside a wall on its southern edge. There was another mud wall on the northern side that opened into a field with a bund line or embankment running from north-east to south-west. The Major used his PRR to inform the rest of QRF1 that he had heard whispers some 30m ahead. Another member of QRF1 used his Common Weapons System (CWS) image intensifier to observe 12-15 people with small arms weapons. The Major then shouted 'British Army, Stop or I fire'. Accounts vary as to the immediate events following this; however, the volume of fire directed at QRF1 was higher than they managed to return [4]. At this time, the members of QRF1 were either prone or kneeling. During these initial moments of contact a Captain who had volunteered for the mission was fatally wounded from a bullet to the head.

There then followed a period of approximately 5 minutes characterised by general confusion. Some members of QRF1 could not return fire in case they hit other members of the patrol. The Major decided to take the Captains body back to the vehicles; this involved pulling him through a drainage tunnel while the others provided covering fire and used grenades. Some

members of the party wanted to leave the Captain in order to ensure that the others could all extract. Assistance could not be called from the vehicles because the PRRs were omitting a loud tone and could not transmit [4]. QRF1 eventually managed to get back to their vehicles with the body of the Captain.

4. Immediate Causes of the Incident

The lack of Standard Operating Procedures (SOPs) affected the performance of QRF1. This is important because these procedures are often drafted to ensure that military units follow standard practices that are intended to mitigate the risks associated with particular operations. In other words, they summarise the activities that should be conducted to reduce the impact of particular hazards even in situations where it is not possible to accurately assess potential risks. The SOPs governing the retrieval of the UAVs had not been extended to consider the wider conduct of patrols from the Combat Outpost. This was partly due to the rapidly changing nature of the OMLT deployment, discussed in subsequent sections, and also to the limited provision of IT facilities for documenting SOPs [4]. In consequence, QRF1 deployed without a number of checks that might otherwise have been expected during counter insurgency operations. Team members were unclear about their role and objectives. They set off without having agreed upon the route to the retrieval patrol. There was no discussion of the contingency plans that might be used if opposition was encountered. Further problems included the deployment of weapons within the Order of March, for instance, to ensure that the light machine gun could be used effectively. This lack of SOPs led to a situation in which QRF1 left the Combat Outpost without installing the Bowman radios. The subsequent Board of Enquiry argued that had the Major been able to use the HF radio system to communicate with the first UAV patrol and the Ops Room in the Combat Outpost then he would have had better situation awareness [4]. He might have been alerted to the hazards of attack from insurgent forces and hence might have been more aware of the risks being taken when he pressed on with the deployment of QRF1. The lack of SOPs compounded the problems of communication that arise for any unit on its first mission together, especially at night.

The lack of SOPs was compounded by *the lack of detailed briefings* both at the Combat Outpost and after QRF1 had left their vehicles. These briefings would have provided opportunities to review a number of the detailed decisions that contributed to this mishap. For example, the leader of QRF1 went to the front in the Order of March. This may have deprived him of a tactical overview during the insurgents' attack. It may also have prevented him from communicating effectively to individuals at the back of the unit. More detailed briefings may also have helped to review the distribution of night vision equipment between the members of QRF1. The patrol commander had to rely on a monocle device that was designed for US forces and could not be mounted to his helmet. There was, therefore, no way for him to both observe and fire at the same time.

The *ambiguity of counter insurgency operations* may also have contributed to the immediate causes of this incident. The leader of QRF1 shouted 'British Army, Stop or I fire'. This may have been motivated by a desire to reduce the likelihood of civilian casualties. However, other members of the unit had already reported seeing a group carrying small arms. It might also have been motivated out of concern to reduce the risk of fratricide given that they still had to locate members of the original patrol to retrieve the UAV. Irrespective of the causes, the subsequent investigations argued that any delay between the warning and opening fire provided the enemy with enough time to respond 'aggressively' [4].

Lack of night vision equipment also contributed to this incident. The OMLT Chief of Staff had written to the Helmand Task Force Headquarters on several occasions before the incident expressing his concern over the lack of resources in his units. In May 2006, he had requested a list of 'mission essential equipment' for force protection. This included 48 more Head Mounted Night Vision Goggles. These are the monocles that are, typically, worn around the neck by British troops. He had also requested 10 Common Weapons System which provide an image intensification facility mounted on the SA80 (A2). The Chief of Staff argued that 'neither the task being undertaken by OMLTs, nor the operational risk being taken, should...be underestimated; it is essential that teams are properly resourced' [4]. However, the mission essential equipment list was not sent to the right unit. This led to a 25-day delay. By the time of the incident, the request was approved but had still to be resourced.

Lack of appropriate firepower complicated attempts by extract QRF1 after they had come into contact with the insurgents. The decision to dismount significantly reduced QRF1's fire power. This was especially important given the high likelihood that insurgent forces would be carrying rocket propelled grenades. QRF1 might have benefitted from Underslung Grenade Launchers as well as Light or General Purpose Machine Guns. The subsequent Board of Inquiry argued that this would have taken resources from other units in the Helmand area. Tracer rounds would have helped in the extraction of the patrol; although this ammunition had been delivered to the OMLT it had not been brought forward to the Combat Outpost. Although the provision of these items need not have prevented the fatality; they would have significantly reduced the risks to the remaining members of QRF1 as they fought their way back to the vehicles.

5. Support for Operational Risk Assessment

The previous section has argued that the provision of SOPs can help to mitigate the risks associated with counter insurgency operations. Team leaders can use these to follow procedures that reduce the likelihood of adverse events without having to conduct

an explicit risk assessment. Table 1 illustrates an alternate approach. This was developed by the US Army to help military personnel assess the risks for the battlefield retrieval of rotary-wing aircraft, rather than UAVs. The box labelled '1. Supervision CMD/CONTROL' provides a means of assessing the hazards associated with operations involving personnel from the same unit or from an attached unit. Risks are increased for operations involving teams from attached units than those for which all staff are drawn from the same command. This is significant in the context of this incident given the complex history of the OMLT formation, described in the following sections, and their relationship both with the rest of the Helmand task force.

ROTARY-WING RISK ASSESSMENT MATRIX

1. SUPERVISION CMD/CONTROL (Risk Value/Mission)

VALUE	TACTICAL DAY	TACTICAL NIGHT
Parent Unit	1	2
Attached	3	4

2. PLANNING GUIDANCE (Risk Value/Time)

IN-DEPTH	ADEQUATE	MINIMAL
Vague	3	4	5
Implied	2	3	4
Specific	1	2	3

3. CREW SEL/PC TIME IN AO* (Risk Value/Fit Hrs) TOTAL TIME

>2000	<2000	<1000	<500
<25	3	4	5	6
>50	2	3	4	5
>50	1	2	3	4

4. CREW SEL/PI TIME IN AO* (Risk Value/Fit Hrs) TOTAL TIME

>2000	<2000	<1000	<500
<25	3	4	5	6
>50	2	3	4	5
>50	1	2	3	4

5. CREW SEL/ADD TIME IN AO* (Risk Value/Fit Hrs) TOTAL TIME

>2000	<2000	<1000	<500
<25	3	4	5	6
50	2	3	4	5
>50	1	2	3	4

6. ALL CREW MEMBERS ARE CREW COORDINATION TRAINED

No	+2
Yes	0

7. ALL TASKS REQUIRED ON THIS MISSION ARE SUPPORTED BY THE UNIT MISSION ESSENTIAL TASK LIST (METL)

Yes	0
No	5#

#Requires bn cdr approval.

8. CREW ENDURANCE (Risk Value/Fit Hrs)

QUALITY OF REST	>8 HRS	6-8 HRS	<6 HRS
Field	2	6	10
Garrison	1	4	10

Add 2 for missions flown during the last half of the duty day.

9. COMPLEXITY TYPE OF MISSION (Value/Condition)

VMC D	VMC N	NVG	IMC HOOD
Multiship	2	6	4	NA
Sling load	2	3	5	NA
Stabo/Rappel	1	2	4	NA
Terrain Flt	1	3	2	NA
Paradrop	2	2	NA	NA
Routine	1	2	2	3
NOE	2	8	4	NA
MTP	3	5	NA	NA
Maint Recovery	3	5	NA	NA

10. WEATHER** (Risk Value/Ceiling/Visibility)

<1000/3	<700/2	<500/1	>1000/3
D	3	4	6	1
N	4	6	10	2
NVG	3	4	8	1

11. ADDITIONAL RISK FACTORS (D, N)

Single Pilot	+4

ADDITIONAL COMMENTS

* Area of operations.
** Visibility values are given in miles.

Table 1: Military risk assessment matrix (US Army, [6])

The opening sections of the form also associate a higher level of command and control risk with operations after dark. A mission involving attached units at night would be assigned an initial risk value of 4. In contrast, a mission that was conducted by an integrated unit in daylight would only score a risk value of 1. Previous work explains the high-levels of risk associated with night operations [5]. These are readily apparent in the previous account of the Sangin incident; QRF1 did not realise that they had become separated from the rest of the Quick Reaction Force as they left the Combat outpost. The subsequent foot patrol found it hard to coordinate their activities and to bring their weapons onto the insurgents in case they hit other members of QRF1 etc.

Complex missions can be broken down into a number of activities using Mission Essential Task Lists. By summing the risk values for the hazards associated with each mission component, it is possible to form a partial ordering of those tasks that contribute most to overall risk. It is these high-risk sub-tasks that become the focus for risk reduction and mitigation. This relatively simple approach provides considerable flexibility. For example, an otherwise low risk mission might have a significant increase in the overall risk value if, for instance, it was the first time that a unit had been on patrol together. Senior personnel might then intervene by introducing more experienced personnel into the operation. The overall risk is obtained by summing the hazards for each stage of the mission. The total can then be assigned to a particular risk level. For example, Table 1 associates 'Low Risk' with risk values less than 16. Medium risk operations range between 16 and 28. High risk operations are associated with scores of 29 and above. In each case, commanders must seek additional levels of authorization before embarking on a mission. Company level approval must be provided for medium risk operations, while battalion commanders must support high risk plans. In this example, extremely high-risk operations associated with the use of night vision equipment must be approved at brigade level.

A number of practical difficulties remain to be addressed before the approach illustrated in Figure 1 can be used to inform a spectrum of counter insurgency operations. It seems unlikely that military doctrine could easily be extended to develop explicit risk assessment tables for every possible operation being conducted in hostile environments. The outputs of these tables would also have to be calibrated and validated against operational experience over time. On the other hand, it seems more than coincidence that Table 1 anticipates so many of the problems experienced in the Sangin incident ranging from the risks of composite teams through to the hazards of night vision operations [2].

5. Longer Term Causes of the Incident

Why was there a Lack of SOPs and Contingency Plans? The subsequent Board of Inquiry argued that the lack of SOPs can be traced back to the austere conditions in the Combat Outpost and to the lack of IT equipment throughout the OMLT [4]. They were not based on an infantry unit and most of its members had little or no previous experience of counter insurgency operations. OMLT members were drawn from units including the Royal Logistics Corps, Royal Electrical and Mechanical Engineers, Adjutant's General Corps etc. In consequence, they may not have appreciated the importance of SOPs and contingency planning for combat patrols in areas of insurgent activity. The members of QRF1 failed to appreciate the risks that they faced because they had not been trained in counter insurgency operations. If they had benefited from this additional training then they may have been more aware of the need to use SOPs and to prepare contingency plans in order to mitigate any hazards that they might face in the field.

Why Was There a Lack of Personnel? Other issues that contributed to the lack of SOPs for QRF1 included the limited number of personnel at the Combat Outpost. There was insufficient staff for a dedicated Quick Reaction Force with

associated operating procedures. Instead, the team had to be formed on an ad hoc basis. This may have frustrated attempts to establish a more coherent approach to contingency planning [4]. This lack of personnel can be traced back to both strategic and political decisions. The British Army had decided to staff the OMLT with full-time soldiers deployed to support individual platoons within the Afghan National Army. In contrast, the US Army chose to develop Embedded Task Teams from reserve and National Guard units. Their support was offered at company level. The British Army also had to meet this greater demand on their personnel from within the 3,150 soldiers that the UK Secretary of State for Defence had previously announced for deployment to Parliament.

Why was the OMLT Not Specifically Formed for Counter Insurgency Operations? The causes of the incident can also be traced back to differences in emphasis over the threat and force structure in the region. The US and Canadian emphasis was on 'full-spectrum combat operations' [4]. In contrast, the UK Helmand Task Force focussed broadly on redevelopment and on capacity building for the Afghan forces. These activities were intended to be a precursor to withdrawal. The OMLT played a pivotal role in this capacity building, acting as mentors for the Afghan National Army. However, it can also be argued that focus on reconstruction left the OMLT ill-prepared for the 'mission creep' that led to their deployment in counter insurgency operations.

Lack of Appropriate Pre-deployment Training further increased the risks faced by QRF1 and the initial retrieval patrol. Many of the OMLT members were surprised to learn that they might have to fight alongside Afghan soldiers. There had been an assumption that they would only be involved in training and reconstruction activities. The lack of clarity over the role of the OMLT was reflected in their pre-deployment training. This lasted 2 weeks, well short of the 6 weeks recommended by some senior officers. The British Army's pre-deployment training was not well matched to the operating environment in Helmand, which proved to be significantly more belligerent than had previously been expected. The Afghan National Army units' pre-deployment training was curtailed for similar operational reasons. This analysis stresses the recursive nature of military risk assessment; the operational elements of the OMLT arguably received insufficient training about the hazards that faced them because the strategic planning for their deployment did not recognise the risks that would arise from their rapidly role in counter insurgency operations.

Why Was Necessary Equipment Delayed or Missing? The 7th Para Royal Horse Artillery coordinated the planning for the OMLT. They, in turn, requested vehicles and communication support from Headquarters, 16th Air Assault Brigade. This left HQ with two choices; either to redistribute resources from other units in Helmand or to issue an Urgent Operational Requirement (UOR). However, the British Ministry of Defence and Treasury were unwilling to commit funds for UORs until there was a formal political announcement. The Secretary of State delayed the Helmand deployment for almost 2 months. He was anxious to ensure that the mission objectives could be met within the 3,150 manning cap and that support could be secured from other NATO members. A knock-on effect of mitigating the political risk of deployment was to increase the operational risk for the OMLT as necessary resources were delayed in procurement.

6. Adequate Strategic & Tactical Risk Assessment?

It is important to consider the strategic and tactical constraints that led to the gradual transformation of the OMLT from a reconstruction and training force into what amounted to a counter insurgency unit. At each stage of this process, key individuals identified the potential risks from 'mission creep'. Longer term problems, therefore, stemmed more from the military decision making processes that were supposed to be informed by these hazard and risk assessments.

Was the Strategic Risk Assessment Adequate? During the first weeks of deployment for the Helmand Task Force it became clear that the focus had partly shifted from stabilisation and reconstruction to counter insurgency operations. This led to a considerable drain on resources with priority being given to groups such as the Joint Helicopter Force rather than the OMLT. TACSAT communications, night vision equipment, machine guns were all allocated on a 'whole fleet management' principle in which risk assessment was used to determine those units that were in greatest need. However, it is notoriously difficult to assess the risk of insurgent activity for particular units in operating environments that are as complex and dynamic as Helmand. The lack of resources, including night vision devices and grenade launchers, amongst both the original UAV retrieval patrol and the subsequent Quick Reaction Force arguably illustrates the limitations of these risk assessments.

Was the Tactical Risk Assessment Adequate? The Chief of Staff of the OMLT had considerable reservations about the general lack of understanding at higher levels in the Helmand Task Force about the capabilities and resourcing for joint OMLT and Afghan National Army operations. In particular, he was concerned that their operational deployment would require additional support from the rest of the task force. The lack of armoured vehicles, night vision equipment and heavy machine guns was compounded by lack of personnel. He requested that Helmand Task Force HQ address these issues before the joint force was deployed 'as a matter of urgency to help mitigate the significant risk being taken by the UK OMLT for this operation'. In response, four WMIK's were sent from Camp Bastion.

Helmand Task Force HQ became concerned about insurgent forces massing at three locations which threatened Sangin. They, therefore, ordered a joint unit from the OMLT and Afghan National Army to go into the town. The 7th Para RHA was

determined to demonstrate their capability although 'all were aware then of the tactical risks of deploying into Sangin without a clear mission or a coherent intelligence picture' [4]. This initial reconnaissance was a partial success. However, reports continued to be received of insurgents massing around the town. An assessment report from 19-25th May noted that 'there remains a high risk of (insurgent) attacks against Afghan and Coalition force troop either located in or transiting through the Sangin valley including those occupying the Combat Outpost' [4]. However, from May 26th to the date of the incident, the OMLT considered that the risk to coalition forces in Sangin was 'benign'. Patrols were conducted by the Afghan National Army into the bazaar without major incident. The only major event appeared to have been the discovery of an apparent IED close to the police station on the 9th June. The Desert Hawks were used in the subsequent operation to help monitor a cordon around the suspect device.

This analysis illustrates the difficulty of military risk assessment. Although individuals recognised the hazards from the changing nature of the OMLT deployment, only limited steps could be taken to mitigate the risks. Additional equipment was provided but this was insufficient to meet the operational needs. Political constraints also acted to delay procurement and placed strict limits on the deployment of additional personnel. At the same time, the rapidly changing nature of the environment in Helmand created a context in which it was particularly difficult to assess the threat level in at any particular time in any particular region. The assessments for Sangin fluctuated from 'high' through to 'benign' in days.

Many of the individuals involved in the Helmand Task Force were aware that the Combat Outpost faced a significant risk from insurgents in that area. The problems were more in trying to reduce those risks in the face of political constraints, finite resources and uncertain hazards. The changing role of the OMLT illustrates a classic 'coping response' in which highly motivated teams did their best to 'make do' with the resources at hand. In such situations it seems unlikely that more formal aspects of risk assessment would have any substantial impact on behaviours. The organisational constraints on the Helmand Task Force meant that basic operational training was cut short without considering the need for additional courses in risk management.

7. Conclusions

Risk assessment has been advocated as a principle means of improving military safety. The British army advocates risk assessment as a means of guiding tactical planning and force protection. The US Army's Composite Risk Management extends explicit consideration of the likelihood and consequences of potential hazards to inform strategic, tactical and operational decisions. Unfortunately, civilian techniques cannot easily be used to guide military operations, especially against insurgent groups such as those in Iraq and Afghanistan. A case study has been used to illustrate the practical and theoretical barriers to the use of risk assessment. In particular, we have identified the problems that arose when trying to identify the hazards that complicated attempts to retrieve a UAV during counter insurgency operations. The dynamic nature of this mission, the need to 'make do' with limited resources and the strong desire to help colleagues fulfil mission objectives makes it unlikely that formal approaches to risk assessment would have provided strong benefits to the teams involved in this incident.

At the tactical and strategic level, many individuals were aware of the hazards being faced by the units involved in this incident. However, political constraints, resource limitations and the difficulty of predicting the level of threat posed by local insurgent operations all combined to frustrate the mitigation of that risk. Unless these wider issues are resolved then there is little prospect that the proponents of military risk management will realise the benefits that they anticipate.

Acknowledgement

This work is based on information provided by the UK MoD Board of Inquiry [4]. Thanks are due to the members of this team and to those involved in the decision to make the findings public. Together they have provided the insights that are essential if we are to learn from past incidents and reduce the likelihood of future mishaps.

References

[1] C.W. Johnson, The Paradoxes of Military Risk Assessment, In A.G. Boyer and N.J. Gauthier, Proceedings of the 25th International Systems Safety Conference, Baltimore, USA, International Systems Safety Society, Unionville, VA, USA, 859-869, 0-9721385-7-9, 2007.

[2] C.W. Johnson, Act in Haste, Repent at Leisure: An Overview of Operational Incidents Involving UAVs in Afghanistan (2003-2005). Submitted to the Third IET Conference on Systems Safety, 2008.

[3] J.L. Drury, L. Riek, N. Rackliffe A Decomposition of UAV-Related Situation Awareness, Proceeding of the 1st ACM SIGCHI/SIGART conference on Human-robot interaction, Salt Lake City, Utah, USA, 88-94, 2006, ISBN:1-59593-294-1.

[4] UK Ministry of Defence, Board Of Inquiry Report into the Death of Capt J Philippson, Helmand Province, Afghanistan, 11th June 2006. London, U.K. 13th February 2008. http://www.mod.uk/DefenceInternet/AboutDefence/CorporatePublications/BoardsOfInquiry/

[5] C.W. Johnson, The Operational Strengths and Weaknesses of Military Night Vision Equipment, Defence Management Journal - Yearbook 2004, 72-75, PCSA International, Newcastle Under Lyme, UK.

[6] US Department of the Army, FM 3-04.513: Battlefield Recovery and Evacuation of Aircraft, Headquarters, Washington, DC, 27 September 2000.