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Editorial

DISLOCATED LOGIC

IN 1870 a Royal Engineer Institute Committee was formed to study how the Corps could set up an Institute of its own to become the custodian of the Corps' long and distinguished history and to disseminate among its Members professional knowledge gathered from a wide and ubiquitous field. The Secretary of State for War had to be persuaded as to the need for such an Institute and a building had to be provided in which it could operate. In 1871 approval was given, the Institute Building (now known as HQ RSME) was completed on 31 December 1873. After completion the Institute Committee submitted its final report on how the proposed Institute should function. The report was approved in its entirety by the Commander-in-Chief and the Secretary of State for War. A precis of the report was finally accepted at the 22 May 1875 AGM of the Corps and the Royal Engineer Institute saw the light of day at that moment.

In 1984, some 109 years later, the Institution of Royal Engineers (the name changed in 1922) left its home and joined the Regimental Headquarters RE, the RE Association, Corps Treasurer and E-in-C's Recruiting Staff on the first floor of the Ravelin Building. As most readers will know the RE Museum will occupy the ground floor, indeed work has already started on the "conversion", as well as the surrounding areas.

There was no ceremony-not even a tune on a penny whistle! It was a sad occasion in a sense but it was also a stimulating one as the Institution moves into a new phase of its existence. The Institution as a whole (including the Library and Museum) had developed as far as it could in the old accommodation. It now faces the challenge of change, of developing the new potential to further promote and advance the science and art of Military Engineering.

The phrase "science and art" started a train of thought.

Logic, simply defined as "the science of reasoning, proof, thinking or inference; chain of reasoning," is one of the many tools employed by all engineers. It should not be the only tool; intuition and flair should never be discounted. It is the blend of the three which makes engineering exciting and makes it a "science and art". Some readers will disagree 'and remain convinced that it is a Science OR an art.

If one accepts that it is a blend it must also be accepted that the mixture of logic, intuition and flair will be different for each set of circumstances and for each engineer. There will always be "horses for courses".

Logic can be dangerous as it is very difficult on occasions to separate "logic" and "dislocated logic". They can be equally convincing particularly when being used to "prove" a strongly held belief.

Readers may be asking "What on earth is dislocated logic?"

In the *Immortal Sayings of Yogi Berra,* an inspired forty-year accumulation of dislocated logic, the Master says of a well known beer parlour:

"Nobody goes there any more-it's too crowded";

and on being asked why a baseball team, with a higher than usual graduate content, was doing so well, he replied

"Baseball is 90 per cent mental, and the other half is physical"

THAT is dislocated logic.

One Engineer's War

A TERRITORIAL ARMY ENGINEER'S PERSONAL REMINISCENCES 1939–1945

COLONEL A H GLENDINNING OBE, TD, DL, JP, B Sc, MICE, Assoc IEE

Harden Glendinning was commissioned in the RE (TA) in 1937 for service with the Antrim Fortress Coy RE (TA), one of the first two TA Units to be founded in N Ireland. He was embodied during the "Munich Crisis" in 1938 and again on the outbreak of WW2 in 1939. In 1940 he became SORE2 E&M at HQ N Ireland District. He moved to HQ First Army in 1942 and served in N Africa. He was promoted Lt Col in 1943 and served in Sicily and Italy where he became deeply involved in timber and steel production required for the supply of the Allied Armies. For his services he was Mentioned in Despatches and awarded the OBE. On reconstitution of the TA in 1947 he raised 591 (Antrim) Indep Fd Sqn RE (TA) which he commanded until 1950. He subsequently was Hon Col of the Sqn for ten years. He worked as a consulting engineer and is now retired and living in Co Armagh.

The photographs supporting this article have been taken from albums and many are unique. The quality of the originals was not high but it is considered that they are worth publishing (particularly the Flambo Bridge photographs) to emphasise the scope of the work entailed.

This article was edited by Colonel I B Gailey TD, O St J (V) who wrote "*74 (Antrim Artillery) Engineer Regiment (Volunteers)*" published in the March 1983 Journal (Vol 97 No 1).

The United Kingdom, 1937–1942

It all began with my joining the Territorial Army, the Antrim Fortress Company RE (TA) under the command of Major J M Sinclair who was at that time Minister of Finance, Northern Ireland. I was commissioned 2nd Lieutenant in October 1937. This involved peace time training for the manning of the Coast Defence search-lights at Graypoint and Kilroot, Belfast Lough.

At the outbreak of war in September 1939 we were called up with all the British Forces and with the Gunners took over the two forts. Kilroot had no search-lights so I was sent to install a generator and the lights. This kept me very busy for the first month.

During this time there were various German submarine scares. On one occasion there was great activity with the six-inch guns on the alert and guns loaded. The scare died down however. That night we were carrying out an exercise with a small boat coming down from Belfast and being picked up by our new light. I was in the Battery Observation Post at the time. The gunners were going through their drill with the command "One round full deflection left. Fire", and bang, off she went and a shell which had, by accident been left up the spout that afternoon, hit the Lough in front of the boat, ricocheted and landed up in the Clandeboye estate. The boat turned round and fled back to Belfast. This terrible act of neglect woke up

Colonel A H Glendenning OBE TD DL JP B Sc MICE IEE

Northern Ireland District (NID) Command and the following day we were descended upon by a bevy of top brass. Certainly the Phony War! It must have been the first shot fired.

Later that year it was decided that guns and search-lights were required at Larne and Magilligan and so as the only "Civil Engineer" in uniform I was sent to plan and supervise their installation.

On completion of the Magilligan works we had another humourous incident. The Battery Commander of the Coast Defence Regiment RA Lieut Colonel a B Graham invited some of the Red Hats from NID down to see his gun firing its first shot into Lough Foyle. All was prepared for a glorious occasion. The command was given, the gun fired and the shell dropped in the mud a few yards away from the bevy of observing Brass. Keep your powder dry, Boys!

Some time in 1940 I escaped from this "play act" and was posted to Northern Ireland District to assist in the planning of camps throughout the Province for British and American troops, the latter arriving in 1942. During 1941/42 there were camps built in nearly every wooded area in the Province as well as large aerodromes for the Atlantic operations. My job was water supply and soil disposal. In all there were some 50000 troops, including an American Force with it's Headquarters in Lurgan, ready to invade the South if Hitler undertook his planned invasion of the UK and also to take over the Southern Ports which at that time were very much needed to help in the furious battle of the Atlantic. This became unnecessary later once we had built the large airfields in Co Tyrone and had the aircraft capable of bombing using these fields.

My job in Northern Ireland was very interesting, involving the procurement of large quantities of pipes, pumps and storage tanks. The surveying of every small river in the Province, taking water out of it, passing it through the troops and going a mile further down stream and doing the same thing all over again. In spite of the interest I longed to get to an Engineering Field Squadron where I could learn to be a fighting Sapper.

In August 1942 at last I got my chance and was posted as Second-in-Command of a Squadron in the South of England. But this was not to be. Everything in the Army was luck! I found out that in time of war once you get onto the apron strings of a successful senior officer and fulfil his requirements your destiny is assured. A senior Engineer in Northern Ireland had been moved to the planning staff for the *Torch* invasion of North Africa, with the result that my posting was changed and I was instructed to report to Flat 1, Floor 2, Great Cumberland Place. Here I found myself as one of three assistants to Brigadier Coxwell Rodgers, Chief Engineer to First Army planning the invasion.

This was a very exciting appointment, planning all our engineer stores and arranging for their shipment. My section was water supply and mechanical equipment. For the water side I had to examine all the physical and geological details from Algiers to Tunis, and as it was all very secret this was not easy. Mechanical equipment was only at it's infancy in the British Army at this time and I had to go to one of our new Engineering Companies in the North of England to try and learn something about it. When we did get to North Africa, a Canadian Engineer, Major Jack Wilson, took this job over from me and he and I operated together, with his driver Arthur, all through Africa, Sicily and Italy.

Jack had come to England with the first Canadian troops and my Chief asked the Canadians for an experienced mechanical equipment officer. We were offered Jack but only if he agreed to transfer from the Canadian to the British Army. Jack, an independent, young man, said to Coxwell that he would come on one condition and that was that his driver Arthur, whom he had recruited in England, could come with him. The reason that Arthur had not already been called up to the British forces was that he was under age, and when he had joined the Canadians Jack had promised his mother that he would look after him.

One of the matters in the planning was the allocation of the then very limited

shipping space to the various branches of the services. This was carried out at bidding conferences for each convoy from the start of the invasion. Every bidding day represented one day's sailing. The demand for space by each of the services was always in excess of the shipping then available, so each chief had to present his case to the Chief of Staff and accept the cuts imposed upon him, so the bidding for that day was settled. Unfortunately at further sessions we would be told that certain ships previously allocated had now been sunk which meant further cuts and rearrangement of dates of sailing of vital stores.

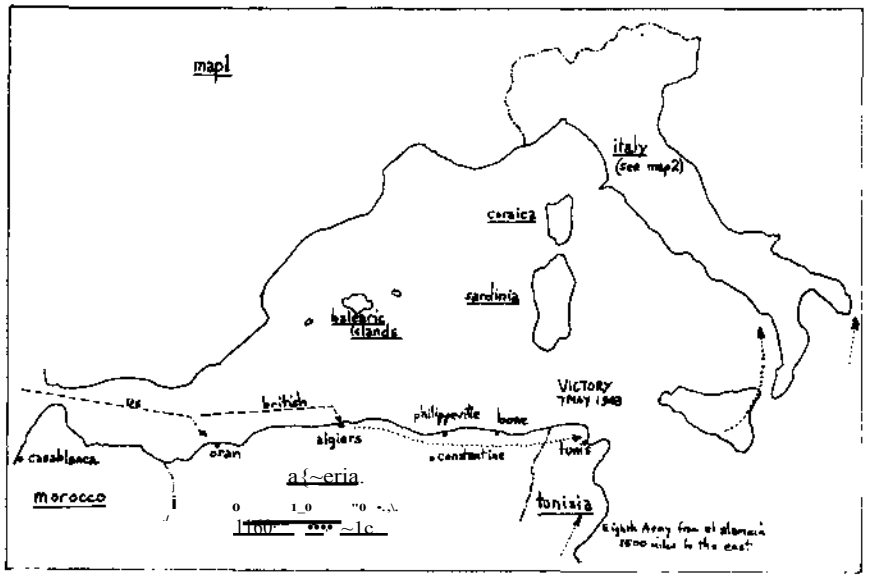
As far as my stores were concerned I had to consult with the War Office Engineer Stores Department to see what was available and at the same time take great care that I did not disclose to these gentlemen where we were going.

NORTH AFRICA, OCTOBER TO JULY 1942

The extensive work, arranging for the invasion, went on right up to sailing time. The convoy on which I was to travel sailed from Scotland. We had a very peaceful passage due west into the Atlantic and then swung south onto our true course, seeing on 5 November lights on the African coast and on into Algiers, where we went ashore on the 8th. In the meantime Montgomery and his Eighth Army had attacked at Alamein on 23 October. By 6 November he had roped in 30000 prisoners, 350 tanks and 400 guns. As we went ashore there was very little fighting. Dar-Ian happened to be in Algiers at the time seeing his son and negotiations for an armistice were made with him on the 9th. While we were having this easy passage, the Americans, with 34000 troops, were having to fight a very sticky battle for Casablanca.

The British First Army, so called, there were only four Brigades, moved quickly up the African coast towards Tunis. Further troops were landed at Bone 250 miles to the East. The Germans acted quickly, landed and took over Tunis and a front was established at this point.

Our Headquarters had moved to Constantine and I had the good fortune to make a trip with my chief to Bone. I was there to look after the damaged water supply to two hospitals. At Bone there was a reinforced concrete bridge badly damaged by German bombing. The Chief was worried about it and on the way back to Constantine I suggested that I thought I could design it's repair. This offer was accepted immediately and I entered a new field of work which was to keep me flat



out for three years.

Very fortunately I had got ashore at Algiers with my civil engineering text books taped round me, as I knew that if I got ashore without them I would be of very little use. These books were the making of my Army career. I started by designing the repair of the bridge at Bone that night crouching on the stone floor of my very cold billet, and had it completed by daylight. I learnt two lessons from this. On a later visit to Bone I found the bridge repaired, but not to my design. I complained to my chief and he replied "Don't worry son, if you had not given them a design they would have been afraid to tackle it, now it is repaired".

One of the great problems which arose was the classification of all the French bridges on a 400 mile L of C, as they had to carry the high load of our tanks on their transporters, 100 tons. The engineers on the L of C were asked to carry out this task but were not all capable of the work involved. Over one section they would report 50 tons, over another 10 tons, and those who asked the local French boys would get the reply, "douze tonne". The weakness of most of the bridges was simply the decks. I settled down and produced a booklet "Notes on Bridge Classification" which was printed by Allied Force HQ in Algiers and used by British and Americans right through Africa, Sicily and Italy. I remember being sent across Sicily to see an American Engineer on the North Coast who was in difficulty with a damaged bridge. When I arrived he produced the booklet in which there were some calculations which he could not understand. I in pride said "I wrote that" and then was able to explain the problem. I got the impression that he thought that I was a bit of a liar, but we worked out the problem and all was well.

By the end of 1942 Hitler had flown in 50 000 troops and their tanks from Sicily and Rommel was in command. Montgomery was advancing with the Eighth Army to the southern end of Tunisia. The bridge problem came up again as Churchill tanks were landed at Bone and I had the bridges from there into the Majerda valley to classify. It was then wonderful to stand by the road, in the middle of the night, and see these tanks creeping up for the coming battle.

On 14 February, Rommel, with new tanks, hit hard at the inexperienced Americans in the Kasserine Pass and achieved a success. The 1st US Armoured Division lost half it's guns and tanks and the Germans looked like cutting through between our two armies and severing the First Army lines of communications. There was a midnight flap at our Headquarters 100 miles to the North. I was chased down to Kasserine to see about mines. On the way through the twisting mountain road we were almost pushed over the edge of a steep ravine by an American truck. The two

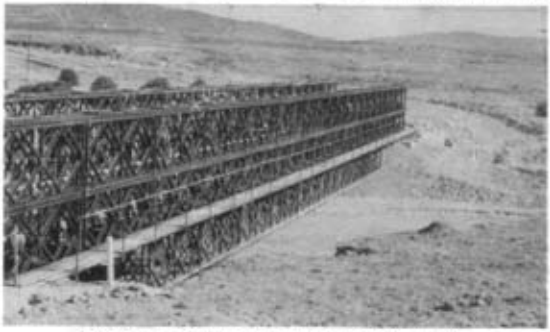


Photo 1. The first Triple Bailey ever built under construction

Photo 2. The first Triple Bailey ever built

vehicles were halted on the brink, I got out and asked the American driver where he was going and he replied, "Boss, I's retreating and I ain't stopping until I gets to Constantine, 100 miles to the West". However, Alexander was now put in command (as Eisenhower's deputy) of the First British and the American Army, which he reorganised, stopped the rot and began to get ready for the final thrust on Tunis.

For the coming offensive we needed a base Hospital in the Majerda Valley and I was sent at once to look for a suitable water supply. The river could not be used, it was too salt. I went to a Monastery and there found Father Munge from Ireland. He took me first to the Monastery supply but this was quite inadequate, it was suitable for a few monks but would not meet the requirements of a large army after a major battle. When questioned further the Irish Father told me that there was a good supply at the top of an adjacent mountain. We climbed in the sweltering heat and there at the summit, gushing out from under a huge rock, was a crystal clear flow of water. Back at once to HQ and got in train a field squadron with pipes and equipment. The supply was laid on in two days but never used, as on 6 May our Armies were in Tunis.

Another Officer and I rode in on a jeep and the reception was marvellous, with lots of pretty French girls cheering us on, two of whom rode with us. My job here was to rush to the Power Station to find out its condition. Jerry had placed explosives on the machinery but with their sudden collapse, they were not detonated. My companion in the jeep was a young French officer, Chombost, who had joined us in Algiers; he was a geologist whom we put in uniform and brought with us to help with the water problem. Chombost had come from Tunis and his wife, he hoped, was still there. We rushed to his house and witnessed a happy homecoming. Madame Chombost, a charming young French girl, was to entertain us on many

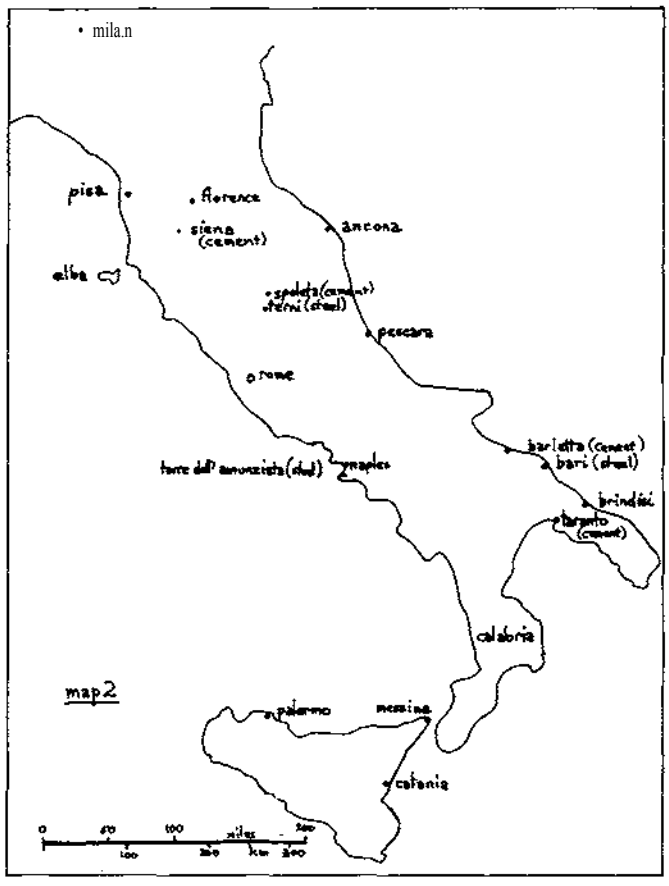
occasions making lovely meals out of our army rations coupled with what she was able to pick up in the depleted Tunisian market place. There is a little story about Chombost. One night, in the desert, another English Officer and I were working in a tent with Chombost sitting on the ground trying to improve his English by reading a novel. He suddenly said "What is a tight"? Peter asked him to read the context and he read "Here she took him in her arms and held him tight"!

First Army HQ moved into a lovely camp close to the Bey's Palace in Tunis where the planning of the next move to Sicily began. Churchill came to Carthage on 1 June and addressed the troops in the Roman Amphitheatre; it was a wonderful setting.

Shortly after this there was a reorganisation of staff and I was sent back to the Allied HQ in Algiers; a most unhappy time as I was longing to be back with the army.

SICILY AND ITALY, JULY 1943

Sicily was invaded on 9 July, we lived on the news but it was very disappointing to be left behind. Fortunately myoid chief General Coxwell Rodgers was now Chief Engineer to Alexander in Sicily. He asked for me but Algiers, the senior HQ, would not let me go. Fortunately Coxwell offered me Lieut Colonel rank and Algiers could no longer refuse. In my usual impetuous way I rushed to the aerodrome and got on an American plane with no gear other than my precious text books. I arrived at camp in Syracuse in what I stood up in, a pair of shorts and a



Map 2. Workshops under control of South African Engineer Base Workshop

Photo 3. No 1 Workshop Foundry. (Under control South African Engineer Base Workshops)

shirt. Just as I arrived a jeep drove up and in it was my old American friend Chote. "Hello Glen what can I do for you?" I said "Clothes" and he immediately drove off and came back with a complete American outfit which I wore until my own gear turned up some weeks later.

In Sicily I was back on bridges once more for both British and American forces. The move East through Sicily was quick and by 17 August it was all over, the Americans having come round the North and we went the Southern side. There was a lull while the top "Brass" talked on Italy. Italy was invaded across the Messina Straits on 3 September. The Italians announced their surrender and the Germans flowed in and took over. The Americans fought North towards Naples and the British moved across the heel. Our Navy under Sir Andrew Cunningham took Taranto with the loss of one ship, captured the entire Italian battle fleet and on 11 September reported this fleet anchored under the guns of Malta. The Mediterranean was ours.

After a time our HQ moved to the East of Italy. Unfortunately I took jaundice and was left in hospital in Sicily. However I was soon out and got a lift on an American ship to Taranto. This ship was commanded by a young American officer who told me that he came from the centre of the continent and six months previously he had never been to sea. In this time he had been trained and put in command of his ship crossing the Atlantic. I asked him how he managed the navigation; he replied, "Easy, I just followed the crowd." He left me at Taranto where I went to the nearest officers canteen. In a white coat behind the counter was my old batman in Africa, Sapper Dixon from Glasgow. One day I asked Dixon what he did in civvy street: he replied "I buys and sells, Sir", and this trade, he was truly practising, selling dried tea leaves after he had made our tea, to the Arabs for eggs.

Now Italy and its problems; bridges, steel, timber, and complete German wreckage from Naples to the Northern Plain. (see Annex A).

Alexander's HQ was first based north of Bari while a new Allied HQ was formed in Naples and Brigadier Anderson was brought in to command the stores and works departments with Colonel Parkman looking after the importation of Engineer stores from the UK and the issue of all stores to our forces; while I took over the

local production side with 80th South African Engineer Base Workshop and the New Zealand Forestry Company under command, and with several local purchasing officers attached. I was first based in Naples and then Rome but being part of the Army HQ I eventually moved North with them to Siena, the Base remaining in Rome.

During the winter 1943-44 efforts were being made to purchase as many engineer stores as possible in Italy to save shipping and speed up the works programme. This required large quantities of timber, cement, bricks and steel. This work had been started on a contract basis with a small staff controlling two engineer sections, each with one officer and twenty to thirty men.

It was apparent by February 1944 that if the works programme was to be met the Italian slow method of production would have to be drastically altered and with this in view the South African Base Workshop, twelve officers and 200 men, was converted from a separate workshop unit to one controlling large numbers of Italian requisitioned works and factories. The plan was that where the Italian management were unwilling to co-operate due to black market leanings we would take over the works and run them by direct labour.

The South African officers, NCO's and men were marvellous. Their commander Lieut Colonel Campbell-Pitt, an experienced South African gold mine engineer, was ready to control any type of Engineer production and by November 1944 he was employing directly and by contract 15000 Italians, controlling eighty-five works and producing 35000 tons per month of Engineer stores. We operated eight woodwork shops in Molfetto, Bari, Naples and later Rome. These shops employed 1000 men and handled about, 2000 tons of timber per month, making bridge decking, camp structures, hutting and caravans with furniture for the Generals.

To supply this timber and to meet the needs for structural timber required for building camps we relied on timber from Calabria. Here there is a considerable area of good pine, up to eighty years old, mostly in the Sila range which rises 5000 feet above the Calabrian coastal plain. These mountains are studded with small timber mills, which we tried to operate on a contract basis paying for the timber delivered to Crotone port, or any of the stations on the coastal railway running

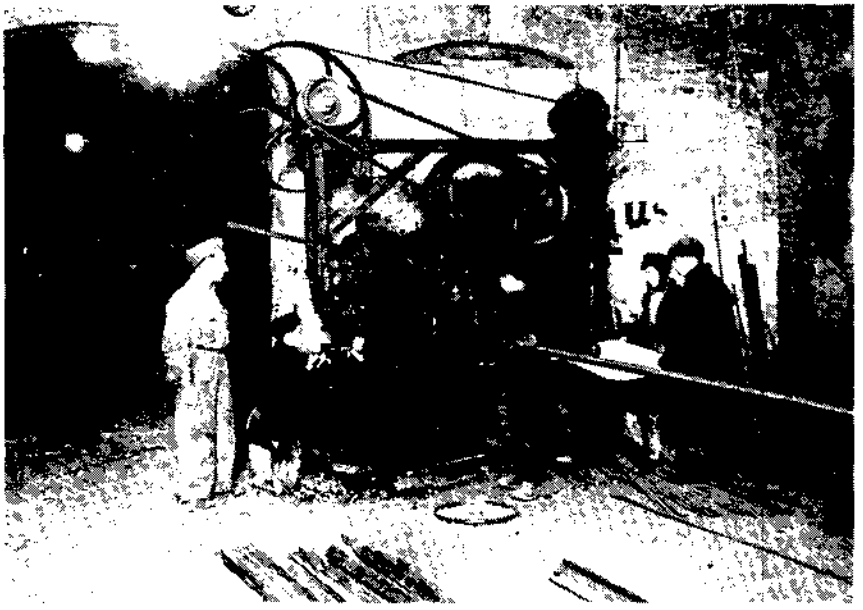


Photo 4. No 6 Sub Workshop Shearing and Cropping Machine (SAE Base Workshops)

Photo 5. Calabrian Timber, New Zealand Forestry Company

from Regio to Taranto. Unfortunately the mill owners did not consider that it was good policy to meet our monthly timber demand of 15 000 tons. The pine of the Sila would be much more valuable to supply the Italian black market after we had gone. Also the workers were short of food and clothes while transport and mill spares were a major trouble. The result was that by October 1944 the Italian output had

Photo 6. Calabrian Timber

One Engineer War 5,6

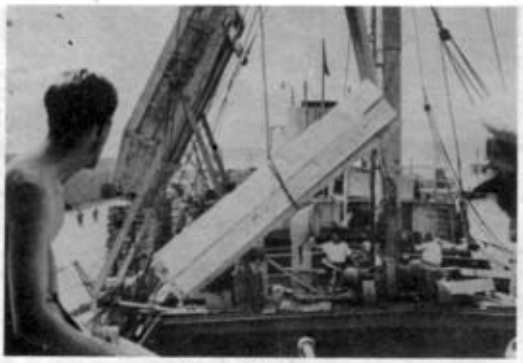


Photo 7. Calabrian Timber

fallen to some 2000 tons per month and they made up their minds to stop for the winter. They told us that the mills never had been operated during this period and that owing to the snow it would not be possible. The only way out was to take the mills over. The New Zealand Forestry Coy was brought in and in early November we requisitioned thirty-five saw mills, sacked the management and set to work. By January 1945 we were getting over 15000 tons of sawn timber per month.

While in Naples I was working one day in my office when the door opened and in walked my old chief from Northern Ireland days, Colonel C de C E Findlay, VC. The army had thought this fine officer too old although he was capable of working twenty hours a day and could walk me off my feet at any time. Findlay did not give up and joined AMGOT. (Allied Military Government) and here he was in Naples as a Captain, regarding me as his senior and refusing to take my seat. Another day my old friend Kenneth Miles came to see me, he was at that time an officer in a cruiser in Naples. Kenneth had been wounded and almost drowned at Dunkirk but being a magnificent swimmer and a very courageous man, he had managed to keep himself afloat and escape home. I had a very pleasant visit aboard his ship.

When we got to Rome we were very short of bricks and I visited a fine works in the city. The management would not co-operate so I instituted the usual requisition drill. The next day I was summoned to Allied HQ and told that the political adviser to the Allied forces wished to see me. I was directed to a palatial room and there sitting behind the desk was Harold McMillan. "Son!" he said "You have requisitioned a brick works and I am afraid you will have to hand it back, it operates for the Vatican and they need the bricks". I replied "Yes Sir" and retired. So ended my interview with our future Prime Minister. At a later date when the Pope was granting weekly audiences to the Allied Forces I attended one. Senior Officers at these meetings with His Holiness were granted the privilege of a semi-private audience. On the occasion that I was there there were about ten of us so privileged, mostly American.

By this time we were operating cement works in Taranto, Medugna, Barletta and Spolato producing 15000 tons per month. We had to import the coal for these and as there was a thriving black market for coal I decided to make a careful check and found that three of these works were being issued with twice the coal of the fourth. I visited all the works but could find nothing wrong so I finally asked the Italian manager of the fourth works why he was able to operate with only half the coal of

the others. He told me that God had done his first stage cooking for him. (His half-cooked limestone may well have been the early Roman cement).

Most of the works which we had taken over had been damaged by the Germans and starting up in most cases meant re-building and repairing the machinery or moving equipment saved out of other factories. While every effort was made to keep book-keeping to a minimum, there was in fact a large amount of this to be done. We had a monthly wages bill of 14000000 lira, or at the rate of exchange then operating, £35000. To help to maintain and compare our production one factory with another we costed all our works on labour only. When I put forward this idea of operation to my chiefs in Naples I had a great battle to get it approved. We also kept records of repairs and improvements made to assist in the final hand back to the Italian owners.

When our HQ moved to Siena most of the officers were billeted in the fascinating town, but as Jack Wilson and I were the only ones with our own transport we were sent to a lovely house on the outskirts. Here we met our hostess Pace Misiatelli (called Pace because she was born in 1918), her two small children, Pierre and Mariaurora, and two servants. Neither Jack or I had acquired much Italian, I was slightly the better having mixed more with the "natives" than Jack. We were shown to our rooms and asked if we would like a bath, one at a time. We tossed for first place and Jack won the privilege. As the bath had to be filled from jugs I left him with the two maids while I went to help Arthur (later here Arthuro) with the baggage. When I returned I found Jack stripped to the waist and standing in the bathroom in confusion with the two girls. Jack had come to the conclusion that they were going to finish the job and bath him. However in my halting Italian I discovered that they were only waiting for him to confirm that the temperature was to his liking!

We spent a very pleasant few months living in this attractive household. Pace was the daughter of Count Chigi, a Knight of Malta and one of Siena's great nobles. "Alex" (Field Marshal Alexander) spent some time with this grand old man, and my wife and I stayed in his house on a visit to Italy after the war. Pace's husband at the time of our visit was lost, he had been in the Italian cavalry; however he turned up later fit and well. I have forgotten his Christian name but we called him George. During our stay in Siena we took Pace and the two children to the Chigi mountain farm of some thousands of acres. This farm was run by an agent, a charming man with an agricultural degree. He had two farm servants living in a house over the top of the cattle shed which kept everyone warm. Pace was treated like royalty, everyone went down on one knee and kissed her hand and the agent waited at table, while we had a magnificent lunch.

I now wish to turn to the major part of our work, steel and bridges. In January 1944 we had three steel fabricating shops-one in Castellammare, one in Naples and one in Ban. The Castellammare works was by far the largest; it had been a railway wagon building works covering twenty-two acres. It had a sheet rolling mill, good foundry, heavy and light forging shop, woodworking shop, nut and bolt works, machine shop, tin plate mill and a shell pressing shop. The Germans had left all this a tangled mess of damaged rolling stock and smashed machine tools. While these works were under repair we started fabricating steel shedding which I had designed. We made mine gapping tools and special parts for continuous Bailey Bridges, all out of existing stocks of structural steel. It was obvious that if our steel fabrication and shed production was to continue we had to start immediately making steel. The only works in "liberated" Italy during the winter of 1943/44 were one small rolling mill with a 25-ton siemens furnace at Giovinazzo near Bari and Ilva works at Torre Annunziatto and Bagnoli. None of these were operative and both the Ilva works were seriously damaged.

Ilva Bagnoli covered 297 acres, 25% roofed, and in pre-war days had produced annually 300000 tons of coke, 300000 tons of pig iron, 350000 tons of steel in blooms and ingots and 150000 tons of sections. Ilva Torre Annunziato covered 85

Photo 8. Our first light steel for much needed shedding. Steel rolled in the repaired and forces operated steel mill in Bari (25ft span × 14ft high)

acres 11.4 roofed and had produced annually 80·000 tons of rolled steel. The whole of this had been very badly damaged, but the owners were encouraged to get on with repairs. Giovinazzo Steel works had not operated since 1943 but was undamaged. This was a small very antiquated plant designed for the manufacture of light sections. The management said they could not start due to lack of certain vital materials. We were in need of a steel production expert. I asked our Chief to signal the front line for such a man, if available, and we got back Major Evans RA. In January on his recommendation, and in spite of the owners protest that it was not possible, we decided to go ahead. The management proved incapable of determined action so the plant was taken over, on a direct labour basis, by the South African Engineers Base Workshop. On 1 April 1944 the furnace was lit and tapped and were in the steel business. From April 1944 until July 1945 Giovanazzo produced 900 tons per month of rolled sections for the armed forces. First used for much needed light shedding.

The strong offensive of 1944 broke the German lines of Casino, Anzio was relieved and our Armies during the summer raced forward past Rome to Florence and the Appenines. In spite of the German haste, they hardly left a single road or rail bridge in Italy from Naples to Florence. The immediate need of the Battle was met by Bailey Bridges, but something more was necessary to fill the gap and relieve the Bailey for use again in the forward area, as the Bailey at home were all required for the coming invasion of France and we were to get no more. During the period April to June 1944 I had been playing with the design of a locally produced bridge, but due to lack of experience and time I had not got very far. By the merest luck Major Lander, of London Underground Engineering Department arrived in Italy in Command of a Tunnelling Coy, after a long blasting in Malta. Brigadier D L Anderson knew him of old and immediately obtained his services. John Lander at once got down to design proper, tied to our limited steel sections and welding facilities, and after one or two shots he plunged for a copy of the Bailey in mild steel, which of course would be much heavier than the Bailey proper. The new Bridge named the *Flambo* was designed for a special purpose, that of replacing already

erected Bailey so that the Bailey could go forward again for use by RE troops in the field.

To meet this demand it was necessary to start up the Ilva Works at Torre Annunziato and operate the three mills Giovinazzo, Ilva and Torri. This being done the required production could be obtained but this involved the movement of 15 000 tons a month of raw materials and the importation of 3 000 tons a month of coal. Rail movement in Italy was very difficult owing to the state of destruction of the railways and their bridges. To produce an average 6000 tons per month of ingot steel and its fabrication involved the shipping movement of about 3500 tons of coal from UK and Sardinia and the rail movement of some 21 000 tons of raw materials, ingots and end products. A mammoth organisational problem.

This would require, to continue, the importation of 2250 tons of Furnace pig per month or, alternatively, repair the Bagnoli Blast Furnace and use Elba ore importing an equivalent tonnage of coke or cokey coal for reduction at Bagnoli.

By September 1944 Flambo Bridges 60ft span 40 ton capacity were coming off the production line at one per day. This job of designing and fabrication, by the Army, of bridges on a production scale, involving the starting and running of the necessary steel works, the construction of fabrication shops and the setting up of a welding school to train Italian civilian welders, was a considerable undertaking, and its success was due to the efforts of Major Lander and Lieut Colonel Campbell-Pitt with his 80 EBW. It all sounds easy on paper, but the snags and bottlenecks which were encountered and overcome were legion.

By October 1944 it was found necessary to cut down the variety of items being demanded to save the multiple changing of rolls and thereby increase production. To meet this need DWAAI steel catalogue was produced and all users were informed that they could have catalogue items only; no other demands would be considered. Through the winter of 1944 production increased, and by January 1945 we were making 6000 tons of ingots per month with a planned programme for increasing to 8000 tons per month by May.

Returning to bridge design we were faced in the autumn of 1944 with the planning for the crossing of the Po river. During the winter months various types of assault equipment were designed. These bridges demanded a vast number of special parts, which were all put into production. At the same time Major Lander was

Photo 9. Flambo mild steel Bailey designed by John Lander. First bridge erected across Dead Horse Gap, Class 30, 100ft span

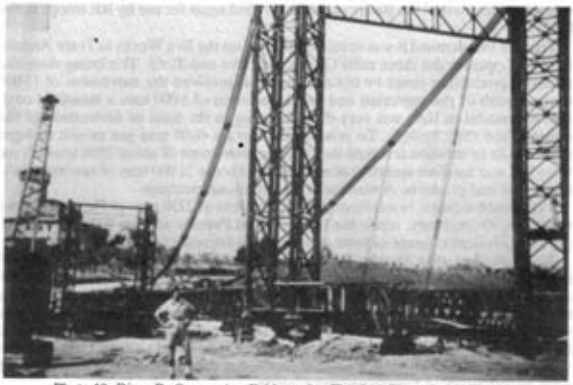


Photo 10. River Po Suspension Bridge using Flambo, Class 40, 300ft span

proceeding with the design of a 300ft span continuous suspension bridge, using Flambo parts for the main structure and piers. All the parts were made for ten spans. Fortunately Jerry collapsed suddenly and the Po crossings were saved. One span of this fine suspension bridge was erected over the Arno and was still there in 1948; it may be there yet.

By March 1945 our bridge production had got up to two bridges per day, and some two hundred by 60ft had been made and a very large number of them erected to replace Baileys.

After VE Day we were left with the steel industry of Central and Southern Italy on our hands. The straightforward way of getting rid of the Italian steel industry was to walk out and leave it to them. Unfortunately the plants involved were living on a day-to-day basis, controlled by a central organisation which was purely military. This organisation planned and arranged for all the movement of raw materials and fuel. It was obvious that if the military withdrew their control the steel works concerned would close down in a very short time and would have left 6000 Italians out of work, to add to the unrest in the country. It was decided, therefore, that an effort would be made to arrange for the three companies concerned to form themselves into a Cartel to take over the existing military organisation.

At a meeting held in Rome on 8 May 1945 on the premises of the Soc ILVA-Via Regina Elena No 66 Rome and attended by the following:

Lieut Colonel A H Glendinning—Chairman
Maj RE Boger
Capt RE Hardy
Ing Mazza (Chairman for ILVA, Terni & Giovanazzo Steel Works)
Ing Lazzara (Tomi)
Ing Artigiani (ILVA)
Ing Sciantico (Giovanazzo)

I reported as follows:

"In consideration of the end of the war in Europe and the coming withdrawal of the Allied authorities a liaison office between the firms Terni, Ilva and Giovanazzo and the Allied Commission has been formed with a view to taking over from the present Military Authority all demands concerning the production and distribution of steel and steel products required for public utility services and repairs to Electric

Power stations, agricultural requirements and the maintenance of state railways. Communication and telephone requirements will continue to be looked after by the Allied Military Authorities.

"With a view to dealing with demands for steel and steel production after the withdrawal of the Allied Military Authority a new office will be opened and the following Military and Civilian personnel presently dealing with steel production will be moved to the new office: Major Boger RE, Capt Hardy RE, Cpl Smith RE, Cpl Mills RE, Sig Torrani, Sig Della Sera, Sig Crete, Sig Scebi, Sig Flasher."

A fascinating experience ended on a satisfactory note.

ANNEXA

EXTRACTS FROM DAILY TELEGRAPH 14 MARCH 1944

ENGINEERS MASTER HAND IN THE ITALIAN SCENE
PURSUIT, ASSAULT, SUPPLY AND AIRFIELD PROBLEMS ALL HIGH ON THEIR WORK

By Lt General H G Martin, Daily Telegraph War Correspondent in Italy

"As one surveys the multifarious activities of the Engineers in Italy-activities all important to the allied cause-~>ne is apt to conclude that this war is above all an Engineer's War. Then one remembers the infantry and the cavalry of winter warfare, on the mountains, which they have endured so triumphantly: one remembers too, the never-failing gunners. Among peers there is probably no pride of place.

"It is undoubtedly true, however, that in no prior campaign have the Engineers made so large a contribution to victory-if for no other reason that in no prior campaign have we fought an enemy who has indulged in demolition on so vast a scale and in terrain so perfectly adapted to it. It is interesting to look at a large-scale map of Southern Italy on which are marked these German demolitions. In the extreme South-in Calabria, demolitions were few and far between. As the front moved northward, however, Gerry's appetite evidently improved with eating; demolitions increased accordingly till, about the line Foggia-Naples, he began his crowning orgy of destruction. In this area immediately behind the present front line the extent has to be seen to be believed. Through this land of mountain gorge and river, the enemy has blown almost every bridge and every culvert, on both road and railways. There was for instance, a long readuct near Isernia where the railway crossed a gorge on perhaps a dozen masonry piers. Gerry had not just rested content with blowing a gap in this readuct; no, with infinite labour he had set himself utterly to destroy every single pier.

"Again there were whole sections of the railway along which his wrecker's train had passed; there mile after mile, every sleeper had been uprooted and smashed, every rail first cut and then tossed aside-an acme of destruction which he achieved with a minimum of effort by the simple expedient of dragging a grapnel behind the wrecker train in order to destroy every sleeper, while he himself sits at ease and feeds into a couple of hoppers twin streams of small explosive charges fitted with time fuses and magnets, which drop down and adhere to the rails."

"This destruction of roads, railways and bridges continued on through Italy as Gerry retreated."

"The repair of this mass destruction was undertaken by the South African Engineer Base Workshop and the New Zealand Forestry Company who both employed large numbers of Italian labour under the direction of our Allied Force HQ through Colonel A H Glendinning from the North of Ireland Fortress Company RE TA, who ranged over Italy as the Front advanced. Starting in Calabria and finishing at the Po River."

Exercise Waterleap 83

CAPTAIN M P CARTER RE, B Sc (Hon)

Commissioned in 1980 after 3 years as a University Bursar at University College London where he read for a B Sc in Geography. His first appointment was as a Tp Comd in 16 Fd Sqn RE and in mid 1982 he joined 59 Indep Cdo Sqn as a Tp Cmd.

Background and Aim

EXERCISE WATERLEAP, one of the major annual construction exercises undertaken by the Corps, took place during the summer of 1983 on the Meaford Tank Training Range in Ontario, Canada. 59 Independent Commando Squadron Royal Engineers deployed to Meaford during June 1983 to spend three months in the construction role working on a number of projects of which Exercise Waterleap 83 was composed. The first six months of 1983 had already been a busy period for the Squadron with its annual three month deployment to Norway from January until March, and a major 3 Commando Brigade Royal Marines FTX on Salisbury Plain during May and early June. There was a need for concurrent activity from the very beginning, but planning a major Squadron sized overseas project from the shelter of a snow cave in Northern Norway put the unfortunate Project Officer under some pressure. Exercise and operational commitments had meant that tradesmen had had little opportunity to practise their skills for more than eighteen months, and there was limited time available for refresher training at RSME before the exercise. In addition, Squadron and Troop management had had minimum experience in the control of project work and quality control of tradesmens' work.

It was against this background that the Squadron prepared itself for and undertook Exercise Waterleap 83. This article briefly describes the mounting of the exercise, the projects undertaken and some of the few problems encountered, and the additional factors which contributed to the success of the exercise.

Scope of the Exercise

Exercise Waterleap 83 was the second successive Waterleap to take place at Meaford, 52 Field Squadron (Construction) Royal Engineers having undertaken Waterleap 82. The projects programmed for 1983 were to complete work on a two-year development plan which had been initiated by the Canadian Forces Training Systems Command for the Meaford Range. The range which had fallen into a state of disrepair was to be revitalised by the improvement and development of accommodation, water and electrical services and access to the range area. Work to be carried out by 59 Independent Commando Squadron consisted of the following:

(1) The construction of a 64-person all weather accommodation building of timber frame and concrete block design, to include a self contained fire alarm system, electrical fittings (including heaters) and water supply for domestic use and

Captain M P Carter RE B Sc

Photo 1. Part of the new road alignment

for fire hose equipment.

(2) The erection of a high voltage overhead line power system for the supply of power to an 800-man bivouac area and to the tank range control tower, and the refurbishment and rewiring of the tower.

(3) The construction of a timber trestle range safety observation tower, with an all-weather observation cabin on top.

(4) The construction of 4.7km of Class 20 all weather gravel surfaced road which incorporated 34 ARMCO culverts along its length.

The manpower limit for the exercise was 200 all ranks from the Squadron and attached UK personnel, and twelve working weeks were allowed to complete the projects. The Squadron was to be located in the existing somewhat dilapidated accommodation at Meaford Camp, with administrative and logistic backing as necessary from the Canadian Forces at Borden Camp some 40km away.

Mounting

The period between the arrival of the Detailed Reconnaissance and Planning Report (DRPR) on the Squadrons Projects Officer's desk, and the departure from UK of the Advance Party for Canada was only fourteen weeks. During this time the Confirmatory Reconnaissance (CR) had to be undertaken. As the Squadron was already committed to exercises away from Plymouth for nine of the fourteen weeks, there was little flexibility for CR dates, with the result that much hot planning was done in a very short space of time. In fact less than three weeks after

returning from the CR, the Project Officer was on his way back to Canada with the Advance Party.

In the time that was available manpower was earmarked, liaison was made with MWF, limited pre-project trade training at RSME was organised and individuals were able to be fully briefed on their tasks and functions. Selection and allocation of manpower was one of the Project Officer's greatest headaches at this time. The normal establishment and organization of the Squadron does not lend itself easily to a construction project of this kind at the best of times. The selection procedure for service with the Squadron inevitably leads to a shortage of key tradesmen such as CMT, draughtsmen and surveyors. Certain personnel from the Squadron were committed to providing support for the Commando Brigade on exercise in Denmark and on a Mediterranean deployment on HMS *Hermes*. The Squadron is not established for Clerks of Works or MPF. However, all of these problems were overcome with the assistance of RE Manning and Records Office, and by early July the Squadron was ready to follow its Advance party (who had left on 11 June 1983) to Canada.

The Advance Party established a sound relationship with Canadian Forces' Base (CFB) Borden, assistance from the various departments of which was to be invaluable to the success of the exercise. As the host unit, all Technical Service support to the Squadron in the form of logistic, transport, maintenance and repair, and certain technical assistance to the projects themselves (workshops facilities)

Photo 2. Meaford Camp. The accommodation block built on Ex Waterleap 83 is on the left. The Squadron was accommodated in the three buildings on the right

Photo 3. The accommodation block near completion

came from CFB Borden. Both they, and we, were extremely fortunate that Exercise Waterleap 82 had provided experience in the requirements for hosting such an exercise, and many of the initial problems which the Advance Party were expecting had already been anticipated and were in the process of being actioned. A Project Liaison Officer (a Canadian Military Engineer) was appointed from the Base Construction Engineering Office to work with the Squadron, and he commanded a mini Technical Services team which was co-located at Meaford to provide intimate support in stores and material procurement, plant and vehicle hire, provision of transport, accommodation stores and rations, civil labour hire and the management of all local contracts.

The preparatory work done by the Canadians from CFB Borden considerably eased the workload for the Advance Party, and they were able to apply themselves to preliminary work on the projects. Four weeks after the Advance Party had arrived in Meaford, the Main Party appeared fresh from their FTX on Salisbury Plain and were able to move straight onto sites to begin work in earnest. The smooth progress of the mounting phase set the scene, with one or two minor exceptions, for the rest of the exercise.

The Projects

The projects were divided among the troops with some shuffling of manpower depending on the character of the project. A field troop reinforced with all of the Squadrons electricians and the majority of building tradesmen undertook the accommodation block and all electrical work. The observation tower was constructed by a second field troop which had given up many of its tradesman, and the road was built by Support Troop with a field troop in support for tree clearance and culvert construction. Each project was commanded by a troop commander who was supported by his normal troop management, but who also had recourse to "imported" expertise in the form of a Clerk of Works (C) or (E), or the MPF. Overall control and coordination of all projects was maintained by the Project Officer, who was directly responsible to the Squadron Commander. It is of interest to note that there wasn't an engineering degree to be seen among the many qualifications of the troop commanders and Project Officer. The Canadian Project

Liaison Officer, a fully qualified Construction Engineer, was of considerable value throughout the exercise for his knowledge of Canadian design, standards and techniques, but was not an enthusiastic supporter of some of the less orthodox methods utilised by the Squadron in overcoming problems. Such was the case for example when it was decided to construct the 10m high observation tower on a convenient site, then lift it into its far less accessible final position using a Chinook helicopter.

The major problem faced by the Squadron became apparent shortly after the Main Party had started work; there would be difficulty in achieving the "project deadline" for completion. It would certainly not have been achieved by working the 7V2-hour day, 5-day week proposed in the DRPR and used for cascade planning. The reasons for this seem obvious in retrospect and readers of this article will probably scoff that they were not taken into consideration in planning. But apparently they were not and the Squadron had to work very much longer days, extra days and in some cases introduce shift work to make up time, particularly in the early stages of the projects. The major reasons for this were:-

(1) Tradesmen lacked experience and were unfamiliar with certain techniques required. They had, for example, revised concrete block wall construction at RSME but in the very dry atmosphere and with the type of blocks available, moisture was lost from the mortar before it had time to set to create a bond between blocks.

(2) The quality of some of the materials for the project meant that time had to be spent in adjusting and making things fit.

(3) Labour constants and plant outputs which had been used in the planning were in some cases unrealistic.

Photo 4. The observation tower in its remote location. To avoid the problem of carrying all materials to site the tower was built on an accessible site with a crane, then flown as an underslung load into location by a Canadian Forces Chinook helicopter. One problem avoided!

(4) The "down time" of much of the hired civilian equipment (particularly plant and dumper trucks) was much higher than anticipated.

As usual, the fine qualities of the individual Sappers showed in their willingness to improve their skills and learn the new techniques required. Pride in themselves, their unit and the Corps (and of course the excellent weather) helped them in working the additional hours required to overcome their mistakes and those made in planning and management.

While planning the manpower before the exercise it became obvious that the satisfactory employment of combat engineers would be a problem. The trade intensive nature of the projects involved meant that many combat engineers could not be gainfully employed and were in danger of being used as straight labourers assisting the tradesmen, the "humpers and shovellers" of all projects. All too often they would have to be employed on basic tasks. One field troop was employed for almost the whole deployment, including time on the Advance Party on tree clearance and simple culvert construction. Although every effort was made to incorporate combat engineering skills into their work (the use of explosives for tree clearance, and the construction of culvert head and wing walls), by mid September morale on site was in danger of flagging. It would seem that the projects which Squadrons are now having to undertake in the Waterleap series might have become too technical and too artisan trade orientated. A return to troop size projects where improvisation using the abundance of timber and basic skills are demanded (projects such as the improvised bridge or timber box culvert), could be of more benefit for everyone from troop commander down. It would also reduce the tasked unit's dependence on external (Canadian) agencies for project support.
the tasked unit's dependence on external (Canadian) agencies for project support.

There were of course other problems encountered from the initial planning stages to the handover ceremony in September 1983. But enthusiasm, professionalism and flexibility aided by the excellent weather combined to overcome these problems as they arose. The successful completion of the projects on, and in some cases ahead of, schedule was a great source of satisfaction for the Project Officer.

ADDmoNAL ACTIVITY

No overseas exercise can be judged complete unless it offers personnel of the participating unit opportunities to meet, train and take part in sport and social events with the indigenous military and civilian population, and to see something of the country in which the exercise is undertaken. Exercise Waterleap 83 certainly satisfied all criteria in that respect. Using the excellent facilities at CFB Borden the Squadron was able to carry out some very worthwhile range work during the exercise and most ranks fired their APWT. The Squadron Diving Team took part in a joint exercise with 2 Canadian Engineer Regiment and were able to undertake continuation training throughout the exercise. Twelve parachutists in the Squadron gained their Canadian parachute wings, and the Squadron represented the United Kingdom at the Canadian International Jump Bivouac. A team with *Operation Corporate* experience was put together at the request of the Canadian forces to give a number of presentations at different locations on their experiences in the Falklands conflict.

All ranks took part in organised adventure training which was organised at troop level and varied in scope and adventure. However, a good time was had by all!

Sports were a major part of Squadron life, particularly at weekends. The Rugby and Soccer teams had full fixture lists and the running team entered many events including the Montreal Marathon.

Most important of all was that all ranks were able to take five days R & R at some stage during the exercise, when they didn't need encouragement to get away and see something of the North American continent. Individuals travelled as far as Florida and California, but to many New York was the main attraction.

CONCLUSION

With all projects satisfactorily completed and handed over to the Canadian Forces on or ahead of schedule, and all personnel from the Squadron had a thoroughly enjoyable time in Canada, it was deemed that Exercise Waterleap 83 had been a success for the Squadron and the Corps. Meaford was agreed to be an ideal location for the exercise, being a range area surrounded by the famous Wasaga Bay holiday resorts. The exercise had lived up to expectations, giving a good balance of hard work and opportunities for additional activities.

Waterleap exercises invariably provide extremely worthwhile experience for any Squadron in the planning and mounting of a major exercise, and in control and management of construction sites. However, we as a Corps should be wary of spoiling the mood of the Waterleap series by taking on projects which demand and test the skills of the highly qualified tradesman and reduce the role of the combat engineer and class 3 tradesman (after all, the bulk of the manpower of most Squadrons) to mere labourers.

The Burma Sappers and Miners

The late LIEUT COLONEL E F R STACK

The Author died on 27 *July* 1983, *his Memoir appears on page* 281. *This article was discovered amongst his papers by his son, Major* D *J R Stack RE.*

1922-1939

The history of the Burma Sappers and Miners begins in 1887, when the raising of a Field Company was authorised, the unit to be affiliated to the Madras Sappers and Miners. Recruitment was slow, and the Company did not reach full strength until 1890, being composed mostly of Burmese, with a few Karens.

During World War I, the Burma Sappers and Miners expanded to a maximum of 1,400 men, and included at least three Field Companies. 15 (Burma) Field Company took part in the Shumran Crossing in Iraq, the Third Afghan War and operations on the North West Frontier after the war. 68 Field Company saw service in the Third Afghan War and 62 Field Company in the Chin Hills in 1919.

68 Field Company was disbanded in 1920 and 62 Field Company in 1921. In 1922 the connection of 15 (Burma) Field Company with the Madras Sappers and Miners ended, and the Burma Sappers and Miners became a small Corps with HQ and Depot, one Field Company and the Rangoon Defence Light Section. In 1928, 15 Field Company left for the North West Frontier of India, and the Sapper Lines at Mandalay were taken over by 12 Field Company, QVO Madras Sappers and Miners. 15 (Burma) Field Company returned to Mandalay in April 1929 and the Corps was disbanded, as neither the Government of India nor that of Burma was willing to pay for it.

When Burma was separated from India on 1 April 1937, the Burma Rifles battalions were manned by Karens, Kachins, Chins and Shans. There were almost no Burmese in them, though Burmese were recruited in some Territorial units and the Burma Military Police. It was decided that there should be a purely Burmese unit in the Burma Army, and that it should be a Depot and Field Company of Sappers and Miners, to be raised at Mandalay.

Major J M Saegert RE was appointed as Commandant. As he was not due to arrive until June, the Depot was organized from mid-March by Captain E F R Stack RE, a former Madras Sapper, then serving as ACRE Burma, and the first recruit batch was received by him. The Subadar Major and NCOs were volunteers transferred from the Burma Military Police and the Burma Territorials. The best of these volunteers, Havildar Sein Tun from the Burma Military Police, was later sent to the Indian Military Academy, Dehra Dun, and commissioned in 1939. He was

killed in World War II gallantly holding off single-handed a Japanese unit to allow an American aircraft to take off from an airfield under attack. Although he was recommended both for a posthumous VC and the highest American award for gallantry that can be given to foreigners, neither award was actually made owing to a disagreement as to which country should make it! Another NCO was Naik Kyaw Pe, a clerk and one of the few Burmese serving with the Burma Rifles. He subsequently became Jemadar Adjutant, was commissioned after the war and was the first Burmese Commandant.

Recruits were enrolled by the Burma Army Recruiting Centre, and the first batch of about sixty arrived during April. At least five of these became officers in the Burma Engineers (as the Corps was later designated) during or after the war, and one received an OBE and an MC for work with Force 136.

A British WO and a British NCO (BWO and BNCO) were posted in April 1937 from QVO Madras Sappers and Miners (CSM H Sims RE and Sgt C Obray RE) and were of great value on the administrative side, and later for Workshops and Fieldworks training. The new unit was first accommodated in the lines of 13 Field Company, QVO Madras Sappers and Miners, then commanded by Captain H B Calvert RE, and received valuable help both in training and administration from its OC and staff. After the arrival in June 1937 of Major Saegert, the unit moved to the South Gate Lines inside Mandalay Fort. Lieutenant B P Tyrwhitt-Drake RE joined in June 1938, and was appointed Adjutant and Quartermaster.

Each intake of about fifty initially did a drill and duties course under Sgt Fisher and Sgt Oldroyd, who were attached from I KOYLI. This course included musketry and infantry tactics. These two NCOs had joined early in 1938 and remained until they rejoined their Battalion on the outbreak of hostilities. After the drill course the recruits did a basic fieldworks course. The only difference from a normal S&M course was the inclusion of the many uses of bamboo, up to building bridges in bamboo. After the fieldworks course, trades training and NCOs cadre courses started. The trades training was initially carried out in 13 Company Workshops in the Sappers and Miners lines. As 13 Coy's potential in trades training was limited, about eighteen retired Madras Sapper trades instructors were enlisted locally. These *Maistries* set up workshops in South Gate Lines and gradually from the end of 1938 trades training became more and more intensive.

The organisation of the Field Company differed from the Indian establishment in that all GCOs were mounted on ponies, and a small pony-mounted section was included in the HQ Section. The normal mules were gradually issued, and training of drivers was carried out by 13 Company. G 1098 equipment was issued, and the Depot scale of tools and training equipment slowly become available.

The formation of the first Section of the Field Company was slow, due to the calls for NCOs training and for specialist training. Wastage in the initial stages was high. The Burmese did not have any military tradition, and discipline proved too much for some. Wastage on medical grounds was also high. The language of the unit was English and on average the Burmese recruits picked it up quickly. The British officers were required to learn colloquial Burmese.

To give experience of actual Sapper work small detachments were attached to 13 Coy in late 1938 and were employed with that company in building a timber truss bridge at Seywa, and camps.

Major Saegert used part of the Field Practice and Training Grant to purchase a second-hand Ford 3-ton lorry. This proved extremely useful both for training drivers, who learnt quickly, and as unit transport in connection with training. This transaction did not please the CMA, but no official action was taken to train drivers until long after the outbreak of World War II, nor was any MT issued. Consequently, when official MT was eventually issued, the Burma Sappers had a flying start.

In 1939 the Field Company took over full responsibility for the engineer preparations for the Burma Army annual camp at Kangyi. Sections were training

with the Burma Rifles during the course of the camp.

Major Saegert left on posting in October 1939 and was relieved as Commandant by Captain Stack. As the Army in Burma was put on a war footing, Captain J M W Howe RE was posted as Adjutant and Captain G M Eccles ABRO and Lieutenant P F Garthwaite ABRO joined the unit. By the end of 1939 a Field Company under Lieutenant Tyrwhitt-Drake was nearly up to strength in addition to the Training Depot.

1940-1947

1940 was spent in training the Field Company and further batches of recruits. In 1941 the Corps moved to the splendid new lines in Maymyo which had been started in peace-time and was about two thirds completed. Later in the year the Field Company moved to Moulmein and was engaged in various defence works, including laying a 6in pipe line through virgin jungle, construction of pill boxes for protection of the landing strip, etc. Major R S B Ward RE was posted from the UK to take command of the Field Company, with Captain Tyrwhitt-Drake as second-in-command.

Early in 1942, after hostilities with Japan had started, the Field Company less 1 Section moved up to Kawkareik, approached by launch up the Salween. It was engaged in demolitions on the road from the Thailand border back to Kawkareik. Credit for the efficacy of these was given by the Japanese in a wireless broadcast to the people of Burma, even mentioning the name of the unit responsible. MCs were awarded to Major Ward and to Lieutenant E Lord ABRO who commanded the Section in contact with the Japanese.

Communications with Moulmein were badly interfered with by Japanese air attacks on the landing stage at Kawkareik, and there were some desertions. One Section had been sent to Morgui for demolition work on the airfield and in the oil installations. On completion of these it was transported by sea to Rangoon, where it took part in the demolition of the power station and of Syriam oil refinery. It was then evacuated by sea to India. There it spent an unhappy war on L-of-C maintenance work, though selected men were trained as parachutists and dropped into Burma with Force 136 for sabotage and similar work.

After Rangoon was abandoned, the Field Company moved back up the Irrawaddy Valley with the Burma Army. It was now commanded by Major Tyrwhitt-Drake in place of Major Ward promoted to be CRE 17 Indian Division. The Field Company was employed on road diversions, strengthening bridges etc. As the Japanese invasion swept Northwards, the Burmese ranks became more and more worried about their families who \fere being overrun, and desertions became so heavy that in mid-April the Chief Engineer disbanded the Field Company.

At Corps Headquarters at Maymyo desertions also started as news from the South filtered in. Orders were received from L-of-C HQ at Mandalay to be prepared to move back to Bhamo as soon as rail transport to Lashio became available. The clerks, Indian trades instructors and non-mobile personnel were sent back to Bhamo in the very limited instructional MT available. The railway line to Lashio had been breached by bombing and was never mended. Eventually orders were received to march to Mandalay and proceed to Bhamo by Irrawaddy Flotilla Coy steamer. The landing stage at Mandalay had been heavily bombed, and this led to many more desertions on arrival there. Eventually the British ranks and about twenty Burmese boarded the last IFC steamer to leave Mandalay. During the voyage it was learnt from a BBC news bulletin that the Japanese had already entered Bhamo. The steamer stopped at Katha and was scuttled there. The remaining Burmese were dismissed to their homes, where it was thought that they would be of more use when the re-invasion of Burma took place than they would be in India. The British ranks started the march over the hills to Imphal.

After the war, the Burma Sappers were raised again as the Burma Engineers, in their old lines in Maymyo which had been pretty well destroyed by British and

American bombing when they were being used as Japanese Headquarters for Upper Burma. The lines were gradually re-built by the Works Services. In June 1946 Lieut Colonel Stack was posted back as Commandant. Other British Officers were posted in who had seen war service in Europe and the Far East, and some BWOs and BNCOs as Workshops Instructors. Some Burmese who had been GCOs and NCOs in the old Corps were promoted as officers and were very good. Some officers of General Aung San's Army, which had changed sides when the Japanese were in retreat, were also posted, but unfortunately introduced a political element. However, the new Corps flourished and gained the reputation of being about the best disciplined Burmese unit in the Burma Army.

In 1947 Lieut Colonel Stack was posted home and was succeeded by Lieut Colonel J H Fyson MBE Me.. Soon after this the connection with the British Army ceased and only a British Military Mission remained. Captain Kyaw Pe was promoted to be the first Burmese Commandant. With his wife, he was subsequently murdered by the Communists. Major J S Whitney RE stayed behind with the Mission to help with Workshops instruction. He was eventually badly wounded by a mortar bomb splinter during a three-cornered battle between Government forces, Communists and Kachins. His wife very bravely stayed behind with him after all British personnel of the Mission had been evacuated and in the end succeeded in getting him out safely.

Little news has come out of Burma as to how the Burma Engineers are faring now, but as long as the original NCOs held sway as officers they probably loyally served the Government in power. The Burmese find military discipline irksome and somewhat foreign to their nature. However they are quick and intelligent and can pick up trades, field engineering etc easily. They work hard and well when there is a job to be done. They are also very likeable. Had they served in an overseas theatre, without the temptation or ability to desert to their homes, they would probably have done very well in war.

"Bigot Dragoon" 15th August 1944 ..... and 40 Years Later

CAPTAIN O W H ATKINS RE (Retd)

Sometime Intelligence Officer 2nd Independent Parachute Brigade Group

ON 14 August 1984 I flew to Nice to take part in the Ceremonies which had been arranged, at various centres along the Cote Varoise, to commemorate the Allied landings there on 15 August 1944 under the code name "Bigot Dragoon".

Originally this operation had been planned as an assault practically simultaneous with General Eisenhower's invasion of Northern France with the object of drawing off enemy forces which might otherwise oppose him. But because there were insufficient landing-craft to support two seaborne operations at once, and because of the prior claims of the Italian campaign, it was launched some six weeks later than the landings in Normandy.

The Assault Force was comprised of a composite Airborne Division and three US Infantry Divisions withdrawn from the Italian campaign. The British element in the Airborne Division was the 2nd Independent Parachute Brigade Group under the command of Brigadier C H V Pritchard, more commonly known in later years as Brigadier Vaughan.

The Airborne Division took off from Rome just after midnight on 15 August, the landing being spearheaded by the 2nd Brigade consisting of 4, 5 and 6 Bns The Para Regt, a Para Sqn RE and other supporting arms. The Brigade landed in a heavy ground mist which completely shrouded the DZ at 04.15hrs at Le Mitan, close to

Le Muy, a small town about 30kms to the West of St Raphael, where the seaborne landings took place during the day. The task of the Brigade was to secure the DZ, blocking off the approaches from the north and west, while the Para Sqn RE were charged with clearing any mines or obstacles from the Landing Zone. The Brigade was swiftly followed on the ground by the remainder of the 8500 parachutists whose duty was to block the enemy's reinforcement routes from the west and northwest.

Very speedily the Brigade subdued local opposition and by noon had captured the nearby villages of Clastron and Les Serres and had liberated the small town of La Motte. During the day 477 Waco and 35 Horsa Gliders together with another 1000 parachutists landed on the DZ, which by now was securely in our hands, but it was not until the evening of D plus 1 that the town of Le Muy was captured. Shortly thereafter elements of the 45th American Division made contact on their advance inland and the Brigade was relieved.

I had learned that a tour of some 250 American veterans was to spend a week in Nice to participate in the ceremonies and I got in touch with the leader who immediately invited any British veterans who wished to do so to join them. This would have meant a week in Nice at the height of the summer and visiting many places not germane to the operations of 2nd Brigade. We declined this invitation and the Parachute Regimental Association, on learning that we were interested in attending the ceremonies, asked us to represent them and lay wreaths as appropriate on their behalf. They endeavoured to obtain official invitations to the ceremonies through the British Embassy in Paris but there was no response. I accordingly wrote to the Mayor of La Motte, the first town to be liberated in Southern France and he very kindly sent invitations to the La Motte celebrations. This was a fine start because they were centred on La Motte and Le Mitan, the Dropping Zone. Later the leader of the American veterans sent me a copy of his itinerary and I was able to select those ceremonies I thought we should attend whether by invitation or not.

I then wrote to Lord King, Chairman of British Airways, who upon receipt of my letter arranged for air passages to be booked for three people at reduced rates. Orginally three former officers of 2 Para Sqn RE agreed to make the pilgrimage. One was forced to drop out because of business commitments, and a second could not go at the last minute because he fell ill. So I was left to make the journey alone. Armed with a new "Red Beret" , a present from 9 Para Sqn, I embarked upon Bigot Dragoon 1984.

Arriving in Nice early in the afternoon of 14 August I picked up a car at the Airport and set off for Frejus where I had been booked into a hotel by the local branch of Barclays who also ordered two wreaths from a local florist on my behalf. By 15.30hrs I was at Frejus, the wreaths were awaiting me at the hotel and I set off for La Motte in good time for the first ceremony. I was greeted by the Mayor and whisked off to a local museum where all the participants in the parade were assembling ... there were many French veterans, local dignitaries and many serving officers from the various army units stationed in the vicinity of Draguignan, the largest military training area in France. The General Officer Commanding the District was present and was escorted round the Museum which contains many relics prepared by Captain Brian Holtam RE and incorporating some of the many photographs taken by Lieutenant R G Burgess during the operation.

I was fortunate to see a British Officer approach the French Officers and speak to them and took the opportunity to introduce myself, explaining that I was representing the Parachute Regimental Association and that I had dropped on the village forty years earlier. From that moment every gate was opened to me. The Officer, Major E L Parry RA explained that he was the liaison officer at the School of Artillery at Draguignan and had been instructed to represent the British Ambassador at the various local ceremonies during the week. He took me under his wing, introduced me to all and sundry, taking care to emphasise that I had actually taken part

in the assault and insisted that I stood by his side in all ceremonial aspects of the events.

During the afternoon I laid the Regimental wreath on the War Memorial in La Motte. Later in the evening I laid another wreath on the Memorial standing on the DZ in Le Mitan which has been constructed partly from the skeletons of two Waco gliders. This hamlet was the Headquarters of General Fredericks, who commanded the Allied Airborne Task Force, and the evening concluded with a free fall parachute display over the DZ and a *Vin d'Honneur* under the stars. During the course of this I was interviewed by the local radio station, the recording being broadcast the following day as part of the running commentary on all the events taking place in the region. Tired, thirsty and hungry I returned to my hotel in Frejus too late for dinner and retired to bed.

Up very early the next morning ... 15 August ... ! D Day! No breakfast because the hotel was not up to providing even a cup of coffee at 06.30hrs! I had arranged to meet Major Parry at 07.00hrs at the Motorway exit at Frejus where all the representatives were gathering to proceed in convoy to the first of the day's events at Dramont, near to the invasion beach. Gradually various groups gathered at the RV and eventually some three quarters of an hour late the three coach loads of American Veterans arrived accompanied by scores of jeeps, scout cars and other World War II vehicles driven by Frenchmen in American uniforms. These people seem to infiltrate every event and it must be said. that they add colour to the ceremonial. One hour late the convoy, preceeded by two policemen on motorbikes set off at high speed through Frejus and St Raphael along the corniche to Dramont. This was a hairy drive and no mistake, through traffic lights, cutting in and out of traffic, up the wrong side of roads all during the early morning rush hour. By luck rather than judgement we arrived at Dramont before the time at which the ceremony was due to take place.

This was a most impressive event. There were detachments from the US Navy, a considerable number of French troops, and it was here for the first time that I met the official British representation, a number of former members of SOE headed by Air Chief Marshall Sir Lewis Hodges who laid a wreath upon the Memorial. They had been involved indirectly with the landings having commanded small groups of *Maquis* in the countryside some distance from the coast creating diversions to assist the advance of the US Forces as they drove inland. During the course of this ceremony I was presented to the Mayor of St Raphael and also to Monsieur Chirac, the Mayor of Paris and a former Prime Minister of France. Some 3000 people attended the ceremony at Dramont which was enlivened by the appearance and landing, adjacent to the Square, of an enormous helicopter from Toulon to take the Allied Generals present, and also Sir Lewis Hodges, to Toulon to take part in the principal ceremony of the day at which the Prime Minister of France spoke. There had been considerable controversy over the decision at a late hour to hold the principal ceremony at Toulon, so far removed from the events of 15 August 1944. Toulon is the capital of the Department, so at Toulon the principal event took place. Rather like celebrating the battle of Hastings at Lewes!

By 11.00hrs Major Parry and I had reached Le Muy where another ceremony was to take place at the Monument to the Airborne landings just north of the town at Le Mitan. At last there was time for a drink, the first of the day, because the American coach party had taken a very long time to embus at Dramont and had not appeared on the scene by 11.30, the time the ceremony was due to commence. At mid-day, after we had been standing in blazing sunshine for half an hour it was decided to proceed without the American veterans. The Mayor of Le Muy made an impassioned speech about Freedom and made a very special point that his town, the second town in Southern France to be liberated had been taken by a *British* Parachute Brigade. It is quite remarkable that so few people realised that British troops had been involved in the operations. At La Motte, on the first day the Mayor also made the point. I am sure that a previous visit to La Motte by Brian

Holtam, who took such an interest in their Museum, had much to do with this, but I am equally certain that Major Parry's instant appreciation of the situation on meeting me at La Motte, and his insistence on introducing me to everyone in sight had much to do with the hasty introduction into the ceremonies of the National Anthem. About half way through the Le Muy ceremony the American Veterans coaches arrived. An American General who had jumped on 15 August 1944 as a nineteen year old private, and who had previously made a speech, made his speech again. In honour of the Veterans it was announced that the Star Spangled banner would be played again. (I think it was only because "God Save the Queen" was the first anthem on the tape that it was also played again before they could begin the American anthem!)

And so, at about 13.00hrs to Draguignan for a luncheon sponsored by the Franco American Society, whose President invited me as his guest after I had been introduced to him by Major Parry. A long lunch with many speeches. We had to leave before the dessert because what to me was the most impressive ceremony of the day was due to commence at 17.00hrs at the Rhone American Military Cemetery at Draguignan. I was introduced to Colonel Pugh, Officer Commanding the Parade, who apologised for the fact that only recently had it been brought to his notice that there had been British participation in the landings, and that consequently there were only two flags flying at the Cemetery, those of France and USA. In fact the printed programme stated that the band of the American 6th Fleet would play La Marseillaise and The Star Spangled Banner. However the National Anthem was played as well. Later, as I looked over the beautiful Memorial Chapel in the cemetery I noticed that among the many units, formations and ships whose names were carved on panels on the walls, as having taken part in the landings, was 2nd British Independent Parachute Brigade Group.

This ceremony at the American Cemetery was most impressive. Mr Richard Perle, the American Assistant Secretary of Defence was present and made what amounted to a political speech. On parade were a colour party from American Airborne Forces stationed in Germany as well as French Airborne Forces and US Navy personnel.

By about 18.30hrs the troops had departed, the 2000 or so spectators had gone and the cemetery was left in peaceful silence once again. Our American friends had departed for yet another Vin d'Honneur but for my part I had had enough as I had been on the go since very early in the morning. I bade farewell to Major Parry, without whose kind assistance I feel sure I would have been no more than an onlooker, instead of a welcome participant. After once again visiting the Memorial on the DZ at Le Mitan, for a last glimpse of it in the setting sun, and taking a last photograph I returned to my hotel, tired, but happy at what had been achieved, for a meal and a beer and turned in.

The next morning, on the way back to the Airport in Nice I called upon Barclays Bank in Cannes to thank them for arranging my hotel, and ordering the wreaths, and to pay a nostalgic visit to their office, for in August 1944 I called upon them after Cannes had been liberated and was the first contact they had had with the English since the war broke out. I had written to the Bank in 1944 to make a report and I found, on my return, that the French Manager who had plied me with carefully hoarded Champagne in 1944 was still alive and well, and, at the age of eighty-nine, playing golf as well as ever.

The pilgrimage was well worthwhile. Two days was just about right and my only regret was that more of my former comrades and friends were unable to join in the events which clearly meant so much to our French and American friends. It is on occasions such as these that the true meaning of friendship between nations comes to the fore. Forgotten are the quibbles over milk and meat, or whether we should have been informed about American intentions in Grenada. Individuals gathered together to commemorate such important events of the past as comrades in arms exemplify the true brotherhood of man.

Nile

ANNE CAVENDISH

The Author served for thirty-two years in the Directorate of Military Survey as a Map Research Officer in Egypt, Cyprus and MOD. Now retired, she is able to concentrate on a long-held interest in Military History. Readers will no doubt remember her brilliant article "Tel-el-Kebir-13 September 1882" published in the September 1982 RE Journal. As 1985 sees the lOOthAnniversary of the death of Gordon and the fall of Khartoum this article provides an introduction to the year ahead.

Introduction

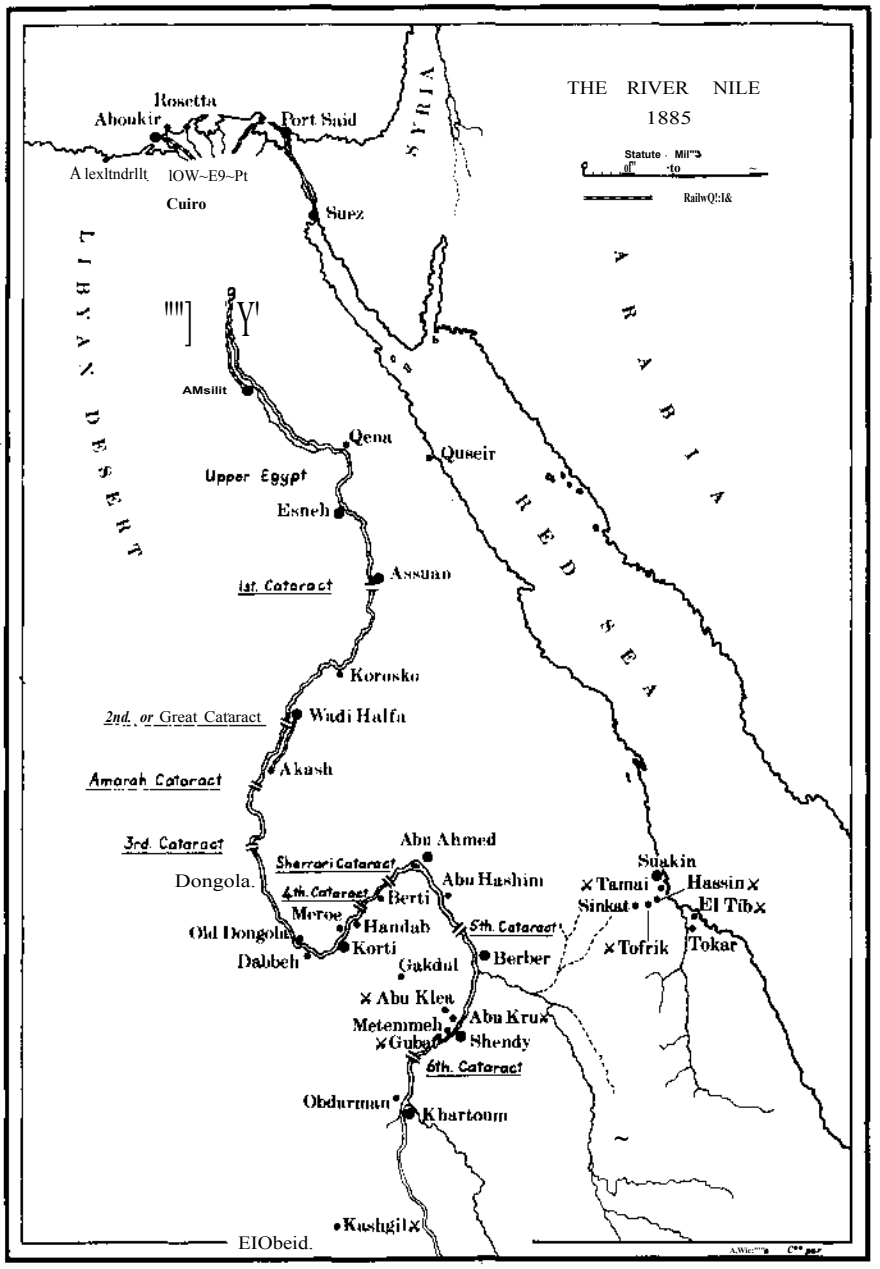
To compose an account of the brilliantly organized campaign which, having lasted barely six weeks, ended in the victory at Tel-el-Kebir in September W82, is not difficult; but to draw together the many threads which led so soon after to the Nile Campaign of 1883 to 1885 is more complicated. After Tel-el-Kebir, Great Britain's prestige among nations was so great that, had she annexed Egypt and the Sudan or declared them protectorates, few voices would have been raised in protest. The Suez Canal and its bondholders had to be protected, and Egypt was totally vulnerable: her army was disbanded and disgraced; her treasury was empty. Unfortunately, Mr Gladstone refused to recognize these facts. His only wish was to get all the troops back to England and to immerse himself once more in his franchise bill. Lord Hartington, who had taken over from Childers as War Minister, warned him against the rapid withdrawal of troops and the apparent abrogation of every responsibility. His advice was disregarded. The only actions sanctioned by the British government were, first, the appointment of General Sir Evelyn Wood VC as *Sirdar* of the Egyptian Army, charged with its training and rehabilitation, and secondly, the appointment of a British Agent and Consul General in Cairo; the man chosen for this position was Major Evelyn Baring (later Lord Cromer) who was recalled from his post as financial member of the Viceroy's Council in India. He was knighted and sent to Cairo where he was to serve with great distinction for the next twenty-three years. Gladstone then felt justified in forgetting Egypt altogether; as for Sudan, the Government refused to recognize even minimal responsibility for its affairs. The decision to withdraw all British troops from Egypt, leaving only a token garrison in Alexandria, was bitterly opposed by the Army. The Duke of Cambridge wrote to Wolseley, the Adjutant General: "I wish you would see Lord Hartington on this subject for I feel that the government contemplate shortly to give up Cairo and keep a small garrison only at Alexandria. Now to my mind no greater mistake could be made. Cairo is virtually Egypt, Alexandria is not, and therefore at Cairo we ought to have our troops till the whole organization of the country has been amended in the spirit and sense in which we went there originally. This does not mean annexation, to which, I know, there would be, at present, great objections. It simply means benevolent occupation for a long period. When Evelyn Baring reaches his post he is certain, for financial reasons and economical ends, to press our departure ... "

Wolseley was having a hard enough struggle to convince the government that Wood needed help in the reconstruction of the Egyptian Army and that specially selected British officers should be seconded to the Egyptian Army for this purpose. The case for the retention of British troops in Cairo seemed to be lost before it was raised, when fate stepped in, in the person of the *Mahdi.*

The Mahdi

Mahommed Ahmed Ibn Al-Sayid Abdulla was born in 1844 at Lebab, an island on the Nile near Dongola. He belonged to a family of boat-builders who claimed direct descent from the Prophet. Mahommed, the third son, was deeply religious and when, on the death of his father, an uncle took over the business and the care of his

brother's wife and children, he allowed Mahommed to devote much of his time to study and meditation. He ate little, worked hard, and practised the harshest of self-discipline. His reputation spread. He retired to the island of Aba to lead a life of austerity, contemplation and prayer. **In** 1861 he joined the Summaniya dervishes, a strict Moslem sect trusting utterly in the guidance of God, and met Abd Al-Alahi, leader of the warlike cattle-owning Baggara tribe, he and Osman Digna, Sheikh of the Hadadowas of the North East, would become Mahommed's



For "Obdurman" (just north of Khartoum) read "Omdurman"

principal lieutenants. Mahommed began to preach. He was a fiery speaker and his teaching appealed particularly to the poor: trust in God; scorn the pleasures of this world; Poverty and Humility are the greatest virtues. Their governors, the Turks and the Egyptians were to be despised for their luxurious and irreligious lives. By 1880 Mahommed had revealed his great secret. He was the Mahdi, the *Expected One*. Divinely guided, he would lead his followers to freedom and to purity of religion. The tribesmen flocked to his banner in thousands, and very soon most of the Southern Sudan was under his control. On 19 January 1883 he captured El-Obeid, this establishing a base from which to advance on Khartoum which was garrisoned by an inadequate force of Egyptian soldiers. That most savage of wars was declared: a *Jihad,* a Holy War. The tribesmen were fanatically brave; they were buoyed up by the certainty that their faith made them immune to the bullets and swords of the enemy, and they knew that if, by any mischance, they were killed, they would be with Allah at the instant of death.

Prelude

In Cairo, the Sirdar and the Khedives agreed that the capture of El-Obeid could not go unchallenged. Wood appointed his Chief-of-Staff, Colonel William Hicks (Hicks Pasha), a retired Indian Army officer of considerable experience and courage, to command an army of ten thousand Egyptians. His brief was to recapture El-Obeid. He cleared the country of dervishes between Sennar and Khartoum. He then reported to Wood that his half-trained army, whose morale was at the lowest ebb, were quite unfitted for their task. His advice was discounted, and he set off with heavy misgivings towards El-Obeid. Between November 3rd and 5th, in thick thorn and mimosa scrub, at Kashgil, a few miles from El-Obeid, Hicks and his army were ambushed by dervishes led by the Mahdi himself. It was not a battle; it was a massacre. They were slaughtered. Hicks's head was carried back to El-Obeid in triumph. The road to Khartoum was open from the South.

At the same time Osman Digna and his savage Hadadowas besieged Sinkat, a small town on the Red Sea, about sixty miles from Suakin. The Egyptian government sent Major General Valentine Baker, the Chief of the Egyptian Police to Suakin, at the head of a force of four thousand men, an undisciplined rabble of police and peasants. Near El-Teb, at a place subsequently named "Fort Baker", they were attacked by Osman Digna with a force of only twelve hundred tribesmen armed with swords and spears and wild courage. Baker's men were totally destroyed. They threw away their weapons and allowed themselves to be hacked to bits. Baker and half a dozen officers, having tried vainly to rally their craven force, fought their way back to their boats and escaped. The defeat at Fort Baker was a disaster rendered doubly disastrous by the capture, by Osman Digna, of machine guns, field guns, over three thousand rifles, and huge quantities of ammunition.

Gordon

Though determined to abrogate all responsibility for the Sudan, the government, or rather Lord Hartington, felt in honour bound to evacuate the garrison of Khartoum. Taking advantage of Gladstone's absence from London, Hartington sent for General Gordon. Gordon, who had served successfully in the Sudan on two previous occasions, was to be charged with the task of going to Khartoum and organizing the evacuation of the garrison together with those inhabitants who might wish to leave. At the time of his summons to the War Office, Gordon had just decided to resign his commission and accept an appointment from the King of the Belgians to organize the suppression of slavery in the Belgian Congo. Wolseley persuaded him to go to Khartoum instead.

In the history of the Nile Campaign, Gordon, a tragic and heroic figure, remains "off stage", awaiting the rescue which came too late. "Chinese Gordon"'s story is well known. His courage and integrity are legendary. Despite the professional jealousies and rivalries in the senior ranks of the British Army, he had acquired remarkably few enemies. (Redvers Buller did not like him, and was reported to have said that he was not worth one of the camels procured for his rescue.) Gordon

and Wolseley had been friends for years. They had served together in the Crimea and in China, and Wolseley, who could in no way be described as a humble man, declared himself "unworthy to pipe-clay his belt". On 18 January 1884 Gordon left England for the Sudan, accompanied by Colonel J D H Stewart of the 11th Hussars. At Charing Cross a party of three bade him farewell: Lord Granville, the Foreign Secretary, bought his ticket; Garnet Wolseley carried his kit-bag; and the Duke of Cambridge held open the carriage door.

Gordon's mandate was the evacuation of Khartoum but there were a number of people who, knowing his independent spirit, were a little uneasy about his appointment. Sir Evelyn Baring, under whose orders Gordon was placed, wrote to Lord Granville, "... a man who habitually consults the Prophet Isaiah when he is in difficulty is not apt to obey the orders of anyone ... ". Nevertheless, Baring appointed him Governor General of the Sudan upon his arrival in Egypt. Gordon reached Khartoum on 18 February 1884. Queen Victoria, with her usual realism, wrote in her journal, "His attempt is a very dangerous one."

Sudan

Before the entry of the British soldiers, what of the stage on which they were to fight seven bloody battles? The Sudan was nearly one million square miles of primitive unfriendly land. When Gordon was touring the country, as Governor General, in 1887 he had encountered a tribe dressed in full medieval armour; chain mail shirts, gorgets, iron helmets with nose-pieces, bucklers and two-handed swords. Their horses were also protected by armour. He was convinced that the armour had belonged to Crusaders and had been forged in the twelfth century.

A report by G W Steevens, a correspondent of the *Daily Mail* who accompanied the Nile expedition, gives a vivid picture: "The Sudan is a man-eater, red-gorged but still insatiable. The Sudan has no colour and no age just a monotone of squalid barbarism. Nothing grows green. Only yellow halfa grass to make you stumble and sapless mimosa to tear your eyes, dour palms that mock with wooden fruit and Sodom apples spreading their flatulent poison. For beasts it has tarantulas, scorpions and serpents, devouring white ants and every kind of loathsome bug that flies and crawls. It is a quarter of a continent of sheer squalor. Overhead the pitiless furnace of the sun. Underfoot the never easing treadmill of the sand, dust in the throat, timeless singing in the ears, searing flame in the eye. The Sudan is a God-accursed wilderness, an empty limbo of torment for ever and ever."

El- Teb and Tarnai

While Gordon was on his way to Khartoum the British government found itself so pressed by an indignant Queen and people that it reluctantly agreed to send a force to Suakin to subdue Osman Digna. General Sir Gerald Graham VC (hero of Kassassin) was given command of this expedition. Two brigades of British Infantry under Major General Redvers Buller VC and Major General Davies were formed from the 42nd (Black Watch), the 75th (Gordon Highlanders), the third battalion of the 60th (Rifles) and the Royal Marine Battalion. They were supported by the 19th Hussars under the command of Colonel Sir Herbert Stewart. They were joined at Suakin by the 10th Hussars, the 65th (York and Lancaster) and the 89th (Royal Irish Fusiliers), diverted on their way home from India. An advance party from the 26th Field Company (Royal Engineers) was landed on 19 February at Trinkitat, where they constructed piers for the landing of troops and stores and, in conjunction with the Navy, organized water supplies. A few days later the force was landed and, on the 28th, moved out to Fort Baker. Graham formed his troops into a huge square. Eight seven-pounders and six Gatlings were placed at the corners, and transport animals carrying ammunition and medical supplies were in the centre. Cavalry and mounted infantry were at the flanks and rear. Osman Digna's force was disposed in shallow trenches and pits in front of the walls and village of El-Teb. They were armed by Valentine Baker's rifles and supported by his two Krupp field guns and by a strongly fortified building on a little rise in the ground. This was to be the first confrontation between the British Army and the

dervishes, and it was to be a salutary experience for both.

Graham's buglers sounded the "advance". The pipers of the Black Watch and the Gordons put heart into the soldiers as the square, marching to the right, in order to turn the enemy's left, went slowly forward. The captured guns and rifles poured shot and shell upon them. Having advanced about a thousand yards the men lay down. At midday, when the burning sun was at its peak, Graham trained his guns upon the enemy at a range of about nine hundred yards. This barrage soon disposed of the Krupps, and the square rose to its feet again, and advanced, shoulder to shoulder. Their wheeling movement brought the Black Watch to the front. As the square drew near Digna's lines, the tribesmen threw away their rifles and swept forward with their spears and two-handed swords to fling themselves onto the bayonets of the advancing army. They perished in hundreds under the withering fire of rifles and Gatlings. Colonel Fred Burnaby of the Blues, having been refused permission to join the expedition, turned up at El-Teb on sick leave, and was described by Melton Prior of the *Illustrated London News* as "Battling Burnaby of the Blues, with shirt sleeves rolled up, picking off the enemy as they rushed in, in the same way you would kill big game ... ". The few dervishes reaching the square fought hand to hand, with frenzied bravery. The square moved on under continual harassment, took the first line of Digna's entrenchments, and trudged on towards the second. The Naval landing party, in a brilliant charge, captured the fortified building. The tribesmen fought for every inch of ground. Stewart's cavalry swept round the enemy's right flank, but the tribesmen split into large parties to the right and to the left, forcing the Hussars to gallop three miles before catching them. As the cavalry charged, the dervishes flung themselves to the ground, endeavouring to hamstring the horses as they passed. The Hussars found it almost impossible to reach the prostrate tribesmen with their sabres, and later Stewart adapted Arab spears as lances by weighting their heads with iron. By 2pm El-Teb was taken and Digna was retreating, leaving two thousand dead on the battle-field. The British losses were thirty-four killed and 155 wounded. Superiority in discipline and weapons, not in courage, had won the day.

On 13 March Graham advanced on Tamai where Digna was to be found, again entrenched in front of the village walls. This time the British were assembled in two squares: Davies's second brigade leading, and the first brigade, under Buller, to the right and slightly to the rear, to enable the two squares to support one another under fire. The Black Watch and the York and Lancaster formed the front of the second brigade square, and they moved faster than those making up the two sides; gaps began to appear. Veiled by the gun smoke which hung thickly in the still air, the tribesmen crept up unseen and, crawling under the muzzles of the Gatlings, penetrated the square. Amid wild confusion the men began to retire. Highlanders fighting in small groups gradually checked the retreat. The men rallied and reformed. Buller's square was experiencing an equally ferocious attack, but it did not break, and the Royal Irish, the Gordons and the 60th were able to fire heavily on Davies's attackers. At the same time Stewart galloped his cavalry round to the left flank and dismounted his men, who opened fire with their carbines. Caught in this murderous cross-fire the enemy was forced to retreat. Graham's force reformed and advanced to take Tamai and to destroy Digna's camp.

"An' 'ere's to you, Fuzzy-Wuzzy, with your 'ayrick 'ead of 'air-
You big black boundin' beggar-for you broke a British Square!"
Rudyard Kipling, *Fuzzy-Wuzzy*

With the victory at Tamai the road to Berber was opened. Then came one of the first of the tragic mistakes of a campaign bedevilled by human error and obstinacy. Graham telegraphed for permission to proceed to Berber. Permission was refused and he was ordered to end his campaign and re-embark his troops to return to Cairo, leaving two British battalions to garrison Suakin. He sailed for Cairo on 3 April. In after years Graham bitterly regretted having telegraphed Cairo and wished that he had sent Stewart to Berber with two squadrons of cavalry on his own

responsibility, thus securing the desert route and preventing Gordon from being totally isolated. As it was, the two gruelling battles of El-Teb and Tamai might just as well not have been fought. The Mahdi's forces re-occupied the conquered areas, and Berber with its small Egyptian garrison was soon captured. The tribesmen were convinced that Graham's withdrawal was inspired by fear, and were cock-a-hoop.

The capture of Berber closed the trap on Khartoum-though Gladstone, in one of his more obscure flights of oratory, announced to the House that Gordon was "not surrounded but, merely, hemmed in." It is true that Gordon could probably have slipped out of Khartoum with a few companions, and made his way to safety through the enemy lines and back to Cairo, but to abandon the garrison he had been sent to evacuate and the thousands of citizens of Khartoum who trusted him was not an action that would even have been considered by Charles Gordon. For nearly a year, by his strength of character, courage and faith, Khartoum was held. For another four months after the fall of Berber the British government did nothing.

Cloak and Dagger

While all these events were building up, a great and ambitious man was making his name in the Sudan. Lieutenant H H Kitchener RE had been seconded to the Egyptian Army in December 1882. Promoted to Captain in the British Army in January 1883, he held the rank of Major in the Egyptian Army. His desert reconnaissances conducted in Arab dress were to prove of inestimable value throughout the Nile Campaign, and for the last months of the siege he maintained the only fragile link with Gordon in Khartoum. He spoke fluent Arabic and was much admired for his courage and endurance. He was said always to carry a bottle of poison when operating in disguise. Having seen the treatment of a captured spy by one of the Sheikhs he was determined to avoid such a fate at all costs. He prepared many reports on desert routes and on the state and attitudes of the local tribes. He suggested the raising of an Arab force to serve in the Sudan. General Sir Charles Wilson (another Sapper), head of Military Intelligence in Egypt, under whom Kitchener worked, forwarded all his reports to Lord Granville, who in turn passed them to Wolseley. Wolseley was impressed and interested by the reports, and began to revise his opinion of the young officer whose insubordination had so annoyed him in Cyprus.

Action at Home

At last, in August 1884, six months after Gordon's departure, Gladstone was forced by pressure of public opinion, by the ceaseless urgings of the Queen ("The Queen trembles for General Gordon's safety"), and finally by the threatened resignation of Lord Hartington, to announce that Lord Wolseley would lead an expedition to relieve Khartoum. Wolseley had been making plans for this contingency ever since Gordon's departure. It was easy enough for politicians to announce an expedition to relieve Khartoum; to plan and carry it out was another matter. From Cairo to Khartoum up the Nile was 1750 miles, which included seven formidable cataracts. The route advocated by officialdom was across the desert from Suakin to Berber, a distance of 280 miles, and thence to Khartoum by the river. The route from Berber, though shorter, involved crossing waterless desert seething with hostile tribesmen. It provided an insoluble problem of supplies and communications. To transport the very minimum quantity of water required by such a force, let alone essential items such as food, ammunition and medical supplies, would require at least four thousand camels. The Nile route eliminated the problem of water, and Wolseley was confident that "boats carrying soldiers and food supplies could, if properly handled, surmount the cataracts on the river and bring the force within striking distance of Khartoum in time to save Gordon." There was bitter opposition to this plan, not because anyone could suggest a better one but merely because it was not the conventional method of going to war. Wolseley had his way. With his Red River Expedition in mind, he called together as many members of his Canadian force as possible, among them McNeil, Redvers

Buller, Brackenbury and Butler.

Colonel Butler, assisted by Colonel Alleyne ofthe Royal Engineers, was ordered to "proceed at once to find four hundred boats similar to those used on the Red River Expedition." The design of the Nile "whaler" was very like that of the Hudson Bay Company "York boat" and was chosen only after exhaustive experiments in Portsmouth Harbour. The requirements were exacting. The boats had to be large enough to carry a dozen men with a hundred days' supplies and ammunition packed in specially designed, weather-resistent cases to be fitted first into the bottoms of the boats and later onto the backs of camels. They had to be light enough to be carried on men's shoulders and tough enough to survive rapids, whirlpools and sand storms. They had to be roomy but with shallow draught, slight and easy to row but durable. The final boat was thirty foot long, with a draught of two foot six inches. It was fitted with two masts and twelve oars. The Admiralty stated categorically that it would take from two to three months to build a fleet of four hundred such boats. Butler, however, had already made his plans, and as soon as his prototype was approved, forty-seven boat builders from all over England, who had been standing by, began work immediately. Within a month, four hundred boats had been completed and dispatched to Cairo, and a further four hundred were in production. Wolseley meanwhile was collecting crews. The Canadian *voyageurs* who had been so valuable on the Red River had, by 1884, almost vanished, and a mixed bunch of adventurers were signed up in Canada, the best of them being the Iroquois Indians for whom Wolseley had asked. He added to these in Egypt with parties of the cheerful West African Kroomen who had worked so well in Ashanti. Wolseley left England for Egypt on 1 September, 1884. He was deeply and agonizingly conscious that his most urgent battle would be against time. Gordon had already been in Khartoum for six months. Still, he was fairly confident, and wrote to Lady Wolseley from Cairo on 13 September, ". . . I ought to shake hands with Gordon near Khartoum about 31st January next . . ."

The Gathering Army

From HMS *Iris,* "at sea", Wolseley launched upon the enraged Duke of Cambridge his most outrageous and revolutionary plan. He wanted a camel corps to act as mounted infantry for a possible strike across the desert in the final stages of the advance to Khartoum. For this embryo commando he proposed a *corps d'elite* picked from all the cavalry, the seven battalions of the Guards and the two battalions of the Rifle Brigade: two officers and forty men from each battalion. They would be combined in a Heavy and a Light Camel Regiment to include a hundred trained Marines: a total of sixty-one officers and 1121 men. They would be joined in Egypt by a mounted-infantry camel corps drawn from the Sussex and Essex regiments: an additional twenty-five officers and 486 men. The Duke declared the scheme" ... unsound and detrimental to the esprit-de-corps of the regiments." However the much-maligned Duke had never been known to let down his commanders in the field, and he was as deeply anxious as Wolseley about the fate of Gordon. He assembled the detachments with great speed and personally inspected every man. This unusual camel corps arrived in Egypt on 7 October.

Wolseley chose Redvers Buller as his Chief of Staff. Evelyn Wood was to be in charge of supplies and communications. Major General Earle and Colonel Sir Herbert Stewart were appointed Brigade Commanders, Earle to the River Column and Stewart to the Desert Force. Butler was in charge of loading, launching and shepherding the boats, a frustrating task because of the lack of support he received from the Staff. He was dedicated to the boats and, if possible, even more conscious than Wolseley of the terrible pressure of time. Wolseley decided to set up his headquarters at Korti, a village on the Nile beyond the third cataract. From Korti the Nile flowed in a great loop, North-East to Abu-Ahmed and then South, via Berber and Shendy, to the sixth cataract and the open river to Khartoum. He planned to send the Desert Column across the loop, some 150 miles to Shendy, via the wells of Gakdul, while the River Column pursued the much longer route up the

Nile. Before any action could be taken, the men and supplies had to reach Korti.

Murder

On 10 September Gordon, increasingly anxious about his ability to hold Khartoum in the face of rapidly approaching starvation, sent Colonel (JDH) Stewart, with two or three others, on a steamer down the Nile to run the gauntlet of the Mahdi's guns and to inform the outside world of the true and desperate state in Khartoum. The steamer passed safely between the Mahdi's forces massed on both banks but, when close to Dongola, the steamer hit a rock and sank. The party was rescued by a local Sheikh who promised to help them to safety. Having disarmed them, he murdered them. When news of this reached Wolseley, it added to the pressure for haste. He moved fast to Assiut, and then on to Wadi Haifa and Dongola. The period from 27 September, when he left Cairo, to the beginning of December, when he was able, at last, to set up his headquarters at Korti was one of feverish activity.

News and Views

Vivid pictures of the frenzied preparations are found in Wolseley's letters to his wife:

"I believe the noble tin bellies and Hussars embarked yesterday. Fancy a Life Guardsman, clothed like a scarecrow and with blue goggles and mounted on a camel over which he has little control. What a picture! ... ", and

"... the great camel corps arrived at Alexandria yesterday, I am anxious to see all the fine gentlemen of HM Household troops, dressed in workmanlike fashion moving over the sands of this desert . . ."

On 6 October he wrote, "... We have actually two lady nurses here in our hospital. Before we got them recognized as part of our medical establishment the doctors pooh-poohed their value and tried to keep them at a distance. I wish we had plenty more of them; they serve, moreover, to keep the doctors and the hospital orderlies up to the mark ... "

Wolseley's manservant, Fricke, who had accompanied him on so many campaigns and postings, was growing old. "... Fricke started this morning by river; he never could ride all day on a camel. So I am being valeted by Wood the coachman. I feel he will come in some morning with a wisp of hay, making a hissing noise with his mouth and try to wisp me down before I have my tub ... "

The Boats

Butler and Alleyne established themselves at Wadi Haifa. They worked round the clock on all the thousands of details involved in the loading and dispatch of the boats as the river steamers plied to and fro from Assiut with supplies. "One day," Butler recalled, "I was employed in the daily work of the dockyards, when, across the river, a strange object caught my sight ... a small American birch-bark canoe, driven by those quick down-strokes that seem to be the birthright of the Indian voyageur alone, was moving up the further shore. When this strange craft had got well abreast of our dockyard, it steered across the swift river and was soon underneath my tent. Out of the canoe, with all the slow gravity of his race, stepped a well-remembered figure-William Prince, Chief of the Swampy Indians from Lake Winnipeg in North America ... Fourteen years earlier this same William Prince had been the best Indian in my canoe when we forced our way up the rapids of the Winnipeg to meet the advance of the Red River Expedition through the wilderness of the North West and, here today, on the Nile, stood William Prince now chief of his tribe . . ."

Apart from this happy encounter Butler and Alleyne had a bad time fighting for their beloved boats. Their Herculean efforts were frustrated and delayed at every turn by laziness and bad staff-work. The most disastrous event was the failure of Buller to order enough fuel for the steamers ferrying supplies to the loading bases. (Wolseley calculated that this blunder delayed the expedition by three weeks and was largely responsible for the failure to reach Khartoum in time.) The weight to be carried by each whaler had been worked out to the last pound. The furious Butler

found that an extra twenty-one days' supplies were being added. This slowed them down and made the boats more difficult to handle. Many of the senior officers, unlike Wolseley and Butler who were content to sleep on the sand under a blanket, with a saddle or pack for a pillow, insisted on their creature comforts. Evelyn Wood's baggage, apart from tents and camp furniture, included ninety-six cases of stores, forty of which contained wine. Buller was another who "travelled heavy". The boats were rowed by soldiers. The voyageurs, one in the stern and one in the bows, guided them. In very rough water or strong currents, the soldiers went ashore, leaving only the voyageurs on board, and towed the boats upstream with ropes over their shoulders. The boats' crews were beset with lice, boils and poisoned cuts, scurvy, cholera and typhoid. It was a desperate struggle to keep together their torn and ragged uniforms; tartan trews were even patched with the lids of biscuit tins. Discomfort, pain and exhaustion weeded out the unfit, and the survivors made up a force as hard and tough as any in the world. The boats were undoubtedly a success and, day by day, the crews became quicker and more expert. Only three of the 800 boats making the hazardous 500-mile journey from Wadi Haifa to Dongola were wrecked.

Ian Hamilton (later General Sir) gives an account of his voyage up the Nile with a detachment of Gordon Highlanders: "My company took their seats in eleven small new boats to struggle hundreds of miles up the Nile in order to save Gordon; a vague and typically British adventure, just like a fairy tale ... Our feelings were, as nearly as possible, those of a party of Boy Scouts dressed up like red indians and let loose in a flotilla of canoes. Each boat of eight rowers, a pole man and a coxswain was-and had to be-a self-supporting and independent unit. At best, the company got together about once in ten days. The tale has a ring of glorious adventure, and so it was, only, at the time, it was incessant toil, most of it waist deep in water; bad food, broken nights, the lack of any drink but sand and water, the resultant scurvy; all these wore health and nerve to fiddle strings ... "

Nevertheless Hamilton agreed with Butler that the boats were the only hope of saving Gordon, and that the creation of the Desert Column sealed his fate.

Supplies

Supplies were a logistics nightmare. Great pyramids of food were concentrated at Wadi Haifa: 1,608,500 tins of bully·beef, 1,359,400lb of ship's biscuits, 20,800lb of pickles, 1003 pints of champagne for the sick and wounded, baking powder, lime juice, compressed vegetables, tea and hundreds of other items which all had to be forwarded to a chain of depots along the Nile from which soldiers might draw their rations and keep intact the supplies in the whalers which were destined to be unloaded at Korti. It was not until the beginning of November that sufficient stores were collected to allow Wolseley to send forward his main force.

Korti

The camp-site at Korti was a pleasant one; palm groves sheltered the tents, and rapidly-growing gardens surrounded the camp. Villagers appeared from nowhere and set up stalls selling fruit, vegetables, eggs and poultry. Every evening the band of the Royal Sussex played in a cleared space in the middle of the camp and helped to restore the spirits of the weary sun-baked men who arrived each day to swell the assembling force. Colonel Burnaby, still on sick leave, was early on the scene, and Wolseley, who found this dashing soldier impossible to resist, created the position of "Inspecting Staff Officer" for him.

By Christmas most of the Desert Column had arrived, but the supply of camels, most precious commodity of all, was woefully inadequate. Once again Buller had proved himself a poor Chief of Staff. Inexperienced riders, unversed in the care of their temperamental steeds, had proved fatal to thousands of camels, which had to be abandoned in the desert *en route.* Additional camels, promised by the *Mudir,* had not been forthcoming, and few could be bought locally. Wolseley was in despair, and the doves in the palm trees at Korti maddened him with their cooing, reminding him, he said, "of that old windbag Gladstone". The Desert Column

could wait no longer. There was not time. A staging post was set up at the wells of Gakdul, half way between Korti and Shendy, and the wretched camels had to make the journey twice. The advance began on 30 December, when the Desert Column paraded before the C-in-C: the 19th Hussars, Royal Engineers, a Medical Staff Corps with bearers, three mountain screw-guns and the entire force of the Camel Corps moved out forty abreast. It was an imposing mile-long train as two thousand camels rolled haughtily past the saluting base while the band played their newly adapted march, *The Camels are Coming.* This was the cream of the British Army, bold and confident victors of a thousand battles, led by, in Wolseley's opinion, "the Nation's best all-round soldier", Sir Herbert Stewart. To his bitter chagrin, the British government refused to allow Wolseley to advance beyond Korti, where he could remain in touch with London, Cairo and both the Nile and the Desert Column by telegraph. Wolseley rode out into the desert to watch their departure. He stood alone on a little mound, waving to them and wishing them luck. It was a sad moment for him. Never before had he been left behind when his troops went into battle.

The next day, New Year's Eve, while the troops sang *Auld Lang Syne* around their camp-fire, a scout found his way through the surrounding dervishes with a message from Gordon. Written on a bit of paper the size of a postage stamp was "Khartoum all-right 14.12.84. C.G.Gordon." This apparently optimistic message was written to deceive the Mahdi should it fall into his hands. The verbal message was grim indeed, telling of the great strength of the enemy and the desperate state of the people of Khartoum. The donkeys, the dogs, the cats and the rats had all been eaten, and the inhabitants were too weak even to bury the dead. "We want you to come quickly" was the urgent cry. Butler, writing twenty-five years later, said, "my own personal reading now of the events at the time is, that there was only one man then in authority to whom the fate of Charles Gordon in Khartoum was a real, tangible, ever-present anxiety-that man was Lord Wolseley." That man was pacing helplessly up and down his camp at Korti. Everything depended on the speed of the Desert Column.

Having deposited its first load of stores at Gakdul with a strong guard, to protect them and the precious wells, the Column returned to Korti for the second instalment. The men were in splendid condition, hard and fit and full of fight, but the unhappy camels were another matter altogether. In six days they had travelled 196 miles, for half of which distance they were heavily over-loaded, and their riders had no experience of camel-care. Most of them suffered from huge and agonizing sores. After only a brief rest, the survivors were re-Ioaded and sent off once more to Gakdul.. This time they were accompanied by Charles Beresford and the Naval Contingent. Beresford rode a donkey which he had christened "Waterford" because he said it had bucked him off as often as that constituency had rejected him. The Mahdi, having observed the first expedition to Gakdul and the return to Korti of the unloaded camels, gathered together ten thousand of his finest warriors to intercept and destroy Stewart's little force of two thousand.

Abu Klea

"The most savage and bloody action ever fought in the Sudan by British troops,"
Winston Churchill.

On 12th of January, leaving a detachment of the Sussex Regiment at Gakdul, Stewart moved out into the desert towards the valley of Abu Klea. They marched under a baking sun. The sand beneath their feet was burning hot. A major feat of endurance took them across forty-three miles of waterless waste and left them on the morning of 17 January facing the wells of Abu Klea. Ahead, a line of brilliantly coloured banners hung motionless in the still air between the column and the longed-for wells. Stewart assembled his force of fifteen hundred officers and men into a large square, with the camels in the middle. He had three screw-guns and one Gardner gun. They advanced slowly over the rough and baking ground under continuous rifle fire. The square was halted frequently, to allow doctors to treat the

wounded and for repairs to the rear face of the square which was continually forced out of line by the slowness of the exhausted camels. The banners stirred as their bearers rose, revealing fifteen thousand dervishes in battle array; the air was alive with the beating of drums and with shrieking and screaming war-cries: a chilling sight and sound to the weary little Desert Column, outnumbered by nearly a hundred to one. Five hundred yards from the enemy lines, the square halted to tighten its formation. Dry tongues tried vainly to moisten cracked lips. Beyond the screaming mob was - water. The shouting ceased, and the earth shook with the thud of thousands of bare feet as the dervish army advanced at a run. Wave after wave was cut down by the Gardner gun and by withering rifle fire, but still they came on. As they neared the square they swerved to hit it at its weakest point, on the left rear corner where a gap had been made by the Gardner gun which had been pushed out by the Naval Contingent and where, also, a bulge had been caused by the press of panic-stricken camels. Tremendous volleys of rifle-fire failed to halt the wild charge. The Gardner gun jammed, and at leaSt half of the sailors were killed as they fought around it. Burnaby was killed as he stood outside the square, wielding his sword until the last drop of blood had flowed from a terrible gash in his throat. Many of the infantry rifles jammed through overheating and rapid firing, and the bayonets, which were then the soldiers' only weapons, proved to be of such poor quality that many of them buckled when thrust. The battered square was only saved by the dogged heroism of the Guards, who held their ground on the two sides not under attack. The left of the square was gradually forced in. The camels formed a living bulwark which broke the Arab rush and gave the square the few moments needed to reform. There was desperate fighting in the centre of the square: camels and men in a churning mass of swords, spears and bayonets. Stewart's horse was shot under him. A stroke of luck forced one flank of the square up a steep little hill and enabled them to fire over the heads of their comrades in the front rank. The enemy wavered, then turned and walked away, leaving more than eleven hundred of their dead on the field. The British losses were seventy-four officers and men killed and a hundred wounded.

The muddy water of the Abu Klea wells was like champagne. After a cold and miserable night without stores, they built a *zariba,* or fort of stones and thorn, in which they placed the wounded with a guard of a hundred Royal Sussex. Then the Column set out for Metemmeh, a distance of about twenty-three miles across country. Early the next morning, 19 January, they reached the top of a gravel ridge and saw ahead the winding Nile. Between them and the river fluttered the banners of many thousand dervishes. "We will have breakfast first and then go out to fight," Herbert Stewart decided. They settled down to a cheerless meal under a continuous patter of long-range bullets.

The River Column

Earle's River Column left Korti on 2 January. It consisted of one Squadron of the 19th Hussars, the Staffordshires (the 80th, Wolseley's old regiment), the Black Watch, the Gordon Highlanders, the Duke of Cornwall's Light Infantry, a battery of the Egyptian Artillery and the Egyptian Camel Corps. The Hussars were on the left bank and the Camel Corps on the right. It was a tough journey, battling with rocks and cataracts. It took the Black Watch four days to navigate a cataract seven miles long. Boats had frequently to be unloaded and portaged and the contents manhandled along the rock-strewn banks. On 10 February, Earle left the boats and marched across the desert towards Abu Hamed.

Kirbekan

He found the enemy firmly entrenched on Kirbekan ridge, between him and his objective. He decided to feign a frontal attack and to lead six companies of the Black Watch, Staffordshires and Hussars round the left flank to take the enemy in the rear. Earle and his flanking column were seen, and they proceeded under continuous fire, but they managed to take the enemy in the rear and to overlap it on the right flank. As the Staffords and Highlanders, to the wild music of the pipes,

stormed the ridge, they could hear the guns of the mock frontal attack. The enemy withdrew, harried by the Hussars. While flushing out snipers from among the rocks on the ridge, the victors came upon a small stone hut. A tribesman, lurking within, shot and killed General Earle. It was a sad loss in a battle for which the casualties were light: twelve killed and forty-eight wounded. Colonel Brackenbury, another member of Wolseley's close circle, assumed command of the River Column. For twelve more days they fought their way up the river towards Abu Hamed and Berber, continually harassed by the dervishes until, on 24 February, they were recalled to Korti.

Too Late

As the Desert Column were breakfasting, a stray bullet hit Stewart in the groin; he was mortally wounded. The command of the Column then fell to General Sir Charles Wilson, the Engineer who was head of Military Intelligence. Leaving "the Heavies" (18th Hussars) and the RN Contingent, with their guns and the Gardner gun in a zariba constructed on a hillock from rocks and boxes, the remainder of the Column marched out in a square in the blazing heat of two o'clock in the afternoon.

By this time the tribesmen had been reinforced from Omdurman, and their standards fluttered on every side. The guns in the zariba opened up, and the Gardner gun, unjammed, fired steadily. Then, as at Abu Klea, the enemy charged and the square halted to withstand the onslaught. Cheering wildly the soldiers began to fire at random until the bugles sounded the "cease fire". Then, steadied by a pause, they began to shoot with such accuracy that not a tribesman reached the square. The front ranks of the dervishes were wiped out and the remainder retreated, and the exhausted soldiers were able to advance to the river and to plunge their faces into the wonderful, filthy Nile. They bivouacked on the river bank that night, and early next morning they returned to the zariba. The whole force then marched to Abu Kru, scene of the previous day's battle, and there they dug in. The period from the victory at Abu Kru, on 21 January, until the morning of the 24th is the subject of bitter dispute. If Wilson had departed in Gordon's Nile Steamers on the morning of the 21st, immediately after the battle, there is a faint possibility that he might have reached Khartoum before it fell. The three days spent in reconnaissance, loading the steamers and resting his exhausted force, must have seemed vital to Wilson. His troops had marched and fought, marched and fought, under cruel conditions for more than three weeks. Hard and fit though they were, it had taken a terrible toll on these gaunt, ragged and indomitable soldiers.

On 24 January, the two river steamers, *Bordein* and *Telahawiyeh,* moved off on the 106-mile journey to Khartoum. They carried twenty men of the Royal Sussex, wearing their red coats to put fear into the hearts of the enemy, a few sailors, and two hundred Sudanese infantry. *Telahawiyeh* towed a barge loaded with grain. For three days, heavily loaded, they churned slowly up the river, moving only by day and even then running aground frequently because the Nile was shrinking rapidly in the violent heat of approaching summer. There was much skirmishing on the banks and a continual search for wood for the steamers' boilers.

At dawn on the 27th they rounded a bend and Khartoum was in sight. Heavy gunfire was turned upon them from both banks. As they approached the town, the tragic truth became obvious. No flag. No welcome. Only savage gunfire. Khartoum had fallen. The day before, on the 26th, a traitor within the city had opened the gates to the Mahdi. The garrison were so weakened by starvation and sickness that they were barely able to pull the triggers of their rifles. Some say Gordon was murdered on the steps of the Governor's Palace, some that it was while he was leading a tiny force to make a last stand in a prepared place. His body was never found.

Sick at heart, Wilson ordered the steamers to turn and run, full speed down river. The *Telahawiyeh* struck a rock and sank, but all on board were rescued by the *Bordein.* On the 31st they passed the last cataract and had only a clear stretch of water between them and Mettemmeh. In the afternoon *Bordein* struck a sunken

rock. They succeeded in dragging her alongside a sand spit which ran out from an island. Guns, ammunition and stores were landed. Wilson and his tiny force dug in on the island and a ship's boat set off down river to seek help from the Desert Column. The message reached Abu Kru on 1 February and, immediately, Lord Charles Beresford manned the small steamer *Safieh* with a crew which included twenty picked marksmen of the 60th, two Gardner guns and two four-pounders. As he ran the steamer through the Arab defences at Wadi Habishi he poured such a fusillade of shot and shell into them that they failed to retaliate until the ship had passed. However, one of the shells fired after them went through *Safieh's* boiler. With difficulty they managed to edge further upstream and anchor, stern on to the enemy, at a range of about five hundred yards. Intermittent fire continued all day between *Safieh* and the Arabs on the shore. By dawn the next morning, the boiler was repaired and Wilson and his force were re-embarked, and they rejoined the Desert Column on the morning of 6 February. So, with this dashing action by Beresford, the expedition which had set off so optimistically to relieve Khartoum ended in failure.

Aftermath

Feeling in England ran high. Gladstone was bitterly unpopular and behaved with unbelievable tactlessness. He appeared at the theatre when the whole country was mourning the death of its hero, and was hurt and surprised when he was booed. His speech in the House made only a passing reference to "the late lamented Gordon". Discovering how out of tune he was with feeling in the country, he began to panic. The horrified Wolseley now received instructions from the government to "avenge Gordon and smash the Mahdi at Khartoum." He was to choose the time to attack; and reinforcements, stores, camels, guns and ammunition would be supplied regardless of expense. A fresh expedition would be sent to Suakin, and a railway would be built between Suakin and Berber. General Graham was to have the task of regaining what he had already once won. All this activity was disturbing. Wolseley's force was ragged and exhausted. Not only was the hot weather, when they must withdraw to summer quarters, upon them, but the spirit and the impetus were gone. While Gordon remained to be rescued they were ready to push themselves to the limit, but with Gordon dead there was no goal. Wolseley set up a summer camp at Dongola.

Graham fought two more savage battles; at Hassin on 20 March and at Tofrik on March 22nd. Tofrik proved a near disaster, with a hundred killed and 140 wounded. The day was saved by the maintenance of their line by the 15th Sikhs and the 28th Bombay Native Infantry who repelled attack after attack with imperturbable courage. Osman Digna had had enough. He and his force melted away, to give no more trouble for the moment.

Having stilled public outcry with bellicose cries for revenge, Gladstone then had the good fortune to have a dispute with Russia. On 30 March 1885, while an Anglo-Russian commission was settling disputed areas of the Afghan frontier, Russian troops attacked the village of Pendjeh. This attack on a hitherto unknown village instantly became for Gladstone "an unprovoked attack on the gateway to India". War with Russia was imminent; he was able to pull out quietly from the Sudan owing to more urgent military concerns. Complete evacuation was ordered on 11 May. Wolseley objected strongly to being asked to act with such dishonour. He wrote: "I made promises to the Sudan people on the faith of Mr Gladstone's announcement in parliament that have blackened my face in this land of Egypt and that make me long to sneak out of it." Thousands of Sudanese who had put their trust in the British were abandoned to the merciless and cruel dervishes. The implacable and ferocious treatment meted out by the Mahdists was to cause the death of more than six million Sudanese. Wolseley returned to England at the end of May. The Mahdi died of typhus in June. His successor, Khalifa Abdullah, continued his reign of terror.

As soon as the withdrawal of the British troops from the Sudan was irreversible,

Gladstone entered into friendly negotiations with the bewildered Russians.

The best comment on the heroic and unsuccessful Nile Campaign is to be found in the open telegram handed to Gladstone by the stationmaster at Carnforth Station when he was on his way to London:

"These news from Khartoum are frightful, and to think that all this might have been prevented and many precious lives saved by earlier action is too frightful. VICTORIA R.I."

The Most Photographed Bridge in Kansas

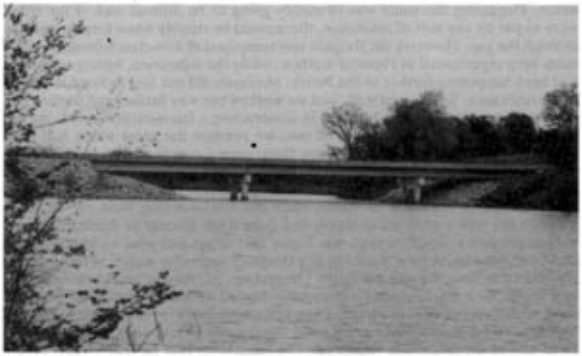
LIEUT COLONEL R A BRADBURY RE B Sc

From May 1974 *to September* 1975 I *was fortunate in being attached to the US Army Corps of Engineers in Kansas City, Missouri. The attachment, which served as the practical training part of* 21 *PET (Civil Engineering), and included both design consultant and contractor phases, followed an initial six months' refresher course at RSME Chatham.*

PRIOR to flying out to USA I was warned that whilst the Americans spoke a language vaguely similar to our own, nevertheless, I would probably find that USA ranked as one of the more "foreign" countries to serve in. This turned out to be sound advice and could be the basis of a separate story. It is sufficient to say that the Bradbury family had great fun in acclimatising to life in the Mid-West and quickly learnt that certain phrases and expressions can have quite different meanings on both sides of the Atlantic. The more serious aspect of my posting soon became apparent during my initial interview with the District Engineer, when he informed me that my "mission" during the sixteen months tour was to design a new 3-mile stretch of road, including several large culverts and a 300ft span bridge. This road and bridge would form part of a new earthfill dam project that was being constructed about twenty miles north of Kansas City. This came as quite a shock, but was exacerbated when the District Engineer remarked, just as I was leaving his office, that nothing had been started yet and I would need to sort out my own survey and geological exploration of the area. My immediate thoughts were "Great Scott, where do I begin? No DS solution or last year's course work to plagiarize"-at that moment, how I wished that I had paid more attention to the instructors back at Chatham!

However, like all good fairy tales, this one also has a happy ending, because, somehow I managed to complete my design and even found the time to submit a few alternative solutions for the bridge. My only feeling of regret as I left Kansas City at the end of that wonderful tour, was a nagging suspicion that my design would be politely put aside as soon as I departed, in favour of one prepared by a more experienced engineer.

Ten years elapsed before I was given an opportunity to verify this suspicion. During my recent posting to the British Army Staff, Washington DC, I was thrilled to receive an invitation to visit the dam that I had worked on, now that it is in operation. Naturally, I leapt at this chance to renew old acquaintances and to put my suspicion to rest once and for all. The visit was a great success and culminated in a drive along the road alignment that I had designed ten years before. As we drove along, I studied my original drawings and slowly realised that nothing had been changed whatever from my design-but what about the bridge? You can imagine my sense of pride when we came to it and there it was large as life-the only change from my original design being a modification to the type of piers used, in order to cater for the contractor's shuttering. Of course, this bridge looks very similar to many others found on projects of this type across USA, but to me it appeared quite different-surely anyone could see that! As I leapt about the bridge, photographing



it from every angle, I heard one of the locals comment that this bridge now probably qualified as the most photographed bridge in Kansas City.

The moral of the story is to listen to your Chatham instructors, because you may be required to put theory into practice sooner than you think.

UXB!

COLONEL G C CLARK OBE

In the "Good Old Days" the minor Wars and Wrangles on the North West Frontier of India were contested in a, more or less, gentlemanly fashion with powder, shot and cold steel. They deteriorated with the introduction of automatic weapons, and they reached an all-time low (in the opinion of the tribesmen who were unable to retaliate in a similar fashion) when we started to use aeroplanes for small, punitive bombing attacks on their villages. Those attacks were really little more than nuisance raids, for the bombs used were small and warning was always given to the tribesmen of the intended target and the date and time of the raid. The inhabitants of the villages were, therefore, always able to evacuate their houses in good time and human casualties were negligible.

For a time the raids were effective, but, as always happens, they did have a certain backlash. All the bombs did not explode on impact, and the tribesmen gradually began to realise that, if handled carefully, those UXBs were a Heaven-sent gift for use in blowing up culverts and making nuisances of themselves in other ways. So there weren't many UXBs left lying around, but I did encounter one when, in the closing phase of the Waziristan (1937) Operations my Sapper and Miner Field Company was attached to a Brigade and sent with it into the Bhittani country which lies on the Southern borders of Waziristan. The tribesmen in that area, though they had shown some signs of unrest while the main operations were on, had not been too obstreperous, but it was thought that, before the troops were dispersed, it would be a good thing to build a road into their hills in case of any future trouble. We had been detailed to build that road.

At first sight it looked as if it might be quite a difficult job just to get into their country, for the only entry was through a very narrow defile which wound its way between knife-edged rock ridges running almost at right-angles to the line of ad-

vance. Picqueting the route was obviously going to be difficult and, if the tribes were to put up any sort of resistance, there could be trouble when forcing our way through the gap. However the Brigade was composed of first-class battalions, all of them very experienced in Frontier warfare, while the tribesmen, having seen what had been happening further to the North, obviously did not feel inclined to put up much resistance. So all went well, and we worked our way further and further into their territory, finding little difficulty in constructing a fair-weather road as we advanced. Eventually, after a week or two, we reached the point which had been selected as the limit of the road, where there were a couple of towers and one or two small houses, all now empty having recently been subjected to a light air-raid. Here the Brigade halted and settled in to the perimeter camp which was to be our home for the next couple of weeks while the road-building went on. It was a pleasant site with a good water supply and quite a fair amount of shade from some well-established trees. Everyone was happy that things had gone so smoothly and that there would now be a chance to tidy things up and enjoy a spell of comparative rest after the long summer on active Operations. So, on our first evening in that new camp, with my Company comfortably settled in and having had a welcome wash and change of clothes myself, I was just sitting down in our Mess tent contemplating a very welcome whisky and soda, when a rather harrassed looking Captain from one of the battalions appeared. The suggestion that he should also have a drink was accepted with alacrity and gratitude and, when his glass had been replenished, he disclosed the main reason for his visit.

"Sapper", said he, "We've got a bomb in the middle of our mule lines".

"That's bad luck", said I. "You'll have to move the mule"-an impractical suggestion as I well knew, for there is very little room to spare in the confines of a perimeter camp, but I was feeling comfortably relaxed in my Roorkee pattern camp chair..

I got the answer I expected and so had no alternative but to go and have a look at things myself.

Sure enough, when we got to the mule-lines, the existence of the bomb was obvious. The tail fins were sticking a few inches out of the ground and, all round them, there was scattered some unpleasant looking greenish crystalline jelly. The mules and their Drivers were huddled uncomfortably a short distance away, packed into an area not nearly big enough for permanent Standings. I was not an expert on bombs and the whole set-up did not look very nice, so I felt that some advice was desirable. Telling the Infantryman to cordon offthe bomb and to make sure that no man or beast went near it, I went off to Brigade HQ where there was an RAF Officer attached for Liaison purposes. We returned to the bomb and I was not surprised to hear his immediate reaction-"Good God! Don't go near the damned thing. It's a hundred-pounder and all that jelly is in a most dangerous state. The slightest thing could set it off."

By then it was getting dark and there wasn't much that we could do. Leaving him to spread the good news at Brigade HQ, and having told the 0 i/c Mules that I would send him some pickets and wire with which to fence off the danger area, and advising him to arrange for a sentry to be posted on the site to ensure that it remained undisturbed, I returned to my neglected whisky and soda and considered the problem.

A visit to the bomb next morning showed that everything was in good order and that, in fact, being well trained in building *sangars,* the Infantry had already started building a solid stone wall to reinforce the wire fence round the forbidden zone. Everything seemed to be well under control so I forgot about the bomb and went on with my other jobs. All was peaceful for a week or so until, one morning, a Subaltern. of mine whom I had put in charge of the road alignment, came and reported that the could find no way round the bomb. The problem arose from the fact that a fair-sized rocky ridge ran at the back of the camp and, unless we were to get involved in some quite heavy blasting, requiring more time and explosives than

were available, the road had to be brought through an existing gap in the ridge, along a track which was obviously used by the villagers in normal times. I would hasten to add that this fact could not have been spotted in the early stages as the camp had been laid out before any serious reconnaissance of the road alignment had been possible.

So much work had already been done on the road on its approach to the camp that it was not practicable to re-align it so as to avoid the vital gap, and, after a very thorough check, I was forced to admit that my Subaltern was right. So I went off to Brigade to discuss the situation and it was eventually agreed that the camp would be cleared on the following Sunday morning, giving us a free hand in blowing the bomb up. It was not a popular decision and, as so often happens in such cases, the Sappers were blamed for disturbing the Sabbath and other people's rest. In vain did I point out that we had nothing to do with planting the bomb there or including it in the camp. We were the "Villains of the Piece".

The disposal of modern bombs and mines, with all their devilish anti-handling devices, must be one of the most unpleasant jobs that anyone has to face, and even in this very simple bit of bomb disposal there were uncertainties which bred butterflies in my tummy. As I sat under a tree that Sunday morning, watching the Brigade file out of the camp, I felt very lonely. The sky looked so blue and, even in the barren landscape round us, the grass looked green; and my spirits were not raised by the cheerful farewells which floated up to me from the marching column, and the facetious good wishes for my enjoyment of the next hour or two.

I had selected two of my men to help with the demolition and, once the dust had settled, I collected them and we moved up to the bomb. Leaving them behind a large rock which would give good cover from the explosion, and having checked that the exploder box was locked, I advanced on the bomb taking with me a slab of gun-cotton fitted up with the usual detonator, primer and electric cable. The bomb was embedded on a slightly sloping hillside which was covered with loose gravel. By now it had been surrounded by a solid dry-stone wall. Unfortunately the only way into the resulting enclosure was through a narrow gap directly uphill from the bomb. Bearing in mind the warning from the RAF Officer that the slightest thing could set off the scattered explosive, and fearing that gravel disturbed by my entry might roll down on to the sensitive area, I removed my boots and inched my way through the entrance. I wasn't at all happy until I had, at last, got level with the bomb. Very gingerly I approached it and gently laid the guncotton in position. Nothing happened and, with a feeling of immense relief, but still very slowly and carefully, I retraced my steps.

How wonderful it was to be out in the open again and clear of that menacing object. We wasted no time in unlocking the exploder box and connecting up the leads. A last look round to to make sure that the coast was clear, and then the order-"Fire! "

The result was most disappointing for, instead of the healthy sound of a hundred pounds of explosive going up, there was only a small bang from one pound of gun-cotton. Hardly had the dust settled before the Brigadier's head appeared from behind a rock and a furious voice demanded to know what I thought I was doing. (Later on I felt that I might equally well have asked him the same question, for the area was supposed to have been cleared of all forms of life, but, at that moment, it might have been a tactless question to put to him!) But there was no difficulty in explaining the reason for the fiasco. Examination showed that the RAF diagnosis was a long way out, for the bomb, far from being a hundred-pounder, was a mere twenty-pound tiddler, and the jelly-like stuff which had been scattered around was obviously quite inert. The explosion had thrown the bomb clear of the ground and left it cowering against the protecting wall. A second slab of gun-cotton placed on top of the roughly collected remains, closed the incident and, thank goodness, proved to be my one and only experience of bomb disposal-an experience which has left me with a tremendous admiration for all Bomb Disposal personnel.

Falkland Islands Centrepiece

The Falkland Islands Centrepiece is now in RE HQ Mess and receiving much favourable comment. It was made by Highleys of Chatham, the Corps Silversmith.

It is an eighteen-inch high Rockhopper penguin made in silver and mounted on a five sided seven-inch high Falkland stone plinth.

The Rockhopper, indigenous to the Islands, was selected largely because its naturally aggressive nature symbolises the attitude of the soldiers who took part in the campaign.

The stone plinth tapers slightly from base to apex. Badges or plates are mounted

Falklands Islands Centrepiece

on the sides and show the Corps Cap Badge, the Falkland Islands Coat of Arms, the inscription "Falkland Islands Campaign May-June 1982", an outline of the Falkland Islands and an outline of Ascension Island. The two "outline" plates list the names of the RE units which took part in the campaign.

Gundulf-Monk and Sapper

DOM HUGH, GILBERT OSB, BA and LIEUT COLONEL S R GILBERT RE

When reading, rather belatedly I suppose, a potted history of the Corps I was particularly amused by the fact that Humphrey de Tilleul, the first King's Royal Engineer, absented himself without leave, to call his errant wife to order in Normandy. He was replaced by a man who could not have such marital problems-a Benedictine Monk.

Having a brother who is both a Benedictine Monk and a medieval historian I suggested we might write a joint article on Gundulf. My brother happily agreed and on receiving his article I think readers will agree that any contribution made by me should be of a minor editorial nature only. SRG

GUNDULF was a Norman, born near Rouen in about 1024, who entered the Benedictine monastery of Bec in 1057, crossed to England in the wake of the Conquest, became Bishop of Rochester in 1077 and died in 1108. A strange *curriculum vitae* for one claimed by the Royal Engineers as their Founding Father. But Gundulf, among other gifts, was a builder, *in opere caementarii plurimum sciens et efficax,* said contemporaries, "exceptionally well-versed and successful in stone construction work", and built not only for the Church but for his king. To him is owed the following:

The White Tower, now the Keep, of the Tower of London
Possibly the Wakefield Tower in the Tower of London
The North Tower of Rochester Cathedral
Mailing Keep (also known as St Leonard's Tower)[1]
Perhaps the design of Rochester Castle on account of its similarity of the Keep of the Tower of London[2]
Possibly Chichester Castle
The first St Peter's Church in London
The Old Barbican in London

These achievements, given the place of the castle in Norman military policy, surely entitle him to a posthumous RE after his name, and justify the Sappers in regarding him as the patriarch of their Corps.

Gundulf, however, despite a place in the Dictionary of National Biography remains little known and relatively unsung.[3] Unfairly so, for he was on several counts a remarkable person and deserves commemoration. Perhaps, then, it will interest readers of this Journal to learn something of the other achievements of their remote progenitor.

We may begin by setting Gundulf's life in its context. He was a Norman, active in the second half of the 11th century, a monk of Bec and subsequently a bishop in England. These facts place him immediately. They make him part of the Norman Conquest and part of a high moment in monastic history. They set him on the stage alongside William I, Lanfranc and Anselm. The Normandy of Gundulf's day was a dynamic place. Its most lasting impact was certainly on England, but the wider connections were, by the standards of the time, ubiquitous, running to the Low Countries and Scandinavia, Sicily, South Italy and Constantinople and eventually to the Levant and Palestine. There were Normans trading, fighting, settling everywhere. There was also a Norman monastic revival underway. In 1020 the land

of the Normans contained only five monasteries; when Duke William set sail for England in 1066 there were between twenty-six and twenty-eight, and of these Bec was by far the most illustrious. It had been founded in 1039 by Herluin, a converted soldier, and with the advent of Lanfranc in 1042 rose to spiritual and intellectual eminence. Lanfranc was an Italian who after a successful career teaching law and letters in Lombardy, crossed the Alps, taught for a while in Avranches, and then sought, as he hoped, the obscurity of Bec. Herluin, however, suggested he take pupils and this launched Lanfranc and Bec onto quite new paths. The house became the model and mistress of Norman monasticism, outstanding in the teaching of philosophy and theology ("nearly all the monks seem to be philosophers" said Ordericus Vitalis) in which Anselm's light was to outshine even Lanfranc's, and a nursery of archbishops (three for Canterbury alone), bishops, abbots, teachers and writers. Gundulf was part of all this.

But there is a wider context too. We forget that a Western European civilisation was not the likely consequence of the collapse of the Western Roman Empire and the repeated barbarian incursions. We forget, too, that the Carolingian revival of the eighth and ninth centuries, crucial though it was, was no necessary harbinger of future creativity. Vikings from the north and Magyars from the east all but extinguished the lamps Charlemagne had lit against the dark, while the Moslem pressure to the south threatened Europe with subordination to the Caliphate of Cordova. It was during Gundulf's lifetime, broadly speaking, that the siege was raised and Western Europe, for all its inner diversity, stood out as a stable and aggressive entity distinct from the Christian civilisation of the Byzantine East, from Islam to the South and from the now recoiling pagan peripheries to the North. Western Europe-Latin Christendom-became a certainty. In 1095 amid cries of *Deus Ie vult* the First Crusade was launched at Clermont and the West at last was on the march. A transformation was in process affecting every sector of Western life, comparable in scope to the later and more familiar crises of Renaissance and Reformation, French and Industrial Revolutions, and First World War. There was social, political, economic change: population was rising, towns expanding for the first time in 800 years, villages replacing wasteland; government was centralising, law cohering, knights and merchants organising; communications were improving, capital accumulating and markets widening. The Mediterranean was returning to Western control, and technology, for example in agriculture and architecture, advancing. In art, the Romanesque was at its height, and already suggesting the Gothic, while literature and sensibility were moving, in Professor Southern's phrase, from the epic to romance. The Church, for her part, was winning new freedom from feudalisation and increasingly asserting her authority in the political world: the year that Gundulf became Bishop of Rochester was the year a German Emperor knelt for three days in the mountain snow at Canossa asking a Pope's forgiveness. Only thirty years earlier another Emperor had to intervene to save the Papacy from destruction. In the monastic and cathedral schools the first steps were being taken towards the great medieval syntheses of classical and Christian thought. Lanfranc, who was first Gundulf's prior and finally his metropolitan, and St Anselm who was his monastic contemporary and closest friend, were at the beginning of this.

The interest of Gundulf is that he embodied the many features of so dynamic a period. With this in mind, we can pass to his life story.

Gundulf's long life falls conveniently into three periods: his early years, c.1024 to c.lOS7; his monastic years c.lOS7 to 1077; his years as Bishop of Rochester c.1077 to c.ll08.

He was the son of Hatheguin and Adelesia and educated at the Cathedral school in Rouen. From there it was an obvious step for a young man attracted to the spiritual life to enter the clerical state. He served in the Cathedral church itself and there first evinced his capacity for winning the confidence of the pace-setters of his

day, becoming intimate, despite his youth, with the Archbishop, Marsilius, a reformer busy redeeming the archdiocese of Rauen from the moral anarchy of over a century, and with the archdeacon, William de Bonne-Ame, later Abbot of Caen and a future Archbishop. It was while returning with the latter from a pilgrimage to the Holy Land that Gundulf, now in his early thirties, decided to become a monk. The story is typical: they were on board ship and a storm blew up; shipwreck and death seemed imminent; Gundulf vowed he would enter a monastery if he survived; the storm abated and, once back in Rouen, Gundulf duly made his way to Herluin, the converted knight, founder and abbot of the already famous Bec. He was the sixty-seventh monk to make his profession there, and the monastery was less than twenty years old.

He entered Bec about 1057 to remain there, in the event, only six years before being chosen as one of the select group accompanying Lanfranc, their prior, to Duke William's new monastic foundation, St Stephen's at Caen. But these six years were formative. *Inter perfectos jam ab ipso initio monachos computatur* says his biographer, "he was regarded as a mature monk from the start", and obviously gained the appreciation of abbot and prior, being entrusted with the office of sacrist, an important position in any medieval monastery. A sacrist had care of the monastic church; its fabric, interior and exterior; of the cemetery, funderals and burials; of the varied items-from altar breads to vestments-required for divine worship; and an overall responsibility for summoning the monks to church at the appropriate hours of day and night. Such a charge would inevitably have involved Gundulf in the monastic building programme. Bec was a young and flourishing monastery and building was proceeding apace. Again, the Norman context should be evoked; "It was in the circle of the monasteries of Normandy before the Conquest that there was evolved the typical plan of a large monastery with its cloisters and offices, and above all with its vast church, planned on a scale far more magnificent than anything that had been seen in the West for centuries. It was there also that all the machinery necessary for such constructions was organised and in a sense standardised, and that the first beginnings were made towards creating the staff of a wide monastic estate". [4]

Decisive too for Gundulf's future were the relationships formed with Lanfranc, prior at the time of Gundulf's arrival and the man whose competence in philosophy and theology had given Bec its reputation, and with Anselm, Gundulf's eontemporary in monastic life, superior even to Lanfranc in gifts of mind and character, later abbot of Bec and, after Lanfranc, the second Norman Archbishop of Canterbury. It was Lanfranc who took Gundulf to Caen, appointing him his prior, and thence to Canterbury in the wake of the Conquest, where he gave him charge of the temporal administration of the archbishopric. It was Lanfranc, too, who appointed Gundulf bishop of Rochester. And if the relationship with Lanfranc was decisive for Gundulf's career, that with Anselm moulded his character. "There can be little doubt that the teaching and example of Anselm were the strongest formative influence in Gundulf's life, for from this moment their friendship was unbroken and maintained by constant correspondence when the tide of events had separated the two. To Gundulf, as to so many others, the eminent sanctity and wisdom of Anselm were a compelling and irresistible force, refining and moulding the disposition of his mind".5 Gundulf emerged from these six years as a typical Norman of his period refined by monastic discipline, with a clear head for practical matters and tender-hearted towards his God, a very medieval blend of Martha and Mary, the active and contemplative. He had what the ancient monastic theology called the "gift of compunction", the capacity to be moved to tears by religious considerations. He and Anselm would spend long periods together studying the Scriptures: Anselm would do the talking, notes the biographer, and Gundulf the weeping. This trait, which awed contemporaries, moved his biographer to note the appropriateness of his dying on the third Sunday of Lent, when the Mass had as one

of its texts the Psalm verse *Oculi Mei semper ad Dominum,* "My Eyes are always on the Lord".

There followed the years at Caen (1063-1070) and Canterbury (1070-1077) passed at Lanfranc's right hand. Years of building undoubtedly, since Caen was a new foundation and Canterbury had been badly affected by a fire in 1067. Gundulf's responsibilities were increased and his experience widened. He would have crossed to England as one of Lanfranc's hand-picked team, to face the daunting prospect, only four years after the Conquest, of what Lanfranc called "an unknown tongue and a barbaric people". It was while at Caen and Canterbury too that Gundulf would have come to the notice of Duke/King William and earned the reputation, irresistible to a medieval ruler, of a man of God, clean politically and adept at building. Lanfranc, always close to William, would have made the introduction.

On 19 March, 1077, Gundulf was consecrated Bishop of Rochester by Lanfranc in Canterbury Cathedral and so began the last and most public period of his life. He was to rule his see for thirty-one years, until his death, acting throughout along the lines of so many of the eminent reforming Norman monk-bishops injected after 1066 into the English Church and of whom Lanfranc himself was the paradigm. Gundulf was typical of the ecclesiastical Norman Conquest at its most beneficial. The co-operation with the king, suggested by his supervision of the construction of the White Tower, would be part of the pattern, but we can see it evidenced in his other achievements.

That Gundulf should have been allotted the see of Rochester was no coincidence. It was of course adjacent to the archdiocese of Canterbury. But the links were more than geographical. The previous short-lived incumbent had also been a monk of Bee and Lanfranc, it seems, wished the Bishop of Rochester to be a quasi-auxiliary bishop to himself, in technical terms a chorepiscopus, the earlier appointment having initiated the desired relationship. Under Gundulf it was cemented and became normative for a good part of the later Middle Ages. Thus the Lanfranc-Gundulf partnership, now already twenty years old, entered a further stage and Gundulf's status on the English and particularly South-Eastern ecclesiastical scene would belie the diminutive proportions of his own diocese. He ordained clerics, confirmed children and dedicated churches throughout the archdiocese of Canterbury as well as in Rochester and-a feudal detail-as a landowner provided knights, not directly to the king, but to the Archbishop, the king conversely communicating with Gundulf only by way of the Archbishop. Further, Gundulf deliberately remodelled the diocesan "structures" of Rochester upon those of Christ Church, Canterbury. He replaced the four or five canons comprising the cathedral chapter by Benedictine monks, twenty-two at first but rising to over sixty by his death, and acted as abbot to this community as Lanfranc did to his equivalent in Canterbury. In all probability, he governed his monks according to the Statuta, a directory of monastic life compiled by Lanfranc for the monks at Canterbury and heavily based on the observance of Bee itself. Again, Gundulf reorganised diocesan finances on Lanfranc's pattern and rebuilt the cathedral church of St Andrew just as earlier he had assisted Lanfranc in rebuilding Christ Church.

Further events then brought Gundulf into ever closer commerce with the primatial see. The Conqueror died in 1087, Lanfranc two years after and troubled times ensued in both Church and State. William Rufus preferred the revenues of empty sees to providing them with bishops and Canterbury remained vacant until 1093 when illness shocked the king into permitting the appointment of Anselm. As a result of the Church's struggle to secure internal freedom from the Crown and secular authority, Anselm was twice forced into exile, leaving his old intimate Gundulf with responsibility for the archdiocese and the difficult mission of representing Anselm's cause to ill-disposed monarchs. Thus for a total of ten years,

Gundulf administered England's primatial see, without relinquishing his staple responsibilities as Bishop of Rochester. One incident at least from these years made the headlines. The English monks of St Augustine's Canterbury had much resented Lanfranc's appointment of a Norman as their Abbot and, after the Archbishop's death, raised a riot of citizens in hope of murdering him. The latter fled to safety; Gundulf intervened, had the monks scourged, their lay accomplices blinded and the community permanently dispersed, monks from elsewhere replacing the original community. Such incidents were, happily exceptional.

Of his achievements within the diocese of Rochester itself we know little. We have mentioned the restructuring of the cathedral church itself and the introduction of monks, but Gundulf was able to raise the status of his see in other ways as well. Kings and local magnates proved generous benefactors and Gundulf, again following Lanfranc, reclaimed many rights and revenues owing to the Church but not recently rendered. He seems to have visited his diocese with sufficient regularity, via strategically sited episcopal manors in each of which he had an oratory constructed, and took close care of the poor, sending provisions to the most direly deprived, inviting at least thirteen poor people to daily dinner, providing a regular supply of clothes and settling a number of the under-privileged on specially acquired land near Rochester. His architectural achievement was also noteworthy: he rebuilt, as we have said, the cathedral church and, having founded a convent of nuns at Mailing c.l099, supervised the building of the imposing abbey church, while at the same time instigating a spate of church building in the Medway valley. He was known as a moving and eloquent preacher and remembered for his attachment to the Mass, which he celebrated twice daily.

He retained his talent for impressing the powerful.. "He fought for God" says his biographer "under three kings and earned the favour of all of them"-a considerable achievement, at least as regards William II and Henry I. It was even said of Rufus that "though he disturbed other churches with various vexations, he always kindly spared Father Gundulf and the church of Rochester. And not only spared but greatly and liberally increased the bishop's possessions". He was recognised by kings, and by chroniclers and, that most critical of categories, his monastic brethren-as a man of God. He died on 7 March, 1108, having been shriven and anointed by Anselm, some fifty years after the two of them had begun the monastic life at Bee, and was buried before the altar of the Crucifix in his own reconstructed cathedral church of Rochester.

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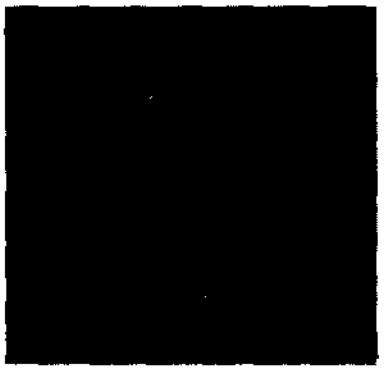
DON'T FORGET THE RE MUSEUM APPEAL

The Cadre-Is it Time for a Change?

W01 (RSM) D N HAMILTON



The Author joined AAC Chepstow in 1962 and some 3 years later joined the Trg Regts. After the standard indoctrination period he moved to 1 Fd Sqn for an enjoyable and rewarding 5 year tour. Promoted Cpl in 1969 he was posted to Cove as a training NCO. 18 months later he was promoted Sgt and "drafted" to join the Navy on HMS Fearless. In 1973 he was posted to 50 Fd Sqn and had tours in Canada, N Ireland and Dhofar. Promotion to SSgt in 1975 and back to BAOR this time with 4 Fd Sqn. In 1978 he was posted to the RE Trials Team where a year later was promoted to QMSI and sent on a punishment posting to Australia. In 1982 he was appointed the SSM of 48 Fd Sqn (Const) and in April this year became RSM 26 Engr Regt.

BACKGROUND

During my tour as SSM I attended various conferences, briefings etc where the main topic has been trade training, role of the Training Regt and RSME. At these meetings discussion has always come round to the first promotion of a Spr and should he be made to do a cadre before promotion or not. Time at these meetings has always been at a premium and I have never been able to put forward my full argument for the abolishment of the Spr to LCpl Cadre.

This paper puts forward my argument for the abolishment of the LCpl Cadre and suggests an alternative to the present promotion of Sprs through the ranks to W01. I will deal only with the promotion of the Field Engineer Soldier..

THE PRESENT POLICY

The present policy on cadre courses is too flexible and has "grey areas". The policy is:-

(a) REMRO state that a unit run cadre course is not a pre requisite for promotion but state in para 30 of the career planning guide that JNCO's *should* attend a unit run cadre course;

(b) The E in C has delegated the responsibility and decision to run JNCO's Cadre courses to Commanding Officers;

(c) Paragraph 569 of Corps Memoranda:-

Selection of Young Soldiers

(1) It is important that unit commanders realise that unless a man is promoted to Lance Corporal within his first four years of service, he is unlikely ever to reach the rank of Warrant Officer Class 1.

Paragraph 569 further states:-

Therefore, good, young, potential Non Commissioned Officers should not be held back until all possible Senior Sappers have been given a chance.

(2) If potential Non Commissioned Officers cannot be promoted due to a lack of Lance Corporal vacancies in their unit, application may be made to the Officer-in-Charge RE Manning for them to be added to the waiting list of Deserving Sappers for promotion in their turn, against vacancies in the Corps

quota in accordance with RE Manning Office Instruction;

(d) *Regimental Policy.* As at the date of this paper (Jan 1984), three Regiments in BAOR and one Regiment in UK *do not* demand that a Spr attends a unit run cadre *before* promotion.

WHY Do WE HAVE A CADRE?

Why is the JNCO unit run cadre held? Is it to:-

(a) Maintain standards;

(b) Make a definite break between Spr and LCpl;

(c) Ensure that the Sapper "is JNCO" material;

(d) Ensure the soldier has the right information and knowledge to become an NCO;

(e) Old soldiers (RSM, SSM etc) advise, "I did it, best thing I ever did, it will do him the world of good."

I believe it is a combination of all these points and many more. I also believe that Commanders, RSMs, OCs and SSMs are too set in their ways and do not want to be seen "not keeping the system going."

THE CuRRENT SITUATION

Flexible Policy. The policy that I have outlined in earlier paragraphs is flexible to the point of being unfair to soldiers who happen to be in a unit that demands that he attends a unit run cadre course. If that unit is UK based the problem is compounded, due to the fact that he is away from his parent Regiment (who run an annual Cadre Course) more frequently than his BAOR counterpart.

Current Cadre Passes. Let us say that a Sapper attends and passes a Cadre Course (current passes are about 95% (must be good selection)). He must then wait for a vacancy in the unit. Whilst waiting, he could be posted, attend trade training or slide down hill frustrated at not being promoted.

Trade Training. REMRO policy is to allow a young soldier 18 months in a unit before allocating him a trade training slot at RSME. It is about that time that good young potential NCO's are being recognised but cannot be promoted until they have attended a cadre. The soldier then decides to attend the trade training and promotion goes out of the window for a further 12 to 18 months.

Promotion Speeds: At Annex C of the career planning guide is a graph showing at what age the outstanding or very good Spr should be promoted. From this graph one can see the future *W02fW01* in the Corps must be promoted in the first 2 years of service to achieve *sufficient time in each of the more senior ranks* before taking up an SSM or RSM's position.

What hope has a "first posting" UK based Spr got of being promoted in the first 2 years?

(a) Joins unit;

(b) 12-18 *month point-looked* at as a possible cadre candidate-but also selected for trade training. Attends trade training;

(c) 24-36 *month point-returns* . to unit or is posted;

(d) *New unit-Looked* at, cadre candidate, gets selected for cadre providing one is run;

(e) 4-5 *year Point-* promoted.

One can see that only the very lucky soldier, not the best is going to get promoted early. In the case of the soldier above, for him to be promoted to warrant rank he must go through future ranks very quickly. If this is the case, which I believe it is today, the future Warrant Officer will lack the experience of their counterparts today.

SOMETHING NEW

So far I have told you nothing new but just presented the facts as I see them. When I was promoted in 1966 I had to attend a unit run cadre; then it was a good idea as

there was no other cadre type course that one would ever attend. Today we have seen the introduction of the SNCOs course and I believe this year the introduction of the Cpls course which will precede the Section Commanders Course. Both these courses are cadre type courses and should be used as a necessary qualification for promotion. At this moment in time one does not have to pass these courses to gain further promotion.

Aim. The aim of all soldiers should be promotion to warrant rank, the aim of the Staff should be to allow all those who have the potential to be Warrant Officers to have the chance of that first promotion as early as possible. I believe this aim is not as difficult as it may first seem, but it does involve a change in our attitude towards the JNCO Cadre.

First Promotion. The first promotion, as all will agree, is critical. The present day soldier is promoted substantive LCpl after attending a Regimental, unit run, cadre. I believe the Regimental cadre should be scrapped and the soldier be given acting rank by his Sqn Commander, it is of course the Sqn management that have decided that the man is suitable for promotion. The acting rank should be for a period of not less than three months. If after that time the acting LCpl is good enough he should be made substantive. If during that time he has not reached the required standard he should revert to the rank of Sapper, thus creating a vacancy for another to be promoted. Therefore the promotion of acting LCpls should be at Sqn level and the promotion to substantive rank monitored by Commanding Officers.

Career Planning. The career of a new Lance Corporal must now be planned and I will deal only with the outstanding or very good, as they are the only ones who are going to make Warrant Rank:-

(a) 2 Year Point - Promoted LCpl
(b) 2-4 Year Point - Cpl Course-Section Comd Course-Promoted Cpl;
(c) 7 Year Point - SNCO's Course;
(d) 8 Year Point - Promoted Sgt;
(e) 3 tours as a SNCO either: 1 at Sgt, 2 at SSgt or vice-versa providing the position of Recce Sgt and Troop SSgt have been held;
(f) 15 Year Point - 2 tours as W02, 1 as QMSI and 1 as SSM;
(g) 19-20 Year Point - Selection to WOl.

Length of time in Rank. Over the past 10 years the time a SNCO stays in rank seems to get shorter. It is now not uncommon to be a Sgt for 2 years, SSgt for 2 years then promotion to Warrant rank. This situation must be rectified as the maximum experience for a future Warrant Officer is gained at the SNCO rank and not at the JNCO rank.

RECOMMENDATION

Policy. The policy on first promotion should be definite with no grey areas. The only way to do this without any bias to anyone part of the Corps is to abolish the JNCO Cadre as a pre-requisite for promotion.

First Promotion. The 3 months acting LCpl should be introduced. This would allow soldiers to be given the chance by their OC to prove they have the will and necessary talent to become an NCO. If at the end of 3 months, (or sooner), they have not carried out their duties correctly they should be reduced and someone else given the chance.

The Cpls and SNCO's courses *must* in the future be *passed before* substantive promotion is given in that rank.

SUMMARY

A direct and definite policy must be adopted into the Corps regarding First Promotion. It must allow Squadron Commanders to promote (when vacancies occur) soldiers who have proved to their troop management, and Squadron OC, that they want, need and are ready for promotion NOW-if only they had the chance.

Sir Donald Bailey's Little Gem

LIEUT COLONEL BRUCE W REAGAN (CE US Army Retd)

A SHROUDING fog lifted on the Saar River at Sarreguimines, France one December morning of 1944 to reveal a thing of beauty-not one that Picasso would admire but perhaps the more pragmatic Leonardo da Vinci would have appreciated. It was one of Sir Donald Bailey's bridges with Sherman tanks rolling across and its elegance lay not in symmetry of visual impact but in its utility. An unusual appearance, it had one side higher than the other-hardly what one would expect of a bridge. Its charm lay in the survivability that Sir Donald had built into his product, and was only one of the many virtues it had displayed. The bridge, together with the Sherman tank and Donald Douglas C-47 (civil version DC3) aircraft, were credited by President Eisenhower as being the major equipment factors leading to the 1945 victory in Europe.

A year earlier, England had become a training ground for the US troops while awaiting invasion of the continent. There was an order one day to report to a British supply point for a pick-up. It turned out to be several truck loads of seemingly purposeless steel. With it, however, a single copy of a manual on erection soon brought meaning to the jumbled array of scrap iron. Simplicity and speed of assembly were quickly apparent. Its expediency and adaptability were to be appreciated as Europe was crossed. It was a real gem.

Unlike vast stretches of our country, Europe is laced with many small, deeply indented streams. Their earliest recorded passages were by the Romans of before Christ when the area was being colonized. Construction of bridges for these crossings became so highly regarded that participants were granted salvation, it became a work for God, and the chief consul of Rome was given the title "Pontiff" , from *pont* or bridge, meaning chief bridge builder-a term still in use.

The Empire expanded as did the need for bridges to keep it intact. A papal or monastic order, "Builders of the Bridge" evolved that was charged with such construction. Several centuries later a remnant of that order, the "Freres du Pont" of France continued that work, some of which remain today. As logical then as now, with all the labour and time involved, the streams were crossed at the narrowest gap between banks. Bergs and villages grew up around them. When the Romans retreated from their conquests in the Second and Third Centuries, these sites, because of ease of defence and availability of water became clustered housing complexes. Forts and castles were attracted and they became key points in the localized feudal struggles of the Dark Ages.

These mutually supportive villages, bridges and strong points were of long lasting stone. Most endured until the advent of artillery and controlled explosives which, together with the devastating battles starting with Napoleon, resulted in much rubble. As a desirable asset, much of that debris is now obscured in the walls of the stream-side villages. Nevertheless, the bridges were usually rebuilt at the same site to serve local needs. The forts lost their purpose and now show mainly as assorted piles of rubble.

These considerations-the tightly clustered houses with their serpentine streets at narrow precipitous bridging sites, were well taken into account in Sir Donald's bridge design. It was little more than an over-sized Erector Set. The heaviest and most essential parts were steel lattice work panels weighing about 500 pounds that could easily be handled by six to eight men. When put together with pins, braces and decking, all assembled on rollers, the whole, properly counter-balanced, was slid across to make a bridge.

The first action after the invasion and break through was to get through the devastation of the Air Corps bombing success. Filling road craters, removing well splattered horse remains, rubble and armament debris from the roads was the order

for a week. Then it was to join the chase across France, through Chartres, Rheims, Verdun into *Festung* Europe, where the real hassles started.

Sir Donald had indeed done his homework and the Germans a lot of destruction. In addition to bridging streams there was need to replace passages across rail lines, canals and mountain side cuts.

Stealth, with things popping up in the middle of the night, became the routine. With the nearest few houses on the far bank neutralized, often complicated by the deep swift moving current, the action began. Stealth was possible only because there was no need for noisy erection equipment for assembly. Men furtively hooked the Tinker Toy together, largely by feel and with determination to get tanks across before the light of day brought complications. If they were not over by dawn there were a lot of unpleasantries that not only brought blood-shed but a delay in preventing more. The concern was not with them but with us.

Thus the not unwelcome fog at Sarreguimines that added a few hours of obscurity and resulted in the unsightly bridge. It had been damaged by opposing artillery during erection.

It had not been a pleasant night. Unlike many, the site was not protected by nearby stone houses but like many others later on, was within range of the long before zeroed-in emplacements of Siegfried Line artillery. The bridge, when finally completed, was to display another virtue of Sir Donald's design-that of survivability and durability. It was damaged to the point of being able to carry only its own weight before completion. The fog of that morning permitted time to file off the jagged edges and add more panels for reinforcement. The tanks got across.

This 16-hour bridging day started at dusk after a few troops worked their way across the flood plain and the river to the far side village. A small paralleling canal was no impediment... It took no genius on the part of the opposition to re-realize that something in the way of bridging was to take place that night. A diversionary effort in the form of raft construction, hopefully to draw some of the artillery fire, was started a mile downstream. It didn't work. Any time a crew started to work, the area was blanketed with steel from the Siegfried Line forcing the men to disperse to the 100-foot away protective masonry buildings. Several hours of this and it was concluded that someone was within sound of the action and was relaying timing data to the artillery controllers. Once all the far side villagers were rounded up and placed under guard, the firing became less effective. An obviously recently occupied fox hole found on the far bank after daylight confirmed the suspicion.

The next day some special and much heavier equipment arrived that was designed especially for close-in Siegfried assaults. The normal loading was the 35-ton Sherman tank but these were a tank-mounted steel chain flail to pass mine-fields and a self-propelled 155mm gun-both of 55 tons each. Mr Bailey's design with a number of panels added, by lifting gear since the heat was off, and at a nearby site, got them across. Very near that site there is now a small greened park dedicated not to Sir Donald but to an American Major who, when the US forces were re-aligned for the Battle of the Bulge, succoured the people who were forced to return to their caves and cellars. The Germans had returned and the area became once more a battleground.

The situation on the Southerly haunch of the Bulge, in Luxembourg, was no different. Rotting crops of the preceding Fall lay heavy on the ground. Only an occasional elderly was seen furtively venturing out to retrieve a remaining edible. At one destroyed bridge, an elongated hump in the six-inch snow cover turned out to be a Sergeant of Armor. His shoulder insignia revealed him to be a member of the forces that had freed most of Luxembourg four months earlier-in September, 1944. The tattered fa<;ade of a *gasthouse* which once concealed a concrete bunker on the opposite side of the destroyed bridge told the story. His group effort at capture had failed and he had long lain in no-man's-land.

The piers remained in so with their use a 300-foot passage over the five spans resulted. When piers were intact the bridge could be extended indefinitely. If piers

were needed the basic panels could be assembled vertically to serve that purpose. It was a versatile piece of equipment.

General Patton's forces had by-passed most of the Ardennes Siegfried positions to relieve Bastogne. The effort then was to reduce the southerly haunch of the Bulge with its many fortifications along the Luxembourg border. The mountainous terrain with heavy snow deposits, slickened roads and ice-laden streams added to the complications of getting troops near the strong points. The Bailey Bridge rose to the need.

One replacement was a deep mountain gorge. The bridge had been a high natural stone arch--one built without mortar, possibly a remnant of Roman times but more probably by Barbarrosa of the 12th Century. A single small explosive charge at the keystone had dropped the whole into a pile of rubble below. The problem-there was no space for the counter-balancing weight needed for launching across the 120-foot gap. The solution-put a dozer on the fraction completed and inch it back as the steel was pushed across to meet the far abutment.

Another of challenge was at Ettlebruck, named for Etzel Attila the Hun of some few wars back. A four-track rail overpass adjacent to a shorter river bridge with an intermediate pier in between had been destroyed. Both were on a curve and sloping approach. After some head scratching, it was decided to stack four panels of the equipment upward for the first 120-foot part; three horizontal for the 90-feet remaining and anchor the whole to some nearby trees by cables. Now at the permanent replacement is an eight foot bronze statue of General Patton pointing East alongside a Sherman tank.

Not all attempts were successful but not due to any imperfections of the material. One, also in Luxembourg had only the centre span of a three-arch bridge destroyed. The Bailey, with its first tank, fell in. It had no horizontal stability. A vivid memory remains of the sizzling hot shards of steel from the Siegfried skittering across the iced road surfaces as it was being installed. They took several men with them as did the entire passage across Europe.

Sir Donald was knighted for the development of his highly effective bridge. The bridge is still in use. In the early morning hours of June 28,1983, a major bridge on one of the most heavily travelled interstate highways in the US failed. It was the Gateway to New England, Interstate 95, at Greenwich, Connecticut. One of Sir Donald's bridges was called on and installed to the great relief of the local people on the by-pass route as well as to the travelling public.

Most state highway departments in the US and many countries throughout the world retain it in their storage yards, as a vital wartime material legacy, for emergencies. It is often used for such temporary bridging as that at Greenwich and needs resulting from flood damage, by-passes for permanent construction or for logging roads. It is also available for rental by construction speciality suppliers.

Some months ago there was occasion to visit the old haunts. A former Command Post, the Post Office at Diekirch, one of the few buildings intact at the time, had served over a period of two weeks in directing eighteen bridging actions, most with the Bailey, sometimes two per night, in getting through the Siegfried Line. Just around the comer, in an old thick walled brewery, a museum of World War II memorabilia is being established. There are a few operating German and US vehicles or tanks along with an array of rifles, machine guns, uniforms and assorted equipment dredged from the nearby rivers or found abandoned in cellars or attics-the debris of war protected by water or by obscurity.

In a nearby government warehouse lies a stock-pile of Sir Donald's bridging ready to bring relief in case of need-as it so recently did for the people of Greenwich.

It was-and indeed remains, a little gem.

DON'T FORGET THE RE MUSEUM APPEAL

Correspondence

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"FORTY YEARS AGo--KOHiMA"

Sir,-It was a pleasure to hear from several old friends following my contribution to the June issue. I am grateful to Major Donald Good, whose letter you published in September, for correcting my faulty memory on several important points, especially with regard to the work of Jamie Ferrie and the Kohima Memorial. Let me also add that Major Ken Daniell was OC 208 Fd Coy, as he himself kindly reminded me. James Landon was indeed OC 506 Fd Coy when he was killed.

Donald Good's remark about water shortage deserves some further explanation. **In** India, during our long periods of training, water supply had been a constant and often critical Sapper task. The division had also trained to live and fight on strict water rations. By contrast, water in the Assam hills was plentiful and (except where there were corpses!) clean. Don experienced the critical situation in the Kohima Garrison where the troops endured severe hardship through shortage of water and almost all other supplies. This I mentioned, but briefly, at the top of page 88 of my article. Access to ground supplies was cut off and many of the air-dropped supplies fell outside the perimeter or were suspended aloft in the trees. But this was due to enemy action and not to any general water shortage or failure by the Sappers.

It is ironic how rapidly our sense of values can change. Those precious containers of water, dropped out of reach of the garrison were, after the battle, being recovered and tossed aside in disappointment by the usual small bands of looters and treasure seekers. A month later, in the monsoon rains, enough water for a bath could be collected in a groundsheet, but by then most of us were ankle-deep in mud and our clothes remained wet for days and weeks on end!-Yours faithfully, C D Yule

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D DAY COMMEMORATIONS

Sir,-UBIQUE-but with little ever attributed solely to the Corps-the D Day commemorations in Normandy included two Sapper features that a retired part-timer can mention freely when more modest Regulars might not.

Firstly, the whole British Army representation at functions where Heads of State were present was provided by 3 Armd Div from Germany. As the only extant D Day assault division, then infantry, it also had to cover its own long-established commemorations. This complex operation, bedevilled by polictical factors and amendments, was awarded to the CRE, Colonel Derek Brownson, and his staff. Its outstanding success was admired by countless TV viewers around the world.

Another feature, in a very small way compared with that, stemmed from the biennial Assault! Armoured Engineer dinner in February at Chatham. **In** the course of a well-lubricated evening we bemoaned the apparent trend towards a mighty American invasion and other activities with little relevance to the beach assault itself.. A few of us agreed to stir the pot.

Apart from 26 Armd Engr Sqn's affinity with the village of Graye (its resurrected A VRE), our best prospects of a break-through lay at Lion-sur-Mer. It was the only

town whose beach was an H Hour target, being at one end of *SWORD,* reinforced by the fact that 77 Assault Sqn's activities on the beach extended to street-fighting with sore losses in the town itself. Furthermore, 77 had been re-formed last year to support 3 Div.

An approach to the Mayor bore early fruit: nothing vague about his instant offer of forty free beds at least, with hospitality to veterans, their wives and a detachment from the present squadron that I had mentioned as a further possibility. This was great news but it quickly became potentially embarrassing when I learnt from Colonel Brownson that, because of 3 Div's NATO role, his group was limited to 210 all arms and 77's share, as in support but not belonging, could not amount to more than one Lance Corporal! I had visions of Dad's Army, corseting our wives as well into their wartime Service garb, if the Municipality was already gearing up for a display of Brits in uniform. A saga of phone calls and letters then ensued, complicated by a postal strike in Calvados-and by Franglais-but all was to be well, thanks to Lieut Colonel John McKeown (32 Armd Engr Regt) and the occasional elasticity of local leave. Major Steen Clarke and a detachment of 77 duly took up residence on S June, happening to have brought their uniforms along!

Lion-sur-Mer's commemoration was a sizeable affair-bands, banners, RE flag, RE Band bugler, speeches, presentations and the dedication of a fine new memorial to fallen comrades and civilians. Of course we also supported 3 Div's own affair in the evening, beginning where 77 and 79 had led them on "The Day". However the punch-line was delivered by the Mayor before (not after!) the three-hour farewell luncheon given by the *Conseil Municipal* to some of us on the morrow. He expressed the wish of the Commune to grant the Freedom of the Town to the Armoured Engineers. One sincerely hopes that this offer can be followed up. Tradition must have a starting point-for all Armoured Engineers this was undeniably at H Hour on D Day forty years ago.

Tailpiece 1. At the banquet, the course following the fish was Calvados, described by our hosts as *"Un trou Normand".* Its aid to the digestive juices provided a "hole" , enabling four further courses to be consumed in comfort.

Tailpiece 2. A word about Lion's *Residence des Falaises-a* battery of self-catering chalets ideal for young family holidays by the sea. Owned by the Conseil it is on the edge of town, traffic-free and overlooking a very clean sand beach. But not a word to other arms-Lion-sur-Mer *estprive au Genie Britannique.*- Yours sincerely, Ken Ferguson

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WHAT'S IN A NAME?

Sir,-Major C E E Sloan has entered what I hope is the latter stages of a debate which began early last year. He says that all Sapper field squadrons have construction capability: indeed so. What he did not say is that the ADR field squadron (as we refer to it in the trade) has even fewer construction tradesmen than an "ordinary" field squadron: there is a similar number of combat engineers, more plant operators and hence less construction artisans. To call an ADR field squadron a "construction" field squadron is therefore not only unnecessary, it is positively misleading. It causes still more confusion among those who have met the construction squadrons of artisans found in other armies.

Happily, a change of name is under active consideration, and we await the final outcome. To be fair, I do believe that there are some even more urgent matters being considered by the Central Staffs at the moment!- Yours sincerely, D M Adamson

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WHAT'S IN A NAME?

Sir,-Undoubtedly all RE Squadrons have a construction capability, simply because they have a wide and skilled selection of tradesman. Some units are more suited to a particular type of construction task because of the balance of certain trades, even if that trade is the ubiquitous combat engineer. Indeed we would be incorrect to call ourselves Engineers if we did not construct. I believe too that Squadrons are interchangeable, but that is not to say one with a particular bias of tradesmen can do the job of another with a different balance, equally well.

A name must surely indicate to those (theoretically) less well informed, to what group or family the subject belongs. Everyone understands the word Squadron because it indicates size. The remainder of the name must indicate to all, the priority role of the unit, thus ensuring that any commander can select the correct team for his task. To this end may I invoke a little heresy and suggest that units currently described as Field Squadrons could be re-designated Combat Engineer Squadrons. After all "Field" is simply a reminder of the time when combat engineering was known as field engineering, surely the term is obsolescentl "Construction" Squadrons should be referred to as ADR Squadrons. Thus no one would have to suggest that, to bring everyone "on line" with the theme of Maj Sloan's letter, armoured and amphibious engineer units should be titled Field Squadrons (Armoured) and Field Squadron (Amphibious) respectively!-Yours sincerely, C E Zimmermann

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THE SQUADRON SERGEANT MAJOR

Sir,-I question the need for Tony Boyd-Heron's SSM course for the following reasons:

(1) The potential SSM is created when a Sapper is selected for his first promotion to LCpl. More care in this selection and subsequent recommendations for promotion will lessen the chances of failure at all levels.

(2) (a) The subjects Tony considers essential are, or should be included in courses already available; Regimental Junior NCO Cadres, Section Commander and Senior NCO courses, except perhaps Corps Matters and Corps History.

(b) This may read like heresy coming from an ex RSM and JDI but cut down on the drill, particularly that ridiculous spectacle of one man bellowing incomprehensible orders at another across the square and substitute some military writing, Orderly Room procedure and the relevant bits of ASJRs.

(c) It would surely be possible to make attendance at the Records Course mandatory for those selected for SSM posts and the time-honoured method of teaching Corps History can be given to the Troop SSgt instead of the Troop Commander. The research necessary for his lectures to the Troop would benefit him in more ways than one.

(3) Administration is a part of Education for Promotion, are we sure that the subject is adequately covered and tested? If not, then lets make it so.

(4) (a) There are other ways of providing opportunities to gain knowledge and experience without going outside the Unit.

(b) The Provost Sgt's post should be rotated among all the Sgts In a Regiment.

(c) Don't give the Sgt's Mess Treasurer job to the Pay Sgts. Make each SSgt do it in turn with a Pay NCO as Assistant Treasurer/Instructor. When the SSM is away don't give the acting post to the same senior SSgt every time.

(5) A "hobby horse" of mine. There has been for some time, for reasons with which readers are no doubt familiar, an increasing tendency for he who sits "where the buck stops" not to delegate sufficient responsibility and authority to subordinates. This is particularly bad for NCOs who find themselves doing one job down instead of understudying one job up. Reverse this trend and they will grow in confidence, experience and ability or you will be able to weed out the failures before they reach the point where they can spoil a whole Squadron.

(6) Last but not least will there be a test and grading at the end of the course or does the SSM just attend? If he just attends you have no guarantee that he will learn anything, he may sleep all the time, in fact the potential failure probably will! If there is a grading and the course is *after* selection for the post what happens if he fails?

Not another course please! Unless of course you wish to be able to blame the Instructor's if YOUR Squadron falls apart.

The failure of a Squadron Sergeant Major is not purely the fault of the individual, it is the result of poor selection and training all the way through the ranks. One short, expensive, course will not prevent it.- Yours sincerely, Jack Cheeseman

Brigadier Sir Mark Henniker Bt, CBE, DSO, MC, DL
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"WHENDID You LASTGo TOTHELAVATORY?"

Sir,-About two years ago, shortly after the Falklands War had ended, I attended a military function near Bath, at which a small detachment from 9 Parachute Squadron RE was present. After the parade, the Women's Institute supplied us all with tea and wads, and I had a chance to talk to the 9 Squadron personnel present. The following points seem to interest those to whom I have repeated them; and may also interest your readers-however belatedly.

In World War II 9 Fd Coy RE (Airborne) served in Airborne Division of which I was CRE, and I formed a very high opinion of them. May I say that I thought the sons (or grandsons) of some of those who had been in 9 Fd Coy looked just like their forbears; and I wished that when I had been a young officer I had looked half as good as their YOs look now. All very cheering to see!

In conversation with a young Sapper, he said to me. "You know, Sir, if you haven't been in a climate like that, you simply cannot believe that such cold exists anywhere in the world! Why! To take your trousers down in order to go to the latrines requires the same moral fortitude as it requires to mount the scaffold to be hanged."

I asked him (in jest) if he had any experience of the scaffold; and he replied: "No, Sir, but I now know what it would be like." He went on to say that many men only went to the latrines once a week, because it was so awful.

In conversation later with OC 9 Para Sqn I asked whether the Sapper was pulling my leg, or whether it was true that soldiers often went a week without going to the latrines? And did the sick-rate mount in consequence? He told meitwas perfectly true, and that the sick-rate remained extremely low nevertheless.

About a week later, I repeated all this to an elderly, retired, doctor, who had served for about ten years in the Indian Medical Service before Indian

Independence in 1947; since when he had clawed his way to the top of the medical tree in the UK, before retiring. He told me he could well believe it; partly because of conventional medical knowledge; and partly from some specialist knowledge he had gleaned, when for a year he had studied medicine in Germany in the 1920s.

Apparently, before the Franco-Prussian War of 1872-or whenever it was-the German Army called up the Reservists. Amongst these men was a middle-aged professional weight lifting champion, who looked extraordinarily fit; and the following dialogue occurred:-

MO-"You look extremely fit. When did you last go to the lavatory?"

Reservist-(After thinking for a short while)-"I think Sir, it must have been in 1869."

CURTAIN

My retired IMS friend was not pulling my leg either. The incident is recorded in one of his German medical text books.- Yours sincerely, M C A Henniker

Colonel J N S Drake B Sc, C Eng, MICE, MIE (Aust)
The Old Mill House
Lower Stoke
Nr Rochester, Kent

POST GRADUATE TRAINING AT RSME

Sir,-Brigadier Willmott missed the inference of my remark on "the comparatively academic atmosphere" at RMCS. Unlike Staff College, to which he referred, RMCS has a very large civilian academic staff; inevitably they will have difficulty providing a military atmosphere.

We are in the business of teaching practical engineering to PQEs; the nearer we are to the realities of engineering and military life the easier it is to do so.

Marvellous it may be in scale and scope, but the colossal engineering of the North Sea and the Gulf has little to do with the requirements of the Corps. I do however heartily agree with Brigadier Willmott that the Corps needs continual practice in construction work, but it must be relevant.

What of Brunei? He was an independent, bloody-minded, entrepreneurial, swashbuckling innovator. In 1984 Lieutenant Brunei RE, shackled by the inevitable restrictions of peacetime, would soon be subject to court-martial or suicide. In war it might be a different tale!

I agree with Brigadier Willmott again-"RMCS is a great place"! It just happens to be the wrong place to train PQEs!-Yours sincerely, J N S Drake

Major A G Marsden
21 Pledwick Lane,
Sandal, Wakefield,
West Yorks, WF2 6DN

CURIOUS Toys FROM THE SAND

Sir,-I arrived in the Canal Zone at about the same time as Colonel Mackintosh, and his article evoked memories which I should hate to describe as nostalgic.

An odd fact which I noticed there was that, whatever the direction the wind, it always unrolled the toilet rolls, and the fences used to be festooned with yards and yards of "bumph." On the other hand, if one hangs washing on the line, the effect of the wind is to roll it up. Do Brigadier Sir Mark Henniker or Lieut Colonel Nowers know of any curious toys embodying this principle?- Yours sincerely, A G Marsden

Major (QM) B Foster RE (V)
106 (West Riding) Fd Sqn RE (V)
Somme Barracks
Glossop Road, Sheffield

MEDALS IN THE TERRITORIAL ARMY

Sir,-It has, I think, been recognised that the tradition of awarding medals to soldiers for special service or distinction serves several purposes. Firstly by rewarding the individual, secondly by reflecting favourably on the Unit or Regiment and thirdly in turn encouraging others to strive for similar recognition. This philosophy has always been endorsed by giving soldiers the opportunity to exhibit their awards on as many occasions as possible when wearing full dress uniform on parades, or on various ceremonial occasions.

However today in the TA, although medals are still presented for long and efficient service, etc, there is very little prospect of a soldier once obtaining such awards being able to wear them if he is of the rank of Corporal or below. This situation is due to the withdrawal of the No 2 Dress and Dress Regulations which do not allow the wearing of medals on Combat Dress.

There is a considerable injustice here, as many TA soldiers hold efficiency medals and quite a large number of ex regular soldiers, who having joined the TA discover that they cannot wear their previously gained awards as they have been able to in the regular army. In time, this situation could cause some resentment, young soldiers on parade will see Senior NCO's and Officers, and Old Soldiers parading with their medals, when they themselves cannot wear their own awards due to this anomaly.

Has anyone thought about the soldiers view point on this subject?-Yours sincerely, Brian Foster

Memoirs

MAJOR GENERAL C G WOOLNER CB MC**

Born 18 *October* 1893, *died 10 January* 1984, *aged 90*

CHRISTOPHER GEOFFREY WOOLNER was educated at Marlborough and RMA Woolwich and commissioned into the Corps in 1912. In WWI he was awarded the MC and two bars and rose to the rank of Brevet Major.

Between the wars he spent some time in India and in 1939 was at Chatham before becoming GSOI British Expeditionary Force. In the Dunkirk operations he commanded a Brigade. He commanded Sierra Leone Area 1940-43 before commanding 81st West African Division in the Far East. He subsequently commanded Mid-West Division (1944-47) and then 53 (Welsh) Division TA. He was appointed CB in 1942.

CLR writes: "I first met Kit in 1931 when he was BM of the Mhow Independent Infantry Brigade in Central India. I had been sent up there, at the age of twenty-three, from Bombay to take over the Garrison Engineer's job from a Major who had gone to hospital with a nervous breakdown. Kit and his dear wife Anne immediately took charge of my social life-they befriended me in the fullest sense of the word.

"At that time Kit was a very dashing figure-a Sapper as a BM was something of a rarity, and when it was discovered that he was a very good horseman ready to play a prominent part in the Mhow Hunt, his popularity was immense. He acquired the nickname "Dusty" from the time when he was an instructor at "The Shop". He certainly set very high standards for himself as well as for others-as I discovered in

1938 when I became his Asst Adjutant in the Training Battalion at Chatham.

"The two particular chores which were unloaded on to me were Courts Martial (in those days the Asst Adjt prosecuted) and Mobilisation. I learnt a great deal from Kit's insistence that Staff Work had to be immaculate. I greatly enjoyed serving under him until 1939.

"In the Dunkirk operations he commanded an Infantry Brigade in General Montgomery's 3rd Division. Only a year or two ago he told me how 3 Div had been fully rehearsed in what was likely to happen on our entering Belgium, and how the entire operation went "click click". This was a great contrast to the adjoining 4 Div where I was DAQMG! Subsequently he commanded a West African Division in the Far East.

"He was a very keen, knowledgeable and successful gardener and most generous to others like myself who were still learning on the job!

"He will be greatly missed in Biddenden, Kent. His services to that village in a great variety of ways will long be remembered".

CLR, TDT, TT

BRIGADIER W D M CHRISTIE

Born 7 April 1896, died 3 September 1983, aged 87

Brigadier "Don" Christie was born in 1896. He was educated at Cheltenham College, and after a few months at the Shop was commissioned into the Corps in 1915, and went to France as a subaltern in a Field Company. He was badly wounded while still only nineteen years old. Besides nearly losing his life, he was perhaps lucky to fall into the hands of a surgeon who saw there was a chance of saving his right leg, and it was not amputated as a matter of course. He spent the rest of WWI mostly on light duty at the War Office with intervals of painful treatment in and out of hospital. Thanks to the skill of the surgeons and to his own resilience and force of character, the treatment was largely successful, — and except for a slight limp he became able to play tennis, swim and dance—in fact to lead an almost normal life until his old age when some of his troubles caught up with him.

In 1919 he attended a Supplementary Course at the SME and was posted to 17 Field Company in Ireland. This was during the time of the "Troubles". The Company was stationed in the Curragh and Fermoy (1921) and Londonderry (1922), when he was posted to India. But the order was cancelled and he was posted to London District as Adjutant RE to 11 Battalion 3rd AA Defence Brigade instead. In 1924 either the unit was re-named 27 AA Battalion RE TA or he was transferred to another unit, but still located in London. Here, amongst his duties, he was responsible for many of the detailed arrangements in connection with the illuminations for the Royal Tournament at Olympia.

In 1925 he was posted to Egypt, first as District Officer—later re-named Garrison Engineer—Moascar, and in 1928 he became SORE to the Chief Engineer, Egypt. He returned to the UK in January 1931 as DCRE South Aldershot; and in 1933 he was appointed Chief Instructor in the Construction School at the SME Chatham.

Brigadier W D M Christie

Of this time lVC writes: "Don Christie was CI Construction when I was a YO. He walked with a slight limp from a wound, though he was an active man and ran a realistic Construction Course, as I was to learn later in 1938 when I served as his ACRE Quetta after the earthquake there. In administering large civil engineering contracts he was extremely effective. He did not believe that contract decisions, involving many thousands of rupees, demanded instant military decisions. He preferred results achieved by quiet thought, as a result of which we carried them through with a minimum of disputes. He had a trusting-and endearing- habit of doing much of his thinking aloud with his ACRE. This was flattering, but a bit delaying if there was a full in-tray waiting on one's own table!"

Don Christie had married in 1926 Zoe Churchill eldest daughter of Colonel Mackenzie Churchill and both lVC and LGTR refer to the part played by her in helping him to cope with "the numerous family problems of the junior officers and other ranks under his command. Being the understanding couple they were, he went a long way to sorting them out." LGTR goes on to report: "He was a keen golfer in spite of a WWI wound in the leg and he gave me many a towsing, and was as pleasant in the domain of sport as he was diligent and firm in the office. My wife and I became close friends of Don and Zoe. We miss him greatly ... as I am sure do many other people too."

The present writer was lucky enough to see a good deal of Don, when he was at the SME: for both of us were keen followers of the RE Drag. He came from a great games-playing, hunting family, and had he been able to play rugger again after his wound in the Ypres Salient I feel sure that his powerful build and thoughtful approach to all forms of sport would have made him a prominent Army player. He met his wife-to-be when out hunting with the Cotswold Hounds and in maintaining the Queendown Warren line in the 1930s they must together have filled in many hundreds of rabbit holes before every Meet of the Hounds there! It was a very good and sporting line.

I have no means of judging his flair for dealing with construction projects; but I heard him give to a few of us, who were in his Syndicate during an Officers' Day TEWT, some excellent advice, which I am sure will be remembered by those present. "Most of you", he said, "seem to know about the siting of Infantry trenches; but I advise you, as Sappers, to make sure you first know about what advice to give when the Infantry ask you how they are to drain the water out of the ones they can perfectly well site for themselves. In real life, most of us find that much more difficult!"

Don Christie was Chief Engineer Northern Command 1945-47 and the CE East Africa Command 1947 until he retired to live in Cheltenham in 1950, where he died on 5 September 1983.

In his last months he became very frail and confused. For a man of his ability and physique he found that most frustrating. He leaves a widow and three children to whom we send sympathy.

MCAH

MAJOR M M I BEGG, MI Plant E, MBIM

Born 20 September 1930, died 17 *June* 1984, *aged 53*

MALCOLM BEGG was killed in a tragic car accident in the Republic of Transkei. He joined the Army in September 1949, virtually from school, and was commissioned into the Corps in August 1951.

He was Adjutant 107 Corps Engineer Regiment 1962-64; Liaison Officer at the French Engineer School, Angers 1966-68; a principal staff officer to Major General Sir Patrick Campbell, Chief Engineer Southern Command 1970-71; GS02 Weapons GEE 1972-74 and finally Senior Instructor (Plant) at RSME until he took early retirement in October 1975.

He emigrated to South Africa and in due time became senior partner in the very successful Security Counselling and Training Centre in Natal dealing with countering urban and industrial terrorism.

To all who knew him he personified the very best of what we all understand by the word "Gentleman". By his winsome manner, ready humour and friendly interest he gave warmth to all with whom he came into contact.

It is no mean comfort to know that Malcolm has gone to be with the Lord. His practice of opening each day's work at the Security Training School with prayer; his meticulous care for those for whom he was responsible; his regular attendance at church; his enthusiastic participation in Bible study; and finally his open confession of Christ are the fruits by which we know, by the Grace of God, that he has been born again.

He leaves his wife Mary and two children Rowena and Andrew.

Revd R J B

BRIGADIER PHILIP SAINT BARBE SYDENHAM CBE

Born 23 April 1898, died 8 April 1984, aged 85

PHILIP SYDENHAM came from a West Country family with a long tradition of service to King and Country—a tradition of which he was determined to follow. Indeed his whole career emphasised his determination to equip himself fully for whatever he might be called on to do.

He was in every way an impressive man with a tall commanding figure and a forceful personality. But though a dedicated soldier he had plenty of time for "play" as well as "work" and was remembered at "The Shop" as "a great and very pleasant character, a good fast bowler and rugger forward". He was commissioned in 1917 and after a brief spell with the Royal Bombay Sappers and Miners in India and Palestine he returned to England for a Supplementary Course at Cambridge, where he gained 2nd Class Honours, and Chatham where he was a leading member of the US Chatham rugger team and was capped for the Army in 1923. There followed various brief appointments in the UK until he attended the Staff College in 1934, and was then appointed Brigade Major at the School of Military Engineering, an important post which he held until shortly after the outbreak of war in 1939. In 1940, when he was appointed CRE of 18th Division (he had earlier been recommended for brevet promotion to Lieut Colonel) it seemed a logical step in a career of great possibilities. But it proved not to have been the step it might have been as the Division only reached Singapore a matter of days before the fall, and the majority of the Division were taken prisoner. Sydenham was not, because when the surrender was clearly imminent, the Divisional Commander selected a few key members of his staff, Sydenham among them, to be evacuated by the Royal Navy. He took with him a small party of Sappers and is remembered by one of them, a subaltern at the time, as "displaying complete calm and an imperturbable steadiness throughout those dreadful days".

In due course he reached Ceylon where he contracted dysentry, the effects of which were to plague him all his life. Evacuated to England he filled various Sapper appointments, eventually as a Brigadier, engaged in the planning of *OVERLORD*, at HQ Allied Expeditionary Force until he was appointed Commander 1st Assault Brigade, 79 Armoured Division in NW Europe in Feb 1945. This was just prior to

Brigadier Philip Saint Barbe Sydenham CBE

the operation of the Rhine crossing. Though his regiments were to play a major role in that operation, and in the battles that followed until VE Day, they were frequently placed under direct command of other formations. It must have been a somewhat frustrating command for him, for though around 4000 troops and 300 armoured vehicles of the Brigade were involved in the Rhine Crossing only his HQ and a Park Squadron were under his direct command. Nevertheless he is remembered at the time as being "essentially the professional soldier, very much concerned with his troops and taking every opportunity of being helpful". He was appointed CBE in 1945 and an Officer of the Legion of Merit USA in 1947, the citation for the latter referring to his "outstanding service in connection with planning for the invasion of Normandy, the campaigns in northern France and Germany and the Rhine River crossings.

After the war—he retired in 1947—he worked in the then Ministry of Town and Country Planning for some years before moving to live quietly in Somerset with his ever-cheerful wife Jo. She died a year or two before him, so it is to his daughter and son that our sympathies are now extended in their loss of a father who as a staunch and distinguished soldier honourably upheld his family tradition.

PRA EH JMHL OLR PAW

LIEUT COLONEL E F R STACK

Born 5 March 1906, died 27 July 1983, aged 77

Lieut Colonel E F R Stack

EDWARD FRANCIS ROWAN (SPIDER) STACK was a Haileybury Scholar and attained a Prize Cadetship, passing in fourth, to RMA Woolwich in February 1924. MCAH takes up the story: "One of the earlier ordeals in a Cadet's life was a boxing contest, arranged for all the new entry—they were called "Snookers". We were sorted out by weight, like turkeys, to box each other after we had been at "The Shop" about a month. E F R Stack and R H Hannay fought in a spirited but unschooled manner, and both contestants earned nicknames that stuck to them all their lives. Stack was very tall and very thin. Hannay was short and stocky. They at once became 'Spider Stack' and 'Crab Hannay'."

After The Shop he joined No 14 YO Batch at the SME. CPJ writes of him: "Spider was full of fun and could always see the lighter side of any problem or military situation. Able and well educated, he helped to make all problems seem simple and I can still see his winning smile. He was the kind of man that the Army needs as good regimental officers—no Napoleon but always there when needed, strong in support of what is right and modestly giving any credit to others."

After the Sapper Courses and a year at Cambridge, he went to India where he arrived in January 1928 and went to Bangalore. MDM writes: "I knew Rowan at Haileybury and was impressed by his ability in the Army Class and his performance as a hard-working forward on the Rugger field. He retained his love for the game wherever he found himself. I remember Rowan telling a story of a game he had played up on the North West Frontier, when a try having been scored he was endeavouring with his heel to make a hole in the hard ground in which to place the ball for a kick at goal, when a helpful Sapper ran out with a pick! I followed Rowan to Bangalore in 1932. We played a lot of tennis and golf together. He was a very

efficient regimental officer, a man of equable temperament, kindly and friendly with a keen sense of humour."

In 1933 he returned to England to do an E&M Course. This he completed in 1935, in which year he also got married.

The next phase of his life was his strong connection with the Burma Engineers. In 1936 he was sent to Maymyo as ACRE Military Works. It was during the time there, following Burma's separation from India, that it was decided to form a Depot and one field company of Burma Engineers from purely Burmese rather than Karins, Kachins and others who composed Burma Rifles. Major J M Saegart RE was appointed Commandant but until he arrived the Depot was organised by Captain Stack who later succeeded him on the outbreak of war.

PFG writes: "In 1939 I was drafted from the Burma Forest Service into the Burma Sappers and Miners on the outbreak of war. The Burmese, though a delightful people, were not noted either for their technical skills or disciplined service to any cause, but Rowan, by force of character and dedication, was able to weld a medley of individuals into an efficient and happy company which played a valuable part in the preliminary stages of the war until the Japs overran the country.

"My memory of Rowan is of his brilliant rearguard demolition exploits when we were retreating from Burma in 1942. In the Field Company in the previous two years he had recced and planned the demolition of many of the strategic targets-bridges, railways, oil wells and other points-and now, at times single-handed, he put much of this planning into effect. Sometimes he personally laid the charges, including those on the only bridge over the Irrawaddy, the railway bridge at Mandalay. I was with him on one occasion when we were laying charges to crater one of the few airfields and when isolated in the middle of the runway were dived on and machine gunned by two Jap planes which just missed us. After that our ways parted, but he has always remained in my memory as an example of a Sapper officer in the very finest tradition."

With the onset of the Japanese invasion and withdrawal it was decided to disperse the Burmese to their homes where they might be more use in the future. Rowan Stack joined the many British ranks who then walked out of Burma over the hills to Imphal.

He spent the rest of the war first training in Bangalore in the Forming Troops Battalion and then in Glasgow on Military Works. He spent six months as CRE Works in Athens in 1945. After the war he was posted back as Commandant to re-construct the Burma Engineers but after a year was posted back to England, in 1947. After a spell as CRE Works Northern Ireland he was appointed Commanding Officer of the newly formed UK reserve engineer regiment-24 Field Engineer Regiment at Ripon.

DAG writes: "At this time the situation in China was changing rapidly with Mao Tse Tung moving south and by July 1949 an Infantry Division of three Brigades was on its way to Hong Kong with 24 Field Engineer Regiment in support. Engineer tasks included up rating a Class 12 route to Class 40 to take tanks, construction of jeep tracks to feed defensive positions all over the mountains, construction of these positions and obstacles round them. In addition there were 'get you in' works to accommodate the twelve extra major units now in the colony. When the Korean War broke out the garrison lost a brigade so Colonel Stack was given the additional command of an *ad hoc* infantry battalion formed out of two Gurkha Field Squadrons and one RE Field Squadron. It is believed that he enjoyed the unique experience in the Corps of commanding simultaneously a Field Engineer Regiment and an ad hoc Regiment employed in the infantry role, and being CRE to the Divisional Commander as well. He tackled these tasks with unbounded energy and enthusiasm and moulded the two major units into a well trained and efficient force. Despite it all he still found time to play hockey and tennis to a remarkably high standard. In 1951 he handed over his command and was posted as CRE Works in

Kuala Lumpur, Malaya." He served there for one year before retiring to farm in Ireland in 1952.

JRCH writes: "He gave twenty years of his service to the Madras and Burma Sappers and Miners lasting through the Second World War. The granting of independence to India undoubtedly shortened his army career and closed the avenue to further advancement."

Having successfully run a chicken farm and market garden in Donegal for fifteen years he finally retired to West Dorset where he spent a further fifteen happy years before his death after a short illness in July 1983. He is survived by his wife, Beryl, and two sons, one a consultant physician the other a serving officer in the Corps.

DAG, PFG, JRCH, MCAH, CPJ, MDM, DJRS

MAJOR GENERAL D HARRISON CB DSO C Eng FICE

Born 11 *November* 1896, *died* 23 *June* 1984, *aged 87*

DESMOND HARRISON was educated at RMA Woolwich and Cambridge University. He was commissioned into the Corps in 1916. He was awarded his DSO in 1940 on the retreat to Dunkirk. From 1943-46 he was Engineer-in-Chief South East Asia Command before becoming Director of Fortifications and Works 1946-47. He was appointed CB in 1946 and was a Commander of the American Legion of Merit.

He retired from the Active List in 1947 and became General Manager of the Overseas Food Corporation in charge of the ill-fated "groundnuts scheme" till he resigned in May 1949 through ill-health. This Ministry of Food scheme was to clear three million acres of bush in Tanganyika, Kenya and Northern Rhodesia. The intention was to produce over half a million tons of groundnuts a year to produce large supplies of oil and fats. In practice the plan encountered enormous difficulties. Government estimates for clearing the bush were grossly optimistic. No blame could be attached to General Harrison-the plan was simply not on.

He served his country with distinction at all times.

TDT, TT

COLONEL THE HON R G H PHILLIMORE OBE

Born 23 *September* 1913, *died* 18 *May* 1984, *aged 70*

BOBBIE PHILLIMORE was the third son of Godfrey, 2nd Lord Phillimore. He was educated at Winchester, "The Shop" and Trinity College Cambridge where he read Engineering. He was commissioned into the Corps in 1933.

Between 1933-39 he served in Palestine and Egypt. One of his major tasks in this period was his survey of what later became known as the Alamein Line and its water resources. Little did he realise the eventual value of his work. In WW2 he took part in General Wavell's campaign and subsequently joined General Eisenhower's planning staff for the invasion of North Africa. At Ike's request he remained on the planning staff for the drawing up of *Overlord.* He was one of the team who prepared the surrender terms and after Victory in Europe served at SHAEF and finally in the War Office on the Advisory Committee to the Cabinet.

He retired from the Active List in 1953 as a result of injuries he had received. He was Mentioned in Dispatches, awarded the US Bronze Star and the Croix de Guerre with palm in addition to his OBE.

On retirement he returned to Shiplake to become a miller and farmer and to take part in many local and national organisations. In addition to administering the Phillimore Family Trust country property, he was a Thames Conservator for many years and became Chairman of the Land Drainage Committee; he was the Founder Chairman of the Thames Valley Cereal Co-operative which later became Group Cereal Services, one of the largest grain-selling farmers co-operatives in the

country; he was also a Parish Counsellor and a JP for twenty-two years.

He had been a keen sailor and was one of the two longest standing members of the RORe. As one would expect of a countryman he was a fine horseman, a good shot and an expert angler. He was a natural leader and a man of great warmth and kindness.

To his wife Sheila and his four daughters we extend our deepest sympathy. He will be mourned by many.

TDT, IT

Book Reviews

ROAD MAINTENANCE HANDBOOK
UNITED NATIONS ECONOMIC COMMISSION FOR AFRICA

(Obtainable from Head of Overseas Unit, Transport and Road Research Laboratory, Crowthorne, Berks RGll 6A U. Price £13.50, cheques to T & RRL)

THIS handbook, in English (or French), is published in three separate volumes by the United Nations Economic Commission for Africa. Volume 1 covers the maintenance of roadside areas, drainage structures and traffic control devices and was prepared in Germany. Volume 2 deals with the maintenance of unpaved roads and was prepared at the Transport and Road Research Laboratory, England. Volume 3 covers the maintenance of paved roads and was prepared in France.

The handbook is intended as a guide for the maintenance foreman in a developing country and to assist him in all aspects of his work on site. He is recommended to carry the book and use it as a reference both before and during the work. It provides descriptions of; the function of components or maintenance activities, defects together with their cause, development and remedies, and maintenance methods together with the resources required.

All parts of the volumes are well illustrated and simple to follow. There is a lot of repetition because of the compartmentalised nature of the presentation, however, only Volume 1 contains a full list of terms and without this volume the other two are of less value. Some of the terms used conflict with British terminology, for example, a road base is described as base course. The disparate nature of the courses of the three volumes also causes problems which the Editor has not overcome, for example, the minimum depth for a V-ditch is quoted as a.5m in Volume 1 but as 1m in Volume 2. The temporary signposting of similar road obstructions also differs between the three volumes.

The handbook as a whole achieves its aim and will provide a simple guide to road maintenance in developing countries. However the presentation is a little too simple for the Corps, although some of the illustrations and methods could be extracted to improve the road maintenance chapter in *Military Engineering Volume II PAM 8A.*

KPMT

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PB

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