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Time and history march onwards. It is easy to forget the momentous political events of 1990 to 1991. In Northern and Central Europe, the post-Stalinist artifice of Soviet dictatorship collapsed with the Berlin Wall, the reunification of Germany and the peaceful accession to independence of the Baltic States, Poland, Czechoslovakia, Romania and Bulgaria with the Gorbachev reforms. In Southern Europe and the Balkans, the Serbs, under the late and little lamented Slobodan Milosevic, were initiating the events that led to the fragmentation of the former republic of Yugoslavia in circumstances which became the backdrop of the worst horrors of World War Two.

In the Middle East, the Iraq-Iran war in 1980 to 1988 had led to the deaths of up to a million combatants and civilians. Nationalistic victory for Iraq had given an empowered, emboldened and generously equipped Iraqi Army the wherewithal to accommodate the further expansionary and neo-imperial ambitions of Saddam Hussein. On 1st August 1990, the Iraqi Armed Forces surged into Kuwait, capturing the country and its oil resources, and initiating an orgy of looting and abuse of Kuwaiti residents. This created an immediate and existential threat to the oilfields of Eastern Saudi Arabia over an axis stretching some 300 miles to the South, and hence to Western economic and political interests.

The personal notoriety of Hussein and his security forces, the takeover by forces of an independent state, and the existential threat to Western economic interests helped to provide a powerful narrative for the immediate collective Western military response, led by the United States, which grew into the remarkable military operation now known as Operation Desert Storm.

Operation Desert Storm/Operation Granby

Operation Desert Storm, to which the UK contributed some 40,000 personnel under the somewhat less memorable title Operation Granby, encompassed three broad phases. The first phase, from August to December 1990, saw the urgent progressive development of a defensive "line in the sand" and reinforcement of military forces in Saudi Arabia, which included the British 7th Armoured Brigade, the "Desert Rats" of World War Two fame. It was accompanied by the construction of a broad political coalition and international efforts to secure the peaceful withdrawal of Iraqi forces from Kuwait.

The second phase, through January and early February 1991, saw a transition to preparation for offensive ground operations to recapture Kuwait. There was a massive build-up of coalition forces to some 500,000 personnel, including the US 8th Armoured Corps and the UK 4th Armoured Brigade from Germany, and a six week strategic air campaign which began in earnest on 17th January 1990. Under cover of the air campaign, a huge deception plan was executed to place the Allied armies in position for a turning movement around and beyond Kuwait, across hundreds of miles of desert. This turning manoeuvre was subsequently known as General Norman Schwarzkopf’s "Hail Mary Play", after an American Football strategy.

The third phase saw the execution of this plan, with brutal speed and efficiency across the desert wastes. While the US Marines, Saudi Arabian, Egyptian and Syrian divisions conducted what were intended to be diversionary attacks against Iraqi fortifications on the southern border of Kuwait, the US 8th Corps crossed the border minefields, surged up the Wa’dat at Batin and into the Iraqi divisions occupying western Kuwait. Further to our left, the US 10th Corps raced towards Southern Iraq and to the destruction of the Republican Guard divisions which formed the Iraqi strategic reserve. An operation which had been expected to take weeks was wound up within 100 hours.

The British medical military plan

For the British Army and for the UK 1st Armoured Division, this operation represented a return to a form of manoeuvre warfare and operational art in which it had learned many hard lessons in the North African desert in the Second World War. The Northern Arabian Peninsula covers an enormous land mass of flat, rocky desert. Planning distances between the logistic port of A1 Jubail on the Gulf Coast, the strategic airfields in Riyadh and the border with Kuwait were between 300 and 500 miles. The allied casualty estimates were very high (in the thousands) and there was a perceived threat of chemical warfare from the Iraqis. The medical and surgical support plan required a high degree of forward deployment of resources, to ensure credible timelines for casualty evacuation to suitable points of care, using helicopter (Hayu, Puma, Chinook) and fixed wing (C-130 Hercules) air transfer of casualties to base hospitals in Saudi Arabia and the UK.

Initially, a Regular Army Field Hospital (No 33) was deployed to a base area in A1 Jubail on the Arabian Gulf coast to support the defensive build-up of troops. As the scale and need for offensive operations became clear, so the medical plan expanded to include an Evacuation Hospital (No 205 Scotish) at the Airhead at King Khalid International Airport (KKIA) in Riyadh (where an unfinished airport terminal became available for conversion to that purpose) and two forward Field Hospitals (Nos 22 and No 32) in the area of Half al Batin on the Northern Saudi Arabian border, in support of the Armoured build up.

The mobile armoured warfare would be supported by two truck-mounted Arrows Surgical/Advanced Resuscitation Teams, embedded with the Field Ambulance Units and dressing stations attached to the Armoured
Brigades. The front-line medical units would be linked to the field hospitals by helicopter evacuation and evacuation rearwards would then be by C130 Hercules transport aircraft.

It soon became clear to the planners that the medical plan could not be staffed without a substantial draw upon the territorial reserves, into both the forward surgical teams and the field and evacuation hospitals. At the time, Stuart Scott and I were working as registrars in Professor Irving Taylor’s University Surgical Unit at Southmead Hospital. We were both active members of the TA with airborne forces experience. A few ex-officio phone calls up the Chain of Command in September 1990 secured us places within the Forward Surgical Teams attached to 7th and 4th Armoured Brigade. These teams were tasked to insert immediate Damage Control Reassuistation and stabilisation of combat casualties for further evacuation, rather than for heroic battlefield surgery.

Mobilisation and deployment into the Desert

The call up of reserves was a major national and media event in the winter of 1990, as it was the first time that it had been undertaken in many decades. In an era before mobile phones, some 700 medical reservists found themselves in a bitterly cold Saifgham Camp near Cheadle in early January 1991. The specially trained, single telephone line out, for a week of preparation and vaccinations against all manner of biological warfare agents. We then transferred to RAF Brite Norton and onto a requisitioned Kuwaiti Airways Boeing 747 aircraft for a direct flight into Riyadh.

We arrived at King Khalid International Airport on the evening of 19th January 1991, where the story of the nascent 205 (Scottish) Evacuation Hospital (Volunteers) were being offloaded from a fleet of freight containers in the car park and into the command post located in the airport terminal. The following day, the war began in earnest. It was heralded for us by the launch of a large fleet of USAF Boeing Stratotanker tankers, and by the arrival overhead of a well targeted series of Iraqi SCUD missiles. This heralded the initiation of one of the largest chemical warfare alerts, driving everyone into respirators and ‘nobby suits’.

A few days later, the reservists in the field surgical teams were detached from 205 and were flown up by RAF Hercules into the airhead at Al Jubal, where we linked up with our field surgical team colleagues from 23 Parachute Field Ambulance. Our equipment consisted of two Bedford trucks with trailers, tentage and basic surgical and anaesthetic equipment. My later discussions with the late Mr Bernard Sanders, as he was then, led a surgical team in the desert war of 1941-43, revealed how little had changed in the intervening years.

We were tasked to join the Armoured Field Ambulance and 4th Armoured Division Stationary Units already deployed in the desert. This necessitated a 300 mile drive north up the Tapline Road to the initial Assembly Area in the desert south of the Kuwaiti border where massive logistic convoys were filling the road in both directions as they shuttled to and from the Front.

For the next six weeks, we were preoccupied with military preparations for the recapture of Kuwait. This involved a massive deception programme, during which we moved far into the desert to the west of Kuwait to rehearse the complex manoeuvres of breach (minifield) crossing, passage of lines and interoperation with the US Army, along with the other elements of mobile armoured warfare which are recorded in detail in many of the contemporary books on the War (see further reading).

In marked contrast to the modern and intensive clinical training for deployments to Afghanistan, our clinical preparation at that time was very basic, primarily consisting of brief discussions of anaesthetic stapling techniques and of the decontamination of chemical casualties. We rehearsed taking up damage control treatment facilities and helicopter casualty transfer, but our capacity for effective work under heavy casualty flows would have been very limited.

The SERA Surgical Team during its six weeks of field manoeuvres in Northern Arabia, prior to Operation Desert Storm, February 1991

Our specific mission was to move with SERA, the Close Support Medical Unit with the 4th Armoured Brigade, which was to alternate with the 7th Armoured Brigade in a “duel fast” punch across the Wadi B Awali to Kuwait’s western border, and on through the dense network of Iraqi defensive positions in depth across Kuwait. The medical plan included the establishment of a treatment facility at the initial border crossing into Iraq (which proved unnecessary) and flexible manoeuvres with the fighting echelons thereafter as combat operations developed. Memorably, our high mobility on the flat and featureless desert was assisted by then secret technology in the form of the earliest models of GPS receivers, which we had never previously seen. These were the size of shoeboxes, with a cavernous hunger for battery power. How technology moves on!

Into the Desert Storm

After a seemingly interminable wait, we were finally called forward with the assault formations on 24th February, and drove along the buldozed routes through the border minifield and trench lines into Southern Iraq. The 1st UK Armoured Field Ambulance team, to which Stuart and I were now attached, headded north with 7th Armoured Brigade, while 4th Armoured Brigade and SERA headed east with 4th Armoured Division towards the Iraqi divisional and defensive concentrations, designated as area targets with the names of metals. Given the speed and scale of the operations, 7th and 4th Armoured Brigades were to strike alternately and sequentially against these objectives. In practice, as the operation turned into a route, both brigades raced headlong towards the end point on the Basra-Kuwait Highway and the blazing oilfields as the Iraqi Army disintegrated.

An informal sketch map of 1st UK Armoured Division movements and those of the forward surgical teams during Operation Desert Storm, between 24th and 28th February 1991. The direction of attack was from left to right. The breakthrough through the minefield into the Iraqi border. The blue circles with metallic codenames indicate major Iraqi Army concentrations. The hand-drawn sketch, kindly provided by Lt Col Stuart Scott, shows the routes of the Field Surgical Teams accompanying VII and IV Brigades.

We ourselves took large numbers of bewildered and hungry prisoners who emerged from the trench systems and bunkers around us when we stopped. However, despite predictions and subsequent misinformed reports, the casualty workload was negligible. We undertook a single trackside operation on an Iraqi soldier with minor fragment injuries and helicopter evacuation of one other group of casualties.

The Iraqi Army imploded through fear, mass desertion, interdiction of supplies and the collapse of morale rather than through death and injury. This was just as well, as we were highly vulnerable to the anticipated Iraqi aircounter-strike if thanks only very much for not being forthcoming. Body armour was not issued, and our soft skinned trucks and canvas tents would have offered minimal protection under such conditions.

In truth, the campaign unfolded so rapidly that casualties were far fewer on both sides than had been predicted. Many of the Iraqis had already fled the battlefield, and those who remained surrendered en masse in the face of a prolonged air campaign and a torrential envelopment by rapidly advancing coalition forces, and the fearlessly destructive power of our new multi-launch rocket systems, the “grid square” operators. Our surgical contribution was limited to minor treatment of a small number of Iraqi casualties prior to helicopter evacuation.

As it was, the battlefield was almost empty of casualties, despite the lurid headlines and estimates. Of the estimated 200,000-400,000 Iraqi combatants in the Kuwaiti theatre at the outset of operations, it is highly likely that up to 90% had deserted, been captured and redeployed before the ground assault began. Of those Iraqis who were still in Kuwait, many were deeply dug in during the assault, using buried steel freight containers to good effect as underground bunkers. Many were profoundly short of food and water, such was the effect of the logistic disruption from air attacks, and very few had any stomach for resistance. 175,000 Iraqi soldiers were taken into temporary holding camps.

In clinical terms, our exercise in surgical battlefield combat was thus intellectual and largely untested. It was undoubtedly necessary for the planners to have surgical and anaesthetic boards on the ground with the combat troops, but in practice, the speed and fluidity of the action meant that we were rarely able to be in the right place at the right time. With our limited clinical capability and relative inexperience of war trauma and trauma physiology, our lack of any ITU or HDU capacity, and where post-operative care should have been restricted if the air evacuation plan had broken down, it is likely that we would soon have been overwhelmed by significant casualties in particular.

Such few casualties found by UK forces were rapidly flown off by Puma helicopter to the field hospitals at Hafar al Batin. The practice of in-flight medical care in dedicated casemaking helicopters, which has since been highly refined in the MERT concept in Afghanistan, had not been developed or explored in 1991.
The Southampton Surgical Unit was formed from the Guildhall in early March 1994 as a result of a SCULU attack.

Further reading
Ray W. The mother of all excuses to take study leave. Association of Surgeons in Training Yearbook 1992
Row D, Scott S D. Gulf War casualties revisited BMJ 1993 Apr 17;306(6864):1017
Cordiner F. In the Eye of the Storm: Commanding the Desert Rats in the Gulf War Hodder and Stoughton Canada 1996 ISBN 0340682450, 9780340682456
Clancy T. Frank's F. Into the Storm Putnam Books 1997

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