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# Institution Affairs Secretary's Update and Editorial

WELCOME to the first Journal of 2005 where we are continuing with the successful combination of A4 and full colour. I do hope you enjoy it and may consider you have an interesting story to tell or point to make by submitting an article for publication - you never know, you may win one of the many Journal awards on offer. I have often been asked if one of our reporters, authors or photographers would like to cover a story, and on a few occasions I have been sent a bundle of papers and photographs with the statement "I am sure this would make a good article for the Journal". We do not have reporters or authors on hand, nor do we have spare capacity to produce articles. We do struggle to provide extra support to authors in the drawing of maps and tables and we definitely do not have the time to find and research images to complement articles. Notwithstanding that, we do offer limited graphical support, advice and guidance on articles; we give you the opportunity to edit your final work and our very small team works wonders in presenting your article in a very professional manner. Another way you can help us is by observing the advice to authors by limiting abbreviations and especially acronyms to the absolute minimum, and then only where they are very common and well known. We receive more complaints about abbreviations and acronyms than any other subject.

This last year has seen many initiatives and changes not only to our publications but to our membership and possible involvement in Professional Development. The initial idea of a trial to send the Supplement by email did not receive sufficient support to proceed with. To those of you who registered for this initiative thank you for taking the time to assist us. Our membership is increasing with more Warrant Officers taking the opportunity to join and there has been an encouraging increase in applications from the Territorial Army. It is hoped that membership from this source this will continue this year. There has been little support from Senior and Junior Non Commissioned Officers on membership as this is tied in with the Institution's involvements with Professional Development. I would like to thank all of you who wrote or emailed with your comments on Professional Development and membership. The Engineer in Chief (Army) will be presenting a revised paper on the subject before the next Council Meeting. To those of you who were concerned that with the new initiatives the Institution may drift away from its current core activities and publications, Council made it clear at their last meeting that this is not the case and that expansion rather than changes is what is foreseen. Thanks to the generous grant from General Dynamics we have completed the project of digitizing all back issues of the Journal and now have the mammoth task of "book marking". Once this is complete, I hope the full digitized versions of the Journal from 1905 will be available in the summer. Our work on the book "Follow the Sapper" is nearly complete and we hope to publish in September this year. If you would like to place an advance order please read the advertisement on page 72.

# **Guidelines for Authors** *The Editor* is always pleased to consider articles for publication in the *Journal*. Subject. Articles should have some military engineering connection but this can be fairly tenuous, especially if an article is well written and interesting. Length. Articles of any length are considered but should normally be between 1500 to 5000 words. About 1200 words covers one page less photographs. *Copy.* One copy of the text should be submitted, together with a head and shoulders photograph of the author plus a short pen picture and any other illustrations. *Clearance*. Articles must be cleared by an author's CO where applicable. *Copyright*. If an article has been published elsewhere, copyright clearance must be sought by the author before submission. Where necessary copyright clearance on photographs, maps or illustrations must also be obtained prior to submission. **Photographs** should, if possible, be of good quality with sharp definition, and have appropriate captions. Files from digital cameras can be used providing they are taken with a camera capable of producing high quality images. The files should not be altered in any way prior to submission and they MUST NOT be embedded in the document. Digital images can be sent via email to assist.sec@inst-royal-engrs.co.uk or on a CD. *Rewards* can be generous. The publications committee has about £350 in prize money for each issue plus valuable annual prizes. All authors receive £20 to help cover costs. Pseudonyms will not be revealed by the Editor under any circumstances. Contributions should reach the Editor by: 10 June for the August 2005 issue. 7 October for the December 2005 issue. Submissions before the deadline are particularly welcome.

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# **Floating Bridges Across the Tigris**

WARRANT OFFICER CLASS 2 A D PEARSON BEM



Alan Pearson enlisted in the Army in 1971, transferring to the Corps in 1979. He saw service with several units, but notably 59 Independent Commando Squadron. He saw active service in the Falklands on Operation Corporate in 1982 and in Kuwait on Operation Granby in 1992. He also carried out several tours in Northern Ireland and in 1989 was awarded the British Empire Medal for his services there.

After retirement, he joined Mabey and Johnson, working for them in more than fifty countries. This has included Bosnia, Kosovo, Kuwait and Iraq in support of military operations. He says of his work: "Working with Mabey and Johnson can be enormously satisfying, especially in the very poorest regions of the world where one can construct some very large bridges without the constraints of occupational health and safety and without machinery of any kind other than the Tirfor Winch".

He also claims that the job caters for his barely controlled megalomania, since he is normally the chap in charge!"

#### INTRODUCTION

DURING the recent conflict in Iraq numerous bridges were destroyed or damaged by coalition air power. In the immediate aftermath of the war fighting phase opening routes for civil and military use became an urgent priority. Many different bridge systems were used including the Mabey Logistic Support Bridge, Medium Girder Bridge, Dry Support Bridge and the Ribbon Bridge. The last three are assault or general support bridges and are not designed for continuous civilian traffic. This is because of excessive ramp slopes and fatigue characteristics and also, there is a psychological effect on civil drivers of having no barrier between the road and the edge of the bridge.

One of the biggest obstacles to mobility in Iraq is the mighty Tigris. This river rises in the Armenian mountains and flows north to south down the spine of Iraq until it meets the Euphrates and then into the Shatt al Arab and Arabian Gulf. The Tigris is approximately 1146 miles long

launched onto floating pier assemblies, together with landing spans carrying traffic from the road to the floating spans. Spans are joined together with span junction assemblies. For military use the bridge has been specifically designed for Military Load Class 110 (Wheeled) traffic. Two floating Logistic Support Bridges were installed during 2003 at Zubaydiyah and Tikrit.

#### ZUBAYDIYAH

THE first floating bridge installed by US Forces was across the Tigris near the town of Zubaydiyah, south east of Baghdad. The previous crossing was an Iraqi designed Mabey Compact 100 floating bridge that was destroyed during the conflict. The town was cut off from all commerce and military and civil traffic could only cross the river after a lengthy detour. The river is 200m wide at the point selected with a flood depth variation of 1.5m. The configurations chosen were two landing spans each of 13 bays (40m) with four floating spans each of

and very rarely less than 150m wide. To counter this, the United States Marine Corps ordered 1.1km of floating LSB from Mabey & Johnson, the bridging which could also be used as fixed spans.This was supplied to the USMC along with supervision and training as part of a contract agreed in 2003. The floating bridge system consists of spans of double truss, single storey LSB that are



The Completed Bridge.

11 bays (34m) giving a total length of 216m. The bridge was constructed by United States Navy Seabees.

US Navy Seabees. The Seabees have Naval Mobile Construction Battalions (NMCB) which are US Navy organisations mainly dedicated to supporting the US Marine Corps. Although Seabees have naval ranks and traditions they are not, strictly speaking, salt water sailors since their role in support of the USMC is land based. They originated during the Second World War and served in the Pacific theatre of operations supporting the USMC and in Europe in a construction role that included Bailey Bridging. The main Seabee tasks are airfield, road and building construction. All officers are civil engineers and Seabees in the ranks are highly skilled artisans. Panel bridging had become a lost art with the Seabees with the exception of a few senior Chief Petty Officers who reminisced about toiling away on Bailey bridge sites in their dark and distant past. The Seabees had a good deal of training on the LSB prior to the onset of hostilities, my colleague Mr Rob Rayman and I spending nine weeks in the desert close to the border with Iraq, not the ideal location for floating bridging but more than adequate for the Seabees to be given a good grounding in simply supported single span bridge building to enable them to participate in the combat support role in forthcoming conflict in a very creditable manner.

The construction of floating bridges is a multi-unit task especially for an operational build. Site security at Zubaydiyah was provided by a platoon of the United States Marine Corps who swiftly imposed themselves on the local situation. The Marines guarded the site during the day and at night mounted ambushes, OPs, VCPs and patrols. Watching them prepare for their night operations gave me a depressing feeling of middle aged envy.

The boat operators and equipment came from the US Army, a platoon of the 1437th Multi Role Bridge Company, Michigan National Guard. This unit, from Saulte Ste Marie, contained a number of ex-regular army soldiers but the majority were National Guardsmen. Like British Territorial Army soldiers they bring civilian skills along with them as well as an enthusiastic and professional approach to their work. The 1437th also supplied a Ribbon Bridge Raft. In addition to the bridge builders and boat operators, another unit was present; this was a Boatswain's Party from Amphibious Construction Battalion 1, USN under the command of Lt David Minnick. These genuine salty sea dogs supervised the deployment of anchors and gave the whole project a much more nautical air.

### **BUILDING THE BRIDGE**

THE initial reconnaissance had already been carried out by of NMCB 133 and the logistic plan had been set in motion, all that remained was a confirmatory site visit. All bridge elements including pontoons were being transported by road from the desert location in Kuwait, the standard of planning was such that only a 1/2 day of work was lost throughout the project for logistic reasons. The task began with site preparation. With the machinery and manpower assets available this was completed in one day and on this same day the first convoy of bridge parts arrived from Kuwait. The convoys arrived at the rate of two convoys every three days normally carrying 13 bays (40m) of bridge plus pontoons for two floating piers. There was no work access to the far bank due to a suspected piece of unexploded ordnance in the shape of a large hole, EOD were unavailable for some time causing some problems with the assembly of the far bank landing span.

The launch slope was carefully calculated to permit the spans to be launched over a pair of floating pier assemblies and to enable the leading end of the span to connect to the outer pier at a suitable height, that is, not too high above the distribution beams or too low so that it would foul the inner pier. The spans were launched off four rocking rollers placed on a grillage assembly; four sets each of two rocking rollers were used as construction rollers each set 7.62m behind the other. The bridge spans were assembled using a tracked excavator fitted with bucket and an eye attachment, which is very effective for craning in bridge parts. All spans were launched



Seabees construct a floating span. Noticethe arm of the excavator being used to assemble the bridge.

fully decked. Whilst assembly of bridge spans was in progress the boat platoon assembled pontoons into the floating pier configurations. The pontoons had been unloaded from the 12m low loaders on which they were transported and pushed into the water using a D7 bulldozer. The Flexifloat pontoons are manufactured by Robishaw Engineering of Houston, Texas; they come in two lengths 6m and 12m long, they have a variety of uses and are easily assembled once in the water. To attach the bridge to the floating piers steel an I-beam must be welded on along with winch

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Floating a span into position, the bridge commander is standing on the top chord.

trays and winch assemblies. Much of the welding was completed whilst the equipment was in Kuwait. A work force of 20 welders worked in two shifts and preparation was completed in 15 working days leaving a minimal amount to be completed on site.

The best system for launching a floating panel bridge can be found in that august tome Military Engineering Volume III Bridging, Part V, EWBB Normal Uses, 1955, specifically chapters 12 & 13. Whilst the design method is no longer relevant the actual system of launching floating Bailey bridges is well explained. To launch a floating span onto piers a short single truss tail with launching link is required. The tail should allow the bridge to run over the rollers past the launch link position until it too can be held by spanners. Once the bridge is attached to the piers it is launched off the rollers under the control of the bridge boats. The tail must then be removed and male span junction assemblies fitted.

The first span was launched after two days work, this span was the far bank landing span and had a five bay launch nose fitted because plant work was temporarily forbidden due to the possibility of unexploded ordnance on the far bank, under ideal circumstances the far bank landing span would be assembled on rollers on the far bank. Once the small amount of welding had been completed a second span was launched and attached to this span and the whole assembly was floated across to the far bank under the control of the bridge erection boats. The launch nose was run up the rollers on the far bank until the end of bridge was in its final position, the launch nose was removed, end posts fitted, anchors deployed and the bridge jacked down onto its bearings. This

whole episode took from 1300 until 2130 and was by far the hardest day on site.

Following the launch of the first two spans the assembly and launches proceeded smoothly due to the skill and work ethic of the two bridge platoons under Chief Petty Officers Walton (NMCB 7) and Mazotas (NMCB133) and the boat operators of the 1437th MRB Coy. I was surprised at the number of Marines, Seabees and soldiers who have British wives and it was during this period that I was able to indulge in Anglo American philosophic discussions on such weighty matters as the importance of putting the milk in the teacup first, certain words and phrases appearing in the recent Austin Powers films, the use of

Spam (the edible sort) and the more profound "mushy peas – what is the point?"

Once three floating spans had been connected to the far bank landing span the final floating span was launched and the home bank landing span constructed. The floating span was brought into position and the home bank landing span was boomed out to it, the two spans were connected at the span junction and the whole assembly then boomed out to the main floating span. After they were pinned together at the span junctions the bridge was complete across the river, all that remained was to jack down the home bank, fit span junction decks and construct ramps at both ends of bridge.

The Zubaydiyah floating bridge was a military project intended mainly for civil use. Once completed the bridge was handed over to the authorities in Zubaydiyah and local engineers were briefed on maintenance procedures. Local police took over control of the site assuring us that should anyone



Constructing the home bank ramp.

interfere with the bridge they would be killed – there's democracy in action.

**Summary:** The Zubaydiyah floating bridge required two bridge platoons (44 personnel from NMCB7, 32 from NMCB133, these figures include machine operators), a boat platoon of 25 soldiers with eight boats, eight welders plus three cranes, a bulldozer and tracked excavator. The project was completed in 10 ½ working days each with two shifts of seven hours.

### TIKRIT

This site is 14km south of Tikrit and the bridge was needed to carry diverted traffic from Tikrit itself whilst repair of the main reinforced concrete bridge is completed. Several sites were considered but found unsuitable; the site selected was an old ferry site with reasonable road access. A considerable amount of road building and improvement was necessary and Iraqi civil engineering companies were contracted to do this.

The US Army had purchased a similar amount of bridge equipment to the US Marines however, whereas the Marines ordered metres of bridge, the Army ordered sets as supplied to the British, Spanish and French Armies. In addition to the sets the Army also purchased 560m of floating bridge similar to that supplied to the Marines with minor differences such as Flexifloat pontoons 1.5m high instead of 2.1m and steel wire rope anchor cables instead of polypropylene.

The installation of the bridge was under the command of the 14th Engineer Battalion, the planning and control of the task was the responsibility of the battalion construction officer Captain Jason Toth. When visiting the site I judged the gap to be approximately 300m using military field craft to estimate the range (there was a man standing on the far bank) since there was not enough time to visit the far bank. At a site meeting I was surprised to be told that the river was actually 450m wide, in fact, after further investigation the river proved to be 311m wide with an expected increase of 150m on the eastern (launching) bank at the height of the rainy season, that is late April – early May. Even more surprising, the maximum depth in August was 4.5m with maximum increase of 5m. The final design selected was a 9 span bridge, two

landing spans of 13 bays (40m)and seven floating spans each of 12 bays (37m)giving an overall bridge length of 339m. To overcome the increase in flood width the decision was taken to construct a causeway 150m long from a levee road running parallel to the Tigris to the river edge. The causeway would be above flood level up to the home bank abutment then slope down to 2m above water level at the river. The 2m height above river level was necessary to overcome the shallow water at the river edge. Flexi float pontoons require 0.6m water depth to float once the bridge has been launched onto it, on the eastern bank the 0.6m river depth mark was 10m from the bank. On the western (far) bank, the site of a now defunct ferry, it was necessary to make a cutting though the bank to give an acceptable landing span slope and still remain above maximum flood level.

It was decided to set up a bridge stores area close to the site inside a security perimeter guarded by the 14th Engineers but upon my arrival very little equipment had arrived. In a moment of military madness the decision had been taken to move all bridge elements from Kuwait to Iraq by rail but given the situation prevailing in Iraq it was a decision taken without thought regarding transport security. All equipment except pontoons were in 6m or 12m containers that would be carried to Baghdad and then on to Beijji where it would be moved by road to the stores area. This decision was to be the source of much breast beating and hair pulling in the coming weeks.

## LOCAL CONTRACTORS

As stated, the existing road on the east bank had to be improved; a new road had to be constructed up to the home bank abutment and a concrete slab was also required for the home bank. On the far bank, plant work and concreting was also required. Local civil engineering companies were contracted by the Battalion Construction Officer to tender for these tasks, numerous site meetings and conferences were necessary where the expression "Insh'Allah" (God Willing) was much bandied about. Eventually Captain Toth reached a very workable agreement with a number of contractors who produced an excellent standard of work that came as no sur-



A soldier from the 74th Engineer Company walks across the bridge.



US Army and Iraq civil welders work on a pier. On the right and left can be seen winch assemblies, in the centre are distribution beams and reinforcing chords to which the bridge will be attached.



Causeway under construction.

prise to anyone who has seen Iraqi civil engineers in action. In addition to the road building it was also decided to employ local welders to work on the pontoons. A total of nine Iraqi welders were eventually used on this task to supplement the efforts of seven military welders. They supplied their own welding machines and equipment and whilst not of the highest quality and definitely not safe by modern standards (witness the dead fish floating downstream from their welding cables), they produced an extremely high standard of work. The foreman of welders was Mr Jummah Hussin who not only oversaw the operations of his welders but was a good contact for welding rods, shackles, clamps, paint and other items that would have taken valuable time to obtain through military channels.

#### **BRIDGE INSTALLATION**

THE task of building this bridge was given to the 74th Multi Role Bridge Company whose 2nd Platoon provided the main workforce and 3rd Support Platoon provided cranes and plant. Boat support was provided by a platoon of 652nd MRB Co, a National Guard unit from Wisconsin. The Tigris at Tikrit is more volatile than at Zubaydiyah with faster flow rates and rapid changes in depth, all due to upstream and downstream dams thus demanding an exceptional standard of boat handling skill from both 652nd and 74th operators. The construction of the causeway was the responsibility of 3rd Platoon, 229th Combat Support Engineer Company, also a National Guard unit from Wisconsin. The 229th had an unenviable task, the length of time that the bridge was to remain in service had not yet been decided, so the design of the causeway was likely to change, It did, a lot, and the 229th had to show great versatility in adapting to the changing situation.

Work began with the setting up of a bridge park near the site. All equipment was delivered to the site from the Beijji railhead and unloaded with a 60 tonne capacity civilian crane or 20tonne capacity military vehicles. Pontoons were placed in the water and fixed together in their configurations so that welding could begin. Soldiers from the 74th assembled double truss boxes of bridge to reduce work time once bridge building started,

The 229th CSE Coy had meantime begun their work on the causeway. The original plan was for a short term bridge but as the civil contractor responsible for the repair of the concrete bridge kept putting back the start date it was realised that a more semipermanent solution would be required. Eventually a causeway 150m long, 30m wide and up to 5m high was constructed, the causeway banks were protected against flood erosion by layers of geo textile fabric to stabilize the earth, on the sides Hesco Concertainer was used, finally, concrete slabs normally used for blast protection were built up in layers. These slabs, known as tetrahedrons, weigh in at 900kg and were used for a number of tasks.

For the actual bridge assembly, 2nd platoon was broken down into two shifts each of six hours. Spans were assembled and launched onto pontoons and once the launch was completed the welders then began work on the winch trays. It required 1 ½ welding days for each pontoon assembly to be completed. Unfortunately all progress was to be arrested by a massive rise in water level. On one night the water level rose by 4m caused by the upstream dam being opened and the downstream remaining closed. The first intimation of this problem was at 0430hours on the following morning when the XO (2 i/c) of 74 Engineer Company burst into the room and asked the ominous question: "how many pontoons are in the water?" The answer was 36 but only six pontoons remained at the site. The river had risen rapidly pulling the anchors holding the pontoons out of the ground and allowing the pontoon assemblies to disappear downstream, some travelling up to 20km south of the bridge site. It required seven days to recover the majority of the pontoons.

By the time the recovery of pontoons was complete the far bank landing area had been excavated. Since the home bank causeway was still under construction (and repair after the flood) it was decided to construct the far bank landing span and to attach the first floating span. The landing span was assembled on rollers on the far bank; the floating span was moved up using bridge boats, the landing span was boomed out from the far bank and connected to the floating span at the span junction assemblies. The anchors were pulled into position with bridge boats and dropped into the river but failed to grip the river bed; the anchors were recovered and re-deployed with the same result. The bridge was held in place whilst the bridge was connected to a D7 bulldozer to act as a temporary anchor; it was while this was happening that a mistake was made that resulted in a bridge boat being swept beneath a floating pier assembly. Fortunately the boat crew were able to scramble off the boat onto the pontoon, without their weapons. Two M16s and an M249 Light Machine Gun were trapped in the boat beneath the floating pier assembly which resulted in demands to cut the steel wire



Attaching the far bank landing span to a floating span. Notice the engine power required to hold the assembly steady for this difficult manoeuvre and also the commander astride the top chord. The commander and boat crews are in rado contact.

rope to allow the boat to pass from beneath the pier and the weapons to be recovered. Since there was no more steel wire rope immediately available I resisted the urge to cut the cable. Given the ghastly things that are happening each day in Iraq it is difficult to become excited about the loss of three weapons especially when it may have been far worse.

The following day a buried anchor was constructed and a new cable ran out to the floating span, this enabled the original cable to be cut and the bridge boat to be recovered – without its weapons.

The problem of anchor holding power had to be addressed; the Tigris river bed at this location was extremely hard. A good illustration of its hardness may be gauged from the fact that an area of river bank was inundated for three weeks after the initial flood yet even after this the ground was still hard enough to drive a wheeled forklift through knee deep water without it becoming stuck. The first solution was to drop anchors in kedge, that is, two anchors connected by a length of chain; this was attempted twice without success. The second attempted solution was to attach concrete tetrahedrons to the anchors, it might be thought that an extra 1.8t (2 tetrahedrons per assembly) would work but it did not. The final solution was to use damaged pontoons filled with earth. I broached this subject to Captain Reyna, OC 74th En Coy, who was under considerable pressure to complete the bridge; she gave the idea about a 1/2 second of thought before ordering us to go ahead. A pontoon was selected that had been damaged during an attack on the train carrying bridge equipment, this pontoon had a number of holes from various projectiles and had been knocked off the rail flat causing a crack along the seam at the corner of the pontoon. The welders carried out

some minor repairs to close some of the holes in the hull and cut two holes, each a metre square, at each end of the pontoon deck. The pontoon was then filled with approximately 15 tonnes of earth and a buoy and 15m of SWR cable was attached. The pontoon was to be held in position whilst water was pumped into it, I had calculated that 22minutes pumping time would be required to put the pontoon in a sinking condition, all the time the pontoon and raft holding the pump (with only 15m of hose) would have to be held in position. The pontoon had to be sunk 40m upstream of the junction of two floating piers in a current running at 2m/s. In an impressive exhibition of control and boat handling accompanied by a lexicon of Anglo-American swearing, Sgt Caterer and boats and crews from the 74th and 652nd did exactly that. The pontoon sank after 20minutes of pumping.

After the success of the pontoon anchor the remaining pon-

toons were scoured for similar damage that would exclude them from use in the bridge itself. Two more pontoons were used as anchors and conventional mullock anchor arrangements were used at intermediate positions.

The installation of the bridge proceeded at a reasonable pace; the main problem was availability of specific items of equipment such as 6m pontoons, bearings, span junction decks and floating bridge end posts. A number of containers had been dislodged from the rail flats during attacks and looted by locals, making an educated guess at what was missing was extremely difficult. Added to the fact that the containers were despatched from Kuwait without consideration for the contents meant that pressure to complete the bridge weighed heavily on 74th



Improvised anchor – Mr Rob Rayman (centre) watches as water is pumped into the pontoon already loaded with 15 tonnes of road fill, the current is running at 2m+/s.



Attaching the landing span to the floating span at the span junction. Notice the commander on the top chord.

Engineer Company, especially so for the Officer Commanding. Eventually the required elements arrived within three days of the required completion date.

The east bank landing span was assembled, the last floating span was brought into position and the landing span was launched onto it. The floating span and the attached landing span were floated out to the remainder of the bridge and fixed into position. The bridge boats held the bridge on line whilst the cable from the buried anchor was attached. The bridge

was jacked down, span junction decks fitted and the bridge was complete.

In summary, The Tikrit Floating Bridge required a bridge platoon of 36 soldiers of the 74th MRBC, the 3rd (support) platoon of the 74th, 3rd platoon, 229th CSE Company and a boat platoon from the 652nd MRBC. I had estimated that the whole mission would take 29 working days exclusive of movement of equipment, in the event for logistic reasons a total of 57 days was required. This is a very good illustration of the importance of careful logistic planning. The actual installation of the bridge was not technically difficult although there were enough problems to exercise a combat engineer's mind. Far more critical to this type of mission is command and control of the

logistic effort. As stated in the paragraphs regarding the Zubaydiyah Bridge, only ½ a day was lost on that project, at Tikrit it amounted to not less than 14 days and another seven days can be deducted for the problems with flooding and loss of equipment. Enemy interference of the railway system that should have been foreseen was also a source of delay and loss of equipment. The railway was sabotaged on average every three days either by demolition or direct fire attack.

The 74th and 652nd MRBCs and 229th CSE Coy did a very good job in less than ideal conditions. For those unfamiliar with the Middle East, it is not sunshine every day and the Autumnal rainy season can be distinctly cold and unpleasant.

Both floating bridges are still open and

in use. The Zubaydiyah Bridge is maintained and controlled by civilian engineers and Iraqi police. It carries a heavy volume of local traffic and will continue to do so for the foreseeable future. At Tikrit the bridge that was originally intended for six months has been in position for nine months and may well continue for another three before the original concrete structure has been repaired. This bridge carries all traffic that would normally pass through a very busy city. It is maintained and guarded by the US Army and Iraq National Guard.



Civil traffic crossing the bridge, July 2004.

# Alamein – A Sapper's Story

DICK RICHARDS MM



Dick was an Apprentice at Chepstow until 1940. He was posted to 9 Fd Sqn in time for the Battle of Alamein in October 1942 and served with them through all the significant battles of the North African campaign until he was wounded by a mine in May 1943 in Tunisia. He recovered and was posted to 505 Fd Coy in time to take part in the invasion of Sicily but was again wounded, by a German "S" mine, near Messina in August 1943. After his recovery from this wound he was posted to 3 (Cheshire) Fd Sqn which helped form 1 Assault Regiment – the first AVRE regiment to form in Italy. During fighting in the Gothic Line in September 1944 he was seriously wounded and blinded in one eye, but refused medical advice to have his right arm amputated. His story illustrates the dangers of being a Sapper in front line units!

After the war he volunteered for service with Gurkhas and was one of the first British SNCOs to join 67 Gurkha Fd Sqn in Malaya and became a fluent Gurkhali speaker. After a tour in Hong Kong the unit returned to Malaya, then in the grip of the Emergency, to build the Gemas-Rompin road in Johore State. Dick later joined 68 Gurkha Fd Sqn which was busy opening up Kedah in North Malaya by building roads and bridges. Unusually, he served with Gurkha Fd Sqns for nearly 12 years.

He left the Army in 1965 and, after enjoying a successful second career in local government, he now enjoys his pensions, his three children, eight grandchildren and a great granddaughter.

I was an Apprentice at the Army Technical School, Chepstow, and had joined man-service in September 1939. I journeyed to Egypt on board the RMS *Queen Elizabeth* and was posted to 9 Field Squadron which was part of an Armoured Brigade in the Western Desert. This was in June 1942, just two months short of my 20th birthday and at that time I had been in the Army for five years; three as a boy and two as a man. My squadron was operating mostly in the northern half of the 8th Army position, working quite a lot in the Ruweisat Ridge area.

Eventually the troop was sent to the mine warfare school which was set up somewhere out in the Blue (the term Blue was used by the soldiers when referring to the Western Desert and beyond- where the expression came from, I don't know). The school was set up by a Major Moore RE. I have to say that in all my time in the Army up to this point, I had not been taught about mine-warfare and mines. Mines, on the scale used by the Germans at Alamein, were a new problem for the Sappers to deal with. We were taught everything about the mines and booby traps used by all the Armies in the desert and about the igniters as well. As most of the mine lifting was done at night, under very trying conditions, the mine school came up with a very clever idea which was a sort of stockade built with a wooden frame and covered by corrugated iron. Through holes in the stockade we were trained to feel in sand trays, deal with booby traps and disarm all the types of mine we were likely to meet.

There were two main types of German mine. First, the Teller mine, or plate mine, designed for use against vehicles. It was safe for a man to stand on one but they still had to be cleared with care because they were designed so that they could be fitted with two booby traps. The Teller mines could also be linked together by the booby trap wires so that a mistake with one mine could set off a string of mines and wreak havoc with all around.

The second of the main types of mine was the anti-personnel "S"" mine. The mine was an ingenious devil; on being activated by the switches there would be a delay of about three seconds and then a small explosive charge would set off and the mine would jump out of the ground to a height of about three feet. Then the main charge would go off and scatter ball bearings in all directions, killing or wounding those around it. The most commonly used igniter was the pressure switch with three prongs but there was a Y adapter which would be used with trip wires.



Dealing with German Jumping Mines.



Wood-cased Italian Mines.

Italian mines are hardly worth a mention as they were of Heath-Robinson design and did not cause us much of a headache. The design was such that sand easily got into them and rendered them comparatively harmless.

This was an excellent method of training. The school was well set up, the instruction we received was thorough and the instructors were first class. We left the place feeling confident that we could handle any problems that the Germans would put in our way. I don't know if Major Moore received any well deserved recognition for his efforts.

It was important to find out all we could about the enemy minefields so, apart from our work in the day there were plenty of minefield recces to do at night. One of the most terrible experiences that I found was to stumble on to a dead body that had been out in the sun for a few days-the smell was enough to knock out a mule. We did have some encoun-

ters with Germans who were busy patrolling too. We had to be very careful because he could come from any direction.

Early one morning I gained a little dog who came haring out from the smoke and blast of a Stuka dive-bomber attack. I called to him and he dived into my trench shaking with fright. He was, of course, renamed "Stuka" and stayed with me until I was wounded in Tunisia. He was a smashing, intelligent little dog and came into the minefields with us where he would find mines and "growl" at them. Our Troop Officer thought that we shouldn't take Stuka but the lads had a go at him and he changed his mind.

#### THE BATTLE OF ALAMEIN

WE all sensed that something big was in the wind but even though we did not know "what and when", we knew that as Sappers we would be involved and that we would be breaching minefields with all that such work entailed. It would not be truthful to say that everyone was straining at the leash to have a go at the enemy and "knock him for a six", because we knew that he was a tough nut and would give us a hard time, but most of us were confident and knew that in the end we would beat him. With all the new vehicles, tanks and weapons that we could see arriving in the desert we knew that we were a match for all that the Gremans had except, of course, for the 88mm anti tank gun. This may be a funny time to say this but all through the war I never heard anyone say "if we win the war" it was always "when we win the war". No one seemed to have any doubt about the outcome.

Now to the Battle of Alamein from a Sapper's view. The day before the battle we had all been gathered together by the Troop Sergeant and then the Troop Officer read out Monty's address to the 8th Army. This was quite well received but the phrase he used about "hitting Rommel for six" out of Africa was commented on - we would have used a stronger and blunter expression! We all

knew that Monty was commanding the Army and he had definitely made an impact. The next day we were again gathered together and this time the Troop Officer told us of the part we were to play in the battle which was to start that night – the night of 23 October 1942. Because we were in the front line we were not told until the last minute. We were given the "big picture" and the message was that although our part was clearly vital we were all part of a big team

Our task was to clear a 24 ft gap as a standby or emergency gap for the 1st Armoured Division and then the gap would be widened if or when required. We spent the rest of that day keeping occupied as best we could, checking our equipment, and writing home. I think it would be as well to remember that the majority of the 8th Army consisted of young men who had no real experience of battle and we were bound to wonder how we would react under fire.



Sappers in the Western Desert waiting to begin gapping Courtesy Imperial War Museum.

### ALAMEIN - A SAPPER'S STORY

Late that afternoon we set off in our vehicles in single file across the Desert. Arriving behind the area where we were to work we dispersed the vehicles and made final preparations. Knowing the nature of the work, we left behind nearly everything except weapons and a water bottle each. I left my helmet behind because it was difficult to wear with the detector headphones. Nearly all the enemy mines and booby traps were armed by removing a safety pin and the easiest way to disarm them was to replace the pin. Sometimes the original pins would be found where the enemy had carelessly thrown them and each man had his own collection of "pins". Those who were short of pins now made extras from wire and these were put in a shirt pocket, a pouch, or sometimes hung handily from the belt. Towards sunset the Troop Officer went off with three men to tape the right-hand side of the gap using a compass bearing.

After dark the Troop set off for the Start Line on foot in single file, section by section, with the Corporals leading. I had left Stuka, my dog, with the Section Driver and hoped to see him again. We arrived at a "dump" of kit, guarded by some Military Police (MPs) and picked up loads of pickets, tape, tin markers and lamps to mark the edge of the gap and control the traffic. We carried all this kit forward to the Start Line, quietly laid everything out and got ourselves organised. The full moon was rising and visibility was good but the front was just as it had been on any other night and there was no indication that this night was to be unlike any other in the previous months. The Troop and its supporting troops were very much alone and just like any other work party going about its business in no-mans-land. We talked and moved quietly.

We actually started gapping at about 9.30 pm and we were eager to do so as the waiting time had seemed endless. I had volunteered to be the detector man for my section and now I put my headsets over my ears and adjusted the volume control until it was a barely audible hum which "whooped" in my ears over a cigarette tin lid. As the detector man I had to keep my eyes on the detector head so I was guided by another man who stooped behind my left shoulder. Being the detector man was not popular because, of course, you could not take cover and with the headphones on you could not hear the whistle of incoming shells or crack of bullets. When the first section had gone some twenty yards we set off. We had no infantry ahead of us but the Troop Commander did post two men ahead of us armed with a Sten and a Bren. Our spare men were left at the start of the gap as reserves. Because of the nature of the work many of us did not carry our rifles and these were left with the reserves.

I was still working the detector and had my eyes on the ground when long shadows leapt before me on the sand. I stopped, startled by the sudden light and then realised that the great flash behind me was our guns opening fire. Then, even through the headsets I heard the thunder of our guns as our barrage opened the battle. I knew that our infantry would be passing us and I did not envy them the job of walking into uncleared minefields, especially the "S" Mines, for I knew the feeling of walking on egg shells, but, deep in my own world, I did not see them passing. Luckily, there were not many "S" mines but there were bombs that had been placed in the ground, nose up, as mines.



German Anti-Tank Mines.

Before the battle I had been told that I would only have one turn on the detector but because of casualties, and a little bit of disorganisation I had two or three turns. We were changed in our tasks at about 20 to 30 minute intervals and, after a turn on the detector, you were normally given something less stressful such as tape laying and then, after each rotation, you worked your way forwards until you were back on the detector. At least that was the idea.

Our infantry were fighting it out up ahead and although we were not under aimed fire bullets and bursts of machine gun fire cracked about us. Our own artillery thundered behind us, the noise rising and falling as they followed their own plan but as the night went on the flash of the guns was lost in the dust and our ears became so used to the noise that we did not notice it any more. The German artillery was very slow which was not surprising after the hammering that he was taking from our artillery but as the night went on shells and groups of shells started to land about us. Luckily they were not aimed directly at us but the dust of the explosions drifted over us and we had a few casualties. I know at one stage our third team had to stop and reinforce our first team who had some men knocked out but after re-organizing our third team was back at work. It must be remembered that the time taken to clear the gap was not set by the speed of the detectors but by the work of that of the clearing men because if they were held up by the booby traps the whole thing was slowed down. Also, the fate of the whole section was in the hands of each man. If the detector man missed something or one of the mine lifters fumbled then the explosion could kill the whole section. Towards morning there was tremendous pressure to speed things up but to give the Troop Officer his due he refused. It is obvious that if we had speeded up mistakes would have been made resulting in more casualties and delays due to vehicles knocked out on mines that had been missed.

Towards morning the gap was declared to be open and then trouble really started. I had the impression that the moon had set and visibility was certainly not what it had been earlier. A twenty four foot lane is hardly generous for the driver of a tank or large vehicle and once traffic started to move through the gap the dust was awful and visibility was quickly reduced by the brown drifting murk. Tracks tore up the tape marking the edges of the gap and the stakes with lights and signs were repeatedly knocked down. The traffic inevitably moved slowly, stopping and starting for no apparent reason, nose to tail. We were under constant fire of some sort even in the dark and nobody wanted to be trapped in daylight in a traffic jam in the middle of a minefield, under the eyes of the "88s" when the sun came up. The impatience could be understood to an extent as everyone was desperate to be through the gap and dispersed before first light. In some places the inevitable happened and vehicles broke down and blocked the gap. Then the drivers and commanders of other vehicles would get impatient and try to go around the stranded vehicle. To do so they would drive off the gap, and perhaps hit a mine, thereby adding to the confusion. I do not think that ever before or since that night have I seen so many handfuls of hair torn out in rage. It must be remembered that we had been under some sort of enemy fire all through the night and were under a terrible strain. It is a good thing that our artillery had hammered the enemy guns during the night and the RAF had command of the skies otherwise we would have been slaughtered. I am sure that the carpet bombing by the Mitchells saved many a life because in the gaps vehicles were nose to tail and queuing up to go through. There was a lot of confusion and chaos and we were working our way up and down the gap doing our best to keep it open. At the home side of the gap we had a D4 bulldozer, which was the smallest size of Army bulldozer at the time, and we used it to push or pull stranded vehicles out of the way. Sometimes we just put the blade down and pushed the vehicle out of the cleared lane. I saw a stalled lorry and watched a Crusader tank pull out of the gap and try to creep past. There was a very loud bang as a Teller mine blew off his track and wrecked his bogies. The tank commander, a young officer, jumped down from his turret. He was clearly shocked by the explosion, upset that he had lost his tank and had completely lost his temper. He stormed over to us and called us incompetent, lazy, and made all sorts of accusations about our moral fibre. Suddenly, out of the gloom, came a tall, high-ranking officer. I could not see his rank badges but he had red tabs on his shirt. He took the young officer to one side and gave him a "right good rollocking" which wound up with a direct order to walk back to his own CO and tell him why he had been sent back. I would have liked to have heard what the CO had to say to the young officer. I am pleased to say that incidents like that were very few and far between and, on the whole, the Sappers were treated very well.

I was very glad to see the dawn on the 24th for I was totally exhausted by the hard work and nervous tension of the night and the rest of the men felt the same. We thought that the job was well done and that after a bit of tidying up we could leave the gap to the MPs to control but "no rest for the wicked", as they say, because then we were told that we had to widen the gap. To do so two detector teams set off in the reverse direction down each side of the existing gap to widen it to 40 ft.

After we had finally finished our gapping we found a comparatively quiet spot and collapsed on the ground; desperate to close our eyes and slip into the unconscious sleep of the exhausted. We were new to this game and had not thought to bring any food with us and everything we had was back with the vehicles although we had a few biscuits to share. It seemed that we had hardly closed our eyes when we were woken and four of us were detailed off to bury a couple of British dead. We shovelled out a couple of pits but when it came to actually handling these blokes; removing their identity discs, paybooks and personal belongings, we were a bit squeamish. A passing Padre saw us looking worried by the bodies, stopped his truck, came across and said "Don't be worried lads, they are not here now, they have gone elsewhere, what is left is just flesh and bones" or words to that effect. It may sound callous but when you think about it is true. I have always remembered those words.

When looking back on the first night at Alamein it is important to remember at least three things. Most of the 8th Army was inexperienced and very "green". This was our first major battle. Secondly, the dust was appalling, visibility was for worse than in any London smog. Thirdly, navigation was exceptionally difficult.

After the first night we really lost track of time. The Sappers were always in great demand and we either went to, or were taken to, one job after another. The main task was to get people out of suspected unmarked minefields but most of these were actually patches of mines laid indiscriminately and were a real nuisance. A vehicle would be mined and then, normally, all operations would stop until the Sappers were brought forward. We would then have to go through the whole careful process of clearing the area only to find that perhaps there had only been one mine, or perhaps one or two, in that area. The Germans also had a bad habit of scattering mines in a completely haphazard way around his strong points and it was rarely possible to detect any pattern in what he had laid.

We also had to check the enemy dug outs and search for booby traps but, at Alamein, he had not had a lot of time and the booby traps were nowhere near as bad as those we were to encounter later. The worst dug outs to do were the Italian ones. They used to stink to high heaven, were filthy dirty, and swarmed with fleas. To try and make things better for themselves they used to use scent by the gallon. In one Italian dugout we found a very large whole cheese. After a close inspection we tied a rope around it, retired to a safe distance, and pulled. Nothing happened so we captured it and classed it as the spoils of war. It had a lovely sharp taste which was something that was lacking in our diet.

We were on constant call to clear the way for formations to get forward and to get people out of trouble. Sleep and food were snatched whenever we could and because we were so tired mistakes were made. At one point we were detailed to bury a couple of Jerry dead as they had been lying out in the sun for a couple of days and were getting a bit high. The Section Lance Corporal detailed me to put a brew on while



German Tank in the desert with its turret blown off Courtesy of The Tank Museum, Bovington.

the others were getting on with the job. It was decided to bury them in a couple of old slit trenches. As the bodies were moved there was a loud explosion; they had been booby trapped. Two of our blokes were killed. These Germans had been made to serve their *Führer* even in death. We were very angry. After that we did not bury any enemy dead unless it was absolutely necessary and even then we would search around the bodies for 'S' mines first and then hook a line on to them and drag them into a hole.

The Germans were very good at recovering their damaged tanks and it was thought that they were also being used by him as observation posts and positions for machine guns and snipers. We were sent out under cover of darkness to destroy these tanks with tins of an explosive called Amanol or Amatol which is in a powder form, like gunpowder, and being a "lifting charge" is also used for blowing craters in roads or the buttresses of bridges. We would sometimes have an infantry covering party with us but we always approached the tanks with caution and on at least one occasion we saw enemy soldiers scuttling away into the dark as we approached. The worst aspect of the job was the smell from the turret hatch. Most of the tanks contained at least a body or pieces of bodies and the stench was even worse, if that was possible, if there had been a fire. Any disturbance would set off clouds of filthy "bluebottle "flies. It never ceased to amaze me that, despite the stench and the flies, some of my pals would climb into a tank to look for souvenirs such as Luger pistols, binoculars or watches. How they did it I will never know. We would place the 25 pound tin of explosive in the turret, pull the igniter, close the hatch and move off promptly to a safe distance. It was important to watch the tank because sometimes the turret would fly into the air and it might be important to take swift

evasive action. At other times the effect would be disappointing as the turret would just lift a little and then just settle on its side

During the battle we started to see prisoners ariving in large numbers for the first time. For the most part they were quiet, resigned to being prisoners and carried themselves very well. They clearly felt that they had done their duty but, on this occasion, things had not gone their way. In contrast, the Italians were fawning and grovelling, filthy dirty and generally disgusting. It took great restraint not to see them on their way with a boot up the backside.

As the battle went on we had no idea of which unit or formation we were working for or who we were working with and we lost contact with our own Echelon, where

our Quartermaster lived, and so we went without our rations, mail, replacement clothing and all the other routine but essential items of life. We had to go to the nearest unit and beg for rations and water. Needless to say, we always checked the "bins" of derelict vehicles and tanks for rations and it was not uncommon to find British rations in the bins of German tanks - it was said that he was still using some of the mountains of our supplies that he had captured at Tobruk. What a scruffy bunch of battlefield tramps we were! As the battle went on into early November so we all became more exhausted. We were working night and day with little sleep, snatched when we could, and infrequent meals of any kind – mainly a half tin of corned beef and a few biscuits. Our planes flew over day and night. The ground shook from the bombing and the night was lit by the flares from the bombers.

All of our attacks were accompanied by terrific barrages from our guns and it became noticeable that our prisoners were increasingly dazed and in a state of shock. Like the rest of my Section I was covered with Desert sores which erupted from all our cuts and abrasions.

When the enemy finally broke there was a short period while we reorganised and then, like everyone else, we set off in pursuit. Our Jock driver had survived the battle so he drove while we collapsed into sleep on the kit in the back. We stopped for nothing and I remember that all "calls of nature" had to be answered over the side of the wagon as we drove along. A frightening sight!

We finally rejoined the Squadron at a place called Mersah Matruh. We were exhausted but were given no time to rest. While we were at Matruh the English papers caught up with us and we were able to read about Alamein. We were really pleased at the reaction to our victory

# The Highest Motor Road in the World?

LIEUTENANT-GENERAL (RETD) T B NANDA PVSM



Lieutenant-General "Tik" Nanda, a retired Colonel Commandant of the Bengal Sappers and of the Pioneer Corps, had a most distinguished career in the Indian Army, becoming Principal Staff Officer to the COAS and ending up as Master General of the Ordnance (MGO).

# INTRODUCTION BY MAJOR-GENERAL IAN LYALL GRANT

THE Indian sub-continent has a land frontier some 5,000 miles long, mostly mountainous. In later British days, the only part of this frontier which needed serious defending was part of the thousand miles of the NW Frontier with Afghanistan. The much longer borders with China and Tibet to the north and Burma to the west, were quiescent. However, the creation of Pakistan and Pakistani encroachment into Kashmir, followed by Chinese expansion into Tibet, have changed the strategic balance. As a result all three countries have, in the past fifty years, built strategic motor roads over the great mountains to the north, where formerly only human or pack transport was possible. A book could be written about all the remarkable and daring feats of the engineers who built these roads, but the aim of this short article is a more simple; it is to describe the building of a road over the Khardong La Pass in Ladakh, which, at 18,380 feet, is believed to be the highest point crossed by any of these roads, and indeed the highest motor road in the world.

#### THE ROAD OVER THE KHARDONG LA

AFTER the 1971 war with Pakistan, there was an exchange of territory in the mountainous country north of the Himalayas, and India acquired an area of some 400 square miles astride the Shyok River, which here runs from east to west. This was far up in the mountains, south of the Karakoram range and north of the Ladakh range, in the Province of Ladakh. The new area is known as the "Turtok Sector" and contained at that time some 200 families. These had previously been maintained by Pakistan from the west; now they had to be supplied along the valley from the east. This was no easy task. For 16 of the 35 kilometres between Thoise and Chalunka there was virtually no track, and for several kilometres the Shyok, a considerable river, ran though a steep and narrow rocky gorge previously considered almost impassable. However, a fair jeep track ran west for the 22 kilometres from Chalunka to the new border.

Our main supply base for this area was at Leh, 11,500 ft, the capital of Ladakh and south of the Ladakh Range. On the north side of this range was a forward supply depot (FSD) at

Partapur, and this supported deployment both north up the Nubra valley to the "Siachen Sector" and west down the Shyok valley to the "Turtok Sector". Up to this time supply to the FSD from Leh had been both by pack transport over the Ladakh Range and by airlift to Thoise, where there was a gravel airstrip. But, despite the efforts of path clearing gangs, the Khardong La Pass was often impassable for pack transport in winter, and the Air Force was unhappy about using the Thoise airstrip. The low-mounted engines of the Avro aircraft tended to suck in dust and grit, while the Fairchild Packets, of World War Two vintage, were being phased out.

A new Northern Command was established in June 1972 to look after this area. The GOC-in-C was a famous Bombay Sapper, General P S Bhagat VC. General Bhagat decided that work to close the gap between Thoise and Chalunka must start at once from both ends. The river had to be bridged twice; once by a bridge fit for animal transport, and once by a 200 lb cableway. Meanwhile bitumen-surfaced helipads were built at each end, and an M18 helicopter was used to ferry stores across the 16 kilometre gap. Six jeeps were also dropped by parachute to Chalunka to utilize the road forward to the border. This solved the short term problem.

However, a more fundamental problem for the new command remained. this was the maintenance of the FSD at Partapur, where the stocks were running down due to the difficulties faced by the Air Force. The options were whether its maintenance should be carried out completely by air, by road/track, or by a combination of both where feasible. During this period I had the privilege of being Chief Engineer of Northern Command and getting fully integrated into the operational and logistic planning of this problem.

I flew twice up to Thoise to estimate the time and tonnage necessary to make it into an all-weather airfield. I then studied the road option. The only possible route was over the 5602 metre (18,380 feet) Khardong La pass. The lower parts of the road Leh – Khardong La – Khalsar – Thoise had already been made, but in the higher reaches the trace-cut was only wide enough for animals, and at a rockface near Khalsar there was not even a trace-



Sketch of Roads in North Ladakh 1972 - Not to Scale

cut. Moreover, on the north side of the Khardong La, a small glacier, over which the road had to pass, was a potentially difficult obstacle. Nevertheless, it was finally decided that the road option was best and that all resources should be applied to building a road from Leh to Partapur over the Khardong La. For the 1973 dumping season it would only be Class 5 and so a jeep platoon would be brought up to Leh by May. General Bhagat ordered in December 1972 that no time was to be lost. The road was to go ahead as fast as possible and be opened early in 1973, so that stocks cold be built up at Partapur during the summer.

201 Engineer Regiment of the Madras Sappers was the only military engineer unit available but they were fully committed forward of Partapur and could only spare half a company for this work. However, the task forces in this area of the Border Roads Organisation, and of the Kashmir PWD, were still under military command. I held a meeting with all those concerned, and explained in some detail the constraints and the priority attached to this project, and emphasised the confidence that the Army Commander had in his engineers to accomplish the task in the shortest possible time. At corps level, co-ordination of the project was delegated to Brigadier A M Joglekar, and at site level to the CO of 201 Engineer Regiment, Lieutenant Colonel Thapliyal.

Work started at once but due to the extreme cold, work in the winter months was very difficult with the constant threat of frostbite and the problem of low output from the plant due to the latitude. However, in April 1973 it was possible to get going in real



The Summit of the Khardong La.

earnest and good progress was made. Lieutenant-Colonel Thapliyal offered me the chance of being the first person to drive over the pass in a jonga, so in August I visited Leh and the second-incommand of 201 Regiment, Major (later Lieutenant General) Suresh Endly, drove me up the pass in the CO's jonga. It took us exactly two hours, after talking to working parties *en route*, to reach the top. I don't mind saying that at the time I was quite scared and apprehensive since the road could only just take the two outer wheels. But once at the top alarm changed to awe and

euphoria. There was a clear blue sky and, looking north, the Karakorams stretched across the skyline in all their breathtaking majesty while, looking south, the snowy peaks of the Zanskar Range were a glorious sight. I had a strong feeling of being present at a great and historic Engineer achievement.

General Bhagat was mightily pleased to hear the news that the pass was open, and I told him of the outstanding work done not only by the Sappers but by all the Engineers who had taken part. The road has been consistently improved over the past two decades, although for some years the glacier section continued to cause trouble and several Bailey bridges were washed away. However, a permanent solution was found for this difficulty, and the road now safely maintains troops, essential for our national security, in both the Partapur and Siachen sectors.

That is a very brief account of how and why the highest road in the world was conceived and completed.

#### NOTES

- 1. A "jonga" (parentage jeep and tonga) is the name given to the Indian-made derivative of the Nissan one-ton 4x4 vehicle, and is widely used by commanders and for reconnaissances.
- 2. "Himank" (see photograph) is the name of One Division of the Border Works Organisation.
- 3. As a young Bengal Sapper officer, I crossed the Khardong La from the north in the early hours of 6 June 1939. The final 500 feet was steep and in deep snow, and, even as late in the year as this, the ponies and yaks could not make it. *ILG*

# SO3 Search – A Job In Its Own Right

CAPTAIN J J COUGHLAN BSC



After completing his first tour as a Troop Commander in 21 Engineer Regiment, Captain John Coughlan moved to 22 Engineer Regiment, splitting his time between Combat Support Troop Commander, and both Second-in-Command and Operations Officer of 6 Headquarters Squadron. His final reincarnation however saw him train as a Royal Engineer Search Adviser (RESA) and deploy on Op Telic 4 as SO3 Search, 1 Mechanized Brigade. He is presently at the National Search Centre (NSC), Lodge Hill, as Training Officer TTA, and now has the opportunity to influence those training for future deployments.

## INTRODUCTION

THERE is a close relationship between EOD and Search and as a result the responsibility for Search within a deployed Brigade Headquarters during recent operations has sat with the SO3 EOD; the appointment SO3 EOD/Search has become the default. The level of Search training or awareness with this appointment has varied with the incumbent and inevitably so has the time allocated to it. This is then mirrored at Divisional level, with Search falling within the responsibilities of the SO2 EOD. The wider understanding of Search and the appreciation of assets available and capabilities within the British Army remains limited. Search is not a black art, yet the tasking of Search assets, its employment on operations and most importantly the advantages gained by the appropriate use of these assets is not widely understood within the all arms environment. It would be a fair assumption that the majority of any current brigade staff would have had little exposure to Search unless they had previously served in Northern Ireland (NI), and even this level of experience is waning. The capabilities of Search assets are often overlooked and a level of encouragement will often be required to prompt their employment. Surely the coordination and control of this key capability should rest with a dedicated Staff Officer on operations? This article will make the case that an independent SO3 Search is required within a Formation HQ, wherever the British Army is deployed on Other Operations.

## BACKGROUND

My appointment as SO3 Search in HQ 1 Mechanized Brigade on Op *Telic 4* was the first time, certainly on Op *Telic*, that a Brigade HQ could call on advice from a Staff Officer dedicated to Search. However, although given this title I was not entirely dedicated to the role and my time was split equally with my responsibilities as the Unit Press Officer (UPO) for 22 Engr Regt. What this did achieve though was a single focal point for Search planning and advice within the HQ, which in itself raised the profile of Search within the brigade. It is this important factor that forms the basis of a case for a dedicated SO3 Search. Some of the factors highlighted below were lessons learned and this appointment was far from the model template for an SO3 Search. Indeed some of the points were only realised as a result of hindsight, but they will only highlight the ineffectiveness of "double-hatting" this role.

### SEARCH ON OP TELIC

IN simple terms Op *Telic* developed from an initial warfighting operation into a peace enforcement operation focusing predominantly on reconstruction. The reality on Op Telic 4 was anything but as clear-cut and at times 1 Mechanized Brigade was simultaneously involved in Security Sector Reform, reconstruction of Essential Services and heavy fighting with the Muqtada Militia. The Brigade operated in a diverse Area of Operations (AO), from the relatively benign Basrah Rural AO where the focus was on protecting essential infrastructure, to the extremely volatile city of Al Amarah, where movement was often restricted to armour only. Basrah City itself fluctuated from benign to volatile and everything in between throughout the tour. This meant that the scope of Search operations varied greatly, as did the operational environment in which they were conducted. To keep pace with this rapidly changing environment and to continually adapt the appropriate Search response required significant time and effort. To combine this responsibility with an equally busy and varying range of EOD operations is a tall order and will never result in the best use of resources or planning considerations in either discipline. In fact to combine it with any other appointment, including UPO, would considerably detract from the employment and management of Search.

Although a significant amount of information flowed into the Brigade G2 cell, especially after the introduction of Field Humint Teams, the quantity of useable intelligence available throughout the tour was extremely limited. As a result the number of significant G2-led Searches was limited. House Searches conducted on the basis of "walk in intelligence" were routinely unproductive and often turned out to be little



Occupied Building Search of a suspected Militia bomb maker.

more than a disgruntled neighbour seeking retribution. This limited intelligence also restricted operations to offensively targeting the constant threat from roadside Improvised Explosive Devices (IEDs). Countering this threat was mostly limited to defensive route Searches, conducted infrequently to ensure routes were free from IEDs, usually before visits by VIPs or logistic convoy moves. This highlights two areas where appropriate Search advice embedded in the Brigade Headquarters can play an extremely important role in the conduct of brigade operations:

### **Co-ordination with G2**

EOD is very much a G3 function, whereas Search has much closer links to G2. Search can be an extremely effective tool in gathering information, which may then be exploited by G2 to produce useful intelligence. Indeed one of the four main

objectives of Search is to gain intelligence. This offensive use can be used when more overt and robust tactics are inappropriate. The employment of search in this way is not universally understood and the potential can very easily be overlooked. In this case, the importance of having a Staff Officer within the HQ planning process to highlight and target this additional capability is self-evident. It is also a further reason in favour of separating the traditional SO3 EOD/Search appointment into two independent roles. This is especially relevant to a new theatre with a relatively immature G2 network.

# **Force Protection**

The utility of Search within the force protection measures adopted by an expeditionary force is crucial. This is especially evident given the IED threat and general range of attacks facing British forces in both Iraq and Afghanistan. The efficient and effective use of defensive route Searches and route checks, good VCP procedures and targeted building and area Searches to remove the threat all need to be coordinated at brigade level. This would benefit greatly from the advice of a Search-trained member of the Staff.

Despite the best efforts of Unit Search Coordinators (USCs) and Unit Search Advisors (USAs), Search assets are not always employed in an appropriate way by units within a brigade. This is again linked to the general lack of understanding of Search capabilities and can result in anything from wasted effort to unnecessarily dangerous practices. Additionally the completion of appropriate Search documentation is essential in order to gain intelligence, gain evidence for prosecution and less obviously, but just as significantly, to avoid subsequent litigation. When the operational environment is as testing as that experienced by The Princess of Wales' Royal

Regiment Battle Group in Al Amarah, this will not necessarily be at the forefront of soldiers' minds. The enforcement of best practice and procedures at brigade level is important and although at times it needs to be robust, it equally needs to be sympathetic to the tactical conditions under which operations are taking place. This is a delicate issue and anyone not receptive to both of these considerations can very quickly lose face amongst unit and brigade staff and may find themself "frozen out". Although the credibility of the advice received from RESAs is essential at unit level, having an SO3 on the brigade staff would provide "top cover" when required and the "bigger picture" appreciation that is needed. An SO3's ability to influence the brigade planning process and to provide a level of co-ordination at this level is key.

Timely, accurate Search advice within the brigade planning cycle is essential for the success of many operations. One



High Risk Route Searches.

### ROYAL ENGINEERS JOURNAL

example from my tour in Iraq that highlighted the need for such accurate Search advice involved the short notice visit of the Iraqi Prime Minister Dr Iyad Allawi. The Brigade HQ was informed the afternoon before the visit that PM Allawi intended to visit a polling station for the local elections in Umm Qasr the next morning, followed by the Teaching Hospital in Basrah before holding a meeting in the Basrah Governate Building later in the day. An estimate involving all of the key staff quickly followed. Advice guiding the suitable employment of Advanced, Intermediate and Basic Search assets and techniques became an important factor in guiding this planning process. In this type of scenario, had there not been a Search trained Staff Officer immediately available, ill informed decisions on the level of assurance required and

assets needed at different locations could easily have risked the integrity and safety of the operation.

The development of Search support to an operation is obviously a continuous process. Staffing the appropriate Urgent Operational Requirements (UORs) to move the capability forward needs the focus and backing of key members of brigade staff. The responsibility for initiating and driving these requirements should not lie with a RESA, who will be busy enough concentrating on current operations. The Search support to Op Telic 4 was limited, with only one operational REST and two RESAs. The level of imagery support to Search, similar to that enjoyed by RESAs in NI through the capabilities of the Reconnaissance Intelligence and Geographic Centre (RIGC), was also extremely limited. Although it was possible to get some imagery for high profile operations, this was the exception rather than the rule. In any case the lack of Image Analysts in theatre severely restricted the utilization of this imagery. Highlighting an operational shortfall such as this and gaining the support required to move the process forward should be the responsibility of a Search Staff Officer.

#### REQUIREMENT

RESAs provide a pivotal role in the employment of Search. Whether they are SNCOs or Junior Officers, the quality of the advice they give to unit commanders and the credibility of the individuals concerned will always be the most important factor in the employment of Search on operations.

However the RESA's primary role is the planning and execution of Searches and their skills are best placed on the ground and at unit level. Additionally the Search knowledge they possess does not in itself equip them to advise on and incorporate Search within a Brigade HQ, as I inevitably found out. Although some individuals would achieve this through effort and personality, the role would be better filled by a substansive Captain with both experience working at brigade level and a thorough knowledge of Basic, Intermediate and Advanced Search capabilities.

It could be argued that an SO3 Search appointment might



Mentoring Iraqi Customs Police searching fishing vessels.

remove some of the independence and responsibilities from SNCO RESAs. However removing some of the staff burdens from them would allow them to concentrate on the application of Search itself and time to develop the important relationships with unit and sub-unit commanders and other related agencies.

An SO3 Search needs to be established as a dedicated member of a brigade staff prior to and during deployments on Other Operations, with sight of all operational planning. They need to work within the Brigade G2 cell, but also work closely with G3 (Ops) and G3 (Plans). The individual would need to be capable of briefing the Commander and Chief of Staff (COS) on all Search issues, which would require a thorough understanding of specialist capabilities and complete visibility of all available assets. Their key role would be to identify opportunities for the use of Search within the Brigade Campaign Plan and ensure the correct and timely employment of Search assets within it.

#### THE WAY AHEAD

Hopefully this article will have highlighted two important factors that need to be realised in order to ensure Search is employed correctly and to its fullest extent on operations. Firstly the establishment of an SO3 Search appointment within any Brigade HQ deploying on Other Operations and secondly a degree of education of Headquarters Staff.

The NSC is pushing the requirement for an SO3 Search appointment and the training required to successfully fill this role and an outline course has already been drafted. Although an SO3 Search would not need to be a trained RESA, (or even RE cap-badged), they would require a thorough understanding of Advanced Search. This would inevitably link any SO3 Search course closely with the theory side of the RESA course, but as highlighted earlier, it would also require an element of staff planning and briefing.

The education of Brigade headquarters' would, of course, eventually be the role of the SO3 Search, but until this becomes an established post, the onus will inevitably fall on organizations such as NSC, through CASTs, Brigade FTXs and predeployment training.

# **Studying for Staff College**

# BRIGADIER J H HOOPER OBE SBSTJ DL FCMI



John Hooper was commissioned into the Corps in 1951 and served a good deal of his early career in Airborne Forces, including service in the Canal Zone. He later commanded 25 Fd Sqn, was GSO 2 in HQRE 1(BR) Corps and then commanded 36 Engr Regt. He wrote the draw-down plan for the withdrawal of British forces from Singapore before becoming successively CRE 1st Armd Div and Col GS, 38 Gp RAF. He was then appointed Dep Comd, HQ Wales, but managed to extricate himself to command the British Military Mission to Saudia Arabia. After retirement, he was advisor to HRH Crown Prince Abdullah of Saudi and Chief Executive of an aviation company in the Isle of Man. He was then involved in demining in Cambodia, Mozambique and Somaliland for over ten years He has also been Chairman of Gwent Appeal of the ABF, President of Monmouthshire St John Ambulance, Vice President of Gwent Scouts, President of Monmouth Branch REA and SW Branch, Airborne Engineers Association and Deputy Lieutenant of Gwent.

In the Olden Days, Oh Best Beloved, there were other euphemisms for having a quick kip but "studying for Staff College" was one of the most favoured by the more senior captains as they slunk off to their tents in the afternoon or to their rooms in the early evening, depending on the posting. As I never studied for Staff College I favoured "a quick check on the insides of my eyelids". I was into lubrication (of the larynx all too frequently I fear) but not lucubration. Just not my scene. It was not that I had anything against study, it just never happened in my case. "But you got to Staff College" I hear you say and so I did and what a riot it proved to be. Two years in Canada: not to be missed. I seem to remember that one could have two shots at the Staff College entrance exam and one needed a recommendation and to have passed the captain to major practical examination before one was even considered for such a course. There were also seven papers to pass in the written part. No wonder one was allowed two shots at it. I cannot recommend the Hooper method of getting to Staff College. It's far too risky as it depends on industrial strength luck and is not to be contemplated by any one with designs on high rank in the Army. Sheer hard graft they tell me is what is required (Yuk, the very thought of it makes me weak at the knees). But, for what it's worth here's what happened.

My very first OC, when a 2Lt in 9 Sqn, was a hugely talented chap and not one to suffer fools gladly. He was not far off being an AI which in his case did not mean Assistant Instructor but Advanced Intellectual. (I mean he has written several learned volumes on military history for goodness' sake). It therefore came as a huge shock to me to learn that I was to be his Adjutant. Clearly, several preferable choices had not been available and he was desperate. At the time I was enjoying life chasing Mr Grivas and his chums around the Troodos mountains in Cyprus as a captain troop commander, again in 9 Sqn. I was seriously miffed to be hauled out of the Squadron just a few weeks before the Gamil airfield assault near Port Said. I would have enjoyed having another look at it after a four year gap. When "Suez" happened I was on a train with my new CO going to visit one of our out-stations both of us very sorry to be missing what promised to be a good party. I am afraid that this was not the first time that senior management had spoiled my fun. They had hauled me out of 9 Sqn in Egypt some four years previously and sent me to Shrivenham. That time my protests on this injustice went as far as the EinC who was, apparently, heard to query "Who is this Second Lieutenant who knows better than I what's good for him?" Now he knows even if he didn't then. And I did know better . . . see later.

The Regiment of which I had become a seriously wetbehind-the-ears Adjutant was 131 Para Engr Regt TA which was fully recruited and spread from Stirling, Glasgow and Edinburgh in the North through Hull, Doncaster and Liverpool to London and Guildford in the South. At some stage we took over 8 Para en bloc and formed a troop in Birmingham. In those days the Regular element of a TA engineer regiment was the CO, Adjt, QM and RSM with several WO2 and Staff Sergeant permanent staff instructors. Inevitably, with the spread of the Regiment, one did a huge amount of travelling by train. Overnight sleepers to Glasgow or Edinburgh became routine as did breakfasts of porridge and kippers in a hotel just outside Glasgow station. When one adds the paucity of regular officers to the travel and the fact that we were in the quill pen and guttering candle era of writing Op Orders and exercise instructions (no computers in those days ) you can see that spare time was at a premium.

Nearly every week end was a training weekend somewhere and there was just no hope of getting a day off mid week in lieu of the lost Saturdays and Sundays. There were, of course, drill nights thrown in for good measure, just in case one did not have enough to do. Study for Staff College ? Fat chance. However, one could read on the train if not in the Land Rovers as one went to various events. I can read and write in a staff car but the Land Rovers, of those days anyway, were far too uncomfortable. After about a year of this hectic life, these minor obstacles to study were totally ignored by my wife who informed me that I was going to take the examination. She was not going to be the wife of a passed over major and some idiot had told her that without staff college that would be my likely future.

I suspect that my wife's informant was another TA Adjutant and my next door neighbour on "the patch". He had just learned that he had not passed at his first attempt and had already started studying for his second attempt. This after studying for a year anyway. Such dedication. Knowing on which side my matrimonial bread was buttered I applied to take the examination and promptly forgot about it. Somewhere along the line I must have passed the practical examination but I cannot recall this vital event. I also managed to get to some really interesting pre-staff college examination very short courses at places like Pembroke College, Cambridge where, co-incidentally, I stayed in the room which my younger son was to occupy some twenty years later. Apart from these odd junkets I did no work for staff college. What I did do was read a huge number of books about World War Two which interested me enormously and one could do that on a train. What I had unconsciously, and quite painlessly, studied was a serious chunk of the military history curriculum. I have to say that I knew nothing about Marlborough nor the Peninsula Campaign but the parts about North Africa, Burma and some other theatre of World War Two, which it was I cannot remember, I knew quite a bit about. So it was one down and six to go . . . If we forget about the serious lack of knowledge about Marlborough, Duke of and Moore J, General. Marlborough marched somewhere and Moore was buried somewhere - I knew that

As you will appreciate being an Adjutant and an ex-9 Sqn officer I knew a bit about Military Law and Queen's Regulations. I had defended and prosecuted at Courts Martial and found the whole legal bit quite fascinating. Inevitably, I read a lot in both books as, according to my father "The Welsh are a most litigatious nation". He really did speak like that and I am Welsh and have since had many an enjoyable tussle with members of the legal profession so he must have been right. In any case provided one understood how to use the books the military law paper should hold no fears. One could take the books into the examination. Brilliant. Here we are then with two down and five to go

Current Affairs featured somewhere but as an avid watcher of Panorama and similar TV programmes, a dedicated reader of The *Economist* and any quality daily I could get my hands on I was moderately *au fait* with what was going on in the world. At least, the bits which interested me. I seem to remember I qualified for a reduced charge for The *Economist* as a student. I should mention here that I lived on a TA "patch" in South Harrow and when on the three or four days a week I travelled to my office it was by tube to Sloane Square. I walked briskly to the tube station got on the train and opened my *Economist* or *Telegraph* or *Times* and got stuck in to the reading. The body clock or some other mechanism took over and when I next looked up we were running in to Sloane Square station This timing mechanism was infallible unless some one spoke to me which did not happen often. However, if some one had spoken to me I could almost guarantee that I would not look up until we were pulling in to Victoria. Most annoying. The best thing about it was that I could go in after the rush hour in the mornings so I could at least read in peace. The Queen got value for her money, however, as I rarely left the office until well after the evening rush hour and there were always drill nights. But again one could read in peace on the way home. Three down and four to go but I never did get the hang of GATT (General Agreement on Tariffs and Trade) which clearly did not interest me. I did vote "against" in the 1974 referendum on EU and have never regretted it. But you lot voted "for" and now look where it's got you.

There were three tactics papers. One was about keeping the peace or aid to the civil power or something like that. Another required one to make an appreciation and then write the op order to effect the plan arising from the appreciation as far as I remember. I think the third must have been the one where one had to know the composition and capabilities of the various units of the arms, ranges of weapons and a bit about specialist formations such as airborne forces, commandos, beach units or whatever. I could read a map which was a plus point as I could at least differentiate between valleys and ridges. I gather that a lack of ability in that field had caused a significant number of students to fail in the past. However, the major factor in my favour was my AI CO. He made me write all the Op Orders and Exercise Instructions (with a fountain pen rather than a quill I must confess) to a very high standard. I must also confess that he was patience personified as I had to write and rewrite and rewrite until I got it right!

I can hear him now

... "John, that really is very good for a first shot. Really good" he would say, but wait for it ...

"However, this is not quite what I had in mind, here, here and here"

I would then have to rewrite it in long hand and after much cutting and pasting produce the next draft and await his comments

"Yes, that's just about it"... Yippee! " but you still have not made it absolutely clear where and when this and that are to happen. It just needs a little tightening up"

Away I would go back to my office to the scissors and paste and the fountain pen. The staff college entrance examination as far as appreciations and orders went was a gift. I had plenty of time to think about things as I could write it down in one steady flow. What a boss!! Four down and three to go.

There was one paper called Administration and Morale as far as I remember and it was probably in this paper that one had to know about the services, what they did, how they did it and how they were structured. I knew about the Imprest Account as I held one. I had been on a messing course so knew something about the ACC and RASC as far as rations went anyway and a bit about them bringing up the bridging. The RAMC was pretty hazy I have to admit. All I can remember was "the bleeding time" and that was from the film "Doctor in the House" not a book. Morale was a pretty good waffle most of the time and I was good at that and Sandhurst had impressed upon me the jingle:

> ST, Med and Ord REME, post and pay Dental, Chaplains, welfare And the Q and A

And a bit more might have stuck! But how I got through the paper on aid to the civil power with not much more than a passing acquaintance with Brigadier General Dyer's nonsense at Amritsar I shall never know. Maybe I was able to draw enough lessons from that and no doubt quoted it, *ad nauseam*, as evidence of a close study of aid to the civil power. I must have picked up enough tit-bits of information to pass the third tactics paper, whatever it was. It's nearly fifty years since I sat the papers so please forgive a failing memory which was never brilliant anyway.

You will recall I mentioned some very short courses designed to assist the serious student. Well, there was one longer one which I somehow managed to get time off to attend. This was a two week course run by Eastern Command and I had had my name down for it for some considerable time. Sadly, it clashed with a diving course I wanted to do and in my mind there was no contest about which course to attend. Again, a wifely intervention messed up my plans and I ended up on the pre-staff college effort. Not at all what I had in mind but again a timely reminder of the location of the buttered side of the marital bread settled the issue. Eastern Command in those days was commanded by a General with a knighthood. Whether he was a three star of four I cannot recall. In any event a general was a general and his stellar achievement was of minimal interest compared with his maximal capacity to terrify a lowly captain.

GOC Eastern Command saw fit to address all we hopefuls on Day One of the course. The very first session of the first morning as I recall. It became clear that the General had a bee in his bonnet. Having paid scant attention to his peroration until this point I sat up and took a keen interest. The general was getting personal. He did not actually mention me by name but I realized he was talking to me. The General was pointing out, for the edification of all, that the course was designed to put the finishing touches to all the hard work we had carried out over the past year.

With my personal antennae permanently acutely attuned for trouble I sensed there was more to come and indeed there was. The general thrust of the General's address was that in the past he had detected a significant number of officers on this particular course who had not in fact been working hard for the past year. Well, I could cope with the General's unhappiness about that. After all he was concerned about it not me. Wrong. I was about to become acutely concerned.

Things, as I said, started to get personal.

" I shall personally deal extremely seriously with any officer who fails to exhibit convincing evidence of serious study for a protracted period" By which I assumed about a year ! I had serious doubts as to whether I could exhibit evidence of even a cursory acquaintance with any of the curriculum for a week let alone a year and, far less, convincing evidence of serious study. What to do? As one with considerable experience of getting into, but more importantly out of, trouble I knew the answer was to own up as soon as possible. It had always paid in the past.

The DS for my little syndicate was a Grenadier Guards lieutenant colonel complete with Household Brigade moustache. Not one to exhibit generosity and understanding you might think. A shade out of touch with his feminine side as one might say these days.

" Sir, I have done no work for Staff College. Please can I go home now before things get rough"

I whimpered and added

" *I do not want to spoil the General's day*" Nor, more importantly, mine, *I might also have added*.

It might possibly have been a case of , "this is going to hurt me more than you" But I did not think that would be the way of things at all and I was heading for some serious hurt. The Grenadier was a real gentleman and advised me to stay for a while to see how things went. He would allow me to slide away if I proved too abjectly ignorant for even he to stomach and the General would not have his day spoiled.

The days of larynx lubrication were over and lucubration was the order of the day (or night actually). I worked like mad every night of the course until all hours and somehow managed not only to avoid spoiling the General's day and my future but to stay on the two week course. Naturally at the end of the course I collapsed in an exhausted heap, took some well-earned lubrication and did no more work until . . .

Good Grief, the exam's next week. I went in for some more very serious lucubration and became totally parasitic on my next door neighbour, he of the past exam failure and unrelenting study for the past year. We shared a car to go to the exam centre: Usually his as my two and half litre soft top SS Jag, although hugely sporting to look at, was more than a touch unreliable when it came to covering the distance. Like me really when it comes to working.

"What is this GATT thing all about?"

I would ask him as he drove along to the current affairs exam and he like a good chap told me, not that I could remember what he told me for more than a few hours but it sufficed.

"Apart from walking to the Danube or somewhere what did Marlborough do?"

As we drove to the Military History paper. And again he would tell me bless him

The upshot of all this plundering of his huge store of facts was that I passed the examination. The military history paper required one to answer a question from each of four sections as I recall and one further question from any of the sections. Three sections referred to World War 2 (Burma, North Africa and Europe I imagine) and one to Marlborough and the Peninsula. With my luck there was a lovely waffly question about morale in the Peninsula . . .saved ! I could waffle. In one of the tactics paper there was a question about the future of airborne forces and as I was then on my third tour in the "Maroon Machine" I reckoned I knew a bit about that and my pen skimmed over pages of really good stuff. I thought! Imagine my distress when I got into the car with my chum after the examination to hear him say

"Ah, that was a trick question. Airborne forces have no future" he said.

Collapse of red-bereted party as one might say. But there is a sequel.

Some months later I was walking to the tube station and I saw my neighbour on the other side of the road walking back to the "patch". he was clutching a copy of The *Telegraph* bought at the tube station. He should across

"Staff College exam results are out. I've failed again so I'm leaving the Army" (Which, in fact, he did)

" I am so sorry" I shouted back "I'll see you tonight and we'll have beer or two" and I walked on

"Don't you want to know whether you've passed? I'll have a look" he said

"Don't bother" I replied "I couldn't possibly have passed"

But I had. By the skin of my teeth as it subsequently turned out. I had the barest minimum of overall marks with the barest minimum in all but one of the papers. I cannot recall in which paper I must have excelled to give me the required overall pass rate. It must have been a waffly one, but Lady Luck stayed with me, Bless her! If you remember before one sat the first examination paper one was given a bit of paper to fill in. It said words to the effect of

" In the unlikely event of you passing this examination and the even more unlikely event of you being selected for staff training to which Staff College would you like to go?" I filled in:

1st Choice	Canada
2nd Choice	Australia
3rd Choice	Pakistan
4th Choice	India
5th Choice	Camberley

GUESS which I got ? Camberley, of course. Such is the way of the Army. But there she was again, Lady Luck. A Sapper friend of mine who had also been in 9 Sqn was selected for Canada but he was also selected for the Snowy Mountain project in Australia if he chose to go on the Long Civils course for which he had also been selected. Clever chap. He chose the Long Civils in preference to Staff College and I got his vacancy in Canada and the best man at his wedding, who was a reserve for Staff College, got my vacancy at Camberley. Tidy, as we would say here in Wales.

Funnily enough, after two years in Staff College in Canada I was selected to be BM of 44 Para Bde. Airborne Forces did have some future after all. I managed to get something right. Of course, the real moral of this story is that **If you want to be a successful Army officer make sure you have luck in industrial quantities!!** 

Oh, and about that first tussle with authority when I was dragged kicking and struggling out of 9 Sqn. "They" knew I had an Inter BSc but totally ignored the fact that I had no maths and considered I should go to Shrivenham to read for a degree in engineering. We are talking about an external London pass degree after three years in a red-brick and in uniform if you please. In vain did I plead the uselessness of a thirty year old degree when I left the Army. I fully intended staying in as long as the Army would have me and Staff College featured there somewhere. "They" told me I had six months in which to get Pure and Applied Mathematics at A level as it had then become, to start a degree course in the following September. To keep out of trouble and get out of Shrivenham I passed Applied and failed Pure but wasted six months on that and a further six months waiting for a JO course. I could have been having a whale of a time in Egypt and, incidentally absorbing a little more knowledge for Staff college. The E-in-C did not know best as I got to Staff College a month over the lower age limit and was able to extend my tour as a BM so that I did not have to revert to captain at the end of the tour. It gave me a taste for bucking the system !

# The Flight Departing from Gate 3 – Latest Report

MAJOR S G TENISON BSC(ENG) MSC



Major Tenison spent six months, from December 2003 leading an undemanding life in HQ Multi-national Division (South East) as SO2 J5 Plans. When not attempting to improve his performance at the Daily Telegraph crossword, he was responsible for drafting various contingency plans including those covering the generation and deployment of a Divisional Reserve Battle Group, the response to a deteriorating security situation and the possibility of conducting a Non-combatant Evacuation Order. This article was prepared some four weeks before the transfer of authority to a fully Sovereign Iraqi Interim Government on 30 June 2004. After taking an enormous amount of post-tour leave, Major Tenison was posted to HQ RE Theatre Troops in August 2004. The photographs illustrating this article were taken by Lieutenant Colonel Alan Hamilton RLC(V).

THIS article is intended as a sequel to that published a year ago in the April 2004 *Journal*. It describes some of the changes in Iraq, particularly in the south east, some notable military activity and reflects on forecasts made at the end of the previous piece. It also looks at prospects for the country after the transfer of authority to a fully Sovereign Iraqi Interim Government on 30 June 2004. Whilst the collection of articles in the December 2003 *Journal* focused on the contribution made by the Corps to operations in Iraq and future authors will continue to do so, this is written from a broader Divisional perspective. Forces in recent months have been well documented in the international media; there is an enthusiasm for reporting anything that might be seen as detrimental to efforts to regenerate the country and a reluctance to cover good news, of which there is plenty. At times it almost seems as though the media would like this huge undertaking to fail. However, whilst significant progress has been made with efforts to establish Iraq as an independent, stable and democratic state, there is still much to be done.

# WHERE'S THE SWIMMING POOL?

The higher level political situation, the spectacular terrorist attacks and the various offensive actions by Coalition

THE first report *from Gate 3* was exactly that; HQ Multinational Division (South East) had been established in the



Go to Jail Square. (HQ Multi-nationalDivison (South East)Temporary Field Accommodation with Monopoly board street names).



Al Muthanna village and stream.

Gate 3 departure lounge at Basrah International Airport. Since then we have suffered, in airline parlance, a technical hitch that has delayed the flight and required the staff to transfer to the airport hotel! However, this move is not as good as it might sound; the swimming pool has been filled-in and, where the HQ was formerly in an open plan, "allinformed" environment, it is now separated into a number of individual rooms. When 1 (UK) Armd Div arrived at the airport the hotel was merely a shell never having been completed by the builders; there were no doors, windows, internal finishes, fixtures or fittings. The Changing Rooms team was unavailable so 62 Wks Gp RE managed the projects for both the new HQ and the Temporary Field Accommodation; the latter replaced the tented Temporary Deployable Accommodation and also enabled everyone living in the terminal building (some 400 in windowless, airless offices) to upgrade from 1 to 4 star. The new headquarters is, in many ways, a huge improvement on the departure lounge; it is light and airy, there are windows and most of the air-conditioning works. However, after three weeks, faulty lighting circuits started to burst into flames! The best part though, is the carpet along the corridors; a huge statement in Corps colours (the only thing available – honest!).

# AL BASRAH PROVINCE – IRAQ'S ECONOMIC POWERHOUSE

WHILST the comfort of all those working in, or for, the HQ is vital (slippers required on future tours), the impact of the moves from the terminal building and the consolidation of fixed and rotary wing activity inside a small military enclave has a far wider significance. At the time of writing, plans to open the airport to civil traffic, albeit initially only for freight, are well advanced; an Iraqi has been appointed to be the airport manager and the vision of the Coalition Provisional Authority in Basrah is to integrate all the import/export and transport

networks in the region. Al Basrah Province is the economic gateway to Iraq, with the only sea/river ports in the country, significant agricultural capacity, oilfields, oil export pipelines and terminals, as well as road and rail links to the rest of Iraq. In May 2004 the airport was used as a base for crop-dusting helicopters working on the date palm plantations, some of which have been established in the last few months. The intention is to create a *freight village* near Basrah International Airport to bring together the road, rail, air and water communications into and out of the country, as well as onwards to the interior. There are some that see the Basrah region being able to rival Kuwait, economically, within five years; the potential certainly exists though, against the current background of terrorist activity and criminality, it is easy to see how this opportunity could be squandered. The Basrah Business Centre has opened and is run by Iraqis, with the aim of publicising the business opportunities in the region. On a rather more fantastic note, there is much for the adventurous tourist to see; the countryside is, in many ways, spectacular with mighty rivers, marshes full of wildlife and historical sites such as the presumed location of the Garden of Eden.



Basrah Market (note the piles of fridges).



Az Zubayr Port 2



River and water buffalo.

# **Relief-in-Place**

THE period from December 2003 to May 2004 saw unprecedented levels of traffic moving through the Multi-national Division (South East) area of responsibility; not all of this was attributable to the Coalition, some was evidence of returning normality as 30,000 Iraqis travelled to Mecca to take part in the annual Hajj<sup>1</sup>. The largest ever US relief in place involved the movement of a total of 260,000 personnel and numerous vehicles in and out of the country. At the same time both Multi-national Divisions replaced units with fresh troops, constant US and Multi-national daily sustainment convoys moved enormous quantities of freight and normal framework patrols continued. There were a huge number of vehicles on a few major roads and, before the relief in place began, we anticipated that this volume of traffic would have a significant impact on the area of operations, restricting Divisional freedom of movement on Corps routes.

The division had also been directed to provide some of the security along the Corps main supply routes, a task that included all the ingredients for disaster. Not only did we have a number of key points on which it was suggested that, initially anyway, we should mount permanent guards for five months but also protection of the routes involved too many separate units for adequate coordination to be possible. Mounting permanent guards for five months would have fixed the Division and prevented most other operations from continuing. Furthermore, potential players at any incident on the route in our area of operations were; US Military Police

who patrolled all Corps routes, convoy escorts, US Quick Reaction Forces based at the Convoy Support Centres, US air and aviation in case of serious attack and Multi-national Division (South East) forces under orders to be able to respond to incidents. There could have been three separate US ground forces at the scene, air and aviation wreaking havoc from the sky and Multinational Division troops charging in from the horizon: tactical communication between such disparate groups would have been impossible and the links at the operational level are tortuous at the best of times. This was a situation inviting fratricide and caused a great deal of anxiety in the Divisional headquarters. However, in the event, the impact of all this traffic was limited and there were no serious security

incidents that required major offensive action by Multinational Division (South East).

Of even greater concern was the presence of so many, understandably nervous, US soldiers in what is a relatively peaceful area of Iraq. Those moving out of theatre had spent months facing threats at every corner, whilst those arriving had seen this in the news reports; they were rather too ready to shoot at Iraqis and Coalition Forces, occasionally with tragic consequences. That the southern provinces did not pose such a threat was difficult for them to understand, though it would be easy to be judgemental from the comparative isolation and safety of Basrah International Airport; I am glad I did not have to do their job.

It probably came as something of a surprise to the Coalition Forces that the Corps main supply routes were so difficult to protect; in spite of Military Police brigades and other units being assigned to the task, troops along the routes were fairly thin on the ground. During the early stages some of the convoys were subjected to criminal attacks, with brake lines being cut to force trucks to stop before the hordes descended to remove the contents in minutes and then set fire to the empty carcase. However, as the weeks wore on, attacks on the routes took on a more sinister aspect, with improvised explosive devices and rocket propelled grenades being used to attack vehicles and bridges being damaged with vehicle-borne improvised explosive devices. For a number of days in April, convoys were unable to reach Baghdad and supplies of fresh rations

<sup>&</sup>lt;sup>1</sup> The Hajj pilgrimage to Mecca is one of the five pillars of Islam; every Muslim hopes to complete the Hajj once during his/her lifetime. The Kingdom of Saudi Arabia limits the numbers allowed from each country; Saddam Hussein used the Hajj as a reward for loyalty and never used the full allocation. This was the first time for many years that the population had been able to participate without such restrictions.



Convoy

and various other commodities ran low. Furthermore, even though HQs down to battle group level were static and had multiple, fixed communication systems, it proved extremely difficult to ensure that convoys transiting the Divisional area of responsibility from outside had a sound grasp of the current threat; the problems would probably be magnified in any "general war" scenario. Tragically, a US Engineer convoy came into the 1 Mech Bde area from the north, having been briefed (at the US Convoy Support Centre) that there had not been any incidents on the route for ten days; in fact the area of Al Amarah had seen significant activity for the whole of that time with 1 PWRR BG involved in numerous contacts. The convoy was attacked in strength, suffering two dead and a number of wounded. Should we be involved in such an operation in the future we would do well not to underestimate the fragility of lengthy lines of communication, as well as the difficulties of properly protecting them and making all users aware of the security and trafficability status.

# THE CRUCIAL FORTNIGHT

THE events of early April were seen at the time as being something of a watershed in the new life of Iraq. The arrest of one of the close associates of the religious leader Muqtada al-Sadr, who had been indicted for murder, coupled with fears for the safety of Shi'a pilgrims attending Ashura and Arba'een<sup>2</sup> in Najaf, caused considerable unease in the predominantly Shi'a south. The arrest provoked a violent reaction from the Sadr Militia<sup>3</sup>, an organization that had previously been fairly dormant though always threatening to take action against Coalition Forces if Muqtada al-Sadr or his key lieutenants were targeted. The moderate Shi'a leaders, such as Grand Ayatolla Ali al Sistani, were reluctant to condemn Sadr and the actions of his militia but also recognised that the uprising had the potential to fracture the Shi'a majority and, potentially, lead to the minority Sunni gaining disproportionate power in a future Iraqi Government (as happened more than 80 years ago). Gradually, a combination of robust Coalition Foirces action and marginalization of Sadr and his militia, by the majority moderate Shi'a leaders and population, lowered the tension and allowed attention to return to the serious business of preparing for the transfer of authority on 30 June 2004.

## WHAT'S IN A NAME?

As all military people know the most interesting and important part of any operation is choosing the name! Some of the names used by HQ Multinational Division (South East) displayed ingenuity, a convoluted logic and, most importantly, a great sense of humour. The plan for generating and

deploying a UK reserve battle group into the Italian area of operations, in response to some particularly heavy action by one of the anti-Coalition militias, was named Op Caine by HQ 20 Armd Bde. Why? Because "he did the first Italian Job" [Hollywood reference]! A subsequent but similar plan (son of Op Caine) was named Op Aenoch (being the son of Cain [no "e", biblical reference]), although some suggested that Aenoch should be spelt without the "A" because of the association with "rivers of blood" [political reference]. The plan to respond to a deteriorating security situation, initially referred to as the "Rorkes Drift scenario", took me a few minutes to write whilst the name was undecided for days; eventually the thunderbolt struck and it was named Op Chard [work it out!]. Lastly, ignoring any political correctness sensitivities, the plan for the potential expansion of the Multinational Division (South East) area of operations to cover the Provinces previously controlled by Spanish troops, was called Op Wellington (he was the last person to lead the British Army onto Spanish territory). Staff officers must take their amusements where they can!

#### **Epilogue**

With less than 30 days before the transfer of authority, sights were set on ensuring that Iraqi institutions were prepared for the challenge as well as being ready to meet the need for continued growth in capability and confidence as the months go by. The GOC is determined to reduce the profile of his troops and compel the Iraqi Security Forces to understand and accept responsibility for the security of their own country in spite of the short term risks to stability; at the same time we will always remain ready to assist if necessary. Planning for the return of the UN and the conduct of the electoral process is underway. The Iraqi Army, an important symbol of nationhood, is increasing in strength<sup>4</sup> and, together with all the elements of the Security Forces with internal responsibilities, is displaying the potential to be able to protect the territorial integrity of Iraq

<sup>&</sup>lt;sup>2</sup> Shi'a religious festivals.

<sup>&</sup>lt;sup>3</sup> The Sadr Militia, subsequently re-styled the Muqtada Militia by Coalition Forces to sever any legitimacy that this bunch of thugs might have from being associated with the revered Martyr Sadr (Muqtada's father).

<sup>&</sup>lt;sup>4</sup> The Iraqi Army did not have a presence in the south until later in the year when 8 Bde formed at Tallil (near An Nasiriyah).

## THE FLIGHT DEPARTING FROM GATE 3 - LATEST REPORT



ICDC (now known as Iraqi National Guard) Passing Out Parade.

without being a threat to her neighbours. The prospects for stability are looking promising, however the rebirth of this nation has already been through more twists and turns than a ride at Alton Towers; no doubt there will be other surprises.

On reflection this has been a fascinating and rewarding tour, even if there have been occasions when the days have passed desperately slowly. Rebuilding such a devastated, fractured country, with so many undercurrents of tension between the various religious, ethnic, tribal, professional and other groups was never going to be straightforward. It has been made more difficult by the extremely tight deadlines, the comparative inability of Coalition Forces to influence the *Economy and Governance* Lines of Operation and the lack of clarity on the way that the Provisional Authority would hand over its various responsibilities; there remains serious concern that the military will be left holding the baby.

It has been a tremendous experience working in a multi-national divisional HQ but thank goodness staff from all the other nations spoke such excellent English as I am from the *speak loudly and* 

*slowly* school of languages. Finally, I am really no better at the *Daily Telegraph* crossword!

# POSTSCRIPT

IT is sad to reflect that the very cautious optimism of late May has been severely damaged by high levels of violence, particularly in Baghdad. The US has acknowledged that the elections, scheduled for January 2005, may not be possible throughout Iraq and a recent poll by a Baghdad radio station suggests that fifty per cent of the people would not vote anyway because of the lack of security.

The situation is made even more wretched by the knowledge that, as an Iraqi spokesman recently stated, the terrorists are not seeking to impose their own form of government but merely trying to destroy any semblance of stability and democracy that the Interim Government may be nurturing. One thing however is certain, the UK armed forces will uphold the finest traditions of the Services by doing their utmost to prepare a better future for Iraq.

Editorial note: Major Tenison submitted this article in September last year in the hope that it would be published in the December 2004 edition. That proved not to be possible, but it is still a fine sequel to his original offering and provides information on the situation in Iraq that has not been covered in other articles, either in The Journal or Sapper Magazine.

# Iraq – Land of Two Rivers

# COLONEL W G A LAWRIE MA CENG FICE FIL FRSA

THERE is much more to this extraordinary country than the pictures we see on TV of bombs and rubble. Its history goes back to the last Ice Age. When Europe was shivering under a thick blanket of ice, countries like India, Egypt and Iraq were forging ahead. Ten thousand years ago Iraqis had invented the wheel, developed agriculture and knew how to write on clay tablets.

With the advent of global warming sea levels rose around the world. The Mediterranean filled up and burst through the Bosphorus, turning a fresh water lake into the Black Sea. Next it breached the Cilician Gates and poured through Iraq wiping out all traces of civilisation and dumping 40ft of sludge at Ur. This was the great flood of Noah, mentioned in Genesis, but described 2000 years earlier in the Epic of Gilgamesh.

The fertile soil of Iraq soon attracted invaders from the North and East. For thousands of years there took place a series of bewildering regime changes under powerful and ambitious rulers like Sargon, Sennacherib, Nebuchadnezzar and Alexander the Great. Three monotheistic religions grew up in the area, of which Islam was the most significant, leading to the establishment of the Ottoman Empire, which included Iraq from 1453 to 1918. The Turks ruled Iraq as three separate provinces of Mosul (Kurds), Baghdad (Sunnis) and Basra (Shiahs) but did nothing by way of education or health, etc. They were simply cruel and corrupt tax gatherers. Under Turkish rule Iraq stagnated for 500 years.

In 1870 Germany defeated France and used the huge indemnity to finance the construction of the Berlin to Baghdad railway, the object of which was the destruction of the British Empire. Posing as the champion of Islam, Germany planned to extend the railway across Persia and Afghanistan to link up with the 70 million Muslims in India and organize a worldwide anti-British *Jehad*.

To defeat this plan we decided to knock Turkey out of the war. Allenby led an army based on Egypt to Damascus, while T E Lawrence mobilized the desert Arabs to assist him, promising to establish an Arab kingdom from Persia to the Mediterranean. (An old Arab prophecy declared that the Turks would be driven out of Jerusalem by a Prophet of God, which is an exact translation of Allenby's name in Arabic -Allah en Nebi). At the same time an expeditionary force was sent from India to attack Iraq from the Persian Gulf. My uncle was serving with Allenby and my cousin was commanding a field Company with the MEF and I have all their letters. Even more interesting was a meeting I had in 1958 with Ibrahim Pasha, Prime Minister of Jordan and Nuri es Said, Prime Minister of Iraq, who had landed at Aqaba with Lawrence in 1917. When I told them of ugly rumours about Iraq I remember Nuri saying everything was under control, placing a large double-jointed thumb on the table as if he was squashing an ant. However both men were assassinated in Baghdad a few days later along with the entire Iraqi Royal Family.

While he was Commander in Chief Lord Kitchener reorganized the Indian army, changing it from being a collection of garrisons into fighting formations. In 1940 the 4th, 5th and 6th Indian divisions were operating in the Middle East. In April 1941 the Germans launched an airborne assault on Crete, expecting to capture the island in four days. Their intention was to continue their original plan of destroying the British Empire by attacking Iraq and blocking the Suez Canal. To this end they got their agent Rashid Ali to seize Baghdad, driving out the young King Feisal II and his uncle the Regent and imprisoning the British Ambassador and his staff. Messerschmits landed on Mosul Airport to await the arrival of reinforcements. However, the heroic defence of Crete, which held out for three weeks, wrecked their timetable and incidentally delayed the German invasion of Russia to such an extent that they failed to reach Moscow before they were trapped in the snow.

Rashid Ali sent a force of 9000 Iraqis with tanks and guns to overlook the RAF station at Habbiniyah, which was protected by a handful of levies. A mobile column was sent from Palestine to help the beleaguered station, but in the meantime the garrison of Habbaniyah under the command of Colonel Ouvry Roberts late RE, who happened to be there on a liaison visit, attacked the Iraqis and drove them off assisted by four RAF instructors on obsolete two-seater aircraft, who had been training Iraqi pilots.

After the Iraqis had surrendered, their commanders were asked to dinner with Ouvry, who told me they wanted a replay when they learnt the size of the British contingent. Rashid Ali was soon turned out and the situation restored.

We now realized the dangerous position in Iraq. If Germany could persuade the Turks to allow them to march through Turkey we would immediately be deprived of the Iraqi oil which was desperately needed in the Western Desert. The 8th Indian division was hurriedly cobbled together from what units were available in India and rushed to the North of Iraq in May 1941. The only sapper unit available was 7 Field Company of the Bengal Sappers and Miners. 66 Field Company on 1 July. I was given five British officers straight from OCTU and 300 recruits from the Training Battalion – 100 Hindus, 100 Sikhs and 100 Muslims plus three first class British NCOs and a handful of Indian officers and NCOs.

We sailed from Bombay in a slowly zigzagging but unprotected



The ziggurat of Ur 1941,

#### IRAQ - LAND OF TWO RIVERS

convoy of nine ships and reached Basra, the Venice of the East, in September. I had been designated OC Ship and had a pale blue cabin on the top deck, which the Shah of Persia had occupied on his honeymoon cruise. Every day I held a courtmartial on men caught smoking on deck after dark and could sentence them to so many hours tied to the mast. There was a real danger from submarines and this ship was sunk on its next voyage.

Before proceeding to join the Division I was told to build a prison cage for some 300 Germans who had surrendered in Basra. We made this as strong as possible, but the local Arabs had no difficulty in getting in, stealing watches and fountain pens from the Germans and getting out again.

In those days there was no road from

Basra to Baghdad. We just drove across the desert – five abreast to avoid the dust. It took several days. The first night we camped at Ur and I scrambled up the ziggurat, which Sadam Hussein later rebuilt in shining tiles. From Baghdad to Mosul there was a good road via Kirkuk. We found that Wavell had approved an extensive defensive position – sufficient for one armoured division and two infantry divisions. 100,000 Arabs were digging an anti tank ditch 140 miles long, and the divisional sappers had to build reinforced concrete pill boxes at every jink. It worked out at about 20 per Field Company. While I was in Mosul I used to go every night to the house of a school master in an unlit street to learn Arabic. After some months, I felt quite confident and took an exam in Baghdad. But in the oral I failed miserably – the dialect in Mosul was so different from that of Baghdad.

The weather had been quite pleasant, but around Christmas we had a sudden cold spell. We only had thin khaki uniforms and hundreds of Indians from the south died of pneumonia. *Paiforce* lost 4000 vehicles in one night with cracked cylinder blocks through inadequate instructions about draining. I didn't undress for two weeks. (Warm battle dress arrived in March just as the hot weather set in). Punctually at 10 o'clock every Saturday morning a German aeroplane flew up and down photographing our work. No invasion came through Turkey, so Wavell's bluff had worked.

In the Spring I was sent to Altun Kupri to make more defences. This means "Bridge of Gold" on account of the heavy tax levied by the Turks. We camped by the Lesser Zab and the hillside burst into bloom like a Persian carpet with every colour of wild flower – narcissus, ranunculus, cyclamen and anemones. I was now working with Kurds and was invited to visit their mountain stronghold at Rowanduz. I stayed with the "Shakespeare of Kurdistan', who showed me the way the Russians had arrived in 1917 on the way to help the British, but this never materialized. They were recalled as soon as the revolution broke out.

In the summer I was ordered to Basra to prepare defences covering the embarkation of our troops if they were driven out by the Germans. It was so hot that we could only work from 3am to 9am, and we found it impossible to dig trenches in shifting



Altun Kupri, with concrete pill box concealed in house.

sand. I remembered that the Engineer in Chief had served under my father in WWI and took a train to Baghdad to see him. A week later were were in the mountains of Persia building defences against a possible German threat from a new direction.

After El Alamein we returned to Iraq to train for the next event. This included a Bridging Camp on the Tigris, where my cousin had won the MC in 1917. I spent the summer of 1943 at the Middle East Staff College in Haifa, after which I went back to Baghdad. My division had gone to Italy and I was glad to be recalled to India. There was no boat for three weeks so I agreed to stand in for an officer who wanted to visit his sick wife in America. It turned out that he was Commandant of the notorious Military Prison in Baghdad, where desperate criminals were incarcerated – many under sentence of death. They were kept in order by a 6ft 4in tall Grenadier RSM, which allowed me to get away in the afternoons.

The Balfour Declaration scuppered Lawrence's promises to the Arabs and led to his resignation. Instead the Sykes-Picot agreement gave France a Mandate over Syria and the Lebanon, while Britain received the Mandate for Iraq, Jordan and Palestine. At the time there were strong arguments for giving the mandate for Palestine to America, but they declined to accept it on the grounds of inexperience. I am not clear about the exact meaning of the word "mandate" in English and much confusion was caused over its impossible translation into Arabic.

In 1920 Sir Percy Cox was appointed High Commissioner of Iraq with the brilliant Gertrude Bell as Oriental Secretary, who was also Director of Archaeology and Chairman of the British Library. They found that the population of Iraq was composed of illiterate Bedouin with the addition of Kurds, Armenians, Yezidis, Christians and Jews, who had been there since the time of Nebuchadnezzar. The Turks had not trained Iraqis in any branch of administration and a complete structure of government had to be set up from scratch. This was done by importing over 100 British experts in the fields of Defence, Police, Railways, Post, Education, Health, Agriculture, finance, etc. I met some of these people in Baghdad in 1943, who were so happy in Iraq that they had retired there.

After local consultation it was decided to invite two Arab princes, Feisal and Abdullah to be Kings of Iraq and Jordan



Map of Syria, Iraq and Persia

and by 1924 democratic elections had been held and Iraq had a parliament with a prime minister and cabinet. There does not seem to have been any troubles as between Sunnis and Shiahs. Faisal's dynasty remained in place until 1958.

It is worth explaining the bitter differences between Sunnis and Shiahs, which appear trivial but have persisted for 1400 years. When Mohammed died in 632 he was succeeded as Commander of the Faithful, or Caliph by Abu Bakr, who had been his first convert and who was the father of his favourite wife Aiyesha. He died in 644 and Omar was elected in his place. Omar was the father of another of Mohammed's nine wives and built the dome of the rock in Jerusalem. His successor was Uthman who standardised the text of the Quran. The next Caliph was Ali, who married Fatima, the daughter of Mohammed and Aiyesha, and their son Hussein was therefore a blood relation of the Prophet. The Shiahs maintain that although Abu Bakr, Omar and Uthman were close family members, they were not blood relations, and Ali should have been the immediate successor to Mohammed. That is all there is to it.

We hear a lot about Najaf and Karbela. These cities are in the Sunni triangle but are especially holy to the shiahs because Ali and Hussein, the fourth and fifth Caliphs are buried there. The tradition is that Ali was murdered in Kufa and his body was carried out on a bier. After some miles the cortege was stopped by angels and he was then buried on the spot. His gorgeous golden-domed tomb in Najaf is regarded by Shiahs as the holiest place on earth. Many thousands of Shiah pilgrims arrive each year from Iran and hundreds of thousands of Shiahs have been buried in this sacred soil. Another holy city for Shiahs is Kadhimain, where the 7th and 9th Caliphs are buried. I would like to add that most of the Muslims in the Indian Army were Sunnis and were first class soldiers. The few Shiahs that I came across were untrustworthy and gave a lot of trouble and I was glad to get rid of them.

I had a staff car and driver and was able to visit interesting places in and around Baghdad, including three famous restaurants which published their dinner menus every day on the front page of the *Iraq Times*.

The Baghdad Museum, which had been set up by Gertrude

Bell 20 years earlier was fascinating. It contained may of the treasures unearthed at Ur by Sir Leonard Woolley which they had split between them. I was able to visit the Arch of Ctesiphon and the extensive remains of Babylon, where a large team of German archaeologists had worked for years under Dr Koldewey, another friend of Gertrude Bell. This was also modernized by Saddam Hussein.

It has been said that there are 10,000 archaeological sites in Iraq. I was glad to have the chance to explore some of them, having previously visited Ur of the Chaldees, Nineveh, looking for winged bulls and Nebi Yunus when I was in Mosul. No one seems to have realized that Nebi Yunus refers to the prophet Jonah. the local mosque even displays in the porch the jaws of the whale that swallowed him. I had been to Erbil, said to be the oldest continually inhabited town in the world, where Alexander the Great had defeated Darius in 331 BC. Kirkuk I knew well, where Daniel is buried along with Shadrach, Mesech and Abed Nego. The little flames which flicker over the oil-soaked ground must surely have given rise to the story about the burning, fiery furnace.

In summary, Iraq has the potential to become a happy and prosperous country, but I see no chance of it surviving as a Democracy. The only hope is to set up three provincial governments. Iraq was built up into a nation by the British after the end of the Ottoman Empire and many Iraqis look on us as friends. I certainly found this.

The dominance of Islam presents a problem. From the eighth to the tenth centuries when Christianity was decadent, Islam led the civilised world in the fields of Science, Mathematics and architecture. Harun al Rashid made Baghdad the centre of the wit and learning of the Moslem world. I would not presume to criticise a faith which has brought comfort to many millions of its adherents, but I would like the clerics to comment on the following quotations from an English version of the Holy Quran –

"Those who are slain in the way of Allah – he will never let their deeds be lost. He will admit them to the Garden and Springs, dressed in fine silks and rich brocades. We will consort them with fair maidens with wide, beautiful eyes"

Does this not encourage suicide bombers?

"When you meet unbelievers smite at their necks. When you have thoroughly subdued them bind them firmly. The reward of those who wage war against Allah and strive to create disorder in the land is that they should be slain and their hands and feet cut off on alternate sides. Let not infidels think they can get the better of the godly. Against them make ready your strength to the utmost of your power, including steeds of war".

Is this not a threat to the Americans?

The world is facing an explosive situation. Perhaps the best hope is that moderate Muslim opinion will adopt the Islamic policy of submission "to the will of Allah, the Gracious, the Merciful" which is written at the head of every chapter of the Quran.



Nebi Yunus (tomb of Jonah).

# "Reflections on Leadership"

CAPTAIN I J SAUNDERS BSc FCIPD



Captain Ian Saunders was commissioned into the Corps in 1972 following a University Cadetship at London University. He spent time with 11 Field Squadron at Ripon (although he was mainly away on interesting projects!) and 57 Training Squadron at Cove. He left the Corps to pursue a career in Leadership and Organization Development working for Rockware Glass, The Rover Group and Allied Dunbar before setting up Transition Partnerships with a group of colleagues. He is a visiting tutor at Warwick Manufacturing Group, Warwick University and has a growing relationship with Templeton College, Oxford University. He works with a wide variety of clients including the DLO and QinetiQ.

# INTRODUCTION "Leadership is just plain – YOU" Field Marshal The Lord Slim

LEADERSHIP is a much researched and discussed subject. A large number of theories exist and many readers of this *Journal* will have participated in some form of leadership development and training. This article aims to identify themes and ideas about leadership following discussions with five successful leaders and commanders. In this context I was fortunate to be able to speak with Lieutenant General Sir Anthony Pigott, Lieutenant General Sir Hew Pike, Brigadier Chris Sexton, Colonel John Sweeting and Keith Carby.

In "*Leadership Matters*", my article in *The RE Journal*, August 2004, I outlined some ideas about leadership that focused on three key elements; – Leadership Context, Leadership Practices and Leadership Styles. For this article I wanted to explore the experience of successful leaders to see if and how their experiences fitted these elements, and what could be learned from the information given.

I asked the five leaders the same seven questions. In abbreviated form these were:

- 1. What is Leadership?
- 2. What is the difference between leadership and management?
- 3. Who are your role model(s)?
- 4. What was your most challenging/developmental leadership experience?
- 5. The world is changing, does leadership need to change?
- 6, Does leadership come from within, is it learned or situational?
- 7. What are the three most important things a leader should do?

Firstly I will outline the results of my interviews using the seven questions for my structure. At the end of the responses to each question I have drawn some initial conclusions which I piece together at the end. Secondly I have made some personal comments as a result of my interviews and relate them to the ideas in "Leadership matters!"

# 1. What is Leadership?

As you might expect, from a diverse group of leaders, their answers to this initial question were not the same! Their key points were:

- "John Adair's three circles, the need to motivate and encourage the individual, melding people together as a group."
   "I use this framework and this model has stood the test of time for me. I have seen the dynamics between team, task and individual, in most leadership situations."
- 2. "A good answer will always be It depends!"
  "The ability to get others to achieve to a level they would not achieve without the leader"
  "The good leader encourages great followership"
  "The helicopter factor being able to lift up and down appropriately"
- "The helicopter factor being able to lift up and down appropriately 3. "It is a human endeavour"

"You have to understand what your organization is doing – this is an absolute requirement" This leader identified a number of must have attributes together with some *pick 'n mix* attributes. The names in brackets are people he identified with

# REFLECTIONS ON LEADERSHIP

this characteristic.

# Must haves:

Clarity of purpose (Alanbrooke) Communication (Churchill, Reagan & Clinton) Advocacy (Blair) Intellect – Quick witted and/or Strategic Knowledge Self confidence – expressed as (a) Want to lead, (b) Robustness to overcome situations, (c) Decision/risk taking

Pick 'n mix:

Enabling others to give of their best Inspirational categorized as –

0		
Sheer intellect		Wavell
Record of success		Montgoi
Personality 1	the persuaders	Eisenho
Personality 2	the respected	Slim
Setting an exam	Gort	

Wavell Montgomery Eisenhower, Colin Powell Slim Gort

4."Setting and communicating a vision "

"Giving people clear objectives, motivating and inspiring, encouraging others to deliver." "Within the military context – to inspire people to things that they might otherwise not do..."

5."It has to be set in context – context really matters"

"Is it an individual, a small or large team or an organization?"

"The leader has to look well ahead and upwards in order to lead downwards effectively"

"There are themes - Context and Ends coupled to Enablers which are the Ways and Means"

Four common themes are apparent from the interviews. The importance of -

- Context
- Clarity of purpose, objectives or vision
- Enabling and encouraging others to give of their best
- Communication

Three other themes emerged, although without the same consistency, and receive greater attention under the question on role models -

- Setting standards
- Trust
- The moral and ethical dimension

The application of these themes has to be set in context. Having the capability to apply these leadership requirements at a certain level of command does not necessarily mean that an individual will be successful at a different level. The application of these themes is not sufficient for "good leadership". The moral dimension is fundamental. There are many examples of people with leadership capabilities who lacked the necessary sense of 'right and wrong'. For example, Saddam from the military context and Lay of Enron from the business community. They were rooted in the malign use of power, greed and self interest. This leads to the conclusion that good leadership has a self-less quality.

# 2. The difference between leadership and management

All five leaders gave pretty short answers to this question -

"Management is a name",

"Management is a specialised form of leadership",

"Leadership is about people, management is about processes",

"Leadership is about ends and delivery - management is more about the ways and means"

"Situational leadership is critical"

"Leadership must have added value to the people"

The common theme here is that Leadership is about people, it is the human endeavour, it captures the spirit. Management is seen as the means for assisting delivery rather than outlining what has to be delivered. This fits in well with the phrase credited

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to Warren Bennis (Chairman of the Leadership Institute at the University of Southern California) – a leadership development guru – "Leadership is about doing the right things and management is about doing things right"

# 3. Role models

Four different types of role models emerged from my discussions.

- 1. Parents and/or schoolteachers who had an early influence.
- 2. Senior NCO's in the form of Platoon Sgt at RMAS, SSM or RSM
- 3. Selected bosses it would be invidious to name them although there were common characteristics standards, sense of right and wrong, encourage and enable people to give of the best, professionally competent, courageous, and able to create a sense of rapport and understanding.
- 4. Famous figures, Nelson for his courage and humanity, Churchill for his ability to inspire, Blair for his advocacy, Thatcher for her charisma. From the specialist area of Organization and Leadership Development (Keith Carby's specialist area before he became a senior line manager), Argyris, Schein, Beckhard and Bennis (respected scholars in learning and organization development based at Massachusetts Institute of Technology, Harvard University and The Leadership Institute)

It was in this question that I observed one difference between the four military leaders and my civilian. Keith Carby identified feedback from followers as important. In a subsequent conversation with one of the military leaders he commented that "feedback is very important to all leaders and that perhaps asking for it and getting it is not as common in military life as it is in civilian".

From these role models the following themes emerged as important in the development of the leaders that I interviewed.

- standards
- rapport
- professionalism
- encouraging and enabling others
- selecting good people
- humanity
- feedback
- the moral element of leadership

The set of themes, and especially standards, humanity and the moral dimension are a vital component of leadership. It appears from my discussions that this is probably learned mostly from observing it in the actions of others and valuing the examples set for them.

# 4. Key leadership learning experience or challenge?

As might be expected there were very varied answers to this question and I will not embarrass the five leaders with specific details – here are the headlines.

"A major project – the key learning point was the difficulty faced when the senior team are not all behind the purpose"

"Setting up a major new unit with cultural implications – cultural challenges always add an additional dimension. Also working in networks rather than with chains of command"

"My first supervisory role – it involved managing people much older than me including women – I was terrible. It taught me to cope with people who were different from me"

"An incident in an out of the way place that taught me not to panic, to put the 'right' person in specific roles and to think things through" "The real challenges are not the serious undertakings as there the requirements are obvious. It is when your people may not have enough to do, have time on their hands or there is a general malaise about. This is when leadership is most tested"

Perhaps the most important thing to learn from these descriptions is the capacity and willingness to learn from the situations. All five leaders were able to recount these situations, what they had had to face, how they had dealt with things and how they had learned by reflecting on events later.

Although it was not said in as many words the common thread running through all of these answers is the importance of dealing with the people issues effectively.

# 5. The world is changing does leadership need to change?

There is a general sense that the world is clearly changing and so Leadership has to change. AND "the basics remain the same".
## REFLECTIONS ON LEADERSHIP

**Specifically:** "Organizations are becoming more complex. Strategic command and leadership is becoming increasingly important, especially at senior levels and generalists can no longer be expected to perform effectively"

"The people we are leading are generally better educated, informed, cynical and street wise. Today's recruit is very different from the conscript about to go to Korea in the 1950's. So the way that you train people has to be modified."

Two clear themes emerged from this question. Firstly the context is changing all the time. Leaders today need to be much more aware of the wider political implications surrounding situations in which they are involved. Communication is so much faster that events reach the public almost instantly and the media is much closer to commanders than in the past. Secondly as the world changes so the people joining the forces change [as do those going into business]. Today's teenagers are generally better educated, more independent and less willing to "just accept what they are told". A third theme also emerged which is the growing complexity that leaders have to deal with especially so in more senior roles. Complex organizations often appear chaotic and effective leaders are able to "cut through" this chaos and create clarity for those they are leading.

## 6. Does Leadership come from within, is learned or situational?

The short answer was "all three" together with you need some 'raw' material to start with. Some specific ideas:

- "You learn something from every situation"
- "The first 20 years is very important"
- "Leadership has to come from the top and the top is in charge of leadership"
- "The context has to be set from the top"
- "You do make mistakes and then what you do is important I typically apologise because I have found that owning up tends to enhance respect"
- "The diaries of Charles Bean (an Australian war correspondent in the Gallipoli campaign) He identified four groups of soldiers
  - the failures
  - the survivors
  - the stickers (only 10 per cent of the total and they influence the other 90 per cent)
  - the thrivers love battle and can be both dangerous and remarkable
  - In training you want to try and pick out the stickers"

Whether leaders are born or made has been a talking point for decades. From my discussions the following themes emerged,

- You need some "talent" to start with
- Development is important to enhance the "raw material" training is vital
- The situation has an enormous impact on the leader and their success
- The context in which the leader finds themselves has a large influence
- You have to want to lead personal drive, robustness and willingness to commit oneself is key and this come largely from within
- You need a sense of right and wrong this defines the difference between "good and bad" leadership.

## 7. If you can only do three things what would they be?

Here, as with the responses to the first question the numbers represent the five leaders,

- 1. a. Build up the team, make sure you have the skills you need and make the best of what you have
  - b. Look after the team as individuals
  - c. Keep everyone focused on the objective
- 2. a. Achieve the objective without it there is no point
  - b. See and enjoy the development of people individually and collectively
  - c. A personal sense of satisfaction and fun (at the involvement)
    - "They are in this order" (this is a comment made after giving me his answer to the question)
- 3. a. Know what I wanted to do
  - b. Inspire others
  - c. Enable others to give of their best
- 4. a. Objectives
  - b. Examples this can be done in many ways

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## c. Achieve success

- 5. a. Clarify and understand the changing context in which one operates
  - b. The challenge of multi-culturalism and all that goes with that
  - c. The supremacy of the moral component in both the precise and wide sense.

## THEMES AND DIFFERENCES

A number of common themes appeared from the interviews. These themes will probably not surprise readers,

- Context
- Clarity of purpose
- Enabling others to perform
- Communication
- Personal robustness
- Standards
- Trust
- The moral dimension

One difference was the emphasis placed on the particular themes. Which ones had primacy and significance over others varied from leader to leader. Throughout my discussions two or three of the themes seemed to emerge more strongly in each meeting and they were never exactly the same ones – although all eight themes appeared somewhere in answer to the seven questions. A noticeable theme – in many ways the defining difference between leaders, is the importance of being 'oneself'. Leadership is an intensely personal activity; it relies on the leader being true to themselves and being authentic. So 'how I deliver leadership' will vary from person to person and cannot be prescribed in any simple list. How skilful and capable I am at adapting to others styles will vary from person to person. This capacity to adapt, or to adapt by building a team around the leader to better manage differences, is a critical element of effective leadership. All the leaders that I interviewed are different. They identified many common themes and all five described these themes slightly differently and through the perspective of their own personality, experience and beliefs.

## **CONCLUSIONS AND LEARNING**

It was inspiring to have had the opportunity to speak with five very successful leaders. I hope that I have represented their individual and collective views appropriately. In the previous paragraph I have outlined what I observed as the major similarities and differences. Does the information gathered, in these discussions, support the three elements outlined in "Leadership matters!"? Yes it does. Leadership Context is a common theme; Leadership Practices are represented by clarity of purpose, vision, objectives, enabling others to perform, communication, setting an example and standards. Leadership Styles are the one theme identified as a difference and that is to be expected. We have to be ourselves and yet throughout the interviews the importance of matching styles to the particular circumstances and individuals came through. The central tenet of Self Awareness was powerfully acknowledged by two leaders and mentioned by the others.

What learning can be taken from the reflections of these five successful leaders?

- 1. The context in which we have to exercise leadership is important. Spending time understanding the context, especially in terms of the political implications and the views and expectations of leaders in the levels above you is vital.
- 2. There are a set of common themes essential to effective leadership. These include, clarity of purpose, vision and objectives, effective communication, setting an example, enabling others to perform and crucially dealing with the people issues effectively.
- 3. The moral dimension is fundamentally important. Without a sense of right and wrong leaders can make terrible decisions and lead people in the wrong direction.
- 4. Effective leadership and command at one level does not guarantee success at a different level.
- 5. Leadership is a personal thing and being oneself is important. We need to be able to lead ourselves before we lead others. There are many different ways to deliver effective leadership find the right one for "you".

# And finally: Leadership is about people – getting that right is the key to being successful. Good leadership inspires. It underpins and enables all the other qualities and capabilities of an organization.

## ACKNOWLEDGEMENTS

I want to thank Lt Gen Sir Anthony Pigott, Lt Gen Sir Hew Pike, Brig Chris Sexton, Col John Sweeting and Keith Carby for giving me so much of their time, enthusiasm and interest.

Whilst the information comes from my interviews I take full responsibility for the way the information has been linked together and the conclusions that have been drawn.

## **One Way of Staying Fragmentation Free**

MAJOR M P WALTON-KNIGHT BENG MSC CENG EURING MICE MCIWEM



Major Matthew Walton-Knight took command of 5 Field Squadron in Bosnia-Herzegovina on Operation Palatine in August 2002. Returning to the UK the Squadron provided a fire and rescue service to Bradford on Operation Fresco, which was immediately followed by the Training Year compressed into six months, before it deployed to BATUS for two months as the 1-2-1 close support squadron supporting an armoured infantry battle group; it also squeezed in two trips to South Africa, one to Kenya and adventurous training in Australia. After a brief respite, the Squadron deployed to Iraq on Operation Telic 4 in April 2004, which is where this article was written. Being a Chartered Engineer, Major Walton-Knight gets a second command tour; in August 2004 he took over command of 535 Specialist Team Royal Engineers (Works) in Northern Ireland

EVEN at 200 m the detonation of an 82 mm mortar was surprisingly loud. I turned to Sergeant Major Woolford and we both agreed that if we had been in the 12ft x 12ft tent which was only 2m from the detonation, then a change of underwear would undoubtedly figure highly on our "jobs to do list"! We returned to the tent from the firing point with a little trepidation, the book<sup>1</sup> had said that the mortar protection wall that we were testing should have been breeched by the detonation, but it was intact and functioned as we had designed it, protecting the "occupants" of the tent as it did again at 1m and again at pointblank range. However, I get ahead of myself, I should start this story at the beginning.

5 Field Squadron conducted a relief-in-place with 77 Armoured Engineer Squadron at Fortress Lines, an Improved Tented Camp, in Basrah, Iraq in April 2004 in a theatre that appeared to be getting more benign by the day, however within a fortnight Fortress Lines had been mortared. By the time I left Iraq on posting at the end of July, Fortress Lines had been attacked by 60mm mortars on 8 May (fell short), 4 June (just fell short), 14 June (hit), 22 June (hit again), 2 July (fell short) and 31 July 2004 (hit again); it was also attacked by 107mm rockets on 22 May (overshot) and 3 July 2004 (fell short). The attacks were generally at night, although one was just after reveille. Thankfully our enemy was not overly competent with his weapon systems and he only managed to drop seven mortar bombs in among our accommodation tents, however two bed spaces were badly damaged (enough to have probably killed the occupants if both not had been vacated literally seconds beforehand) and most of the Squadron's tents received varying degrees of damage. The tented camp at Fortress Lines was not alone in being attacked; the Temporary Deployable Accommodation tented camps at Camp Cherokee (in the port area), at Old State Building and at the Shatt Al Arab Hotel all in Basrah were also on the receiving end of mortar bombs. Certainly the attacks on Fortress Lines were enough to focus our minds on setting an ambush on the probable mortar base plate



Detonation of an 82mm mortar on the far side of a 12ft x 12ft tent.

<sup>1</sup> 63 Wks Gp RE 63/10077/500/062 *Temporary Camp Hardening Guidance – Op* Telic 4 dated 10 Jun 04, pp 2-3 Para 7 Graph 1 prepared using data taken from QinetiQ/FST/CR035664/1.0 *Design data for fortifications and field defences* 2nd edition, dated Feb 04.

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5 Field Squadron happily at work building block work walls.



The finished product: on the left, the standard four course wall; on the right, a five course variation.

and on improving our physical force protection measures; the latter is the subject of this article.

Little can defeat a 107mm rocket when fired, as they were, in a low trajectory; their velocity is too great to be stopped by anything other than a reinforced concrete wall, such as an Alaskan Barrier<sup>2</sup>. In Al Amarah, a 107mm rocket passed through an ISO Container, a Hesco Bastion wall and continued for over 100m before striking the ground<sup>3</sup>. Fortress Lines has a small footprint and so would always be difficult to hit with a rocket despite repeated attempts; so the primary threat weapon to Fortress Lines was the 60mm mortar, fired at night.

Many see Hesco Bastion as the panacea to all force protection, but it is difficult to use where access is restricted, it is plant and sapper heavy and in June it was also getting in quite short supply. Accepting that it was necessary to live in tents in areas prone to sporadic mortar attacks, what 5 Field Squadron believed was needed was a system to rapidly provide nocturnal protection to personnel in tented camps using a system of compartmentalisation<sup>4</sup> that could be constructed by all-arms, that is it requires only unskilled labour and no plant, perhaps with just a RE JNCO to give advice. Ideally it should be cheap, when compared to Hesco Bastion, re-useable and make use of local materials. After deciding that there was nothing in the pamphlet<sup>5</sup> that would meet our needs<sup>6</sup>, 5 Field Squadron designed its own solution. We adopted a double-skin fourcourse unbonded (that is dry laid) 0.8m high concrete block (each 0.4 x 0.2 x 0.2m) wall with a 0.4m base using English Bond with staggered stretchers for additional strength as we planned to only build straight runs without corners. Course one would consist of headers, course two of staggered stretchers, course three of headers again and course four of staggered

stretchers again. The wall would be positioned 1m away from tent walls in order to limit the probability of injury to occupants from scabbing or dislocation of blocks. As the wall was only 0.8m high it would also not inhibit any means of access to tents. The original solution used locally- manufactured hollow concrete blocks which we believe would have been adequate to defeat 60mm mortars, however in June our enemy allegedly acquired 82mm mortars, so solid 27.5 kg concrete blocks were used instead; conveniently, 61 Field Support Squadron already had a call-off contract in Kuwait that could provide these blocks at short notice.

A concept wall was built and "tested" by my Sergeant Major, Ouartermaster and Second-in-Command. This testing repeatedly pitted the Second-in-Command against the wall to our considerable amusement; the wall won on each occasion and so the Squadron started building. What we found was that 10 "unskilled" personnel could build a 10m run of wall in 30 to 60 minutes, depending on their skill and enthusiasm levels. Whereas a 10m run of Hesco Bastion (Single Cell Military Type 1) required three skilled sappers with plant and took one to three hours to construct depending on site access. Unbonded block work walls do need to be built on relatively level surfaces, although this was at times achieved by laying a 25mm bed of sand. The key to rapidly providing force protection was multiple work faces; in a 250 man tented camp, there could be 20 plus concurrent work faces using block work if most of the occupants were mobilized. As opposed to Hesco Bastion where rarely could there be more than one work face, because tented camps are constricted sites where a crane and hopper are frequently required to fill the Hesco cells. Economically the block work walls also did quite well, which certainly pleased SO1 Infrastructure. The cost

<sup>&</sup>lt;sup>2</sup> An Alaskan Barrier defeated a low trajectory 107 mm rocket fired at the Shatt Al Arab Hotel in Basrah in the early hours of 14 Jun 04.

<sup>&</sup>lt;sup>3</sup> Recorded in 63 Wks Gp RE 63/10077/500/062 Temporary Camp Hardening Guidance - Op Telic 4 dated 10 Jun 04.

<sup>&</sup>lt;sup>4</sup> Compartmentalisation is a system of protection that aims to restrict any loss of life from a single ground burst detonation to the occupants of a single walled compartment or tent; this assumes that mortar bombs will detonate as a ground rather than an air burst when they strike a tent, which has yet to be proven. Surprisingly this method of protection did not enjoy universal popularity among those who are protected by it in Basrah; however, overhead protection for tented camps was financially not an option.

<sup>&</sup>lt;sup>5</sup> Military Engineering Volume 2 *Field Engineering* Pamphlet Number 2 *Field Fortifications* 1993.

<sup>&</sup>lt;sup>6</sup> Sandbagged walls which were an option are slow to build, are rarely built to the correct standard by unskilled labour and sandbags suffered considerable solar degradation in Iraq, some lasted less than three months.

### ONE WAY OF STAYING FRAGMENTATION FREE



82mm mortar at 2m from the block work wall: before and afterwards.

**The 2m Detonation.** This test resulted in no loss of structural integrity of the wall and no noticeable movement of blocks was observed; however the blocks suffered significant surface damage. The tent suffered no fragmentation damage below 1.3m; however damage above this was considerable. No mortar fragments penetrated the wall.



82mm mortar at 1m from the block work wall: before and afterwards.

**The 1m Detonation.** This test resulted in no loss of structural integrity of the wall, which had been constructed using the blocks that had just been in the 2m test; however, the blocks suffered considerable surface damage and movement of up to 40mm was observed in the stretchers in Courses 2 and 4. The tent suffered no visible fragmentation damage below 2.0m; however as the same element of tent was used as in the earlier 2m test, this was difficult to assess. No mortar fragments penetrated the wall.



82mm mortar at 1cm from the block work wall: before and afterwards.

**The 1 cm Detonation.** This test resulted in the local loss of structural integrity of the wall with also localized pulverisation of the blocks; however no block was projected more than 0.8m, a quarter block was projected 1.3m and pulverised concrete was projected up to 2.4m (as the tent blew open in the wind at the test site). No element from the wall penetrated the tent nor was assessed could have penetrated the tent and no mortar fragments penetrated the wall.

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for a 10m run of block work walling was £180 and the blocks would last over two years and were re-useable. Whereas the cost of a 10m run of Hesco Bastion (Single Cell Military Type 1) was £580 and the cells were frequently lasting less than 12 months due to solar degradation and were not reusable, although some of the £69 worth of fill could be recovered.

5 Field Squadron was content with block work walls and it took less than three days for us to construct mortar protection walls around its tents using this system. Another RE squadron in a similar tented camp used Hesco Bastion as its protection system and due to the restricted access in its camp it took eight days to complete its mortar protection walls.

Although we were content with this new type of mortar protection, there was some uneasiness as we tried to export it to other units to use as protection for Temporary Deployable Accommodation tented camps. To give confidence to future occupants we conducted a series of explosive tests<sup>7</sup>, using the maximum size weapon system that the wall was designed to resist: the 82mm mortar at ranges of 2m, 1m and 1cm to demonstrate fragmentation protection and the structural integrity of the wall. It was thought that it was less probable that a mortar bomb would impact and detonate within a metre from a wall (although at the Old State Building camp a 60mm mortar actually did strike a wall!) and so the results from the 2m and 1m tests would be most relevant. Also the test was against the maximum size of mortar that it was believed was in our enemy's arsenal that was the 82mm mortar (with typically 680g of explosives) rather than the most probably mortar likely to be used by the enemy that was the 60mm mortar (with typically 315g of explosives). The results of the test were quite interesting, however we accepted that the results were unique to the specific circumstances being evaluated.

The test validated our design of a block work mortar protection wall completely and gave confidence to all in the test team that unbonded block work provides adequate nocturnal protection to accommodation tents for up to 82mm mortars; however those in a tent subject to an 82mm mortar attack at less than 2m would probably still need that fresh underwear! When I left theatre, 0.8m block work walls had been adopted by 22 Engineer Regiment as the preferred method of providing nocturnal mortar protection to personnel in tents where access was constricted, and block work was being used for mortar protection on all Temporary Deployable Accommodation tented camps<sup>8</sup>.

Neither Hesco Bastion nor block work walling is the force protection panacea, unbonded block work does not offer the range of protection that Hesco Bastion can offer; however in the right circumstances block work walls may be the better system to use and it was the system 5 Field Squadron used to provide its own force protection. In the Corps we have some excellent publications, however when the pamphlet does not have the solution that is required in a particular situation, then as Combat Engineers we have to be innovative and find our own solutions, especially if they are as simple as laying a few concrete blocks!



Block work walls protecting Temporary Deployable Accommodation tented camps

<sup>&</sup>lt;sup>7</sup> The explosive tests were conducted by 33 Engr Regt (EOD) (Sgt Teesdale with an EOD section), and 5 Fd Sqn (Maj M P Walton-Knight, WO2 (SSM) D Woolford and SSgt Jones with a field section) at the Shaibah Logistic Base Demolition Pit on 27 Jun 04.

<sup>&</sup>lt;sup>8</sup> In Aug 04, as the intensity of attacks increased, the Temporary Deployable Accommodation tented camp at the Shatt Al Arab Hotel was attacked by 60mm mortars, some detonated immediately adjacent to the new 0.8m block work walls. On the far side of one were Boat Troop, 22 Engineer Regiment who said "the walls did exactly what it says on the tin!".

# "The Quartermaster<sup>1</sup> – Pirate or Prince?<sup>2</sup>"

CAPTAIN S M PEMBERTON



Captain Stu Pemberton joined the Corps as Junior Leader in 1977 before moving to 38 Engineer Regiment in 1978. There followed tours in Northern Ireland and Belize before taking part in Op Corporate. Next posting was to 33 Independent Field Squadron for a two year tour in Northern Ireland followed by seven years of service with the then 28 Amphibious Engineer Regiment. In 1992 he moved to Military Works Force and in 1993 to 25 Engineer Regiment that had recently arrived in Northern Ireland. During this tour he was compulsorily transferred to the AGC (SPS). In 1995 he was posted to Liverpool for a tour with 208 Field Hospital RAMC(V) from where he was posted to the Manning and Establishments Branch of Military Survey. In 1998 he was successfully commissioned back into the corps and posted as 2IC 63 Training Support Squadron at Minley. This was to be a short tour as he was moved to fill the vacant SO2 Soldier Postings Branch appointment at RE MCM Div. In 2001 he took up the post of QM 23 Amphibious Engineer Squadron and accompanied that unit to Iraq during Op Telic, from where he moved into his current post as SO3 (Infrastructure) in HQ Hohne Garrison.

SINCE the day that Julius Caesar marched his triumphant armies into Rome and made himself the military dictator, successive Roman Emperors have relied on the strength of their Legions to maintain power.

Legions were made up of land owning citizens who paid for their own equipment, weapons and food, and fought for Rome in order to protect their property. But as time moved on there were fewer landowners and so non-citizens were encouraged to join the Legions. As an incentive, they were offered citizenship for themselves and their families but only after completing 25 years of service. The decreasing number of recruits of independent financial means forced the Senate to provide funds for clothing, weapons, horses and other items of ancillary equipment.

This necessitated the employment of officers and staff to manage the ever-burgeoning procurement and supply system. The senior post in the Legion was given to the *Praefectus Castrorum*-a grizzled veteran who had been promoted through the centurionate (sound familiar?). Commanders relied heavily on this veteran who was trusted and highly regarded by the soldiers, too.

The answer to the posed question might have been simple until one changes historical direction, then the first indications of a darker side to the Quartermaster's character begin to appear. To put this into context I will turn to life on the Seven Seas.

Aboard the most notorious of pirate ships, including those of Black Beard, Blue Beard and Captain Hook, a strict rank structure existed. On every ship that flew the Skull-and-Crossbones, the second in command was none other than The Quartermaster. He exercised a strict authority over the crew who had all selected him to represent their views. A man chosen for his courage and one who had proven himself in a fight, the Quartermaster was also "of the ranks" and had served in many of the lower positions on board.

When he was not involved in fighting, the Quartermaster had command of the ship and crew. His responsibilities included provision of grog and victuals and ensuring the Boatswain (equivalent of a modern day SQMS perhaps?) distributed these fairly. Is it therefore plausible to assume that this link with Pirates was an early step in blackening the name of The Quartermaster?

The Emperor Napoleon was most certainly not a supporter, and when writing *Maxims of War* he noted that: "*If the General allows himself to be guided by the Supply Officers, he will never move, and his expeditions will fail.*" Of course these are only the opinions of one diminutive Frenchman and are not supported by any obvious facts; at least, I could not find any.

You might think that the passage of time would soften this view of the Quartermaster, but this is not borne out by the following statement contained in the personal papers of Field Marshal Erwin Rommel. Over one hundred years later he writes: "If Quartermasters and Civilian Officials are left to take their own time over the organization of supplies, everything is bound to be very slow. Quartermasters often tend to work by theory and base all their calculations on precedent, being satisfied if their performance comes up to the standard which this sets. This can lead to frightful disasters when there is a man on the other side who carries out his plan with greater drive and thus greater speed. In this situation the Commander must be ruthless in his demands for an all out effort." If a successful Field Marshal of the stature of Rommel believed such things then what hope is there?

<sup>&</sup>lt;sup>1</sup> It is not the intention of the author to sully the good name of Quartermasters serving or retired. The aim is merely to offer the readership of the *RE Journal* a subject for light-hearted debate. We all have memories of the Quartermaster (good or bad) and, I am certain, a view on the subject matter raised.

<sup>&</sup>lt;sup>2</sup> In this context "Prince" is taken to mean "An outstanding member of a specified group" – Collins Dictionary 1995.

Do not despair, all is not lost. That great British General and military leader, The Duke of Marlborough (1650–1722) clearly maintained a high regard for his Supply Officers. In his personal papers he notes that: "No Soldier can fight properly unless he is properly fed on beef and beer" and of course he recognized in making this statement that his Quartermaster would be responsible for the procurement and supply of said victuals. Equally effusive of his logisticians was Frederick the Great. In his Instructions for Generals of 1747, he wrote: "understand that the foundation of an Army is the Belly. It is necessary to procure nourishment for the soldier wherever you assemble him and wherever you wish to conduct him. This is the primary duty of a general". He obviously had great trust in his Quartermaster to ensure the troops were properly fed and provided for.

The importance of logistics and supply is clear throughout the ages. In 1984, the Chief of Soviet Armed Forces Logistics Colonel-General Golushko wrote: "In modern warfare no success is possible unless military units are adequately supplied with fuel, ammunition and food and their weapons and equipment are maintained. Modern battle is characterized by resolute and dynamic action and by abrupt changes in situation which call for greater quantity of supplies than was the case in World War Two. Hence the increasingly important role of logistics continuity aimed at supplying each soldier in good time with everything he needs for fulfilling his combat mission." There is clear evidence then, that not everyone believes the Quartermaster to be a Pirate? Sadly, it must also be noted here that Colonel-General Golushko was writing during the period of the Soviet "involvement" in Afghanistan, and though his logistic supply was excellent, so too was its subsequent trading on the black market. The finger of blame is not being pointed directly at the Soviet Quartermasters but the question must be asked, "who was signing the Monthly Check Sheets?"

Evidence suggests that Cromwell's New Model Army might well have provided the doubters with ammunition (pun intended) for their cause. In reports from Coventry for the period 1643-1645 there are numerous cases of Procurement Officers making away with goods without payment or for less that the true value. An extract reads "When they were not patrolling the streets of the City or accosting visitors, Coventry troops went on raiding parties into the surrounding towns and villages." After the war the good people of the shire wrote to parliament to seek recompense of their losses. The list is extensive and includes: Captain Mercer taking a horse worth £5.00 from Robert Day of Sharneford. Captain Turton took six horses worth £6.00 from Ratcliffe Culy. At Sheepy Magna Captains Flower and Ottaway availed themselves for free quarter for 100 horses and men valued at £13.6.8. Mr Winford of Desford claimed that Captain Ottaway took a nag's saddle, bridle, saddle cloth and horse cloth together valued at £10.15.

In 1657, the Quartermaster-General, General Monck, wrote to parliament extolling the virtues of his logisticians as their posts were being threatened in a round of cost saving measures. As a member of the Committee for the New Model Army that had been appointed by the Protector's Council, this is what he had to say:

"The Commissary of Provisions. Because he keeps an account of all the Garrisons and Field Stores in Scotland. He charges soldiers with any provision they receive out of either of those stores and so provides an audit trail for the Auditor Central.

*Store Keepers.* There is a necessity of having Storekeepers where there is a magazine of provisions. The cheese, corn and biscuit must be checked or they will be ruined causing a loss to the public.

**Commissary of Ammunition.** This Officer of the Stores Train takes care of ammunition and other provisions and needs a clerk to help him in his duties."

It is clear that the General understood the necessity of good accounting and that this was only possible with the employment of Quartermasters and Storekeepers. The response from Parliament is not available but I feel certain the politicians would have supported the General and made their cuts elsewhere!

During the period of the Peninsula Wars, the post of Quartermaster was not considered to be a combat one. However, Quartermaster William Swift, who spent most of his long career in the Rifle Brigade, had a different view. "I was ordered by my Commanding Officer not to go into action except for the purpose of bringing ammunition, etc, and when my duty required me. However, the post was anything but risk free, as Swift goes on to testify: Early in the action, my horse was killed, being shot in the head, which ball, had the head not stopped it, would in all probabilities have entered my body."<sup>3</sup>

An article in the Dorset County Chronicle and Somerset Gazette dated 1890, describes the daily life of the British Private Soldier, (Tommy Atkins). "There are two men in whose hands lies the principle administrative control of Atkins at Home, One is the Quartermaster and the other the Corporal in charge of Tommy's room. You will conceive the responsibility on the Quartermaster's shoulders when you reflect that he has the housing, provisioning, and clothing of from 600 to 900 men in an infantry regiment to cater for. It is but a bare fact to state that this officer requires intelligence, tact, capacity for work and management that in civilian life would fit him for a high administrative position, and bring him a salary far more adequate than does his military pay. The Quartermaster is chosen from the ranks, and his commission is looked upon by the senior non-commissioned officers as a prize always within their reach. The Quartermaster arranges the whole of the contracts for provisioning the regiment, and in every possible instance such are placed with local firms. He attends the stores every morning to superintend the weighing of the rations of meat and bread, which constitute Government's contribution towards the support of private soldiers. He is responsible for the good quality of these provisions, and the correct allowance for each troop or company. Vegetables, groceries and the like – which the sol-

<sup>&</sup>lt;sup>3</sup> "Redcoats" pg 113-114 by Professor Richard Holmes.

# *dier himself pays for – are all bought from the regimental canteen through the Troop Mess Fund.*"

The soldiers undoubtedly respected their Quartermaster, as the man who provided their daily needs and ensured their equipment was maintained and serviceable. They could relate to him as he was "of them" and they also understood the working of his stores, as is reflected in the words of the popular soldier's ballad, "The Quartermasters Store:

#### **First Verse**

There were rats, rat, big as bloody cats In the store, in the store

There were rats, rats, big as bloody cats

In the Quartermaster's Store.

#### Chorus

My eyes are dim, I cannot see

I have not brought my specs with me

I have not brought my specs with me.

## Verses (each followed by the Chorus)

There was Beer, beer, to bring us all good cheer etc There was cheese, cheese, rotting, stinking cheese etc There was bread, bread, heavy as lumps of lead etc There was Whisky, whisky, the stuff that makes you frisky etc

With few exceptions the Quartermaster ensured all ranks were well looked after.

There are numerous stories of derring-do involving Quartermasters not least that of Commissary Reynolds and his courageous actions at Rorke's Drift for which he was awarded a Victoria Cross. The number of gallantry awards to Quartermaster's during the course of WW1 further supports the case that the holders of this prestigious post do not stand back (or aside) when there is fighting to be done.

The recent experience of Quartermasters during the war in Iraq appears to be a suitable conclusion to this article. The arrival of Lt Col Ernie Stables in theatre meant there were a total of seven Quartermasters sharing a tent in Camp Rhino, Kuwait. Like Ali Baba, Colonel Ernie let loose his pack, (who were all over forty - but not thieves) on the unsuspecting allies and neighbours in this sprawling camp. Within days the tent resembled the best that Mr Hilton's Hotel chain could provide for the RAF and was fully furnished with beds and mattresses. Vehicles had been procured from "a friend of a friend" and boxes of the most up-to-date mapping had been provided for one and all. Rations and water had never posed a problem and so the motley crew set their sights further afield – to the SPOD<sup>4</sup>. It was not long before they returned laden with goods ranging from M3 Amphibious Bridging Vehicles (they were ours!) to members of the regiment who had spent weeks fending off over-attentive Merchant Seamen!

Next, Colonel Ernie decided to show the "boys" how the men do their work and off he set into the barren expanse that is the Kuwait Desert. He found a spot he liked, and after marking out his territory<sup>5</sup>, he set to work procuring the necessary tentage and other items to create a basic infrastructure. Three days later and the barren desert had been transformed into Camp Trident–a temporary home for the regiment.

After crossing the border the regiment dispersed and supported the Division and individual Brigades in their manoeuvres. History was made, (as far as M3 Amphibious Bridging Equipment is concerned), on 23rd March 2003, when the first M3 Bridging Vehicle splashed into the Shat-Al-Arab, North of Basra, to form part of a Class 70 Ferry. Squadron Echelon was in place to support the troops on the ground, and a familiar figure was seen refuelling Rigs on the water–was that really the Squadron Quartermaster?<sup>6</sup>

Initial post-war analysis has highlighted significant deficiencies in the Logistics Supply System operated during the Iraq War. However, it was recognized that Quartermasters at unit level provided real support from meagre resources to keep their units going. Using experience and charm- not piracy or theft (okay, maybe a little) - they ensured that rations, water, stores, equipment and ammunition were received and distributed in a timely fashion.

So it seems that Quartermasters of today are not unlike their Roman counterparts; grizzled veterans who are still recruited from the ranks. That this system has been retained over the passing centuries is testament enough that you should trust in your Quartermaster for he is a Prince amongst men who delivers by fair means or....don't ask!

<sup>&</sup>lt;sup>4</sup> SPOD – SeaPort of Disembarkation of which there were two in Kuwait City.

 $<sup>^{5}</sup>$  It is not true that this was done using bodily fluids.

<sup>&</sup>lt;sup>6</sup> The Author.

## British Military Geology in India: Its Beginning and Ending

## COLONEL E P F ROSE TD MA DPHIL CGEOL FGS

Ted Rose has contributed several articles on military geology to the RE Journal in recent years, all from a European perspective. To balance the record, he here describes how British military geology was first developed for use in India; how a Strategic Branch was developed within the Geological Survey of India to provide military geological information and advice to the India and South East Asia Commands during the Second World War; and how the end of the War generated the most ambitious proposals ever made for a British military geological service.

LONG-TERM readers of the *RE Journal* will be familiar with aspects of the military use of geology made by several European nations, in particular by Germany (Rose & Willig, 2002a,b) and the United Kingdom (Rose & Pareyn, 1996a,b). To mark the 60th anniversary of the end of Second World War hostilities in the Far East, it seems timely to complement these accounts with a review of British military geological work in that area. The work described here was all provided for or based in India. Operations during the Second World War revived a military geological interest stimulated by India early in the 19th century, and generated proposals for a British military geological service of considerable size.

#### GEOLOGY AND THE EAST INDIA COMPANY

TEACHING of geology in a British military context was initiated at the East India Company's military college at Addiscombe in Surrey (Figure 1) – a military seminary founded in 1809 to complement the sister establishment at Haileybury, in which the Company trained its civilian staff (Cumming, 1980). Geological teaching began in 1819, so at least a generation earlier than such teaching at the Royal Military College, Woolwich, the Royal Military Academy, Sandhurst, the Staff College, Camberley, and the (Royal) School of Military Engineering, Chatham (Rose, 1997). Indeed, at this time Addiscombe was the only place in England other than the universities of Oxford and Cambridge



Figure 1. The East India Company's military college (now demolished) at Addiscombe, Surrey. *From Vibart (1894)*.

to provide a course in systematic geology. By 1829, cadets studied for nine hours each day, and were taught mathematics and classics, fortification and artillery, military drawing and surveying, oriental languages, landscape drawing, French, chemistry, and geology – in decreasing order of importance.

At Addiscombe, Dr John MacCulloch (Figure 2) was appointed in September 1814 to give lectures in chemistry, but in 1819 contracted to give lectures in geology as well: 20 lectures per year in chemistry, 20 in geology, for an annual salary (including allowances) of £250 (Vibart, 1894). Moreover, in 1820 the Court of the Company agreed to buy 400 copies of the book he was writing (*A geological classification of rocks:* MacCulloch, 1821) – the first textbook written specifically to complement an annual British geological lecture course, and the first comprehensive, systematic, descriptive, catalogue of rocks to be prepared by a British author (Cumming, 1980, 1983).

MacCulloch wrote a further book (Asystem of geology: MacCulloch, 1831), intended as a sequel, but the Court would not pay for more than 100 copies. Although MacCulloch's Classification remained the official geological textbook for all Addiscombe students until geological teaching ceased with his death, the System failed to achieve even the status of a class book. Designed principally for engineering students, to reviewers the System appeared unsatisfactory as an account of earth history in com-

parison with Charles Lyell's (1830-33) highly acclaimed and near-contemporary *Principles of geology*.

MacCulloch died in August 1835, the result of a carriage



Figure 2. John MacCulloch, MD, FRS (1773-1835), an early president of the Geological Society of London, Ordnance geologist, and lecturer on geology at the East India Company's military seminary, Addiscombe, 1819-1835. Portrait c.1820, fide Cumming (1980). *From Rose (1996). Reproduced by permission of the Geological Society of London.* 

#### BRITISH MILITARY GEOLOGY IN INDIA



(1814-1880), an early professor of geology at

King's College London, consulting geologist and mining engineer, and lecturer on geology

at the East India Company's military semi-

nary, Addiscombe, 1845-1861. Drawing dated

1850. From Rose (1997). Reproduced by per-

mission of the Geological Society of London.

be amputated; and he died soon afterwards. Many of his students later became distinguished officers. Some (e.g. Sir Proby Cautley, Lord Napier, Sir A S Waugh, General Sir William E Baker, and Major General Sir Henry M Durand) undertook geological surveys early in their careers - their research in India largely stimulated by the civilian palaeontologist Hugh Falconer, but perhaps building an interest created by

MacCulloch (Cumming, 1980).

> On MacCulloch's death, the lectureship in chemistry was filled by the physical chemist J F Daniell, and a supposedly

combined course in chemistry and practical geology became almost exclusively chemical. Not until Daniell's death in 1845 were lectureships in both chemistry and geology filled, the latter by David Thomas Ansted (Figure 3). His elementary treatise on geology and a short, simplified summary of it (Ansted, 1844, 1845) became standard reference books in Britain: one of these was awarded as a class prize at Addiscombe, and presumably formed the basis of at least his early lectures at the college (Cumming, 1980). Ansted taught geology at Addiscombe until 1861, when as a result of the war following the "Indian Mutiny" of 1857, the East India Company lost its sovereign powers, its army was merged with the British army, and the college at Addiscombe closed as cadet training became focused at Woolwich and Sandhurst.

However, it was a graduate of Addiscombe, Richard Baird Smith (Figure 4), who published a substantial early Essay on Geology, as a branch of study especially meriting the attention of the Corps of Engineers (Smith, 1849). He had entered the college in February 1835, and passed out as its head pupil, with first prizes in mathematics and Latin, gaining his commission on 9 December 1836 and a posting to the Madras Engineers (Vibart, 1897). After a year he was posted to the Bengal Engineers, and then for the next 16 years served largely with the irrigation department in the Northwest Provinces. He gained particular fame in combat in 1857 as the "leader of the Delhi heroes" - being Commanding Engineer during the Siege of Delhi.

Smith's time at Addiscombe overlapped that of MacCulloch by barely six months, so it is unlikely that he benefited greatly from geological teaching. Yet Smith enthusiastically advocated a place for geology in military education on the grounds that the subject is "fascinating" (Smith, 1849, p. 28) and potentially able

to excite an interest in the applied sciences as such; also, that it can be put to practical military use, notably in siting boreholes for water supply, in road alignment and construction, and in bridge building. The views of this distinguished engineer were seemingly not unique at the time, for the teaching of geology had been reinstated at Addiscombe in 1845, and was initiated at Woolwich by 1848, at Sandhurst in 1858, and soon afterwards at the adjacent Staff College, Camberley (Rose, 1997).

The teaching at Camberley

seemingly bore early fruit: a paper whose "object is to show how ... Geology ... is, to military men, by far the most important



Figure 4. Colonel Richard Baird Smith (1818-1861), a distinguished graduate of the East India Company's military seminary, Addiscombe, Indian Engineer, leader of the "Delhi heroes" during the "Indian Mutiny" and early proponent of the military value of geology. From Vibart (1897).

of all the sciences, and therefore the one to which their attention should be principally directed" (Hutton, 1862, p. 343). Its author, Frederick Wollaston Hutton, was, according to The Army List, an infantry officer whose early professional experience had also been gained in India. He had purchased his commission as an Ensign in the 23rd (Royal Welsh Fusiliers) Regiment of Foot on 18 May 1855, been promoted Lieutenant on 27 March 1857, and served in the Indian compaign of 1857-58, including the relief of Lucknow by Lord Clyde, defeat of the Gwalior contingent at Cawnpore, capture of Lucknow, and operations north of the Goomtee - for which he received a medal and two clasps. He entered the Staff College, Camberley, in 1860, prior to promotion to Captain on 2 March 1862.

Hutton's article draws attention to the value of geology in predicting sources of fuel (coal); potable water (borehole site selection); site selection for military encampments; development of building stone and aggregates; foundations for major engineering works; road and tunnel alignment; diggability of ground for tactical earthworks; factors influencing crosscountry movement; fordability of rivers and stability of bridge abutments - and terrain assessment for military purposes. All these were to be among the British military applications of geology in the Second World War (Rose & Hughes, 1993a; Rose & Rosenbaum, 1993; Rose & Pareyn, 1996a,b).

Yet despite this early perception of the practical applications of geology, when a College of Civil Engineering (Figure 5) was established for the Government of India in 1871 under the presidency of Lieutenant-Colonel Chesney RE, the founding staff comprised teachers of construction, mathematics, physical science, surveying, mechanical drawing, landscape drawing, and Hindustani – but not geology (Anon, 1871). And it was largely the survey branch of the Corps of Royal



Figure 5. The Royal Indian Engineering College, Cooper's Hill, Egham, Surrey, when opened in 1871. Admission of 50 students per year to a three-year course was by competitive examination open to youths between 17 and 21. Teaching was by a staff developed over the first three years to comprise a president and eleven professors or instructors. Successful graduates were appointed to the engineer service of the Indian Government. *From Anon (1871)*.

Engineers that produced the Sappers who achieved some geological distinction in India (e.g. H H Godwin-Austen [as recorded by Mason, 1937]) rather than the Corps as a whole.

Geological work as such was developed by a non-military organization, the Geological Survey of India. This was directed for its first twenty-five years (1851 to 1876) by Thomas Oldham, previously (from 1846 to 1850) the first civilian Local Director of the Geological Survey of Ireland (Rose, 1996). Oldham had graduated from Trinity College Dublin in 1836, and then studied engineering for two years at Edinburgh, where he came under the geological influence of the renowned Professor Jameson. However, for the first twenty years of its existence the Irish Survey was led by Royal Engineer officers, and it was as assistant (from 1839 to 1843) to the geologically distinguished Captain (later Major General) Joseph Ellison Portlock RE that Oldham learnt his Survey skills. He was appointed assistant professor

of engineering at Trinity in 1843, and promoted to the newly-established chair of geology in 1845, before developing his Sapper-initiated Survey abilities in appointments first in Ireland and then, to even greater effect, in India.

### MILITARY GEOLOGY IN INDIA DURING THE SECOND WORLD WAR

MILITARY interest in geology seemingly waned in India by the end of the 19th century much as it did in the UK (Rose, 1996). But during the Second World War, a Strategic Branch was developed within the Geological Survey of India to provide military geological information and advice to the India and South East Asia Commands (Bradshaw, 1945).

#### Origin and development of the Strategic Branch

When Burma was lost in the Spring of 1942, it seemed possible that India might be invaded from the east and, with the deterioration of the Allies' military fortunes in Europe, also from the northwest. An extensive programme of airfield construction (Figure 6) was therefore initiated in both the threatened areas. To advise on the location and construction of the projected airfields, about half a dozen geologists, most previously exploration geologists employed by major petroleum companies who had been evacuated from Burma, were commissioned as Field Engineers (Air) and posted to the various regions.

As the military situation improved and airfield reconnaissance and construction abated, the Field Engineers (Air) were relegated to other duties. By this time not all Field Engineers (Air) were geologists, and while some of the

geologists continued to serve as such, others were posted to general engineer duties. By late 1942 these military geologists had thus been dispersed. However, some geological officers had been posted to headquarters of Armies to serve as technical advisers to Chief Engineers, and the Royal Air Force had a number of officers charged with the inspection of airfields, some of whom were geologists.

The construction of airfields and strategic roads was partly the responsibility of the Public Works Department of the civil administration, which relied upon the Geological Survey of India for geological information and advice. A geologist with the rank of major had been posted to act as technical adviser in the Engineer-in-Chief's Branch, General Headquarters, India, but his services were soon lent to the Government of India to help increase production of mica, an important mineral resource.

In general, "military" geologists were handicapped by lack



Figure 6. Construction of a new airfield in Assam – men of the Pioneer Corps take a meal break. *Courtesy of the Imperial War Museum, London: Photo IND. 3269 (issued 1944, but still representative of local construction techniques earlier in the War).* 

of readily available geological information about the areas for which their advice was sought. Much of the geological mapping had been carried out by independent petroleum companies and was not directly available even to the Geological Survey of India. At the Geological Survey, Eric Bradshaw therefore proposed that a special branch (later called the Strategic Branch) be set up to provide the geological information required by the Allied armed forces operating in India and adjacent countries.

The Branch was duly set up under his leadership in June 1943, based on the headquarters of the Geological Survey of India in Calcutta. It was agreed that in future Commanding Royal Engineers and other military "clients" should submit all requests for geological information and advice directly to the Branch's Superintending Geologist, who might depute one or more military geologists to carry out such fieldwork as appeared necessary. A pamphlet (E-in-C Pamphlet No. 9) was prepared and widely distributed among engineer and other units listing the many ways in which geological information and advice could be of military value and explaining the procedure for obtaining assistance from the Strategic Branch.

#### **Functions of the Strategic Branch**

The five functions initially specified were:

- To compile, from all available sources, geological information likely to be of military use concerning India and neighbouring countries (including Burma, China, Malaya, Thailand, French Indo-China, and the Netherlands East Indies).
- To obtain, and make available on military request, geological information or advice concerning particular problems, projects, or areas. Whenever desirable, specialists or geologists familiar with the area in question would be consulted.
- To carry out geological reconnaissance and other fieldwork in connection with military operations or engineering projects, or in search of materials or information for military purposes.
- To compile a series of technical notes on topics of interest to military geologists or engineers; or on the geology of road alignments or other projects; or of actual or potential operational areas.
- To compile geological maps of areas of military interest.
- Three roles were soon developed by the Branch:
- It was primarily charged with the direct provision, on demand by any units or staff organizations in the India and South East Asia Commands, of geological information and advice on specific problems and projects. This work was usually carried out by suitably qualified individual officers deputed to visit the location concerned; give direct advice; and prepare a written report. Reports were normally issued only to the parties immediately concerned, and not widely circulated. Such work was mainly carried out in rear areas.
- It provided information and advice required by South East Asia Command for operational planning - notably to the Engineer-in-Chief; the Intelligence Division; Operational Research Division; HQ Combined Operations; Intelligence Division HQ Air Command; Advanced HQ Allied Land Forces; and Combined Photo-Interpretation Centre HQ Air Command. Regional reports usually comprised a description of the terrain from a military perspective; an account of the probable effect of geological factors on engineering projects; and an indication of the stone and water resources and other useful materials likely to be obtainable within the area. Regional Technical Notes were illustrated by geological maps interpreted by means of specially prepared indexes; by special maps indicating the distribution of stone and water resources; and in some cases by physiographic diagrams to illustrate the nature of the "going". As hostilities ended, the Branch was developing applications of photo-geology to military purposes and analyzing coastal types in South East Asia so that these might be



Figure 7. Officially captioned "A prospective water-site is examined and tested by geologists", this, so far as is known, is the only photograph taken during the Second World War purporting to show British military geologists actively at work. The scene actually seems to show one man picking up a sample of rock whilst the other may be using a compass/clinometer to measure the dip and strike of the inclined strata from which it came – the most basic of geological field techniques, necessary to generate a geological map for any purpose, not just for prediction of optimum well sites. *Courtesy of the Imperial War Museum, London: Photo IND.* 2432 (issued 1943).

matched and studied in accessible areas for experimental and operational training purposes. There was interest in the properties and classification of mud from a practical military perspective, and the presentation of beach data. Studies benefited from close liaison with the Operational Research Division, and the Topographical Research Committee, South East Asia.

 It also assisted the Inter-Service Topographical Department (South East Asia) in much the same manner as the Inter-Service Topographical Department (United Kingdom) was served by its own Geological Section – and a close relationship was established



Figure 8. "Latest modern equipment used in well-boring in NW India" during the Second World War. "In the vast stretches of North Western India, wells [were] bored and water ... made available in territory otherwise rendered arid and unproductive by lack of irrigation." *Courtesy of the Imperial War Museum, London: Photo IND. 2437 (issued 1943).* 



Figure 9. "British troops working on a difficult corner" during construction of the road from India into Burma which provided access for the final advance. Hailed in its caption as a "unique army engineering feat", during the six-month task a "whole division was used for digging, uprooting trees, and blasting rocks". *Courtesy of the Imperial War Museum, London: Photo IND.* 1977 (issued May 1943).

between all these units.

In practice, the main work of the Branch comprised:

- Advising on water resources, either for installations or projects (e.g. airfields and transit camps) in rear areas, or for operational planning (Figures 7 and 8).
- Locating and evaluating stone resources, either for specific projects (e.g. airfields and roads) both in accessible and enemy-occupied territory; or on a regional basis for operational planning; or for maintenance and construction purposes in rear areas (Figure 9).
- Describing terrain from an operational viewpoint the description being based on geological reports and maps interpreted in nontechnical terms and supplemented by examination of air photographs and by information obtained from individuals familiar with the areas under consideration.

Additionally, the Branch was consulted on a variety of other matters, such as the distribution of iron-bearing rocks and ores – especially magnetite – likely to affect radio signals,

direction-finding stations, and mine detection; sources of supply for materials used in camouflage, dusting bitumenized hessian, and as light-weight aggregate for specific floating structures; obtaining petroleum for military purposes; causes and control of flooding affecting communications; preventive and remedial measures in respect of landslides; sites for large Bailey bridges in occupied territory; possibilities of blocking enemy communications (e.g. the Burma-Thailand Railway and Taungup-Prome Road) by producing persistent landslides (Figure 10) by bombing; suitability of airfield sites and road alignments; and preparation of Technical Notes on aspects of water supply and materials of construction. In total, over 50 Technical Notes were completed and issued between March 1943 and August 1945 (Table 1).

#### Manning of the Strategic Branch

By the end of 1943, the military staff initially sanctioned (one major and three captains) could no longer cope with the volume of work. It was easy to make a case for expansion – but more difficult to find suitable officers who could be released from their existing appointments. Eventually it was agreed that the military staff of the Branch should be increased to two at GSO2 grade, six at GSO3, and a Junior Commander WAC(1) graded as a Staff Captain, with appropriate clerical, drawing office, and ancillary staff. The staff came to include majors A J Haworth (Indian Engineers) and A N Thomas; Squadron Leader W R S Henderson MBE RAF; captains J E Denyer RE, H H Rennison (BASC), K V Stringer (General List), C B Campbell RE, and F C P Slinger (Indian Engineers); and Junior Commander M B Baker.

A great increase in operational planning during the summer of 1945 made further expansion imperative, but before individual officers could be selected, the War came to an end. Consequently, the military establishment of the Branch was reduced to one GSO2, two ranked at GSO3, and a Junior Commander as Staff Captain. The sanction for the reduced establishment expired on 31 January 1946, and the Strategic Branch, Geological Survey of India, consequently ceased to

exist.

## POST-WAR MILITARY GEOLOGY

BRADSHAW (1945) noted that during the War "the development, organization, and application of military geology have, in general, been slow, sporadic, uncoordinated, and incomplete. There has therefore been an avoidable loss in military efficiency whose repetition in a future war should be guarded against".

He proposed "that in the Joint Intelligence Bureau there should be immediately included an adequate staff of professional geologists, working under a Director of Military Geology, and charged with:

1. The development, during peace, of the theory and practice of military geology.



Figure 10. "A gang of Nagas clearing a road blocked by a landslide", under British military supervision, to let Allied vehicles, troops, and supplies through to the front line. Geologist tasks included advice on route alignments that minimized risk of natural landslides in Allied areas, and selective bombing of enemy routes to induce landslides. *Courtesy of the Imperial War Museum, London: Photo IND. 3657 (issued 1944).* 

## BRITISH MILITARY GEOLOGY IN INDIA

1.	Geology of the Assam-Arakan region	Oct 43, Jul 44, Dec 45
2.	Laterite (superseded by T.N. 48)	Mar 43
3.	Landslips and wash-outs in the hill section of the Assam-Bengal railway	Mar 43, Aug 44
4.	The under-drainage of earthworks	Apr 43, Aug 44
5.	Delone (Burmese road bricks) (superseded by T.N. 47)	Mar 43, Aug 44
6.	India: geology of the Chittagong district	Apr 43, Aug 44, Jun 45
7.	Burma: the Gwa-Ngathainggyaung path across the Arakan Yoma	Oct 43, Jul 44
8.	Burma: the Prome-Taungup road across the Arakan Yoma (superseded by T.N. 45)	Oct 43, Jul 44
9.	India: the Kohima-Bokajan road alignment	Oct 43, Jul 44
10.	India: note on a traverse through Manipur state	Oct 43, Jul 44
11.	Water supplies in crystalline rocks	Oct 43, Dec 45
12.	Water supplies from rivers and their vicinity	Oct 43. Dec 45
13.	Water supply: general principles	in abevance
14.	Burma: the Kalewa - Ye-U road alignment	Jan 44
15.	Sumatra: the north coastal region (stone supplies)	Mar 44. Jul 44
16.	The Andaman and Nicobar archinelagoes	Mar 44, Jul 45
17.	Sumatra: We island (Poeloe We)	Apr 44
18.	Burma: the upper Chindwin district	May 44, Jul 44
19	Sumatra: the northwest coast (stone supplies)	Jun 44 May 45
20	Sumatra: Simalur island	May 44
20.	Burma: Myitkyina Mogaung and Bhamo	Apr 44
21.	Burma: the Katha district	Jun 44
22.	Sumatra: northern Sumatra (in 8 parts)	Δμα 44
23. 24	The Nicohar islands	Jun 44 Jun 45
2 <del>4</del> . 25	Southwest Burma (in 2 parts)	Oct $44$ Apr $45$
25. 26	Burma: water resources in the dry zone	Dec 44
20.	Malaya: Singapora island (in 2 parts)	Dec 44 Mar 45
27.	Purme: the southern Shen states (in 2 parts)	Lop 45 Mar 45
20.	Burma: the southern Shan states (in 2 parts)	Oct 44, Dec 45
29.	Burma, the normer in Shan states (in 2 parts)	New 44, Dec 45
50. 21	The Measure Lode read (1042)	Nov 44, Apr 45, Juli 45
51. 22.	India, stane symply in Festern Commond	Juli 44, Jul 44
32: 22	Matarials of construction line	Jul 44
55. 24	Durane the Meithering district (in 2 ments)	Aug 45
34. 25	Burma: the Mythkylna district (in 2 parts)	Jan 45 Oct 44, Dec 45
33. 26	Signa the intervent of Ker	Oct 44, Dec 45
30. 27	Stam: the istimute of Kra	
37.	North-central Burma (in 6 parts)	Aug 44, Mar 45, Jun 45
38.	Burma: the eastern Shan states (miscellaneous notes)	Nov 44, Dec 45
39.	Burma: the Rangoon area	Nov 44, Dec 45
40.	Siam: Puket Island	Jul 45
41.	India: miscellaneous notes on the Palel-Tamu road	Dec 44
42.	Burma: the Mergui archipelago (in 2 parts)	Jan 45, Jun 45
43.	Burma: Ramree, Cheduba, and the Baronga Islands	Feb 45
44.	Coastal topographic reports: their content and terminology	Mar 45
45.	Burma: the Taungup-Prome road (1945)	Mar 45
46.	India and Burma: distribution of iron ores and ferruginous rocks	Apr 45
47.	Materials of construction: bricks	Sep 45
48.	Materials of construction: laterite	Aug 45
49.	The characteristics of dredged mining areas	Mar 45
50.	Siam: Puket mainland	May 45
51.	Malaya: western Malaya	Jul 45
52.	Malaya: the Kuala Lumpur area	May 45
53.	Netherlands East Indies: the Riouw and Lingga archipelagoes	Jul 45
54.	Coastal types of South East Asia	Aug 45
55.	Netherlands East Indies: the Natuna and Anambas islands	in abeyance
56.	Netherlands East Indies: Bangka and Billiton islands	in abeyance
57.	Mud	in preparation

Table 1. Technical Notes issued by the Strategic Branch, Geological Survey of India, during World War Two, with date of issue and reprinting. From Bradshaw (1945).

- 2. The listing, on a world-wide regional basis, of technical resources and personnel, and the cataloguing of general and regional geological information.
- 3. The popularizing of military geology to ensure that geological information and advice are furnished in a convenient and intelligible form, and that Engineer and Staff Officers have a sufficient understanding and appreciation of the military applications of geology.
- 4. The concerting of plans for the rapid mobilization and disposition of the geological personnel required in war."

"On the eve of war, the Director of Military Geology would be appointed Director-General, and would become directly responsible to the Engineer-in-Chief. His immediate duty would be to set up, in conformity with a pre-arranged plan, a geological organization analogous, in a smaller way, to the Medical Services".

Bradshaw proposed an ambitious war organization for military geology (Figure 11), to be staffed by a total of 176 officers (Table 2), led by a brigadier.

But the world was changing rapidly. The Indian Empire came to an end in 1947. It was the American army that came to make use of large numbers of geologists – about 150 between 1945 and 1972, as the wartime Military Geology Unit of the United States Geological Survey was transformed into its Military Geology Branch. The Americans developed seven principal administrative units and research programmes, several embracing the Far East (Terman, 1998):

- Strategic Studies Section (1945-1972; funded by the US Army Corps of Engineers and later by the Defense Intelligence Agency) was the major production unit. Its principal responsibility was to contribute to the comprehensive small-scale National Intelligence Surveys Program.
- Pacific Field Program (1945-1962; Corps of Engineers) was a research

and mapping programme in areas formerly occupied by Japan.

- Alaska Terrain and Permafrost Section (1947-1965; Corps of Engineers and US Geological Survey) conducted field surveys on surficial geology and permafrost phenomena in Alaska and other Arctic areas and compiled reports with maps and engineering interpretations.
- European Field Program (1953-1964; US Army Europe) generated 1:250 000-scale maps of military engineering geology for western Germany and 1:100 000-scale maps of cross-country movement for all of Germany.
- Austere Landing Site Program (1956-1970; US Air Force) compiled large-scale studies on arid lands, both inside and outside the United States, and on Arctic ice-free land.
- Special Intelligence Element (from 1959; Corps of Engineers and Defense Intelligence Agency) served as geoscientific consultants to the special intelligence community.
- Nuclear-Test Detection Program (principally 1962-1972; Advanced Research Projects Agency) compiled studies assisting in the interpretation of global seismic signals, particularly a five-volume 1:5000 000-scale Atlas of Asia and Eastern Europe.

The grandiose military geological organization proposed for the British army never materialized. A Pool of Geologists was soon established in the reserve army – but for up to only eight geologists, initially none ranked higher than major (Rose & Hughes, 1993b). Numbers shrank even further as these geologists were later incorporated within the Engineer Specialist Pool (V), which in time became the Royal Engineers Specialist Advisory Team (V) (Rose & Hughes, 1993c). But an element of that expertise still remains!

#### ACKNOWLEDGEMENTS

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Figure 11. Military geology: proposed war organization, as compiled by the Strategic Branch, Geological Survey of India, in December 1945. From Bradshaw (1945).

#### BRITISH MILITARY GEOLOGY IN INDIA

	Director-General's office	With Joint Intelligence Bureau	In war theatres	Total
Geologist Officers				
Director-General (Brigadier)	1			1
Director (Colonel)		1	3	4
GSO1		4	9	13
GSO2		10	21	31
GSO3		30	72	102
Total	1	45	105	151
Non-geologist Officers				
Junior Commanders (or equivale	ent) 1	12	12	25
Grand Total	2	57	117	176

Table 2. Total officer establishment proposed for a future military geology organization by Bradshaw (1945).

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## War in the Middle East 1916-1919

MAJOR A S JAMES OBE MC AMIEE



Major A S James OBE MC AMIEE was born in 1891. He joined the Territorial Army in 1908 and served for four years as a Private in the 6th (Glamorgan) Battalion of the Welsh Regiment. On the outbreak of hostilities he enlisted as 56011 Sapper A S James, wishing to go to war with his friends in the 13th Division, many of whom were potential officer candidates destined to be killed in 1915 at Gallipoli. He was a fortunate survivor of that carnage and by July 1916 he was a Company Sergeant Major. He was commissioned in the field in September 1916 for duty with the Signal Service and awarded the Military Cross on 25th August 1917. He held the appointments of Deputy Assistant Director of Railways in Iraq and Divisional Engineer (Telegraphs) at Rawalpindi in India. He retired as a Major in December 1919.

#### INTRODUCTION BY MAJOR PH JAMES

Old notebooks discovered in a bookcase provided some interesting short accounts of events in the Middle East in World War I which may still be relevant to current incidents in Iraq. The brief articles were written by my father who subsequently enjoyed a quite distinguished career, becoming Deputy Director General of Posts and Telegraphs in India up to partition when he took eary retirement. He was awarded the OBE for his work on the sub-continent

#### BASRA – SEPTEMBER 1916

I HAD been promoted to Warrant Officer, as the Squadron Sergeant Major of the RE GHQ MEFD Signal Company, quite recently in 1916. Our unit was linked in Basra with another Anzac detachment that had just arrived from Australia. In all we numbered about 15 officers and eight hundred men, with one hundred horse drawn vehicles, four hundred horses (we were a "mounted" unit) plus two armoured cars.

My original unit, the XIIIth Division RE Signal Company, formed from reservists in 1914 at Chatham at the outbreak of war, had been decimated in 1915 at Gallipoli. Major Crocker, our distinguished OC, with only a very few members of the company were the survivors from the SS *River Clyde* landing on 25th April 1915, up to our final evacuation from Sulva Bay on 18th December 1915.

Now in September 1916, after several unsuccessful attempts to relieve Kut with very limited forces, our GHQ Signal Squadron RE was on parade for an inspection by the Corps Commander, Lieutenant General F. S. Maude. In Gallipoli our exposed signal cables forward from Div. HQ to the brigades and battalions were cut frequently by shellfire, causing bitter comments and reprimands from Major General Maude, while our repair parties worked in the open under enemy fire to restore communications. At that time as a Signal Sergeant and CQMS I had to placate the Divisional Commander on several occasions while others tried to avoid this dreaded responsibility. Maude was a Coldstream Guards officer, very efficient, brave and demanding as a commander, much respected and not a little feared by his staff and senior officers. This then was our inspecting officer in Basra.

The Anzac detachment, having just arrived in the Middle East, was still very clean and smart, but inexperienced in war. Our somewhat battered mounted signal squadron was certainly well experienced in warfare. Apart from our horses that were much loved and well groomed, we were far from impressive on a parade ground.

The C in C first inspected the Anzacs and then my weary squadron. Behind the C in C were the Director of Signals and ten senior staff officers. They all glowed with gleaming uniforms mounted on the pick of horses from the Remount Depot. General Maude then looked me up and down – at least I was mounted on a 17-hand charger – and barked a question at me: "How long have you been a Warrant Officer?"

Remembering how many times I had been previously reprimanded in Gallipoli for faulty communications, which were not my fault in any way, I answered cautiously and admitted to: "About 24 hours". The previous CSM had disappeared suddenly two months previously and I had been acting in the meanwhile. I discovered later that I had been a Warrant Officer somewhat longer; since 15th July 1916.

Fortunately General Maude had a sense of humour on occasions. He continued to gaze at me, possibly remembering earlier disputes in Gallipoli, for many fraught seconds. He then asked if I could "afford a Sam Browne belt". If so I was to be immediately promoted to Second Lieutenant in the field! This was followed by a series of quick fire questions on how well I knew the desert road to Kut and beyond, and whether I could take my four hundred scallywags and horses there to arrive within three weeks plus his own superb three chargers and thirty more belonging to his senior staff officers. I unwisely asked: "When should I start?" He replied "Tomorrow morning". I could collect his horses and his grooms that evening! The C in C then cantered off leaving me in a swirl of dust; promoted in the field to commissioned rank.

When the dust had settled our Director of Signals, Brigadier "Quai Pip", as the men called the Mountain Gunner, began to grin before he treated me to a real regular Horse Gunner's opinion on my men and our horses. He was a master of descriptive bad language. But he chuckled away at the unusual method of promoting a soldier to officer grade, and told me grim stories of the Arabs along the 300-mile march northwards that I was to lead in the morning. He felt that I would be shot up and robbed, losing rifles and horses whilst sleeping at the various halts beside the river. Probably I would be shot for losing the C in C's pet chargers, and if not I would be hanged if I lost my Signals Director's famous Indian polo pony that he was riding that morning. Other good news was that four reinforcement officers and a hundred just landed sappers out from England were joining us that evening. Three of the officers had hardly seen a horse before and one had been a motorcycle dispatch rider. Our OC, Major Crocker, was unable to accompany us and the second in command was unfit to travel except by river steamer later with GHQ troops. There were only four small garrisons along the 300-mile route and they were manned by untrained Indian troops guarding supplies of forage and food.

The CO of the Anzac detachment asked for information on the route to be sent back by wireless, if possible, as he was due to follow a week or two later. He obviously thought that some of us would survive the journey.

Thanks to some splendid NCOs, some Regulars and some from British Cavalry, we celebrated my unusual promotion late that evening and still left on time the following day, in a mile long column. There was no escort, we were on our own. The shade temperature was about a hundred. No unit since the early spring had traversed the awful road, touching the River Tigris at intervals to permit us to water our animals. This journey proved an interesting experience, but that makes another story.

#### THE DESERT ROUTE - SEPT 1916 TO JAN 1917

AFTER the first weary 15 miles over sand and drift our convoy pulled into the riverbank to water the horses. We set up a laager for the night, with the wagons forming a defensive outer perimeter. The men slept under the wagons with their rifles in a shallow trench under their bodies. Rifle bolts, apart from sentries, were removed and placed in haversacks which served as a pillow. The loss of a rifle was a Court Martial offence. Double sentries, twenty in all, guarded the camp and each had a number he called out regularly. That night number 10 sentry reported seeing a body of Arabs slinking about near the perimeter. He did as he had been instructed: "Push your back against the outside of the nearest wagon and fire one round". Within a few minutes over a hundred rounds had been fired into the darkness, until a ceasefire whistle ended the fusillade. At dawn we could find no corpses. We saddled up and departed. The next march was nearly 20 miles. We all thought that if anyone could open and prove the route again it should be our Sappers.

The route north from Basra had not been used since the first three desperate attempts by an inadequate force of tired troops from 13 Div, survivors of Gallipoli under Stanley Maude, had failed to relieve the siege of Kut in January, March and April 1916. Kut finally had to surrender on 29th April 1916. Then hot weather together with a lack of troops and equipment had prevented further major offensive action until the next winter in November/December.

During the second day our column made much better progress over relatively easy going. The three reinforcement officers and the one hundred recently landed Sappers had begun to settle in to our march routine. That evening two officers with shotguns killed about two hundred sand grouse and we all enjoyed a good evening dinner. That night there was to be no wild shooting by sentries and we slept in peace until dawn. We were often trailed by wandering bands of Arabs, mostly the debased marsh Arab types that had mutilated our wounded in the earlier battles along this road. They generally kept their distance when it was established they would be shot if they came too close, particularly at night.

Several uneventful days passed until we heard by signal that an escort of an officer and fifty infantry would be joining us for our last hundred miles; their river transport had failed them. No doubt it was the safety of the C in C's horses, and not our welfare, that induced the L of C general to make this provision.

The aggressive infantry captain on arrival outranked our reinforcement officers and, of course, the newly promoted Second Lieutenant James who had been effectively directing the column so far. We pointed out that he was dependent on feeding his men from our reserve stocks on our sapper wagons. Unfortunately, like some other depot officers who had no experience of war, he regarded Royal Engineers with veiled contempt.

Before a serious confrontation situation could develop we were pleased to welcome our senior second in command Captain Flock, a regular of 1909 vintage, who rejoined us from the river transport route. I could leave the bickering to the two captains with some relief.

A few days later during one dark night we awoke to hear all hell let loose. Temporary panic reigned as hoards of Arabs were said to have attacked us. Thousands of rounds of 0.303 ammunition had been fired into the night. To add to my concerns our newly arrived second in command was missing. He was the only officer to sleep in a tent, we all slept under the stars. Out in the darkness we heard casual revolver shots: our dear old Captain Flock making his last stand?

After much shouting and anxiety we located our hero, stuttering with rage having awoken to find an Arab in his tent whom he then chased down to the river. It also emerged that one of our newly joined reinforcement officers, wearing the cap badge of a famous Light Infantry regiment, had seen all that happened in Flock's tent but had pulled a blanket over his head and had hoped for the best. Months later the officer proved to be very tiresome and useless to to RE signals communications. We had to return him to a depot where he could do no more harm in this war. Our only casualty among the troops during our long march was one poor Indian cart driver who went to sleep. We finally reached the end of our 300-mile trek beside the river at the village where the GHQ camp was being set up. Part of our squadron became the XXV RE Airline Unit and we joined III Corps in February.

General Maude was now in overall command of 1st Corps with the 3rd and 7th Division, and 3rd Corps with the 13th and 14th Divisions, plus two brigades of Cavalry. The forces were slowly assembling. The Mesopotamian Field Force started to advance to recover Kut on 19th January. After some hard fighting to regain Kut the town was recaptured on 24th February and the pursuit to Baghdad started. The army was dependent on the river as our L of C for supplies and ammunition. Each bend in the river had to be fought for during January and February with increasing cost in casualties. A Ghurkha officer won a VC at a river crossing on 23rd February and Private White another well-deserved VC on 10th March when 38th East Lancs Brigade, with Sapper support, forced another crossing. We played a supporting part in all these events.

During our spare moments we got to know several of the leaders of the various river line tribes, we studied Arabic with a Munshi, and Gerold de Smidt, an Arabic scholar, found a copy of the Arabian Nights in the bazaar and read extracts to us. The spell of the desert began to influence our soldiers, particularly later after Baghdad was captured, and our motor truck driver mechanic, a poet, blossomed forth in verse to his best girl back home.

#### MARCH & APRIL 1917

THE GHQ RE Signal Squadron now evolved into several different components. I became largely responsible for the XXV RE Airline Signals unit with two priority duties : a) to repair and replace the Turkish landline forward from Kut to Baghdad and b) to follow the GHQ P.21 paddle steamer up the river and to run a landline, a poled line, to GHQ whenever the steamer anchored for the night.

Our other commitments continued: to ensure communications from Corps HQ forward to Divisions and thence to Brigades in action, and to battalions on occasion.

The Turkish landlines were easier and quicker to repair than we had expected. We followed up their rearguard demolition teams so swiftly that we were sometimes mistaken by the Turks for a supporting German detachment, with our mounted signallers and horsed transport using similar pickets and crow bars. We were seldom more than a mile behind the enemy working parties and we could hear their commands and activities as they tried to demolish their cables. Often we were out on the southern flank, away from the daily fighting with only our advance cavalry screen ahead, or so we hoped. Our proximity to the Turkish demolition parties became almost a personal contest, but on occasions we over-played our hand, as we discovered at Lajj.

The "affair" at Lajj produced some exciting moments for my XXV Airline Signals Unit. A dust storm had raged for two days. We discovered that a deep irrigation channel, apparently abandoned, was ahead. The Cavalry Division, consisting of four regiments led by the 14th Lancers, had been checked. My repair party had moved ahead outside the 3rd Corps screen of the 32nd Lancers and we were busy in the dense darkness of the dust storm. Sgt. Burrows and Spr. Heywood were so engrossed in their task that they entered and passed through the Turkish defences before they appreciated that they were in the midst of the enemy position, a well sited and held defensive stronghold unknown to our forces. They managed to withdraw quietly and escaped back to me half a mile behind them. I considered that the GOC of the Cavalry Division needed an immediate warning. We galloped off through the dust storm and hoped that we were going in the right direction. We were, fortunately, and as the storm started to lift we located the Cavalry Brigade.

The GOC of the Brigade ordered the 14th Hussars out to investigate. They formed up for a charge and passed through our wagons at a good canter but failed to dislodge the well entrenched Turks and gave way to the 13th Light Armoured Cars who used their machine guns successfully with great effect. The cavalry general was most grateful and took our names and particulars. Sgt. Burrows was awarded a Military Medal as a result. We were only too thankful to have escaped capture. The Turks had clearly mistaken us for a German demolition detachment and let us pass through their defences.

Our next problem was hunger and thirst that day. I finally located our supplies on a river transport following behind the GHQ vessel, with engineer stores on board together with our new signals 2IC; he had given our rations to the crew and other friends; all we had left was biscuits and bully beef. Not even a drink remained. We were very hungry and thirsty, but what our nominal 2IC was doing on a supply vessel bothered us. Our Signals Director subsequently ordered him to be returned to his regiment (not RE) when we reached Baghdad.

On the next day, 6th March, in the evening we arrived near Diyala, a swift deep river with high banks, 80 yards wide, which ran into the Tigris. We were present with the XIII Divisional CRE and his adjutant. They were seeking a site for a pontoon bridge to cross the river. I was concerned about the high overhead tele-graph lines of the Baghdad – Basra communications at the same site. The Turkish forces seemed to be in some strength, almost a swarm of bodies, on the right bank. Plans for the following day involved the Sappers rowing pontoons with infantry into position for the bridging operation. My old friends, or as many of them who had survived their Gallipoli landings in the SS *River Clyde*, had played rugger with us before embarkation in Bulford; they were about to lead the crossing with the 71st, 72nd and 88th RE Field Companies.

The pontoons and boats loaded with infantry were soon so badly shot up that the river turned red, being full of dead and wounded in pontoons drifting down stream and no longer under any form of control. A tiny East Lancs Private tied two pontoons together with some borrowed telephone cable, under intense fire, and pulled them back into the relative safety of the home bank. He well deserved his V.C.

Subsequent attacks finally cleared the river line. By 11th March the Turks were in full retreat. The 1st Corps cleared the right bank up the Baghdad – Samarra railway line while the 3rd Corps with both divisions widely separated moved up the left bank of the Tigris. Our problems involving keeping the two corps and a cavalry division in touch with the GHQ vessel became difficult. General Maude would not use or trust our wireless sets. We knew that the GHQ steamer must finally anchor near Baghdad and probably use the British Residency as their HQ. The Airline Signal Unit sat down ahead of our forces outside the south gate to the city until it seemed safe to enter. A rather wild and excited Irish Telegraph Lieutenant Colonel resented our presence, ordering us away, but we had the C in C in mind and knew he would expect safe communications immediately on arrival.

Following the withdrawal of the Turks the local Arabs were enjoying themselves, looting and burning civilian property – a customary way of celebrating events in the Middle East. We quickly established law and order when our troops entered the city the next day. In the meanwhile the Airline Signal troops had made it's way to the Residency, which was still flying the Turkish flag. This I lowered and retained as a prize of war, despite questions about its location days later. [Note: The flag has been presented to the RE Museum at Chatham]. When the GHQ staff and our Director of Signals joined us at the Residency I discovered that I had been awarded an MC and Mentioned in Dispatches within the last three months.

General Maude's next task was to pursue the Turks and capture Ramadi, a heavily defended Turkish advance base occupied by about two divisions, well dug into prepared defensive position. The hot weather was just starting and there was no way we could mount an attack before the early autumn in September. Despite still being only a very junior Second

Lieutenant I was twice recalled from forward brigade areas at the personal request of the C in C, to explain communication problems. They were seldom very technical!

**1917-1918 PREPARATIONS FOR VICTORY** 

In the next four months in 1917 General Maude was, as always, very active and demanding in his preparation for the attack on Ramadi. His staff all feared his wrath. On one occasion my presence was demanded when our signals staff at GHQ were unable to explain to Maude, to his satisfaction, why his command network was suffering interruption on his personal line to Corps and Divisional commanders. He had heard people speaking on his private line! It was even suggested that it might be a German spy and the general's plans could be overheard.

Later, I was twice more recalled from the forward brigade area to attend the C in C at his personal request. The explanations given were not complicated. When I used the unfortunate word "obviously" the C in C barked back at me "Why?" I reminded him that we had advanced to Baghdad by conserving wire and cable. It was due to 'economy'. He himself had ordered this. We only had sufficient wire then available to use this single wire to reach Baghdad. He then began to grin as he was well aware that at his Advance HQ in February he had restricted his entire GHQ telephones to one dozen only; even Lieutenant Generals could not have one. We had to work the dozen telephones on a single wire, not twin. Occasional interruptions were inevitable until twin wires were available. On another occasion the GOC turning the handle of his telephone found eleven distinguished staff officers all answering at once. Someone had pulled the earth pin out of the forward HQ exchange.

My next "personal" summons to the "Almighty" was when someone had tapped into

the command line to Baghdad. This took a little longer to trace. Perhaps there was a spy tapping his line! The General was not satisfied nor convinced by the explanation of his staff, hence the personal summons. I found the culprit before too long, 70 miles away along the railway line. A new Signal Company was in training and they had amused themselves tapping in with condensers and working back to Baghdad. Unfortunately they had used the Corps line that carried all our new plans, codes and cyphers; hence the major alarm and staff flap.

I was able to explain to the nearly arrived CO of the Signal Company the fraught situation. His career might be at risk due to the illegal activities of his young subalterns. On returning to HQ I was ushered back to the "Almighty", in company with the Director and Assistant Director of signals. The C in C insisted that he wanted the culprit.

My explanations involved 'technical' details of how two adjacent landlines could become entangled and conversation



Sketch Map of Operational Areas in Iraq.

on one could be transmitted on the other. A cover-up story, to protect the GHQ Signal staff and the new CO of the Signal Company. This explanation was received with grave doubts by the C in C; understandably! Under Maud's bushy eyebrows I could almost read his thoughts: "A perfect and unblushing liar is this subaltern" he was thinking. But I promised that this fault would never happen again. The conversation then changed to the condition of his horses, some still in our care, and my posting to 15 Division to support the attack on Ramadi. "And after that?" he asked. I reported that I was shortly to be posted to join the RE planners of the RE Railway staff as a Deputy Assistant Director of Railways with promotion to Major, and even more important, Major's pay, over double my present salary. General Maude kindly congratulated me. The Baghdad railway and its sections northwards were vital to Maude's future operational plans. Partly as a result, another personal Mention in Dispatches was published in the London Gazette on 27th August 1918.

I was particularly sorry to learn that my famous and distinguished benefactor, General Maude, died of cholera shortly afterwards in November 1917. He had influenced my career and always been an example to me, both in Gallipoli and later in Mesopotamia. This had helped to change my life and I shall always be eternally grateful to him.

In later years, thinking back, it still surprises me that a very junior newly promoted 2nd Lieutenant had been summoned on several occasions to advise or inform the C in C about signal communications' problems. Certain members of the GHQ staff must have been delighted to discover that I had been posted away from GHQ Signals to the RE Transportation Railway planning department, even if I had gained promotion to Major in the process.

The earlier and costly attack, a frontal one, by the 7th Infantry Brigade on Ramadi in July caused over 550 casualties, half due to heat stroke. The next assault on Ramadi was carefully planned and executed on 27th - 29th September 1917 against the well-prepared enemy positions. Our XXV Airline RE unit maintained communications throughout, forward to the assaulting battalions. We were often under fire alongside the

infantry. Our two Lieutenants, Gauld and Sparrow, were both awarded their well-deserved Military Crosses. The 12th and 42nd Brigades advanced to permit the 6th Cavalry Brigade to clear the canal, covered by the RHA (V) Battery. Finally white flags went up and the Turkish forces surrendered. We took 3,450 prisoners at a cost of 120 killed and 875 casualties in the 2nd/5th Gurkhas, Punjabis, Garwalis and the 1st/4th Dorsets. I took some interesting photographs of the Turkish surrender and of our splendid XXV RE Airline Unit for my records.

In my younger days before the war, I had been employed for six years in a lowly capacity by the Great Western Railway in England and Wales. During these six years I had passed a series of GWR examinations. My earlier four years service in the TA (1908 – 12) and events in the GWR may have shown up in my army records. Hence the order from the Director of Railways to join his staff, perhaps thinking that I was a capable railway service engineer pre-war. I warned him that I was not so qualified, but who refuses promotion?

My next job involved a much less exciting staff commitment planning the railway extensions North-East of Baghdad and support for the Tigris operations to Daur and Tikrit in November, plus the Euphrates Ops to Hit and Khan Baghdad in March 1918.

I was well engrossed in these schemes one hot day when I was ordered to pack and catch the next boat from Basra to India. I was required as soon as possible in Quetta, but this enabled me to snatch a brief few days of very unofficial leave in Ceylon to meet my future wife. On arrival in Quetta I discovered the 3rd Afghan War was in progress in 1919 and we enjoyed a North-West Frontier battle. Then lo: I was given another campaign medal, my fifth in five years.

We had had no leave since embarkation in 1914, it was time to request and be granted a longer local leave in Ceylon. I was aged 29 years and I was able to marry the girl of my choice in Ceylon. Our first child, a daughter, was born in January 1922 in Lucknow, and second child, a son, in Maymyo, upper Burma. A third child, a much-loved daughter, followed in 1929. My son, in due course, became a regular officer in the Sappers.

## 78 Malayan Field Park Squadron RE



BRIGADIER A C S ROSS FIPLANTE FCMI

Brigadier Ross has written several articles for the Journal ranging from taking M2 Amphibians from Denmark to the Danube to a walk down the Grand Canyon in 2000.

His three years as a troop commander in Malaya followed two years as a subaltern in 9 Airborne Squadron. He thinks that five years at Troop level gives the best possible grounding for command of an independent squadron, a BAOR regiment and a brigade. His photograph is chronologically appropriate since it shows him in 1954 whilst on a course at RAF Seletar, Singapore. For his work in Malaya, Brigadier Ross was mentioned in Despatches.

This 50 year old photo of Alan Ross was taken at No. 2 Parachute Training Unit at RAF Seletar, Singapore. although the unit was primarily for training SAS it also accepted any Service parachutists who wished to keep in date. In those days one had no reserve 'chute and as the dropping zones included trees and too many monsoon drains these short courses could almost be classified as Sport Parachuting.

THE Malayan Emergency – late 1940s to late 1950s overlapped with the more conventional war in Korea which still has no firm peace treaty. Kenyan Mau Mau, Aden, Cyprus and several other "small wars" resulted in British withdrawal and loss of influence. Malaysia (or Malaya as it was in 1955) is, on the other hand, today a pretty stable and progressive State, a direct result of the work of General Templer and many others half a century ago.

It is sometimes forgotten that in 1955 there were twenty- two infantry battalions in Malaya including Gurkha, Malay, Fijian, Kings African Rifles and British. There were also British and Malay armoured car regiments and SAS. The major field formation was 17 Gurkha Division, whose GOC was Maj Gen L E C M Perowne, a Sapper, as was Brig Sir Mark Henniker the Commander of 99 Gurkha Brigade. 78 Malayan Field Park Squadron RE was part of 17 Gurkha Division and with its Stores and Plant Troops and Workshops (Troop Commander Captain, later Brigadier and Director of Engineer Services, Nigel Sturt) and 76 Federation Engineer Squadron worked on road and bridge construction throughout Malaya. They also aided other Arms in clearing fields of fire, access tracks, water supply and Commanders' greenhouses – the usual sapper tasks.

Peter Burleigh's and Ken Newham's articles in the April 2004 issue of the *RE Journal* covered well most aspects of airstrip construction in the Malayan jungle forts in the mid 1950s. Newham was, on paper, a Troop Officer of mine, one of up to five at a time, who were in charge of plant detachments dotted across Malaya. It is an indication of our nomadic existence that the first time I actually met Ken was, I think, as he was leaving Kluang for demobilization.

I had felt slightly guilty having not written a "50 Years On" piece about airstrips but Newham and Burleigh have covered things much better and in greater detail that I could have. So I am simply enclosing some relevant photos and jottings.

Graham Bell, then OC 78 Squadron, in his letter in the August 2004 *RE Journal* mentions a D4 dozer being dismantled, shipped and reassembled to work in Fort Legap. He is absolutely right about it being particularly interesting but it was to another Fort – Fort Dixon.

Now to the photos:

*Photo 1*: The Caterpillar D4 was stripped down by REME fitters of 18 Infantry Brigade) whose Chief G4 Major, later Brigadier, Steve Goodall RE, arranged inestimable support). The REME delivered the bits to the river bank in Kuala Lipis, central Malaya, and helped with the loading.



*Photo 2:* The boats [prahus] we hired were not hollowed logs but well constructed clinker craft with keel and ribs.



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Because of the rocks and rapids on the forty mile trip we limited each boat load to about one ton including not more than one heavy component – track, engine block, blade yoke etc. The Chinese owner, centre rear, is looking understandably apprehensive. This photo is a very rare one, showing Ross apparently working. In fact I think I had my hand caught between the track links. It was the time spent in Malayan rivers that grew my webbed feet, which proved invaluable when I commanded 23 Amphibious Engineer Squadron.



*Photo 3*: Loading is not going well. But better any mishaps here than a couple of miles later.



*Photo 4*: Refuelling stop en route. The "River Kwai" type bridge was on the railway north to Gua Musang and the Thai border and mentioned by Peter Burleigh.



Photo 5: One of the wider reaches of the river to Fort

Dixon. The rocks and rapids here posed only small risks to top heavy loads. Higher up they became a real worry: the recovery of a D4 engine block or winch would have been very difficult. The jungle forts were so sited both to enable offensive action against the communist terrorists and for protection of the Aborigines. Four our security we usually drove the laden boats upstream in a group of three or four. Even so the departure of a "convoy" would be easily known to the local civilians, the river route was fixed and the racket of the outboard motors was audible for miles.

On the "International Scale of Bravery" I am a timid fatalist but I did feel slightly anxious when rounding river bends with overhanging branches and the motors straining in white water. My sympathies are with soldiers in Iraq patrolling the main roads. In fact we had no "shoot outs" at the jungle forts I was in, but on one three day march to a fort we came upon an empty terrorist camp and purloined their flag.



*Photo 6*: Fort Dixon. The ex-Guards Colour Sergeant, now a Police Lieutenant, always with his swagger stick, ran a camp that any SSM would be proud of. Note the fire buckets.



*Photos 7 and 8 (previous page)*: The plant unloading dock. A Ferguson tractor was taken in three loads together with fuel drums and supplies. Manpower, blocks and tackle were still needed for the first few yards.



*Photos 9 and 10*: Assembling the D4. This was done by the Plant troop fitters and plant operators under the only British NCO, Sgt White. The bits went together with many minor snags but no real problems.



*Photo 11*: The hilltop site of the airstrip. When completed it was one of the less dangerous strips and most favoured by Pioneer pilots.



*Photo 12*: Top right, Fort Dixon Airstrip – centre, the Fort – bottom centre, aborigine huts – bottom left, river with the last flight of rocky rapids.



*Photo 13*: Detachments of Plant Troop of 78 Sqn were employed on half a dozen airstrips besides Fort Shean, Chabai and Dixon. The photograph shows a D4 successfully fording on its slow trek into Fort Lankap.

These last few photographs are typical of a number of roads built to enable the security forces, including Police Field Force Companies, to get into jungle areas and outflank the Communist Terrorists (CTs).



*Photo 14*: A frequent sight after the first clearance in a rain forest.

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*Photo 15*: "More haste less speed" but in Malaya getting effective drainage quickly is paramount. surface water dries out, deep mud does not.



*Photo 16*: "Happy as butcher's dogs". Malays make very good plant ops; they don't get bored, they take a pride in good work and they enjoy the mix of men and machines. Plant Troop had eight Caterpillar D8s among a total of over 50 pieces of powered plant including dozers, graders, excavators, rock crushers and road rollers, plus scrapers, sheepsfoot rollers and piledrivers. Several of the Caterpillars and international TD18 dozers and Gallion graders had 14th Army or American army signs from 1945 underneath their green paint.



*Photos 17 and 18*: "Before and After" pictures of a culvert site in Kedah. One of the Field Troops lost a sapper killed in an ambush here. It is always difficult to decide on the proportion of tradesmen that should be diverted to protect the others. The sapper killed was actually one of the armed sentries. This twelve mile stretch of road was topped with a rolled laterite wearing coat. 60 mph in a Jeep with the top down gave one quite a buzz.

In his letter, Major Bell says that his time in Malaya was the most interesting and challenging. I heartily agree. For Army engineers – Royal, Federation or Gurkha – Malaya in the middle 1950s was exhausting, satisfying, testing and exhilarating. And with social "do's" in the Selangor Club, Scottish dancing in the Kluang Club and nurses in the Military Hospitals it was great fun too.

A particular memory is of the stability, camaraderie and general espirit of the Troop for my whole three years. They taught me much.

## Memoirs

**LIEUTENANT COLONEL B A O WARD** Born 8 May 1932, died 12 June 2004, aged 72.



BRIAN Allan Ogier Ward was born in London, the second son of Ronald Ogier Ward, an eminent surgeon who had served in both wars, earning a DSO and an MC as a Gunner in WW1 and an OBE in the RAMC in WW2. Ronald was also an accomplished climber, and was invited to join Shipton's Everest expedition in the 1930s as medical officer. These two interests, military and climbing, were to pass to his son.

Brian was educated at Marlborough and entered RMA Sandhurst in 1951, where he became Senior Under Officer of Alamein Company. It was here that he started climbing, an interest inherited from his father, which lasted all his life. He was commissioned in 1953, and after completing his Young Officer courses, was sent to BAOR for a year, and then to the Engineer Training Centre at Kluang in Malaya, where he first met Malay soldiers. In 1956 he was back in UK to complete his Junior Officer courses, but returned to the Far East immediately afterwards, where he spent another four years with the Federation of Malaya Army. Initially he was with the Federation Engineers, until he was badly injured in an accident whilst clearing a helicopter landing site. A tree being blown up came down on his leg and he spent several months in hospital in Malaya and UK. He returned to Malaya as a staff officer in 2 Federation Infantry Brigade, and then Engineer Branch in the Federation MOD. It was this spell in the Far East, amongst Malay soldiers, which led to Brian's lifelong interest in South East Asia, and love for its peoples.

He returned to UK in 1962, and after serving as adjutant of a

Territorial Army engineer regiment in London, attended the Staff College. From there he became Brigade Major of 12 Engineer Brigade, which had a world wide role, and involved him in further visits to Malaya. His next appointment was as squadron commander of 42 Squadron in 35 Engineer Regiment in Hameln. He was an excellent squadron commander and a first class trainer, full of initiatives and new ideas in the somewhat routine environment of BAOR at that time. He is remembered with affection by his men, and particularly by the successful regimental ski team which he trained.

After a spell in MOD, he was promoted to lieutenant colonel, and posted once more to the Far East, this time to Bangkok as a staff officer in the SEATO HQ. This was his last tour in the Army, as he retired voluntarily in 1973.

He then embarked on a year's cultural tour through the Middle East, India and South East Asia. As a speaker of both Malay and Indonesian, he was able to travel through South East Asia by public transport, and see conditions at first hand. During this extended journey, Brian saw many UN and international aid and development projects, many of which were suffering from poor organisation and a lack of drive. He realised that the principles which he had learned in his military career could be applied to such projects, particularly those concerned with disaster preparedness. So in 1975 began his second career.

As a result of visits to the UN Headquarters in New York, and its Disaster Relief Office in Geneva, over the next five years Brian carried out an almost continuous series of disaster management consultancies, and practical relief work, throughout the Far East, Middle East and East Africa, for a range of UN agencies and NGOs. In the mid-1980s he carried out a feasability study for the UK Overseas Development Administration, which led to the creation of the Asian Disaster Preparedness Centre within the Asian Institute of Technology in Bangkok. He was given the task of setting up the Centre, and had to overcome many financial hurdles, and problems occasioned by academic conservatism. He was appointed its first Director.

Brian's common sense, charm and diplomacy enabled him to establish an effective organisation with his varied multinational staff, which proved, and has continued to prove, very successful. He was continuously involved with ADPC from 1984 until his death, first as Director, and then as Director Emeritus and Special Adviser to the Centre. His name is known and admired throughout Asia, and he will be missed by the disaster threatened developing countries of Asia, whose welfare was so much a part of his life.

Brian was a kind, generous and cultured man, with great charm, who took enormous trouble to maintain his links with his many friends. For the last twenty years of his life he lived in Bangkok, where he royally entertained his many visitors. He will be sadly missed by those of us who were privileged to be his friends, and by many people worldwide who benefited from his advice on Disaster Preparedness.

Brian never married, but had many godchildren, and was loved by all.

RFNA JHE GNR JHGS RJOW

#### **MAJOR P B BLOOD**

Born 24 September 1920, died 13 August 2004, aged 83.



BINDON Blood, always known as Peter, was the son of Brigadier W E R Blood CBE MC *Croix de Guerre*, and a descendant of General Sir Bindon Blood, the first Chief Royal Engineer. After an endless succession of illnesses as a small child, Peter went to Imperial Service College where he described himself as "quite good at boxing and rowing". After leaving school in 1937 he went to work in his father's construction business, starting at the bottom and studying the various building trades, such as carpentry, joinery, bricklaying, plumbing and so on, trades that were to stand him in good stead after retirement when he took up furniture restoration.

Volunteering for the Corps in 1939, he was initially turned down on account of his pleurisy but was eventually accepted three years later. After passing out top of his class at 140 OCTU, Newark, he was posted to a Field Company but after only six months he was sent back to Newark as an Instructor, on the strength of his earlier A Grade. In 1944 he returned to 43rd (Wessex) Division as Adjutant to the redoubtable Lieutenant Colonel (later Brigadier) "Honker" Henniker DSO MC, and went right through the NW Europe campaign, crossing the Rhine and driving an armoured bulldozer into Cleeve. He was Mentioned in Despatches and was wounded, losing an ear drum.

Leaving the Army after the war, he joined the Forestry Commission, bought one of the first Morris Minor convertibles for £379 and sold it for £760, but soon got bored and returned to the Corps as a regular officer. He became 2IC of the Officer Cadet Squadron at Ripon, moving to Gordon Barracks, Gillingham, when the School of Military Engineering returned to Chatham. Immensely popular, he was an excellent instructor and, having passed the Staff College examination, he attended Camberley in 1951, doing extremely well and being posted to NATO's Military Standardization Agency in London as a Major.

Marrying Liz Hillier in 1953, he became seriously ill soon after (she swears there was no connection!), being taken to various hospitals and eventually being diagnosed with Addison's Disease, a glandular condition controlled by cortisone and steroids. This meant that Peter had to be invalided out of the Army, a great disappointment to him and to all his friends who were certain that he was destined to reach the highest ranks. Peter however was not to be kept down and when he had recovered sufficiently (he was on medication for the rest of his life), he joined the Foreign Office (SIS) for several years before deciding to try something completely different. He entered industry, rapidly rising to become a Deputy Chairman before being invited in 1972 to become Director-General, of the Institute of Marketing.

Peter built the Institute into one of the best-equipped and profitable professional bodies in the country, and on leaving some twelve years later, became Chairman of Industrial Research Limited, and a Marketing Consultant to the Department of Trade and Industry. He was also Chairman of Governors of the Berkshire College of Art and Design for five years. Not bad going for someone invalided out of the Army!

In his own epitaph he wrote "Throughout my happy life I have been greatly blessed by the love I have received from my close family, including my quite wonderful wife Liz (the best in the world) and our two wonderful children, together with five super grandchildren. Who could ever ask for any-thing more?" Who, indeed.

GLC

## MAJOR R KEEBLE DSO MC TD

Born 20 February 1911, died 23 August 2004, aged 93.



ROBERT Keeble, known to all as Peter, was born at Kenilworth in Warwickshire and educated at the King Henry VIII School at Coventry. On leaving school he was awarded an apprenticeship at a machine tool manufacturers. He also joined the RE TA and on commissioning in 1936, was posted to Kent (Fortress) Battalion RE (KFRE). On the outbreak of war, he attended the short war course at Sandhurst.

After the invasion of Holland in May 1940, Keeble left Dover in command of nineteen men of KFRE on "Operation XD" – a highly secret mission to destroy the oil installations in Amsterdam. After an eventful journey in *HMS Whitshead*, and after Keeble personally carried out the reconnaissance, the tank farms were blown up. The party then destroyed outlying tank farms and other targets, finishing with the huge installation at Petroleum Haven. They then commandeered a lorry and drove through a series of road blocks to Immuiden. On arrival they blew up lock gates, cranes and coastal defences and also sank two block ships. As dusk approached, Keeble and eleven men boarded a motor-boat and headed out to sea, their only aids being a compass and radio transmitter. On the second night, after numerous attacks by enemy fighters and close to exhaustion, they were picked up by the destroyer *HMS Havoc* which was returning from the battle of Narvik. For their exploits on the operation, Keeble and two other officers were recommended for the Military Cross, but on the personal orders of the Prime Minister, Winston Churchill, the awards were changed to the Distinguished Service Order.

His next task was to carry out a reconnaissance of large petrol refineries in the Seine basin. Twelve officers and 120 other ranks of KFRE were deployed in six areas between Le Havre and Rouen. Keeble's party destroyed the refinery at St Jerome before moving to the forest at Blain, near St Nazaire, where the BEF had a huge dump of petrol and aviation spirit. Twenty-nine refineries and oil storage plants holding a million gallons of fuel were fired, some of them by Keeble firing a *Very* Light cartridge into the nearest drums. Keeble's force then embarked at St Nazaire on the liner *Duchess of York* for the journey home to Liverpool.

Keeble, by now a major, then took command of 582 Field Company and went to Iraq because of Government concern that the British owned oilfields at Kirkuk might tempt Hitler to strike eastwards. Keeble learned that setting fire to the oilfields was not the answer, so he dropped the lower sections of the boring pipes down the wells and then backfilled them with concrete.

Keeble was still in command of 582 Coy for the D-Day landings and the advance into Europe, and was severely wounded at Nijmegen carrying out boom construction across the River *Waal* under heavy shellfire. In March 1945 he constructed the eastern section of a 1,200 ft, all-weather bridge over the River Maas at Venlo. He insisted on making a personal reconnaissance to check for mines, his leadership and drive enabling the bridge to be opened two days early. Later the same month he carried out two night reconnaissances at Xanten where his company was preparing for a brigade assault across the Rhine, and was wounded again. Returning to his unit after only five days, he took charge of the construction of a 2,000 ft all-weather bridge across the Rhine. For these actions he was awarded the Military Cross.

In addition to his DSO and MC, Keeble was also twice mentioned in dispatches. He retired from the Army in October 1945 and rejoined the family business, Blue Circle Cement. He never married. When he retired he returned to Kenilworth and taught himself to cook, attaining a very high standard and enjoyed entertaining his friends and going to the theatre.

With acknowledgment to The Times and Daily Telegraph

## **Memoirs in Brief**

**Major Iain Douglas Usher** who died on 7 October 2004 aged 83, joined the Corps from the RMA Woolwich in 1939. Until 1941 he served in 5 Div RE in the UK and Ulster, and, not enjoying garrison life, volunteered for service in India. He joined the Royal Bombay Sappers and Miners, reaching the higher standard of Urdu in record time. He served with the Bengal Sappers (Mareth and Wadi Akarit) in North Africa in 1943 and later commanded 93 (Bombay) Field Company in the landing in Malaya.

After a supplementary course at RMCS where he put much effort into the construction of a steam car, he attended the Staff College, served in the War Office and commanded 43 Field Park Squadron in 26 Engineer Regiment. He retired in 1958, feeling that with his talents, he was better suited to mechanical engineering.

An individualist, he delighted in original ideas. At his preparatory school in Scotland he surprised his teachers by taking a top scholarship into Marlborough. Later he acquired a lathe and produced a range of ingenious devices leading to the steam car at Shrivenham for which, sadly, he was unable to obtain a boiler licence or insurance cover. Its engine is now thought to be powering a yacht somewhere in the United States. This enterprise followed in the footsteps of his great-grandfather James Usher, who invented the first locomotive steam plough.

Iain began his career working in General Electric on nuclear power stations, writing a manual on the management of reactors. He went on to take charge of a small firm making specialized fans for a range of high-technology applications. He ran it successfully for some ten years, playing a real part in the design processes.

In retirement, he spent three months of each year on La Gomera in the Canary Islands where, with his excellent Spanish, he made many friends. At home, as a dedicated Bombay Sapper, he put much work into the writing of that Corps' 1939-45 history. He was also President of his local branch of the Royal British Legion.

CHC BSJ CAAC JHH

## Correspondence

## LIEUTENANT COLONEL M J J ROLT

#### From Lieutenant Colonel (retd) H P Munro TD

Sir, - Thank you for the December issue of the RE Journal.

I read Mike Rolt's obituary with great interest. Unfortunately, I never met him, but as he was the first OC of 411, when I left India in 1947, I was its last British OC.

They are a few errors in nomenclature of 411 in the obituary. Originally it was raised in November 1941 at the equivalent of a troop in today's terminology. Volunteers were drawn from Muslims of the Bengal and Bombay Groups. As all field units had to belong to a group, it was allocated to the Royal Bombay Sappers and Miners as most of its sappers came from that group. I do not know exactly what its title was, but I suspect that it may have been 411 Parachute Section, Indian Engineers (In those days field companies had platoons, as in the British Army).

When it was expanded to a full squadron in June 1943, its title became 411 (Royal Bombay) Parachute Squadron, Indian Engineers, and consisted of a HQ and three troops.

Today its title is 411 (Independent) Parachute Field Company. After the war all engineer company-sized units of the Indian Army became field companies, whereas in the British Army they all changed to field squadrons!

The Elephant Point assault on 1 May 1945 involved two Dakotas for the pathfinders, and 38 others for the initial main force. Dakotas carried twenty paratroopers, so this force must have been around seven or eight-hundred all ranks. The round flight Akyab/Rangoon/Akyab is about seven-hundred miles. I believe that a loaded Dakota had a full range of some 1,200 miles, so the Dakotas could carry a full load. 411 supplied a full troop – this was the Muslim Troop, nominated to restore their *izzat* (pride), as they had not performed well at Litan, during the battle for Imphal,

I have e-mailed the first parachuting OC of 411, (Lt Gen Sharma), to ask him if he can let me know what was the exact

1941-43 title of 411. The parachute school was near Rawalpindi, and went to Pakistan. The Indian Army had to re-establish a new school at Agra. It took about two years to get it going flat out, and make 50 (Indian) Parachute Brigade (including 411), fully effective as an airborne formation. Yours sincerely – Pat Munro.

#### ACRONYMS

#### From: Major (retd) H G H Stafford

Sir, – I was delighted to see in the contents page of the December *Journal* that besides the EinC's Report there were several articles about Sapper work in Iraq. I tried to read these but found myself entangled in a sea of acronyms and finally had to give up on some of the articles. The acronyms used are, of course, those in current use in today's Army and they are listed on the last page of the *Journal*, but constant reference to the back page distracts from the reading of the articles.

For those of use who retired many years ago but still try to follow the affairs of the Corps, I wonder if it would be possible to provide a short summary of the main points of these sorts of articles – a summary without current acronyms.

A notable exception was Brigadier Hooper's article "*The Unexpired Portion* . . .", which I thoroughly enjoyed, and I realise that Brigadier Hooper is nearly my vintage! Yours sincerely – Hugh Stafford.

Editorial Note: This of course is not the first time this point has been raised in both The Journal and Sapper Magazine and we would like to assure you, the readers, that the publications staff are addressing the problem. The most obvious solution is to expand the abbreviations/acronyms every time they appear. We did an article as a trial, but it made it very unwieldy and almost as unreadable as before. We also tried using footnotes on every page. This worked when only acroynms appeared, but when 'real' footnotes were required as well, it just added to the confusion. We shall continue the search for a solution.

## **Reviews**

## BENEATH FLANDERS' FIELDS Peter Barton, Peter Doyle and Johan Vandewalle



Published by Spellmount Ltd, The Village Centre, Staplehurst, Kent. TN12 OBJ. Price £25.00. ISBN 1-86227-237-9

At first sight, this is a typical coffee table book. In A4 format, and with copious illustrations, it is perhaps a book that you might delve into periodically and at 300 plus pages it is certainly not a Booker Prize read of 143 books in 139 days. On the contrary, this is a serious piece of very specific Great War Corps' history which has been minutely researched by the three specialist authors who are all experts in the subject. *Beneath Flanders' Fields* is the story of the underground tunnellers (on both sides) who sought to breach the stalemate of the North Sea to Switzerland trench line by military engineering initiative. If you could not outflank the opposition – go underneath him.

We all know that our antecedents were called the Corps of Military Artificers. What is probably not known is that we did not do our job of fortifications and siege work very well during the Peninsula War and incurred the displeasure of the Iron Duke. His displeasure in our poor operational performance caused the Corps to be renamed the Sappers and Miners in 1812; the mining element's mission to undermine fortification walls by the means of tunnels. Throughout the 19th century, and particularly during the Crimean War, the art of tunnelling and mining was perfected and demonstrated with some pretty spectacular explosive results on the fortifications in the environs of Brompton Barracks.

To appreciate the challenges of tunnelling in France and Flanders it is necessary to understand the geology and topography of the area. Within the British and Empire zone of operations, the Salisbury Plain like chalk uplands of the Somme and the low lying clay and overlying sands and silts plain of Flanders, with Ypres at its centre, are divided by a line which runs roughly North West from Vimy to Calais. Along the North Sea coast from Calais to Ostend lies an alluvial plain. In October 1914, the Belgian Army, withdrawing in contact with the invading Germans and vastly outnumbered, decided to use inundation of the low lying coastal plain as a man-made obstacle. Although this was successful, it had the unintended effect of canalising the Germans to the higher ground which lay in a huge sickle shape around Ypres. And so the scene was set. As mobile operations stagnated to linear warfare, the British and Empire forces wallowed in the wet sandy-clay silts which became saturated as shellfire caused the fragile drainage system to break down. All the Germans had to do was to look and shoot into the Ypres salient from their higher, and drier, positions.

In 1914 the British Army went to war with 15 field companies in infantry divisions and one field squadron with the cavalry division, some 12,250 all ranks. Two fortress companies, to carry out what we understand as force engineering, were sent to operate on the line of communication. The Germans had a similar percentage of engineers as the British but were far more flexible and adaptable military engineers, being the first to use offensive tunnelling in early 1915. As the Germans' activity increased, the infantry demanded that counter-action be taken and Mining Sections were formed from miners recruited from infantry battalions. These Sections were usually commanded by an RE officer, often detached from the Divisional Field Company. The initial military mining effort was typically British - un-coordinated and with few resources. However, as is often the case, came the hour, came the man. A charismatic civil engineer with huge drive, determination and initiative, Major John Norton-Griffiths, had raised the 2nd King Edward's Horse, a yeomanry regiment, early in the war. He was a specialist in mining, having worked on the London and Manchester sewer systems. He realised that the siege like conditions at the front required a novel military approach and he pestered the War Office to raise a unit of "moles". As the German successes continued and the infantry clamoured for action, Lord Kitchener interceded, Norton-Griffiths was interviewed, and on 19 Feb 15 the tunnelling companies were born with an initial demand for 10,000 miners. Almost immediately a draft of 20 miners were selected from the sewer diggers, attested at Chatham, kitted and posted to France as the embryonic 170 Tunnelling Company RE at a daily pay of 30p, when an infantryman was drawing 51/2p and a sapper field engineer only slightly more.

Your reviewer has not the space to précis the tunnellers' story much more. Suffice to say that they fought an underground war beneath the trenches every bit as dangerous as that on the surface. Death from cave-ins, flooding, asphyxiation or German tunnellers was often inches or seconds away. Think of the psychological pressure - no post traumatic stress disorder or post operation counselling here. Keeping direction and depth was a precise science and the tunnelling units often stayed in their sector of the trenches for months on end, unlike the infantry and field companies who were generally relieved after about five days in the line. As the war matured into 1916 and 1917 the tunnelling companies had their greatest moments with the mines that were exploded on 1 Jul 16 in support of the Somme attack, at Vimy Ridge and perhaps the greatest achievement of all, on 7 Jun 17, on the Messines-Wytschaete Ridge, when 19 mines with a total of 450 tonnes of ammonal blew the Germans off the dreaded ridge as part of the opening moves of the 3rd Battle of Ypres, and allowed a battlefield victory

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for the British and Empire forces at minimal human cost. Finally, in 1918, as this great trial in the mud staggered to a close, the tunnellers assumed a new role, that of building underground structures for all kinds of military needs – very much a precursor to force protection.

One of the delights of this book is the wealth of photographs, plans, maps and diagrams used to support the text. Most interesting to me were the photographs of tunnels which the team had recently excavated, showing military artefacts exactly as they had been left behind by soldiers as they started the final advance in 1918 – spooky! If it has one weakness it is that the tunnellers' order of battle and unit establishments are not shown. However, this minor quibble must not detract from the fact that this is an excellent book which puts a vast amount of flesh onto the bones of one of our Corps' major military tasks in the Great War. I have said before that infantry soldiers of the Great War must have been giants in terms of human endurance – the Tunnelling Companies RE deserve such an tribute every bit as much. Read it and bask in your Corps' history!

MC

### SECRET FORCES OF WORLD WAR II Philip Warner



Published by Pen & Sword Books Ltd, 47 Church Street, Barnsley. S70 2AS. Price £12.99. ISBN 1-84415-114-X.

MANY people will have known Philip Warner during his thirty years as a lecturer at Sandhurst. Some who subsequently achieved prominence in life may have wished they kept on his right side as he contributed over 2,000 obituaries in the *Daily Telegraph*, not that it would have worried them ultimately! Somehow he also found time to write no less than fifty-four books on a wide variety of military subjects. Less well known, because he never talked about them, were his experiences during World War 2 when he spent three long years as a Japanese POW on the infamous Burma Railway and in the mines of Japan.

Secret Forces was actually written in1985 but such is the current interest in this type of warfare that Pen & Sword have decided to republish it. The title is a bit of a misnomer as not all the forces were secret, though many of their operations were at the time. Some operations were secret in that they were little known, such as the brief and bloody struggle for Elba in June 1944. Others were secret in planning but when put into action were soon in the public domain, such as the raid on Dieppe. Other operations such as the "butcher and bolt" early commando raids mounted from England and Scotland were very definitely secret – among them was the entry by canoe, manned by Captain Gerald Montanaro (a Sapper) and a Trooper, into Boulogne harbour where they attached limpet mines to a German tanker.

Though there is rather too much emphasis on parachute forces, – they were hardly 'secret' – there are many tales of derring-do to whet the appetite. The SBS signal station on top of the German commandant's house on the island of Santorini; the XX (Double Cross) Committee; the ever fascinating intercepts of the "Y" Service; "A" Force whose purpose was to deceive the enemy about everything everywhere; the daring raid in a fishing boat on Singapore where four men from the SOE sank 40,000 tons of Japanese shipping and found their way back to Australia, and the exciting raids on the islands of the Adriatic all make good reading.

A common thread runs through all these operations. Brave men, highly trained, carried out these amazing feats of arms. *Secret Forces* lifts the veil on many of these events and discusses the rivalries between the various organisations involved. Many lessons can be drawn from the past – how many pertain today?

Do read this narrative with pride. We still breed such men and women and it is to be hoped that someone will chronicle similar exploits since the end of World War 2 and will bring together the many, often very sophisticated, meticulously planned operations of the last sixty years which have yet to be revealed in detail.

### XD OPERATIONS Secret British Missions Denying Oil to the Nazis C C H BRAZIER

Published by Pen & Sword, 47 Church Street, Barnsley, S70 2BR. 165 pp, 29 illustrations, three maps. Price £10.99. ISBN 1 84415 136 0.

IN May 1940 there was little to cheer about as the lights went out all over Europe under the impact of the German blitzkrieg. The BEF was in retreat and plans for evacuation were being made that were to come to fruition at Dunkirk in the final week of the month. On 10 May, however, a group of sappers, was heading in the opposite direction aboard a Royal Navy destroyer with one aim in mind: preventing the Germans getting their hands on the valuable stocks of oil in the Channel ports. They were members of the Kent Fortress Royal Engineers taking part in the highly secret "XD Operations". This is their story. It was written by Brigadier Clifford Brazier who had been commanding the unit since raising it 1932 at the invitation of the War Office, in line with the policy to relieve the regular Army of the responsibility for coastal defence. His son, Lieutenant Colonel "Jock" Brazier, has now edited and arranged for the publication of the book. In the process he was able to consult some of the survivors, in particular Major Peter Keeble whose obituary appeared in The Times on 29 October 2004 after his death in August at the age of 93.

In all six parties each about forty strong and under naval command undertook these tasks in Amsterdam, Rotterdam, Antwerp and several other locations round the French coast as far as St Nazaire. A larger group under Colonel Brazier himself also attacked targets along the basin of the Seine. It was hazardous work, suffering from enemy action both *en route* and after landing in the race to beat the Germans to their valuable goals. Nor did the participants know how or even whether they would be recovered. They were on a oneway ticket. The frustrations were many. Local Dutch, Belgian and French commanders could not accept the realities of their predicament and the devastation that was to be inflicted on them could not be contemplated until the enemy were at their door.

Colonel Brazier's story flows through these epic events in delightfully readable, slightly understated style, conveying both the wit and patient tolerance of soldiering at a time when it was so difficult to guess what the future held. His own philosophy was summed up in the slogan "Always keep on your toes; you never know what is just around the corner". Thus, when XD came up, the Kent Fortress Royal Engineers were not found wanting to take on what might seem like a lucky break in the more humdrum indeterminate preparations for war. Reading between the lines one doubts that luck came into their selection for this task. Only a unit that was thoroughly well trained and motivated, with the sort of internal mutual trust and confidence that the best of those "family" TA units enjoyed (Kent Fortress RE were largely recruited from Clifford Brazier's company, Blue Circle Cement) could have achieved what they did. Their courage was recognised in the well-earned awards made for the XD operations: one OBE, three DSOs, one DCM and three MMs. But their true rewards must have been seeing the fruits of their careful and professional preparation and their stubborn refusal to let obstacles stand in the way of their aim, finally to return to Britain ready to fight another day. Sadly nine never returned, of whom all but two died in the catastrophic sinking of HMT Lancastria on 17 June 1940.

The story continues after the XD episodes, following the unit through many other adventures, although Colonel Brazier left them on promotion in 1942. Their expertise in demolitions led to tasks as far afield as Spitzbergen, Greece, the Middle East and Gibraltar. A substantial portion volunteered as parachutists and formed Second Parachute Squadron, serving in North Africa, Italy, the south of France and Greece. The unit as a whole became 15 (Kent) GHQ Troops Engineers, specialising in bridging and distinguishing themselves, inter alia, in the crossings of the Seine, the Maas, the Rhine and the Weser at Bremen.

This most enjoyable and inspiring book can be strongly recommended.

GWAN

## A BUSINESS OF SOME HEAT The United Nations Force in Cyprus before and during the Turkish invasion of 1974 By BRIGADIER FRANCIS HENN



Published by Pen & Sword Books Ltd, 47 Church Street, Barnsley. S70 2BR. Price £30.00. ISBN 1-84415-081-X.

A MAJOR international crisis flared in the summer of 1974 when after a *coup d'état* had unseated President Makarios, Turkey intervened in Cyprus by force and imposed the partition that still persists today. Brigadier Henn explains the complexities of the Cyprus problem and the chain of events that sparked the crisis in which a critical, (but hitherto little recognised), part was played by the United Nations Force that was already on the island – UNFICYP.

UNFICYP was established in 1964 with a mandate that related solely to the dispute between the Greek and Turkish communities on the island. Composed of contingents from eight nations, it maintained an intercommunal calm with some success until July 1974, when it faced by the situation created by Turkey's invasion. The only guidance given to the commander by the UN Secretary general was "play it by ear!". This book describes how the Force responded and the degree to which it succeeded in mitigating the sufferings of all communities. The quarrel was not the UN peacekeepers' but many were wounded and some gave their lives in efforts to halt it.

Brigadier Henn, who was Chief of Staff and Commander of the British contingent of the UN Force in Cyprus from June 1972 to October 1974, also provides an account of UNFICYP's totally unexpected and little-known deployment to Egypt during the 1973 Yom Kippur War and uses it to point out that it is all too easy in today's changed world to forget that conflicts such as described in the book threatened both the unity of NATO and international peace and security at the height of the Cold War.

This book is both a complete account of this early UN peacekeeping operation and a fitting tribute to the men and women of many nations who made it possible. To quote Sir Brian Urquhart in his Foreword, "UNFICYP provided a remarkable example of what dedicated and courageous people with minimal resources can do in a violent crisis when well led".

Pen and Sword

## GREAT TEY TO RANGOON BY ROGER BROWNING



Price £7.75, Orders + £1.00 p&p to Roger Browning, Great Tey Brook, Colchester, Essex . CO6 1JE ISBN 0-9549-338-X.

It is said that everyone has a book in them and it probably true that old soldiers have far more to say than others. Roger Browning served in the Corps during WW2, ending

up as a major in command of 652 Mechanical Equipment Company RIE, having been mentioned in despatches twice. His book is essentially a family history, a fact which would normally preclude its appearance in these pages. The story commences with his early years at school and his training as an agricultural surveyor and ends with his post-war activities in local government culminating in his election as Mayor of Colchester. It is however the bit in between that makes this interesting reading. In his foreword, Viscount Slim acknowledges the vital part played by the Corps in the success of the Fourteenth Army, and this can be appreciated as we are taken through the various actions with which the author was associated. Crossing the Irrawaddy, the Siege of Meiktila and the race to Rangoon, the return to the Kabaw Valley and the preparations for Operation Zipper, (the proposed invasion of Malaya) are all documented. Histories of these can be found in a hundred other publications, but it is the small details as well as the wider picture in a personal account such as this which makes it a good read and possibly a research tool for anyone wanting to know more about how the Corps actually operated, as opposed to knowing what they achieved.

#### **ORDINARY HEROES**

BY CHARLES JONES



Published by Writers Printshop, 50 Penn Road, London N7 9RE. Price £14.99 ISBN 1-904623-08-5.

THIS book is sub-titled "The extraordinary tale of 106 Company Royal Engineers", which was comprised of the railwaymen and miners who formed 106 Army Troops Company, from when they were mobilized in 1939 until their return home in 1945. Your heart may sink if I say it is a collection of the diary entries of some of the men, but this book is far more than that. It is a very readable account of what happened to

#### HITLER'S SECRET HEADQUARTERS By Franz Seidler & Dieter Zeigert



Published by Greenhill Books, Park House, 1 Russell Gardens, London. NW11 9NN. Price £19.99. ISBN 1-85367-622-5.

WHEN this book came into the Institution, the Corps Secretary put a question mark against the box "review or not review". Indeed, a few years ago it may well not have been allocated space. A book such as this could well just be a description of the twenty or so *Führerhauptquartiere* that were completed, not to mention the projects started but not finished and the countless recces done for other suitable sites, so would have limited interest. It does of course contain descriptions of the various bunkers and buildings, with enough detail of reasoning, methods and materials to satisfy the Doncaster railwaymen as they went to France with the BEF, returned home, went to North Africa and trained as commandos in the embryo SAS. They were captured at Tobruk and the latter part of the book deals with their time as prisoners-of-war. This of course was before El Alamein (October 1942), but even though by then they were "in the bag", the unit had set out to site the lines at Alamein as long ago as July 1941 and the notes, maps and diagrams made at the time provides some useful background material for those interested in the battle. These were the men who built The Flying Scotsman locomotive so they were something special to start with, and Charles Jones has done an amazing job of linking the stories together with background information, maps and photographs. He interviewed the men who were there as well as delving into official archives and has pointed out some places where the official record is at variance with individuals' recollections. The chapters on life in the prison camps are particularly interesting and illuminating. POW books and films rarely start with the moment of capture - a poignant moment for a soldier as it involves laying down ones arms, but this one does in great detail. Apart from the activities of the writers, there are plenty of vignettes of life in the camps so the reader gets a real feel for what the men were going through. This is a fine tribute to a remarkable body of men, and if you are thinking "just another unit history" - you should think again.

JEB

any PQE officer or Clerk of Works of any persuasion, and even I, whose background is Draughtsman (E&M), Combat Signals, armoured engineering and stores found it easy to follow and interesting. What enhances the interest is the story of Hitler's command structure and methods that have been researched by the two authors and interwoven into the story. The Führer and his henchmen, von Ribbentrop and Himmler, watched the early campaigns, notably Poland and Yugoslavia, from special trains, the Führersonderzug and the Ministerzug. These could not go everywhere and defence was a problem, although each train was accompanied by a Luftwaffe anti-aircraft train. For the other campaigns on mainland Europe, the invasion of France and the Soviet Union and the defence of the Atlantic Wall, Hitler decided that he needed hard headquarters that were impenetrable to any type of attack. As a result, the Organization Todt built a chain of concrete bunkers that stretched from France to the Ukraine. Some, such as the Berlin Bunker where he eventually died, and the Wolfschanze are well known, but others were equally elaborate. Indeed, even though it was never completed, the bunker at Riese in Silesia consumed more concrete than was available in the rest of the entire Third Reich and the cost was also astronomical - 150 million Reichsmarks and rising. All this to fuel Hitler's belief that he should personally supervise the campaigns of his forces by the revival of the "field warlord" role of a national leader, although as usual, propaganda also had something to do with it. Do not dismiss the book, you may be surprised.

JEB

## ROYAL ENGINEERS JOURNAL



## THE MEDAL ROLLS OF THE CORPS

As reported in *The Supplement to the Royal Engineers Journal*, the Corps Medal Rolls are being published by the Institution. Four have been completed, of which two volumes and one extract are available for sale, since the information in them is in the public domain. These are:

Vol IV – Campaign Medals 1857-1889: Price £50 + £6.05 p&p.

Vol IV Chapter 1 – Indian Mutiny Medal 1857-1858: Price £15 + £1 p&p (*Chapters 2-9 are available but have not yet been printed and bound, please enquire*)

Vol V – The Queen's and King's South Africa Medals 1899-1902: Price £40 + £6.05 p&p

An information sheet on the whole series is available from The Assistant Secretary (Publications), Captain J E Borer, Tel: Chatham Military 94661 2299, Civil: 01634 822299 or email: assist.sec@inst-royal-engrs.co.uk or write to: The Institution of Royal Engineers, Brompton Barracks, Chatham, Kent ME4 4UG

## The Corps' Heritage Book

## FOLLOW THE SAPPER by Colonel Gerald Napier

As reported in the August 2004 edition of *The RE Journal*, The Corps' Heritage Book, *Follow The Sapper* is on track to be published later this year and it is hoped that it will be available for sale from September. The final cover price is yet to be determined, but it is hoped to be around the £40 mark.

To place an advance order (do not send money yet), please contact The Assistant Secretary (Publications), Captain J E Borer, Tel: Chatham Military 94661 2299, Civil: 01634 822299 or email: assist.sec@inst-royal-engrs.co.uk or write to: The Institution of Royal Engineers, Brompton Barracks, Chatham, Kent ME4 4UG



The Cariboo Road, British Columbia by Rex Woods



Maj Gen David Watson, Surveyor of Scotland by Andrea Soldi



View Through An Embrasure, Sebastopol by Lt ER James