

ACCIDENTAL HEROES

Britain, France and the Libya Operation

An Interim RUSI Campaign Report, September 2011



Key Points

- Britain and France found themselves, uniquely, in the lead in an operation where the US pulled out of the combat at an early stage;
- NATO found itself operating in new ways that will change the alliance;
- The operation was unlike any of those of the last decade, but more like those of two decades ago;
- The air and maritime campaign demonstrated the success of precision weapons but also their dependency on high tech ISTAR technologies;
- The maritime aspects of the campaign may re-ignite the 'aircraft carrier debate' in Britain.
- The RAF and the Royal Navy had to divert assets from other tasks to undertake this operation and successfully improvised some combat systems;
- Special forces operations on the ground were extensive and multinational. They helped turn the tide between the rebels and Qadhafi's forces.

Introduction

Britain, France and the United States can take some justifiable credit for the success of the Libyan operation. Whatever happens next in Libya, there can be no doubting that the allied air operation was critical to saving many innocent lives and removing a dictatorial regime. Britain and France, almost alone among the international community, took a consistent and robust line from the beginning and have now seen it through to the verge of military success. They deserve the plaudits.

The two allies have thus emerged as the most key political and military players from a small war in which they had nothing much to gain and a lot of reputation to lose. Prime Minister Cameron and President Sarkozy became accidental heroes in a civil war, justified – unlike most civil wars – on grounds of principle.

Like all military operations, this one was more messy and ambiguous than politicians like to admit. In this particular case, it reflected a number of new, and sometimes novel, political and military elements. This Interim Report on the Libya operation marks the opening of RUSI's research work to examine all aspects of the campaign. It includes

details and judgments that have not appeared in any other form and reflects on some of the less obvious aspects of the campaign. More extensive reports will follow as information is gathered.

Several features of this operation show evidence of improvisation, innovation, and good luck, as well as the characteristic military professionalism of the allied forces involved. Non-NATO forces were integrated into an improvised command structure that was then operated through NATO, while the alliance was politically divided about it. Surveillance systems and weapons themselves were adapted and used in different ways; air-to-ground communications were minimal – an unusual situation in conflicts such as this – and special forces from a number of different countries appear to have played important roles in a conflict where foreign forces on Libyan territory were explicitly ruled out by the United Nations.

Amid the justifiable satisfaction of military success, this was nevertheless a curious operation – both politically and militarily – that will offer many pointers for the future and will require careful analysis.

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Timeline

15 Feb	Protests begin against the Qadhafi regime across Libya	27 May	David Cameron approves the deployment of four Apache attack helicopters
24 - 25 Feb	<ul style="list-style-type: none"> Special Forces enter Libya to aid the evacuation of foreign nationals Rebels in Misrata fight against government forces beginning the siege of the city Zawiyah, to the west of Tripoli, also falls to rebel forces 	4 Jun	First strikes by Apache attack helicopters near the town of Brega
26 Feb	UN passes Resolution 1970 imposing arms embargo and freezing assets of Qadhafi family	7 Jun	Rebels from the Nafusa Mountains take the town of Yafran
3 Mar	The International Criminal Court (ICC) confirms it is investigating alleged crimes against humanity committed by the Qadhafi regime.	29 Jun	French military officials confirm that weapons had been air-dropped to rebels in the Nafusa Mountains
5 Mar	The rebel National Transitional Council (NTC) declares itself the true representative of Libya	6 Jul	The Italians announce they will withdraw their carrier <i>Giuseppe Garibaldi</i> from Libya to save on costs
10 Mar	<ul style="list-style-type: none"> Qadhafi forces retake Zawiyah, 175 rebel soldiers reportedly killed The African Union (AU) reject foreign military intervention in Libya Qadhafi counteroffensive continues towards eastern city of Benghazi 	1 Aug	West of Misrata on the road to Tripoli, rebels enter Zlitan in a renewed offensive
12 Mar	The Arab League backs a no-fly zone over Libya	10 Aug	French carrier <i>Charles De Gaulle</i> leaves Libya and returns to Toulon for maintenance
17 Mar	UN passes Resolution 1973 authorising a 'no-fly zone' over Libya – China and Russia abstain	14 - 15 Aug	<ul style="list-style-type: none"> Rebels capture Sorman and Sabratha, west of Tripoli and continue fighting for Zawiyah. Main supply lines from Tunisia to Tripoli are cut. Rebels in the Nafusa Mountain region reportedly control Gharyan and Tiji
19 Mar	<ul style="list-style-type: none"> US, UK and French military assets begin bombing campaign Italian carrier <i>Giuseppe Garibaldi</i> leaves the port of Taranto First RAF Tornado aircraft arrive at Gioia del Colle airbase in Italy 	20 Aug	Rebels push into Tripoli as part of a 'three-pronged' assault called 'Operation Mermain Dawn' on the Libyan capital
20 Mar	<ul style="list-style-type: none"> Rebels push out of Benghazi in second-offensive French carrier <i>Charles De Gaulle</i> leaves Toulon Naval Base for Libya First RAF Typhoon aircraft arrive at Gioia del Colle 	23 Aug	Rebels enter Qadhafi's Tripoli compound in Bab al-Azizia, signifying the end of the Qadhafi regime
25 Mar	<ul style="list-style-type: none"> NATO takes over from the US command enforcing no-fly zone, it is named Operation Unified Protector Fierce fighting in Ajdabiya leads to rebel victory, they push onto Brega, Ras Lanuf and Bin Jawad 	10 Sep	<ul style="list-style-type: none"> Libyan interim leader, Mustafa Abdul Jalil, arrives in Tripoli Strong opposition encountered in Qadhafi strongholds of Ban Walid and Sirte
7 Apr	Qadhafi forces go on the offensive and retake Brega beginning a stalemate between the opposing forces	15 Sep	David Cameron and Nicolas Sarkozy visit interim government in Tripoli.
24 May	French Defence Minister Gerard Longuet confirms that France will send attack helicopters to Libya	20 Sep	Heavy fighting continues in Ban Walid and Sirte

Compiled by Grant Turnbull

The Road to War

There was something surprising – even to London and Paris – about the way unfolding events in Libya drew the two European powers into the leading roles they played. The protests on Libyan streets that began on 15 February rapidly became an outright challenge to the authority of the Qadhafi regime and within weeks a full-scale civil war had erupted across Libya, with rebel forces first on the offensive in Cyrenaica moving out from Benghazi, and in Tripolitania, west and south of Tripoli itself. Once government forces had recovered from the immediate shock of rebellion, they fought back with evident brutality directed at population centres, and rapidly reversed rebel gains in a series of helter-skelter engagements along the coastal strip of the country. Within two weeks the Libyan government was being widely condemned for its indiscriminate attacks on civilians.¹

By the first week of March, the idea that an international coalition should enforce a no-fly zone over Libya was being publically debated. But there was widespread scepticism both about its political feasibility and its utility in protecting Libya's civilians from a vengeful leadership in Tripoli. In the United States, John Kerry, Chairman of the Senate Foreign Relations Committee, called for a no-fly zone, as did Senator John McCain. But Defense Secretary, Robert Gates, pointed out that such a zone would require an outright attack on Libya to disable its extensive air defence system, while Chairman of the Joint Chiefs, Admiral Mike Mullen, regarded a no-fly zone as an 'extremely complex operation'.² Besides, Russia and China argued against the concept, both in principle and on practical grounds, so the chances of UN Security Council authorisation were regarded as very low. The passing of Security Council Resolution 1970 on 26 February which re-imposed the arms embargo and froze the assets and travel of the Qadhafi family seemed to be as far as the UN was likely to go.

Events, however, moved extremely quickly. On 3 March, the International Criminal Court announced that it was investigating alleged crimes against humanity committed by the Qadhafi family. By the end of the first week of March, the National Transitional Council in Benghazi had declared itself the true representative of Libya and was gaining



Prime Minister David Cameron (left), NTC Chair Mustafa Abdul Jalil and President Nicolas Sarkozy.

Photo courtesy of the Prime Minister's Office

rapid international recognition. On 7 March, the Gulf Cooperation Council (GCC) supported the establishment of a no-fly zone, and the following day the Organisation of the Islamic Conference (OIC) did the same. The African Union, meeting on 10 March, pointedly rejected the notion of any foreign military reaction to events in Libya. NATO beefed up its naval operations in the Mediterranean to give itself more options in the crisis and the NATO Secretary General continued planning for a no-fly zone. The EU had met at head of state level to increase the pressure on Qadhafi; and the UN dispatched a peace envoy to Tripoli.

The critical days were from 12-17 March. Up to this point, it was clear that the international community was alarmed by events in Libya, but evidently split over how to react. A no-fly zone was favoured by some, but not all, European governments, by the OIC and the GCC; but it was opposed outright by the African Union, China and Russia. The US was genuinely ambiguous – fearing another engagement in a Muslim country only marginally less than it feared a failed engagement in any country. President Obama's own political instincts were simply unclear.

Few believed that a no-fly zone would have more than a marginal impact on the ability of Qadhafi's forces to target civilians. At best, it would constitute a strong statement of intent; with the implication that more might follow.

Colonel Qadhafi and his heir, Saif al-Islam, evidently felt that they could snuff out the rebellion before any of this could take effect, and they made blood-curdling threats against the people of Benghazi.

France and Britain took the diplomatic lead in outlining a toughly worded UN resolution to impose a no-fly-zone. This was drafted more in anger than anticipation of success but it would clarify Paris and London's position. The key moment came on Saturday 12 March when the Arab League explicitly called for a no-fly-zone. By Tuesday a draft UN resolution was in circulation via France and Britain. US Secretary of State Hillary Clinton urged support for it on Wednesday 16 March and Prime Minister Cameron and President Sarkozy were working the international phones to gain support. Britain and France were suddenly at the forefront of an international military intervention on behalf of an alarmed United Nations.

Four particular elements came together during this week to create an unusual situation. One was the impact that the Arab League declaration had and its appeals during the week for the international community to avert a massacre in Benghazi. This was critical and it was uncharacteristic of the League to be so firm and united on any matter affecting another Arab country. NATO had always made clear that there could be no action without an explicit mandate, and the appeal of the Arab League to the

UN suddenly seemed likely to create one.³

Secondly, this had the effect of tipping the Obama Administration into a decision to do what it had previously thought impractical. President Obama was determined not to take on another military commitment, and he was soon to put unprecedented limitations on this one; but for the time being the US lined up behind a tough UN resolution that now had a realistic chance of success.

Thirdly, the threat of a massacre in Benghazi and the speed with which any UN decision would have to be implemented put unusual pressure on the debate which took place in the Security Council on Thursday 17 March. The aggressive statements of Qadhafi and his son, Saif, made it very difficult for Russia and China to exercise a veto in the face of the evident alarm of the Arab League's spokesmen. In the event, ten of the fifteen Security Council members voted in favour; five abstained, including China and Russia who did not therefore exercise their veto. Security Council Resolution 1973, when it appeared, contained surprisingly strong and specific wording.⁴

The fourth factor lay in the actions of President Sarkozy between Thursday 17 and Saturday 19 March. An international summit was held in Paris on that Saturday in an atmosphere of emergency. Rebel forces were falling back on the outskirts of Benghazi itself ahead of the armour and heavy artillery of Qadhafi's forces. The three Allies who would be in the forefront of implementing a no-fly zone, and therefore bombing the Libyan air defence infrastructure – the US, Britain and France – discussed their plans.

At the end of the meeting, however, President Sarkozy announced to the world's media, and without consultation with either of the allies who he had been with only minutes before, that French aircraft were in action over the city. Within two hours, French forces had engaged Qadhafi's tanks and armour in a dramatic series of attacks which halted the immediate advance of government forces on Benghazi.⁵ This played directly to world opinion, as much as to that in Benghazi, but it was little secret that Downing Street and the White House were privately furious at what they took to be an act of grandstanding. This was not the start of the campaign that they had envisaged or discussed and it had

the effect of alerting all Qadhafi's forces that the action had begun. After the French attack at 6pm, US and British submarines launched Tomahawk missiles at fixed targets throughout Libya around midnight.

London and Paris were now in a leading, but increasingly uncomfortable, position. At this stage, only the three allies were taking offensive action against Libyan forces, and the only way to operate a no-fly zone so as 'to protect Libyan civilians' required the allies to stretch the meaning of the UN resolution to the limit. They had to destroy Libya's air defences, dismantle its military command system, and attack Libyan forces on the ground wherever they could be found. As it happened, Libyan forces made it easy for them by relentlessly attacking population centres wherever they operated; and Qadhafi played into their hands by continuing with his delusional bluster and threats. A more subtle dictator could have put the three principal allies under far greater political pressure when the Arab League blanched as it confronted the realities of what it had advocated, and voices in Europe and the US warned of a dangerous military stalemate.

The political vulnerability of the principal

Did This Operation Set a Precedent?

At first glance, Libya was a classic test-case of humanitarian intervention, now incorporated as a new United Nations concept, and usually referred to as the 'Responsibility to Protect', or R2P. The idea is that, while the national sovereignty of states remains the lynchpin of the global system, there are extreme cases when this principle may be set aside and foreign intervention becomes justifiable, should a government fail in its fundamental duties to ensure the life or basic welfare of its own citizens.

The concept remains abstract and controversial, but the Libyan case was clear-cut: that country's leader not only failed to protect his citizens, but actually threatened their wholesale murder. And the UN Security Council explicitly rejected the claim that what happened in Libya was that country's internal affair.

Nevertheless, when the UN Security Council was asked on 17 March to approve a military intervention, China, Russia, Brazil, Germany and India all abstained. Each country had its own reasons, and most of the abstainers subsequently modified, or reinterpreted their arguments.

Still, the fact remains that a large proportion of governments refused to consider Libya a test case for the R2P concept. Indeed, the 17 March resolution only passed by a simple majority because South Africa was persuaded to support it, and that country publicly regretted its vote the very next day.

To make matters worse, the Western nations which led the military operation did nothing to enshrine the concept either. For, the moment the resolution passed, the West proceeded to interpret it in any way it wished.

Officially, the military intervention was only intended to protect civilians in Benghazi. But, after Benghazi was secured, the operation was expanded and became open-ended. In theory, the aim was never 'regime change', but many argued this was precisely the main objective. The UN-imposed arms embargo on Libya was brushed aside, first by using Qatar as a conduit for weapon supplies to the rebels, and then by supplying the rebels directly.

The Libyan episode mirrors Western behaviour in previous interventions, from the Bosnia operation in 1995, to the Kosovo war in 1999 and the invasion of Iraq in 2003. In every one of these occasions, a handful of Western governments used a UN Security Council resolution which lacked full backing, supposedly on the behalf of the 'international community'. And, in every single case, once a resolution passed in the UN, Western governments precluded any further debate. So it proved this time: Russian and Chinese pleas to reconvene the Security Council in order to debate the Libya situation were shrugged off.

The more this strategy is repeated, the more reluctant other countries are to give a handful of Western nations a blank cheque to use force. In effect, the West may be preventing the concept of humanitarian intervention from taking shape through its own short-sighted behaviour. Libya was an opportunity to define what R2P should stand for, but the concept still lacks a unified interpretation.

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allies was not made any easier by early confusion over who was running the operation. For the first ten days this was a loosely coordinated series of national operations. Only on 31 March, after a lot of political wrangling, did NATO take command of the whole operation, and with that the United States pulled out of the military front line to take a back seat, providing (albeit extensive) combat support to other allies.⁶ In pushing so hard for a no-fly zone, in the circumstances of wanting to 'save Benghazi', Britain and France thus found themselves in the forefront of an air campaign which pitched them into a nasty little civil war as the air arm of the rebel forces.

Whether saving civilian lives automatically meant fighting to remove Qadhafi was a difficult political line to maintain. This made the military objectives more ambiguous than they might otherwise have been. It was reported that the National Security

Council in Whitehall was less than clear in its own collective mind what the mid-range military objectives of this operation were. The NSC appears to have flip-flopped more than once between seeing the operation as an immediate protection of Libyan civilians wherever Qadhafi's forces could be targeted, in Brega, or Ras Lanuf or Misrata; and trying explicitly to bring Qadhafi down with a mixture of military pressure and aerial coercion in and around Tripoli. As the operation progressed, and the 'remove Qadhafi' objective strengthened, there appears to have been considerable uncertainty over where the rebels were best placed to do so: in the East of the country, a very long way from Tripoli; in the capital itself; or in the Nafusa mountains, where a well-organised rebel thrust eventually linked up with an underground opposition movement inside Tripoli.

*Analysis by Professor Michael Clarke,
Director General, RUSI*

NOTES

1. By the UN Human Rights Council and by Human Rights Watch, among many others. On 26 February the UN Security Council referred Libya to the International Criminal Court.
2. David Lerman, Bloomberg.com, 7 March 2011.
3. 'Arab League Backs Libya No-Fly Zone', BBC Online, 12 March 2011.
4. United Nations Security Council SC/10200, 17 March 2011, para. 4.
5. 'French Planes Stopping Airstrikes on Benghazi: Sarkozy', *Defense News*, 19 March 2011.
6. The US planned to pull out of combat operations on 1 April, but was prevailed upon to operate for another 48 hours and eventually halted operations on the morning of 4 April. See, 'NATO to take over Libya No-Fly Zone', CBS News 24 March 2011; 'US pulls out warplanes from Libya: Pentagon', AFP, 4 April 2011.

The Air Operation

The Libya campaign has been a salutary reminder of how a broad spectrum of military capabilities are usually required to address any modern conflict. In this one, air power, and the assumption of air superiority, has re-emerged as a critical factor.

The lack of any allied 'boots on the ground' also meant that nations were forced to lean more heavily on other levers of power, including diplomatic efforts, in order to achieve success, which resulted in a more pan-government effort.

Precision strikes to minimise casualties

NATO's ability and effectiveness in acquiring targets was a vital aspect of the campaign. There was clearly some (indirect) communication between the rebel forces and NATO forces regarding the positions of loyalist forces and potential targets, however, it would have been neither appropriate nor safe for the Libyans to laser designate targets. Without Joint Tactical Air Commanders (JTACs) on the ground, it fell to other air assets to carry out this task.

NATO's Rules of Engagement meant that coalition forces would not engage a target unless there were 'eyes on the target'. As a result, the capture of Zawiyah, Zlitan and Gharyan in early August permitted coalition intelligence assets to concentrate their efforts on Tripoli, which subsequently allowed for a



A Tornado GR4 aircraft is pictured being prepared for a sortie during Operation Ellamy, the UK's contribution to the UN sanctioned no fly zone over Libya. Photo courtesy of SAC Neil Chapman/RAF. Crown Copyright.

more intense bombing campaign in the city.¹

Cameras and sensors would observe targets before and during a strike to ensure no civilians would be hit (this reduced the risk of embarrassing mistakes such as the Chinese Embassy strike in Belgrade in 1999 as well as protecting civilians who might have been used as human shields).

In addition, precision-guided munitions with a small blast radius have allowed NATO forces to minimise collateral damage, in some cases only targeting

specific sections of buildings rather than demolishing the entire structure.

While the coalition was criticised for their tentative approach in the early part of the campaign, it seems to have paid off with even loyalist forces reportedly recognising the fairness and accuracy of the airstrikes. To date between 50-100 civilians have perished from air strikes in this six month campaign – although figures vary wildly at present – compared to 400-500 in Kosovo.

Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) missions

Given the importance of real-time information in this campaign, ISTAR will be critical for future operations. However, it is an area in which European forces are lacking. General Mark Welsh III, Commanding General USAF Europe, suggested that less-wealthy NATO nations might consider choosing cheaper ISTAR assets over more expensive combat platforms when modernising their air forces as there was a critical need for these capabilities.²

As it stands, much of the dedicated intelligence assets were provided by the US (at least 27 per cent). British ISTAR assets, such as Sentinel were much appreciated by US and French allies, however, they have an uncertain future as indicated in the Strategic Defence and Security Review.

Despite these reservations, the operation has been an excellent example of the multi-role or Combat ISTAR concept recently adopted by the Royal Air Force. Not only were US Predator and RAF Tornados used in both strike and reconnaissance roles, air-to-air refueling platforms also provided additional ISTAR capabilities as they operated in the airspace above Libya, increasing the area that might be observed.

While collection of imagery and other information proved successful, dissemination of that intelligence across the alliance was less effective. Lieutenant General Patrick de Rousiers indicated that integrating French intelligence proved problematic as the only mechanism allowing France to feed into the mission was through NATO at NATO Secret Level.

In terms of sharing resources, France and the US have agreements on the military use of space assets. Moreover the UK

and France also have some arrangements for sharing intelligence but bi-lateral agreements do not permit that information to go further. Discussions are underway to examine how France might be able to insert its intelligence in a timelier manner for future operations.

Combat/Kinetic Missions

Initially 123 combat aircraft were deployed under the US-led Operation Odyssey Dawn. Continuing now under the NATO-Led Operation Unified Protector, around 130 combat aircraft supplied by eighteen nations are committed to the operation. Of these, only aircraft provided by the US, UK, France, Canada, Denmark (a total of around fifty-five) are able to conduct air to ground operations. The targets these aircraft can prosecute are further limited by the munitions each carries. With an average of fifty strike sorties a day some squadrons have been stretched.

Suppression of Enemy Air Defences has been mainly left to US forces, although Italian Tornados were able to provide additional support. Even after the US severely reduced its commitment in April, a US Department of Defense spokesman said that the 'US has done 77 percent of all the refueling missions and 27 percent of the surveillance flights. [The US also] provided 22 tanker aircraft and 13 surveillance and reconnaissance aircraft to NATO for use in Libya operations, including two Predator drones, a high-altitude unmanned Global Hawk, and an array of planes that have sophisticated jamming, radar, communications and spying capabilities.'³

Operation Unified Protector is a small operation by NATO standards but many are concerned that European forces are finding it so difficult to deploy aircraft and sustain them. The fact that French Rafale and British Typhoon fleets are in the process of ramping up is partly to blame for some of the challenges in

sustaining the operation. As a result training is now a matter of concern, particularly for contingency operations. As the First Sea Lord, Sir Mark Stanhope rightly stated, there will be some difficult decisions required to maintain this tempo if the operation extends much beyond September.⁴

Similar stories have been heard across NATO and much praise has been heaped on Scandinavian nations (Denmark, Norway and Sweden), who took on a lion share of the operations relative to the size of their commitment and their nation's defence budget. It is no surprise that Norway, which undertook up to 17 per cent of the strike missions with just six aircraft felt unable to maintain such a pace of operations.

Helicopters

Helicopters have been seen by some as the tipping point in the battle for Misrata and indeed the entire Libyan campaign, although this claim is somewhat a stretch. They certainly would not have been able to prosecute the whole campaign (Libya is too large a theatre) and even after the main air defences had been removed, attack helicopters remain vulnerable to smaller air defence assets and even small arms fire. Nevertheless, helicopters were effective in the following ways:

- The French are extremely pleased with the effectiveness of the rotary wing platforms. Others have questioned the ISTAR coverage required to ensure the safety of these operations. The 'black hawk down' effect will always mean that helicopters are high on the target list for enemy forces and this means that a number of air assets were needed to support attack helicopter operations.
- The arrival of the helicopters allowed the UK and France (and subsequently NATO) to signal their intent with the

Brimstone Missiles

Did UK forces nearly run out of ammunition in the Libya operation? It is a claim which has been much discussed in relation to the Brimstone missile. A new variation on this anti-armour missile is the Dual Mode Seeker Brimstone (DMSB) which makes it a laser-guided weapon with a small but very potent charge. But the military only had so many of these upgraded DMSBs, with a stockpile in Afghanistan of Brimstone that had not been used and were due for re-servicing. The supplier, MBDA, was able to increase production of the seeker heads; and other weapons were fired wherever possible. Supply then caught up with demand. But the stock of usable DMSBs was reported to have fallen to single figures at one stage. There is no question of the UK running out of munitions for this operation. Nevertheless, it ran very short of the new variant of the weapon which most suited the chosen tactics.



Air Sorties and Strikes

Around 115 sorties are conducted every day, of which 45 are strike missions.

Over 22,342 sorties have been conducted, of which 8390 have been strike missions.

(Dating until 9 Sept)

Source: NATO

arrival of an uplift of force midway through the campaign.

- They had a psychological effect both on the rebel and loyalist forces, being more visible (and audible) than the fixed wing aircraft overhead. The notorious reputation of Apaches involved in collateral damage in Iraq would also have played on the minds of the Libyans.
- Munitions used by helicopters are generally smaller and would have been more appropriate to the latter stages of the operation as most of the larger targets would have already been picked off. It also allowed NATO to ensure lower collateral damage.

The British involvement in NATO's joint air planning

All air operations for Operation Unified Protector were tasked by the Combined Air Operations Centre (CAOC) in Poggio Renatico (Italy) and supported by CAOCs in Brummsen, Germany; Izmar, Turkey;

Finderup, Denmark and Uedem in Germany. There were initially no British officers in the Italian CAOC owing to a slow reduction of RAF postings to NATO facilities over the last few years and in part to the number of CAOCs dotted around Europe. This meant that British forces were unable to influence the nature of operation, promote national doctrine or share experience. Air Commodore Ed Stringer was responsible for the British contribution but only from a distance in Cyprus and not the designated command centre in Italy.

The presence of German officers in NATO headquarters proved highly controversial given that the German government had chosen to stay out of the operation. More controversially, seven officers were in fact deployed, as the operation started, to targeting posts in Brummsen and elsewhere, in direct support of the operations. This is perhaps seen as a sign where the military were keen to avoid renegeing on their NATO commitments despite the political choice to abstain from operations.

A model for the future?

The air campaign has been largely successful in limiting the movement of loyalist forces, protecting the population and providing the rebel forces with time to train and organise themselves. Is air policing in support of local forces likely to be the future strategy for liberal intervention? If we consider former Defense Secretary Robert Gates' speeches to the Air Academy and West Point earlier this year – both delivered before Libya became a concern – he indicated that the US would not commit ground forces beyond the operations in Afghanistan and Iraq but he encouraged

the emerging talent at the US Air Force to prepare for emerging security challenges.

Certainly the French are very pleased with the outcome and, based on private conversations, the British are quietly satisfied albeit cautious that the operation is not yet over. However, given the concerns of many countries in the lead up to this intervention and the inevitable mission creep from United Nations Security Council Resolution 1973, is it likely that politicians will get international support for future air interdictions? Perhaps not, if Syria is anything to go by, where David Cameron has already made it that there is currently insufficient international political support to warrant military intervention.

Air operations are still likely to be an attractive choice for political leaders in the near term until operations in Afghanistan wind down: especially as it provides the ability to intercede rapidly as security situations erupt.

Analysis by Elizabeth Quintana, Senior Research Fellow, Air Power and Technology

NOTES

1. Samia Nakhoul, 'The Secret Plan to Take Tripoli', Reuters, Sept 6 2011
2. General Mark Welsh III, Commanding General, United States Air Forces in Europe 'Partnering by Choice and Necessity', speech given at RUSI 14 July 2011.
3. Sagar Meghani, U.S. still conducting limited Libya airstrikes, Associated Press, 13 April 2011
4. 'The RAF and Expeditionary Operations', RUSI Defence Systems, July 2011.

Libya and Afghanistan: Cost Analysis

Compared with operations in Iraq and Afghanistan, Libya was a relatively inexpensive operation for the UK. In June, Defence Secretary Liam Fox estimated that the net additional costs of a six month operation would amount to around £260 million, including up to £140 million for the cost of replenishing munitions. This still seems a reasonable estimate for the total additional cost to the Treasury, provided the NATO military operation is substantially completed by end-September.

By comparison, UK military operations in Afghanistan during 2010-11 cost the Treasury an additional £4.5 billion, and a similar amount is likely to be needed in 2011-12. If the lifetime costs for caring for those disabled by the war during this year

are also included, the bill (both human and financial) for Afghanistan is even higher.

The cost of the Libya operation amounted to around 12 per cent of that of Afghanistan operations over the same (six-month) period, and only 1.6 per cent of the £16 billion total additional cost of UK Afghanistan operations since they began in 2002. As in Afghanistan, the Libya figures do not account for the full cost of the personnel and equipment involved in the Libya operation. Nor, importantly, do they account for the additional costs which may be incurred from the need to plug the capability gaps that have been revealed by the operation.

What the comparison with Afghanistan

does illustrate is just how expensive it can be to deploy large forces on the ground. Had NATO decided to deploy a major peace enforcement mission on the ground in Libya, total additional costs to the UK (if it had joined such a force) would have increased several-fold. Despite the apparent intensity of this operation, in terms of the deployment of advanced munitions and sophisticated support capabilities, the resource demands that it has presented are therefore of a different (and lower) order of magnitude than Afghanistan, which has remained the Ministry of Defence's main effort throughout 2011.

Analysis by Professor Malcolm Chalmers Research Director, RUSI

The Maritime Contribution

Throughout the Libyan campaign, various navies have conducted tasks across a wide spectrum of operations in ways not necessarily obvious from media reports. This has ranged from maritime security and blockade enforcement to the use – even if on a small scale – of traditional high end capabilities such as mine counter measures, naval fire missions and carrier strike. Even before the commencement of combat operations in March, warships and other maritime assets were deployed to conduct non-combatant evacuation operations. The United States Navy's Joint Force Commander Admiral Samuel J. Locklear III stated that Libya demonstrated not only the agility and flexibility of sea power, but also that the coalition's ability to assist ashore would have been reduced without it.¹

The Royal Navy's initial contributions to the campaign, however, required it to drop some other on-going naval tasks. For example:

- HMS *Cumberland* had been conducting counter-piracy and other maritime security operations in the Indian Ocean before being redeployed to Libya. Her relief, HMS *Liverpool*, was sent to Libya;
- HMS *York* was en route to the South Atlantic, for her second deployment there in 12 months, when she was re-tasked to head to Libya;
- HMS *Westminster* had been operating in UK waters.

The UK had to choose for the duration of this crisis, however long that would turn out to be, between four critical national tasks – counter-piracy operations, deterrent presence in the South Atlantic, domestic maritime tasking, or supporting a UN-mandated operation in Libya. This choice was made on the back of the February 2011 decision to drop counter-narcotics and disaster relief warship patrols in the Caribbean.²

Unique UK Maritime Contributions

Apache at Sea

Following the recent Defence Review's decision to withdraw from service the UK's current aircraft carriers, the UK was not able to contribute a carrier to the operation. Nevertheless, in an unprecedented operational deployment delivering what some described as a 'game-changing' capability, British Army Apache helicopters were embarked in the

Landing Platform Helicopter (LPH) ship HMS *Ocean*.³ Indeed, the very public demonstration of this new capability, off the coast of Cyprus a few weeks previously, could have been intended to have a deterrent or coercive effect on regime forces.⁴

Tomahawk Land Attack

Tomahawk land attack is one of the Royal Navy's four core strategic contributions to British defence and security policy.⁵ The UK holds an inventory of sixty-five Tomahawks, deployed across its flotilla of seven nuclear-powered attack submarines (SSNs). Given this force level and the range of global commitments these submarines must support, it is challenging to maintain in theatre even one boat equipped with a Tomahawk load sufficient to make more than a modest numerical contribution.

In Libya, press sources suggest around seven UK Tomahawks were fired, compared to the 221 fired by the US Navy.⁶ Indeed, when compared to the United States – the only other Tomahawk-capable navy – the UK's use of the weapon since it entered into service in 1998 has always been significantly lower. Alongside participation in the opening strikes, firing the first UK ordnance in the operation, HMS *Triumph* fired a mix of Block III and – in a first for the UK – Block IV Tomahawks, including conducting the first UK-only Tomahawk strike.

The strategic value of Tomahawks is to reach deep into hostile territory and in this case to target air defence, command and control centres that were intrinsic to Qadhafi's forces as a pre-requisite to operating a no-fly zone. The use of

Tomahawks are also designed to have some coercive effect on an adversary.

The presence in theatre of the American guided missile submarine USS *Florida* (SSGN-728) – which at one stage fired ninety-three of its maximum potential load of 154 Tomahawk rounds – enabled the US Navy to retain the ability to fire large numbers of Tomahawks even with fewer platforms available. This was also the first conventional or nuclear launch mission of any of the US Navy's *Ohio*-class submarines.⁷

Command, Control and Situational Awareness

The presence of new partners within the coalition presented challenges in integrating other navies into the command and control network. The network was brought together by established naval traditions of operating together, longstanding NATO procedures and the role of key assets like the command ship USS *Mount Whitney* (LCC/JCC 20) and the UK maritime command and Cruise Missile Support Activity (CMSA) operations at its Northwood Headquarters. Moreover, the role of established professional and personal relationships brought by individual naval personnel should not be underestimated.⁸ The habitual ease with which naval forces routinely work together was demonstrated in the 'fairly easy and straightforward' maritime hand-over from the US-led to NATO-led phases of the operation.⁹ One notable development from the UK's perspective was the contribution of the newly-established, multi-agency National Maritime Information Centre at Northwood in



An Army Air Corps Apache helicopter takes off from HMS *Ocean* during Operation Ellamy, the UK's contribution to UN Security Council Resolution 1973 in the Mediterranean Sea near Libya.

Photo courtesy of Guy Pool/Royal Navy. Crown Copyright

providing maritime situational awareness.¹⁰

Surveillance capability was critical throughout the campaign. From the maritime perspective, while the Nimrod MR2 maritime patrol aircraft had already been withdrawn from service, Libya showed that the decision to scrap the Nimrod MRA4 upgrade programme would raise renewed questions about the UK's future maritime surveillance contribution.

The Strategic Significance of an Aircraft Carrier Contribution

In the UK, the polarity of the aircraft carrier debate has only been exacerbated by the Libyan conflict. The operation served to highlight a range of questions relating not only to the Defence Review's decision to withdraw the carriers but also to the wider use of air power based at sea on aircraft carriers.

Arguments persist that the UK can still contribute prominently to such operations without sending a carrier. Yet the fact is that three coalition carriers were employed, which added some capability and reduced the risks to aircraft operating from land bases. These were: the French strike carrier *Charles de Gaulle*; the Italian carrier *Giuseppe di Garibaldi*; and a US amphibious assault ships – initially USS *Kearsarge* (LHD-3), relieved by USS *Bataan* (LHD-5).

At an operational level, the carriers provided some unique advantages. The faster repeatability of carrier-borne air missions, due to proximity to Libya relative to land air bases, saw AV-8B Harriers flying from *Kearsarge* play a critical role in halting early regime offensives. The carriers also provided the only Combat Search and Rescue Capability (CSAR) in theatre. While the French and Italian navies argued that carrier-based air power improved their operational flexibility and cost-effectiveness, the return home of their carriers underscored the risks of operating without them.

Perhaps most notably, for the first time in recent history, a major coalition combat operation was conducted without the presence of a large-deck US aircraft carrier. The USS *Enterprise* (CVN-65) did transit the region, but was en route to other regions and other priorities. This suggests that even the United States Navy may be struggling to meet commitments. In such circumstances, allied support is likely to assume greater relevance in the future.

Another key argument in the carrier debate is over the assumption that friendly and allied nations can provide sufficient basing options to deploy land-based air power to fill any gaps opened up by the lack of a carrier. Interestingly, however, even within the NATO context, the availability of Gioia del Colle, the Italian air base used for UK aircraft, could not initially be taken for granted and created some political turbulence. Some analysis suggests Italy had to tear up its non-aggression pact with Libya and required NATO to assume operational command, on 31 March, before it could permit use of the base.¹¹ Other recent examples demonstrate that the assumption of available shore-basing always involves a balance of risks.

New Partnerships, New Players

The campaign provided the first operational and political test of the new UK-France bilateral defence co-operation arrangement. With the US endeavouring to take a reduced profile in Libya, this arrangement took on a more prominent role in the coalition operation.

Some emerging navies also played a significant role. Deploying a carrier and eight other ships, Italy took a leading role in the NATO operation (especially with French, UK and US assets operating under national taskings). Turkey, which had traditionally close links with Libya, sent five ships and a submarine.

Perhaps most notable, given its growing global presence, was the involvement of China and its navy, led by the frigate *Xuzhou* - itself diverted from counter-piracy operations to conduct the first Chinese non-combatant evacuation operation in a combat zone.¹² Chinese involvement in global crises is something which should now assumed to be more likely.

The Role of the United States

The conflict also raised the significant question of the risk of US overstretch. Despite its established history of leading 'coalitions of the willing', with commitments elsewhere and resource challenges of its own, the Libya campaign was a clear example of the US seeking to play a different role. Then US Secretary of Defense Robert Gates stated that 'our goal right now [in Libya] is actually very limited ... It is basically a support role'.¹³

Alongside the absence of major capabilities, the US attempted to scale back its commitments as early as it could. In a press briefing on 25 March, when asked how quickly the US would reduce

its number of ships in theatre, the Joint Chiefs of Staff Director Vice Admiral William Gortney stated that this would be 'a function of how quickly the coalition ramps up and becomes effective'.¹⁴

Analysis by Dr Lee Willett, Senior Research Fellow, Maritime Studies

NOTES

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The Ground Offensive: The Role of Special Forces

Throughout the Libyan conflict the focus has been on the large-scale air campaign, especially in destroying Qadhafi's command and control capabilities as well as aiding – in a limited capacity – rebel ground advances. But on the ground an equally large-scale effort has been undertaken by a range of international special forces (SF).

Through an extensive analysis of open source material (not all referenced – references are indicative), including media reports, individual sightings, videos and photographs from the start of the campaign to date, this section looks at the likely evolution, role and importance of coalition special forces in Libya, and in particular how rebel forces may have been organised and assisted by special forces.

The first intervention by special forces

The earliest known activities by special forces took place from 23/24 February when a number of countries decided to undertake evacuation operations to protect their citizens, including oil workers, from the emerging conflict in Libya. At the same time, it is reported that the UK and France entered Benghazi

and Tobruk to try and build links with the rebels and understand who the 'rebels' actually were (a traditional human intelligence – HUMINT – function). These forces were also used to assess the effects of coalition air strikes on Qadhafi's regime.¹

It took most of March for relationships with the rebels to be built. This is because of the significant number of rebel groupings across the West of the country which were detached from the National Transitional Council.

The coalition's need to engage with this larger number of dispersed groups between East and West required an increase in the number of deployed forces. In late February it is likely that UK special forces personnel in Libya numbered between eight and twelve, but by the end of March this is likely to have increased to between twenty and twenty-two (including supporting elements).² French special forces are likely to have numbered about ten from April.³

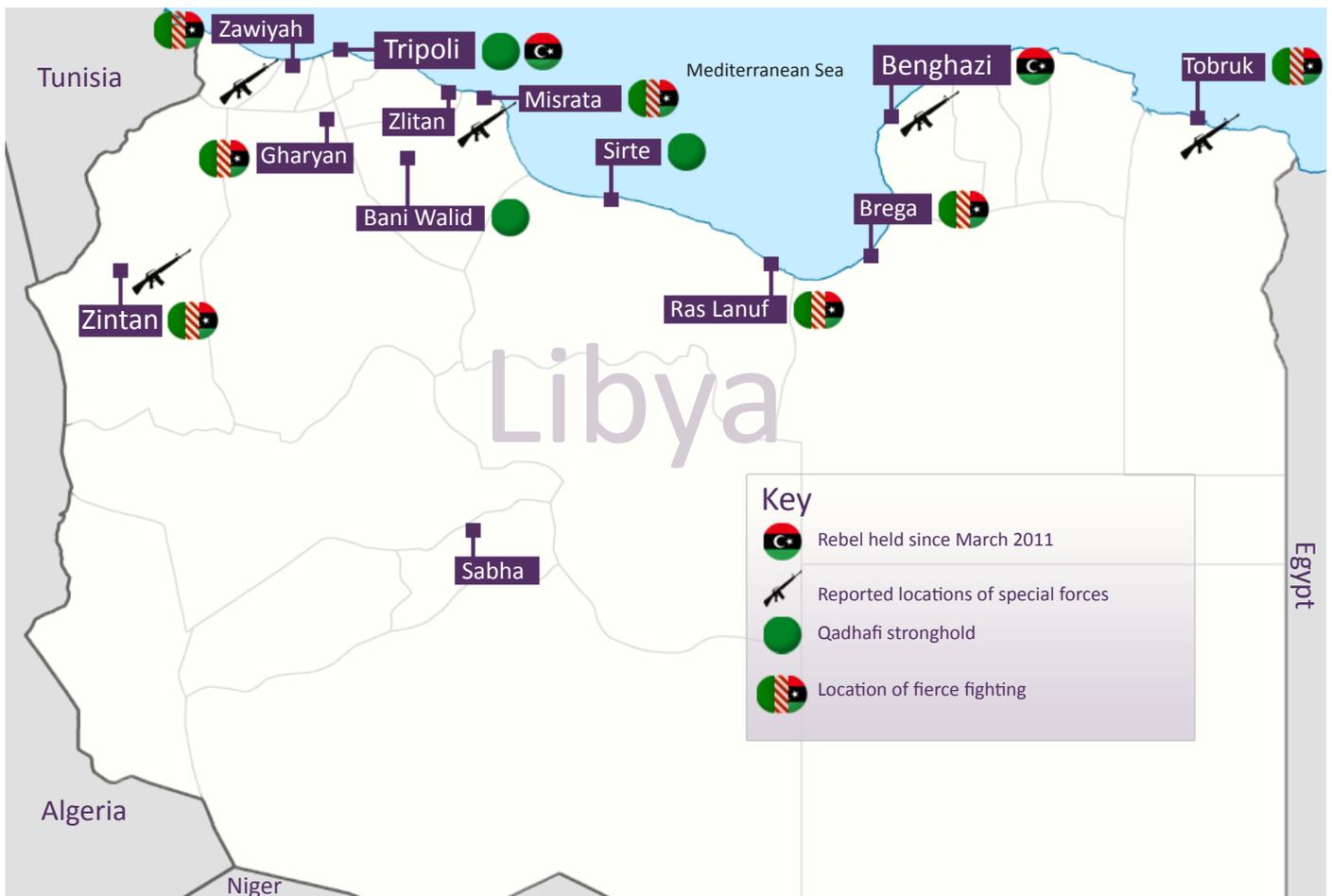
As the conflict developed the range of tasks that needed to be undertaken by

special forces began to increase. In addition to building relations and liaising with rebel forces, special forces also had to secure key critical infrastructure and weapons sites (including those housing remnants of Weapons of Mass Destruction) around the country.⁴ French forces, for instance, were very active in the south-west desert area in April.⁵

This increase in the range of tasks did not match the relatively small increase in special forces numbers made by the UK and France in March, particularly, as awareness grew of the poor state of rebel organisation, discipline and capability. Coupled with political concern about an emerging stalemate, there was a growing need for more extensive operational mentoring and training of the rebels and the provision of specialist equipment.

Planning for Tripoli: the central role of Arab special forces

To define the uplift in resources and effort required to achieve this, the primary focus of coalition activity in April was planning and preparing for a future advance on Tripoli. This planning process



involved a much wider range of countries, including Qatar and the UAE.⁶

Rebel ranks in each area were comprised, broadly, of three elements: former soldiers and police officers, a main body of self-led cells of fighters built around a few weapons and pickup trucks, and the 'shabab'. The *shabab* consisted of roaming groups of younger people who would arrive at frontlines everyday wanting to get involved, but with little idea of how to fight effectively. The approach seems to have been to focus on building a higher quality component – up to 100 – in each geographic area/village based on people within the first two elements of rebel ranks (usually from the Berber tribe and Misrata, and some in Benghazi), with some training provided to others. The theory was that the higher quality rebels act as the lead element in an advance and impart knowledge to the more disparate rebel elements.

The need for greater numbers of special forces to mentor and train the rebels was met to an extent by Egypt having already sent a significant number – possibly 100 (including supporting elements) – to eastern Libya in late February and March for the purposes of providing weapons, training and organisation.⁷ However, the real centre of gravity for rebel potential lay in the West, given the proximity to Tripoli and pressure already being brought to bear on the regime by rebel forces in that region. Therefore, there was a requirement to increase special forces activity in western Libya.

It is notable that, from April, the UAE established a special forces presence in the Zawiyah District⁸ and started to supply rebel forces in that area with equipment and provisions by air. Qatar also assumed a very large role; it established training facilities in both Benghazi and, particularly, the Nafusa Mountains in May,⁹ and acted as a supply route and conduit for French weapons

and ammunition supplies to the rebels (notably from June),¹⁰ including by establishing an air strip at Zintan. The size of the Qatari and UAE contributions is likely to have numbered approximately 15 to 20 personnel (not necessarily including support elements).

Tunisia had an important role in facilitating Arab contributions: it permitted forces and supplies to transit through and operate from their territory, on foot and by air.¹¹ In addition, from May, Tunisia helped develop and host an intelligence and planning cell/facility for the rebels in Djerba.¹² Jordan is also reported to have contributed special forces for training purposes, given their significant experience in urban fighting and capturing fortified compounds; and Bulgaria provided a maritime SF component of twelve people between April and July to disrupt the Qadhafi regime's access to the littoral environment and aid rebel forces by allowing them to exploit the coast for ➤

How the Rebels Became an Effective Fighting Force

At the end of March, Qadhafi regime forces launched a counteroffensive on the eastern front. The rebels retreated in disarray from Bin Jawwad, within a hundred miles of Sirte, all the way to Ajdabiya, the same distance from Benghazi.

That was typical of the poor operational performance that characterised the rebels' ground campaign. Why was that so, and what accounts for the rebels' eventual success on their western front?

First, equipment: the rebel armoury included rifles like the Carcano cavalry carbine, dating to the interwar Italian occupation of Libya and submachine guns without magazines. Rebels futilely carried on foot guns designed to be mounted on and electronically fired from tanks. Arms were not only obsolete, but also scarce: Kalashnikov prices in eastern Libya reached \$2,000, and many fighters shared weapons.

Second, organisation: modern warfare demands that infantry units exploit terrain in small units, work together to provide covering fire, and use defence in depth to concentrate forces where needed. The rebels, many of whom had no combat experience, could not do so, in part owing to the absence of a command structure. Hence the early rushed advances that gave way to routs.

Third, vulnerability to indirect fire: the rebels' homemade rocket systems (plus some Grad rockets – unguided rocket

artillery fired from a truck) were ineffective in suppressing regime artillery, as they had no forward observers.

Why did this change? The following are four overlapping, but not exhaustive, factors.

First, outside powers began supplying rebels. UN Security Council Resolution 1970 had imposed an arms embargo on Libya but this was qualified, it could be argued, by wording in the subsequent resolution authorising the use of force. Qatar sent AK-47s and MILAN anti-tank systems; France airdropped rifles, machine guns and rocket launchers in the western Nafusa Mountains; the UAE sent Belgian FN FAL rifles; and the UK and US sent body armour and tactical communication equipment.

Second, Western and Arab special forces from the US, Britain, France, Qatar and Egypt are likely to have trained and otherwise assisted rebels through the summer, and played a key role in preparing Tripoli for its capture. The tactical proficiency of the amphibious force that assaulted Tripoli in August hints at this effort.

Third, the western Nafusa Mountains became the crucial front by mid-June. Regime forces were driven out by units composed mainly of Berbers, a non-Arab ethnic group indigenous to North Africa. Those units then severed key pipelines from southern oilfields to the refinery at Zawiyah, and seized border crossings with Tunisia to interdict regime supplies. That was

the beginning of the long, and eventually successful, drive to Tripoli. One enabling factor may have been the mountainous terrain, enabling guerrilla warfare, in contrast to the flat eastern deserts that amplified vulnerability to artillery.

Fourth, and finally, the dénouement of the war, the uprising in and assault on Tripoli, saw NATO move to a higher plane of close air support. That relied on targeting information from loitering drones, frontline rebels using transmission equipment, and foreign special forces. It also benefited from an American decision to share sensitive and previously restricted imagery and signals intercepts with NATO allies. In short, rebel effectiveness improved as the Libyan campaign converged on the so-called 'Afghan model': airpower coordinated with indigenous ground forces, bolstered in various ways by small contingents of special forces.

Without further evidence coming to light, we cannot properly evaluate the respective importance of these four factors. It is possible that slow-moving but non-visible causes, such as a cumulative degradation of regime command and control, was essential for latter rebel advances. We should be wary of extrapolating too easily from the Libyan case to other theatres, where the composition of rebel forces and operating environment may differ substantially.

Analysis by Shashank Joshi, Associate Fellow, RUSI.

the purpose of transiting people and weapons (including towards Tripoli).¹³

Western special forces could have confidence in the training roles undertaken by Qatar and the UAE, because the special forces in those countries have in turn been trained by the UK and France over many years. Furthermore, Jordanian and UAE special forces have increased their operational experience through long-term deployments in Afghanistan.

The real role of Western special forces

Supplying weapons became a real priority for France from late June. This entailed a greater obligation to train rebels to use those weapons and in military organisation and tactics. France had a presence in Misrata and Zintan through approximately thirty to forty personnel. The UK is also likely to have increased its presence to approximately 30 to 40 personnel by June (including supporting elements). As other countries picked up the training burden, UK forces shifted their effort to provide advice on tactics and tactical co-ordination to rebel forces, and to focus on other high priority tasks. Most UK forces during this period were used to gather human intelligence to improve target identification and to infiltrate Tripoli, planting supplies and undertaking psychological operations, with the aims of aiding ongoing planning for the rebel advance and also facilitating the advance when it eventually came.

Contrary to much reporting, UK special forces are unlikely to have operated as forward controllers for air strikes in great numbers,¹⁴ though their HUMINT did provide greater context for decision-making about targets: the technical precision of targeting systems and munitions, imagery from US unmanned aerial vehicles and information provided by rebels using externally provided transmission equipment meant that forward controlling by special forces was not vital. Italy also contributed ten

special forces personnel from April/May for the purposes of providing intelligence information and training and advice to rebel forces.¹⁵

Special forces who were training and advising rebel forces all had an additional role to help ensure the security of rebel leaders. However, the small number of special forces compared to rebels and the limited force protection available to them meant that the coalition had little ability to intervene during any tensions within or between rebel groupings.

Neither British nor French special forces dictated timing for the rebel advance on Tripoli in late August. The timing was a rebel decision, underpinned by tactical advice and intelligence from Western special forces (including the US, which deployed a small covert team for the purposes of intelligence collection and also made much use of electronic interception of communications). Special forces from Qatar and the UAE led the rebel advance from the west (from Zawiyah to Tripoli) in August, with Western forces concentrating on providing a real-time intelligence picture for the rebels (a task which is still being done in relation to Sirte and Bani Walid). These Forces are now providing intelligence and reconnaissance capabilities to locate former members of Qadhafi's regime and securing vulnerable weapons stocks.

Conclusion

It is notable that special forces activity was very extensive within Libya, and that:

- Arab states provided the bulk of the training and mentoring effort and led the advance on Tripoli;
- Western special forces concentrated primarily on providing an intelligence picture to rebel forces, including understanding the effect of coalition air strikes on Qadhafi's regime;
- Western special forces undertook a

range of influence and enabling activities within Tripoli itself over a period of four months, in preparation for the rebel advance. If this had not been done, the Qadhafi regime and security forces are likely to have held out for much longer and in a more organised manner than they have. However, it has been more difficult to infiltrate the towns of Sirte and Bani Walid for this purpose and the conflict is ongoing. A question is whether the capacity building and support from special forces has been enough to enable the rebel forces to take these more difficult locations.

Overall, the high profile air campaign in support of rebels was not undertaken in isolation of efforts on the ground, nor could it have guaranteed the success of rebel attempts to advance. Special forces activity was a vital enabler.

Analysis by Mark Phillips, Military and Intelligence Research Fellow

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Special Forces Contributions



UK: 10-40



Egypt: 100
Deployed in February and March for training purposes



France: 10-40



Jordan: N/A
Personnel supplied for training purposes



Italy: 10



Qatar: 20



Bulgaria: 12
Deployed for maritime duties



UAE: 20

Special forces personnel between February and September

Conclusion

There will be much to analyse from the Libya operation for some time to come and many lessons will doubtless be derived from it. At this preliminary stage a number of issues stand out that should be addressed further.

At the diplomatic level:

Britain and France found themselves taking the diplomatic, and military, lead in an operation where the US subsequently withdrew from front line combat. It is unlikely they anticipated that this might happen, and it left them politically exposed. The ultimate success of the operation should not prevent an honest appreciation of the strategic judgements that lay behind British and French actions over Libya.

The relationship between the United States and its other NATO partners is unlikely to remain unaffected by this crisis. Ambiguity over the command arrangements, the extensive back-up support that US assets had to provide, and the overt political splits in the alliance, even while it was acting as the military arm of the United Nations in enforcing Resolution 1973, saw NATO acting in a way it had never done before.

At the strategic level:

After Iraq and Afghanistan where the emphasis was always on numbers of 'boots on the ground', this operation seemed to be a throwback to some of the crises of the 1990s in the Balkans. It was characterised by airpower, precision weapons delivered from a distance, and politico-military pressure to affect events on the ground indirectly. Whether this operation is an outlier to the trend we have seen since 2001, or the beginning of a swing back to previous operations, will be a matter of keen debate as the British Government still wrestles with the hard choices of making further cuts

in defence capabilities between now and 2020.

If future NATO operations are likely to be as ambiguous and vulnerable as this one; success in this case principally dependent on the determination of France and Britain to act militarily, then bilateral and trilateral defence relations between the key European players may loom much larger in the future than their commitment to NATO, as such.

At the military level:

Notwithstanding difficulties in the command structures, a complex air and maritime operation was successfully conducted, based on precision weapons that effectively hobbled Qadhafi's forces, leaving them isolated and without access to their heavy weapons.

The precision of the attacks kept the number of civilian casualties – from all related causes, including friendly fire incidents on the rebels – extremely low (certainly less than 100). This avoided one of the political nightmares of operations such as this, where domestic support can drain away as news of innocent victims of bombing builds up.

This welcome precision was heavily based on ISTAR assets (Intelligence, surveillance, target acquisition, reconnaissance); highly sophisticated, expensive, and available to only a few of the allies. Even in this case, however, ISTAR assets among the key allies were almost at full stretch. Their value in this operation has re-opened a number of the arguments around last year's defence review, since Britain was due to lose some of these ISTAR systems by 2015.

The maritime component was intrinsic to the air operation in a number of ways that were not obvious in media reports;

launching missiles, getting weapons and personnel close to shore, collecting intelligence, and providing combat search and rescue facilities in case any allied aircraft went down in hostile territory.

The 'carrier debate' in Britain will almost certainly be re-ignited by this operation. The fact is that the operation was successfully conducted without a British aircraft carrier being available. But it is equally a fact that the operation involved four major ships that were capable of launching aircraft – the French and Italian carriers, the US assault ship, and Britain's HMS *Ocean* acting as a helicopter carrier.

British operations in Afghanistan were not affected by commitments to the Libyan theatre, but both the RAF and the Royal Navy had to divert assets from other tasks to cope. This crisis demonstrated that the forces could improvise and 'could cope' even in light of the Defence Review. But it also demonstrated that there are significant opportunity costs in doing so and that even a comparatively small operation such as this puts the forces under some considerable strain.

In the case of exerting an indirect military effect on the ground in Libya, the operation was remarkable for the number and variety of special forces operating – including significant operations by Arab special forces – who supplied and helped organise rebel forces, more than they were able to 'train' them.

The emphasis of special forces operations centred in and around Tripoli, where the rebellion would ultimately succeed or fail.

About this report

This Interim Report on operations in Libya marks the opening of RUSI's research work to examine all aspects of the campaign during 2011.

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