A short history of Camp Bastion Hospital: the two hospitals and unit deployments

David Vassallo

INTRODUCTION

During its short period of existence (2006–2014), Camp Bastion Hospital in Helmand Province, Afghanistan, established a well-deserved international reputation as the world's best trauma hospital.[1] Many service personnel and civilians owe their lives to the exemplary care they received there (Figure 1), described by Lt Col DSG Graham, Commanding Officer of 2 Scots during Op HERRICK 13: '*The medical system was almost unbeatable. Without doubt I brought back over half a dozen of my soldiers who survived because of the medical professionalism that currently exists in Theatre; that is humbling.*'

Why Bastion?

> For all of us here, especially medics, Afghanistan has been the defining operation of our military generation. It has been the catalyst which has catapulted us to the forefront of battlefield trauma care world-wide. This building, the Bastion Role 3 has been at the heart of that development. (Lieutenant Colonel Jaish Mahan, final Commanding Officer Role 3 (UK) Bastion Hospital, on closure of the hospital on 22 September 2014, Op HERRICK 20).

In November 2001, following the terrorist attacks on the USA, British troops deployed into Northern Afghanistan. In April 2006, British engagement in Afghanistan was expanded, with 3300 troops drawn mainly from 16 Air Assault Brigade deploying into Helmand Province in Southern Afghanistan on Op HERRICK 4. The main base and a 25-bedded tented field hospital were constructed in a defensible position in the desert, above an aquifer, at Camp Bastion, some 9 km south of the main Kandahar to Jelalabad road and some 160 km west of Kandahar City.

The deployment soon transformed into full blown warfare with the Taliban, costing the lives of 453 British service personnel before the final withdrawal of British combat troops from Helmand on 26 October 2014. Camp Bastion became synonymous with the Afghanistan conflict in the UK and grew to become the largest British overseas operational base since World War II.

The hospital at Camp Bastion morphed throughout the conflict, from its establishment in April 2006 until it finally closed its doors on 22 September 2014. The original tented hospital was replaced by a purpose-built hospital in February 2008, which was further expanded to meet the peak of casualty flows in 2009 and 2010. For a brief period in history, Camp Bastion Hospital became the most famous, reputedly the best and certainly the busiest trauma hospital in the world.

By 2009, the training and procedures for work at Camp Bastion Hospital were well established, with a number of major developments coming fully on line about that time, such as the Military Operational Surgical Training course, rotational thromboelastometry and the deployment of consultant radiologists.

The work done at Camp Bastion Hospital was initially undertaken in parallel with the military medical deployment in Iraq (Op TELIC), which ended in April 2009. Each of Britain's Regular field hospitals deployed six times, and the Reserve field hospitals deployed at least twice each, to Iraq and Afghanistan in the period 2001–2014, in addition to the four hospital squadron deployments by the Royal Navy and Royal Air Force (RAF) (Table 1).

Moreover, many personnel deployed as individual augmentees at other times. The rapid sharing of this operational experience across the Defence Medical Services catalysed developments in working practices, equipment, training, doctrine and force protection, resulting in an integrated and sophisticated trauma system which was to achieve international recognition and be held up as an example to the NHS.

THE TENTED BASTION HOSPITAL, 2006–2008

22 Field Hospital deployed its Hospital Squadron to Camp Bastion in April 2006 to set up a Role 2 Enhanced Medical Treatment Facility in the form of a tented (Tier 1) 25 bed complex which was expandable to 50 beds, manned by 86 tri-service staff (Figure 2). This was concurrent with 22 Field Hospital's Regimental Headquarters and Support Squadron also deploying to Iraq for 6 months.

Setting up a fully functioning field hospital in the middle of the desert simultaneously with a major force deployment was by far the most technically challenging construction task faced by the Royal Engineers building Camp Bastion in early 2006. The hospital required significant infrastructure works (such as piped water, electricity and waste disposal), and it incorporated invaluable lessons identified from experience in Iraq and major exercises in Oman (Ex SAIF SARREA II) and the UK, lessons that will remain pertinent to future insertion operations now that HERRICK has ended.[2–4]

The 22 Field Hospital Squadron was succeeded on a rotational basis by each of the UK's 3 regular and 10 reserve field hospitals, along with Royal Naval and RAF hospital squadrons specially formed for these deployments, and on one occasion a Danish field hospital. It was not uncommon for individuals to have served in Bastion on multiple occasions and with

Figure 1 The 'New Build' Camp Bastion Hospital, when opened on 9 February 2008, showing the casualty reception area (Defence Images).

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Table 1 Field Hospital Deployments to Iraq and Afghanistan, 2001–2014

	Iraq—Op TELIC 1–13	Afghanistan—Op HERRICK 4–20 Camp Bastion Hospital
22 Fd Hosp	TELIC 1 (February–May 2003) TELIC 3 (November 2003–May 2004) TELIC 8 (May–October 2006) (RHQ & Support Squadron) TELIC 13 (December 2008–April 2009)	H 4 (April–September 2006) (Hospital Squadron) H 16 (April–October 2012)
33 Fd Hosp	TELIC 1 (February–May 2003) TELIC 2 (July–November 2003) TELIC 5 (November 2004–April 2005) TELIC 9 (November 2006–May 2007)	H 11 (October 2009–April 2010) H 18 (April–October 2013)
34 Fd Hosp	TELIC 1 (February–May 2003) TELIC 7 (November 2005–April 2006) TELIC 10 (May–November 2007)	Op FINGAL (December 2001–May 2002) (Bagram, North Afghanistan) H 12 (April–October 2010) H20 (April–September 2014)
201 Fd Hosp		H 7A (November 2007–January 2008) H 15B (January–April 2012)
202 Fd Hosp	TELIC 1 (February–May 2003)	H 10A (April–July 2009) H 19B (January–April 2014)
203 Fd Hosp		H 8A (May–July 2008) H 19A (October 2013–January 2014)
204 Fd Hosp		H 8B (July–October 2008) H 17B (January–April 2013)
205 Fd Hosp	TELIC 6 (May–November 2005)	H 11B (January–April 2010)
207 Fd Hosp	TELIC 4A (May–August 2004)	H 13A (October 2010–January 2011)
208 Fd Hosp		H 6B (July–October 2007) H 15A (October 2011–January 2012)
212 Fd Hosp		H 6A (May–July 2007) H 13B (January–April 2011)
243 Fd Hosp		H 7B (January–April 2008) H 17A (October 2012–January 2013)
256 Fd Hosp	TELIC 4B (August–November 2004)	H 11A (October 2009–January 2010)
RAF Hospital Squadron	TELIC 8 (May–October 06)	
Royal Navy Hospital Squadron		H 5 (October 2006–April 2007) H 9 (November 2008–April 2009) H 14 (April–October 2011)
Danish Fd Hosp		H 10B (July–November 2009)
1 Close Support Medical Regiment (provided Hosp Sqn)	TELIC 11	
3 Close Support Medical Regiment (provided Hosp Sqn)	TELIC 12	

Fd Hosp, Field Hospital; Hosp Sqn, Hospital Squadron; RAF, Royal Air Force; RHQ, Regimental Headquarters.

various units over the 8 years of operation of the hospital. Small teams of Estonian medics deployed to Bastion from 2007 onwards, and similar Danish teams from some time later, as well as civilian CONDO nurses. From mid-2009, starting with Op HERRICK 10A, a sizable US detachment of between 40 and 90 personnel was also based at Bastion Hospital on 6-month rotations, as part of a US troop surge into Helmand.

The original tented hospital was built to a standard linear pattern, with separate tents for the emergency department, operating theatres, intensive care unit, laboratories, X-ray department, wards and command areas, blistered on to a long central tented corridor (Figure 3).

While tented (Tier 1) hospitals are well-designed for insertion operations, they are unsuited for enduring operations such as developed in Iraq and Afghanistan because of their inability to provide adequate environmental controls and protection from dust, heat and cold. A more robust and resilient building was therefore soon commissioned for Bastion (just as one had previously been for Iraq) as it was apparent from the outset that the Afghan engagement would be prolonged.

THE 'NEW BUILD' BASTION HOSPITAL, 2008–2014

A contractor was engaged in September 2006 to build a semi-permanent (Tier 2) hospital alongside the original tented facility by April 2007. The intention was that once the new build was ready, staff and patients would move across to it, retaining the original tented hospital as an emergency reserve. There were, however,

Figure 2 Entrance to the original Camp Bastion Hospital, in June 2006 (Defence Images).

unforeseen problems with planning and project management in the early stages and significant delays in the construction process, of direct relevance to future builds of this nature.[2]

The new hospital was finally opened and occupied by 243 (Wessex) Field Hospital (Volunteers) in February 2008, during Op HERRICK 7. Its design was revolutionary in military terms. It had an emergency department with eight resuscitation bays, leading directly into an adjacent Operating Theatre Department (the Bastion Right Turn), which was large enough to support two concurrently working operating tables (and later four).

Radiology Department: Critically, a CT scanner was also immediately adjacent to the Theatre and Emergency Departments in the Tier 2 build, substantially improving patient flow. This 6-slice CT scanner had been the first part of the new hospital to be completed, having been installed in June 2007 (following experience with the first CT scanner ever to be deployed with a British field hospital, at British Military Hospital (BMH) Shaibah, Iraq in March 2005). It had been quickly put into use for trauma cases, though patients initially had to be transported to the scanner by ambulance from the tented facility, with reports promptly provided through teleradiology links to two British Forces radiologists in the UK. Consultant radiologists were added to the hospital's establishment in 2009 once sufficient military radiologists became available.

Figure 3 Operating Theatre in Tier 1 Bastion Hospital (2007).

Improvements to diagnostic imaging were a key element in the success of the Bastion project. The clean and environmentally stable physical environment of the Tier 2 Hospital was a major factor in ensuring the efficient working of complex technology, with its unique vulnerabilities. One such vulnerability was exposure to the electromagnetic spectrum and particularly to the output of the nearby air surveillance radar. This uniquely obliged the construction of an adjacent 'container wall' to provide electromagnetic protection to the hospital.

The other vulnerability was that the single CT scanner required expert maintenance and would occasionally be out of action. The CT facility was eventually upgraded, with two state-of-the-art multislice CT scanners (64 slice GE (General Electric) Healthcare VCT) becoming operational and replacing the original CT in July 2010, allowing a degree of resilience. More importantly, these were capable of producing images with 10 times more detail than the original equipment in only a fraction of the time,[5] being capable of scanning from head to toe in around 18 s. This had major benefits in complex trauma.[6]

An MRI scanner funded by the US Military was also deployed to Bastion, in October 2011, its primary role being in the evaluation of, and research into, mild traumatic brain injury.

Other capabilities: The intensive therapy unit (ITU) was immediately adjacent to the Theatre, and initially was configured for four beds. There were two general wards with capacity for some 35 patients, and there were two isolation rooms with a single bed in each. There was a laboratory with a blood bank, an X-ray department, reception and administration area, and an attached primary

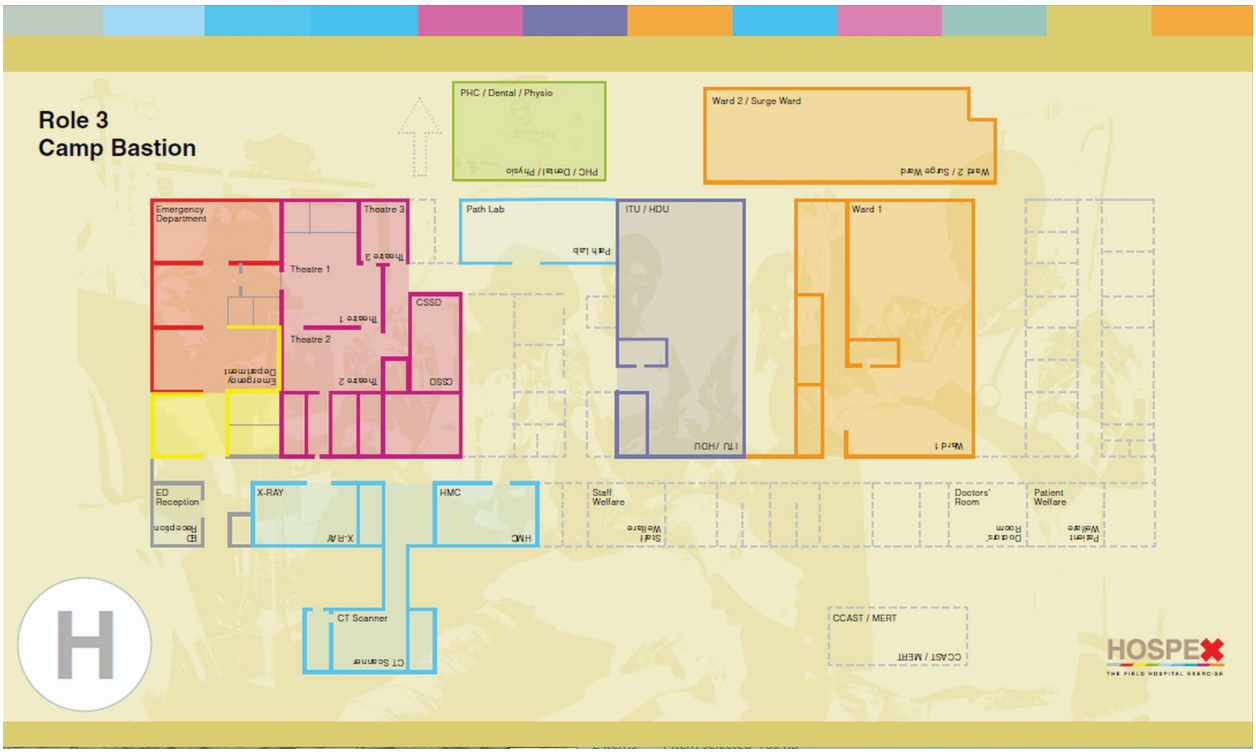

Figure 4 Layout of the new Role 3 Bastion Hospital, before expansion (2008–2009, with single CT scanner) (Hospex Tabletop Training Aid, Army Graphics Andover).

health, dental and mental care facility. Crucially, work could now be undertaken in a physically protected, temperature and dust-controlled environment which could be kept properly clean.

The extra capability within the new build, particularly the ready availability of CT scanning, resulted in the hospital being upgraded to a Role 3 Hospital once the new facility opened in February 2008 (Figure 4). Its official title thus became Joint Force Role 3 (UK) Bastion (Figure 5).

The increasing casualty flow through 2008–2010 led to major expansion of capacity and physical reconstruction (Figure 6). The number of operating theatres was increased to four, the ITU department moved to a larger ward (previously Ward 1) and expanded to 12 beds, ward capacity was increased to a surge capability of 50 beds, the CT suite was upgraded, and the blood bank was significantly enhanced (during 2009, over 3200 units of blood products were administered as massive transfusions to severely injured UK personnel).[7]

With the increased tempo of combat operations in 2009–2010 (during which time there were more than 200 UK fatalities), the original tented hospital was re-equipped as a standby or contingency hospital with four emergency department bays, two operating tables, four ITU beds and 20 ward beds.

Thereafter, planning began to increase the capability of local Afghan health facilities, such that care of Afghan casualties could gradually be transferred from Bastion hospital as British troops prepared to withdraw from Afghanistan. Improved evacuation procedures to Kabul National Military Hospital and Kandahar Regional Military Hospital were instituted, and a process of mentoring by Bastion staff began at the Afghan Medical Treatment Facility in nearby Afghan Camp Shorabak as its capabilities were enhanced. Local casualties were increasingly diverted there pending full transfer of their medical care in theatre to the Afghan authorities and

Figure 5 The official name of the new Bastion Hospital (sign at hospital entrance).

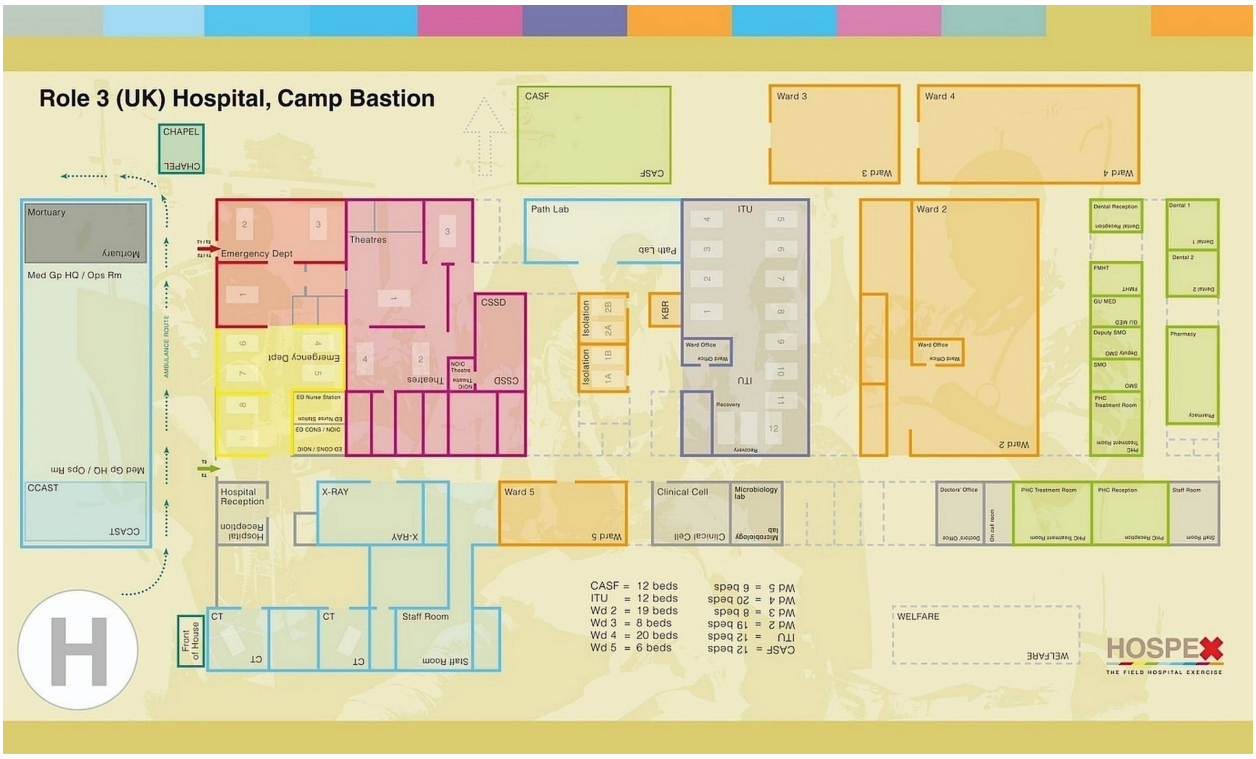

Figure 6 Layout of Bastion Hospital, after expansion (late 2010, with two CT scanners, fourth operating table, extra emergency department and ward capacity) (Hospex Tabletop Training Aid, Army Graphics Andover).

the closure of Camp Bastion Hospital on 22 September 2014.

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REFERENCES

1 Vassallo D. The Short Life and Times of Camp Bastion Hospital, Helmand, Afghanistan J ASGBI 2014 (Winter); No.45:16–21. http://www.asgbi.org.uk
2 Tarrant JS. Field hospitals—lessons learnt. *R Eng J* 2012;126:46–55.
3 Pelton JF. Force engineering Iraqi style—62 Works Group Royal Engineers on Operation Telic. *R Eng J* 2004;118:184–8.
4 Merrett SJO. Royal Engineers support to constructing field hospitals. *R Eng J* 2005;119:220–5.
5 MOD News, New CT scanners improve trauma care at Camp Bastion. https://www.gov.uk/government/news/new-ct-scanners-improve-trauma-care-at-camp-bastion (accessed 14 Jan 2015).
6 Gay DAT, Miles RM. Use of imaging in trauma decision-making. *J R Army Med Corps* 2011;157(3 Suppl 1):S289–92.
7 Mercer SJ, Tarmey NT, Woolley T, *et al*. Haemorrhage and coagulopathy in the Defence Medical Services. *Anaesthesia* 2013;68(Suppl 1):49–60.

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Notes