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Editorial

LOOKING BACK

JUNE 1944 will be remembered by many. 1944 as a whole will be remembered by many more as, to most people serving at the time, this was the year in which "the plan seemed to come together" as Hannibal Smith, thinly disguised as George Peppard, leader of the TV "A-Team" would say!

This particular issue of the Journal looks back in most of the articles, but, as this is going to be a year of looking back, it is probably appropriate. There is nothing wrong in looking back provided the lessons and principles from the past are analysed and studied in the full context of the time.

Looking back is often accompanied by unpleasant memories, though most of these are made palatable because the human spirit tends to diminish the unpleasant and accentuate the more pleasant experiences, almost to the point of fiction. This is typified by expressions like "The Good Old Days", which, in most ways were pretty terrible if one looks at *all* the facts.

Knowledge of only some historical facts can be a dangerous base from which to draw conclusions. The costs of every-day items is a very good example – "I can remember when one could go out and buy a car, have a slap-up seven-course meal, have a drink, buy a packet of cigarettes and still have change out of half-a-crown!" (For younger readers half-a-crown was 12½p!!)

Some interesting figures, based on the purchasing power of the pound or 100p, came to our notice a short time ago. Assuming that the purchasing power of the pound was 100 in 1914, then the purchasing power has fluctuated as follows:

PURCHASING POWER OF THE £ (1914 = 100)
Based on a compilation by E Barry Bowyer

1825	65.08	1879	102.50	1930	63.33
1830	83.75	1880	96.25	1935	70.00
1835	85.00	**1881**	**100.00**	1938	64.14
1840	77.91	1887	124.16	1946	37.91
1845	92.50	1890	118.33	1950	31.25
1848	**100.00**	1896	140.00	1955	25.04
1852	105.00	1900	112.91	1960	22.50
1857	79.16	1905	118.33	1965	19.58
1860	85.04	1910	108.75	1970	15.83
1865	83.75	**1912–14**	**100.00**	1975	9.37
1870	88.75	1920	40.00	1980	4.58
1875	88.75	1925	56.66	1982	3.54

These figures may look depressing BUT unless they are related to the *earning* or *income* figures they are virtually meaningless.

Looking back MUST be related to historical time (which in turn relates it to resources and conditions in general), otherwise the conclusions drawn will be suspect to say the least.

The temptation to use the Buzz-Phrase Generator (see page 130) has been resisted by the Editor who hopes that future contributors to the Journal exercise similar restraint!!

* * * * *

DON'T FORGET THE RE MUSEUM APPEAL

"Forty Years On. . ."

1944 was a momentous year in many ways and in many places. The Publications Committee considered that an opportunity should be given to add some colour to the more formal published literature (which is readily available) referring to those stirring times.

The contributions which follow are accounts of individual experiences in NW Europe, Burma and Italy. They are grouped geographically. Not all refer to combat (and indeed one is from 1943 but it seemed appropriate to include it!) but they do recount the deeds and thoughts of people who were doing their jobs to the best of their ability.

With 26 Assault Squadron RE – 6 June 1944

MAJOR C J HENDRY MBE

FORTY years on and before memories become clouded I must record on paper some memories and recollections of a very important day in my life.

On that day I was a Troop Leader (Captain) of 26 Assault Squadron RE and under command of 3 Canadian Division. On D minus 2 I recall loading my allotted LCT with:-

AVRE with SBG bridge
Own AVRE
AVRE with Fascine
Armoured bulldozer
2 Sherman Crabs (Flails)

This represented a half troop only. The other half troop was in an LCT immediately following me and carrying a similar load.

We moved into Southampton Water and joined very many other Naval craft. Later that day I recall the thought that one could possibly walk "dryshod" over the boats from the mainland to the Isle of Wight. Due to adverse weather conditions "D" Day was postponed for twenty-four hours, and we sailed at about 1700hrs 5 June following the mine sweepers to the harbour boom. The LCT Skipper and myself read out the orders of the day from "Ike" and "Monty", checked the security of the vehicles, repaired to the Wardroom and opened our sealed orders – to learn that we were due to land at 0730hrs 6 June at JUNO AREA NAN beach (Courseulles-sur-Mer).

We were obviously in for a rough trip and the SBG Bridge began to act as a sail – making it difficult for the Skipper to keep station. We lowered the SBG until it rested on the tank in front. I remember that we were all seasick, not helped by the fact that the members of the naval crew were also seasick! The worst moment occurring when the LCT propellers left the water. On the wall of the wardroom was a framed copy of "Nelson's Prayer before Trafalgar" which I laboriously copied onto a signal message pad. We were all pretty miserable by dawn 6 June and it was a great effort to prepare the tanks for touchdown.

The Skipper had been told to approach touchdown in line with a church tower, which, fortunately for us, had survived the bombardment, and just before touchdown I remember being very impressed and somewhat comforted by the fire from the rocket ships. Due to the gale force wind we were some thirty-five minutes late at touchdown, the rising tide was higher than expected but we were able to swim our tanks between rows of Element "C" and hedgehog obstacles with mines on top, almost, but not quite obscured by the tide. How thankful I was to reach dry land and see the back of a very angry English Channel – and to see my other half Troop following me shorewards.

As has been documented, the main natural obstacle was a line of sand dunes

some 20ft high at the back of the beach. Beyond this some 400 yards of low lying land – flooded by damming the outlet of a stream. The stream flowed under the proposed exit from the beach via a small culvert. This culvert had been demolished resulting in a flooded gap some 65ft wide and 12ft deep. In addition a tank trap had been dug in the centre of the proposed exit – 16ft wide 9ft deep. The beach exit through the dunes was filled with barbed wire and, with the possibility of buried mines, produced a very formidable obstacle.

We used a crab flail to flog through the wire but it became hopelessly entangled and bent a jib. We cleared the wire by bulldozer winches, dragging the wire seawards, and I remember with horror the Canadian Armoured Regiment tank that came through the gap before we could check for buried mines. However, all was well, and apart from saving time we could use the tank's firepower. The SBG bridge was dropped on the dunes and climbed by a crab flail which immediately lost a track – the bridge was remounted to the AVRE and kept in reserve. In any case the exit was now open.

The arrival of a second Assault Engineers Troop meant that AVRE and its related equipment was duplicated and would be more than adequate for completion of the task. I and part of my tank crew then went to find the dam, to open it and release some of the flood water into the river. We found closed sluice gates – unmined – and opened the gates with AVRE toolkit spanners. Then a Corporal with me suddenly commented "Bloody hell, sir, look at this lot!" To my astonishment there was a sudden appearance of fifteen-twenty German soldiers – hands held high and sporting white flags!

A fascine was successfully launched into the prepared tank trap and a second fascine ordered up to the cratered culvert. Well targetted mortar fire and floodwater prevented us from realising the extent of this gap. In the event, the tank fascine slipped into the water and disappeared from view. The tank crew then baled out but got caught in the mortar fire three were killed and two seriously injured. The survivors, Messrs Hawkins and Dunn have lived with and suffered from their injuries for the last forty years. They have their memories of "D" Day. The troublesome mortars were spotted and silenced by some half dozen tank guns – only too eager to have a go!

The opening of the exit road has been well documented. The use of the turret as a bridge seat – the completion of the crossing with rubble from damaged houses – brought to the site by a horse and cart, complete with driver, "acquired" from a farmer. These remain as memories.

Our route to a Squadron Harbour area on a hill overlooking the Courseulles beaches took us over the Courseulles Dock Swing Bridge. Some twelve 40-ton Churchill tanks safely crossed this bridge – built for lorries and cars only (Class 9). We found, incidentally, at our Harbour Area, a battery of some eighty large rockets targetted onto the beaches. Fortunately, RAF bombing had cut the wires and the rockets were never fired.

The first very gruelling day of *Operation Overlord* was over.

A Brief Moment on D Day

MAJOR H R K NEILSON

Author's Note:
After forty years the term used for this contribution should be "anecdotage" as far as recalling incidents of those days is concerned!

THE Bridges over the River Orne and canal had been captured intact. John Howard's Ox and Bucks had been relieved by 7 Para.

Sappers of the *Coup de Main* Force had been joined by the remainder of 2 Platoon who had flown in with rafting equipment for use if the bridges had been

blown. Commandos of 1 SS Brigade had passed through our position and had reduced the incessant sniping from the East bank of the Orne.

The surface craft from Ouistreham had been captured, and on the evening of 6 June Sapper involvement was restricted to patrolling between the two bridges.

Smugly complacent that all had gone well and no bloody ferrying to be done it suddenly appeared – an enemy aircraft and a 500kg bomb heading straight for us. It dropped quite slowly, touched the lower edge of the cabin housing the bridge lifting gear, and was deflected enough for it to land flat on its side, break up in lumps, but did not explode! It landed "smack" on the hinge of the bridge and made a small "pot-hole" in the road surface.

A commendable effort, by a dashing Subaltern from 3 Div who had reached us, to repair the pot-hole was hurriedly abandoned when it was pointed out that the "hard-core" he was using was in fact explosive from the bomb.

Depending on whose side you were on, this must have been the luckiest or unluckiest bomb in the invasion.

77 and 79 Assault Squadrons RE

THESE three short accounts were submitted by Colonel J G Hanson DSO. They were sent to him when he was helping David Cobb with his "Queen Red Beach Normandy Landing" painting.

THE BOBBIN AVRE THAT NEARLY FAILED ON EMBARKATION

Extract of a letter from Captain J F G Charlton RE, 79 Assault Squadron RE:

"You may recall that prior to D Day you gave me the task of getting the AVRE ready and said I would not be going with the main party on the great day. Henry V would no doubt have classed me as one of the "Gentlemen of England now abed", not that I had much sleep as having walked round the welding plants so much I had "arc eye" which lasted quite a few days.

"There was one small incident of which you may not have been aware. When the AVREs were loading at the hards, one of the Bobbins in transit struck a lamp standard with the side of the Bobbin and bent it to such a degree that in no way would it have been able to revolve. I asked the LCT Skipper how long he could give me to effect repairs and he said he had to pull off in one hour. Knowing there was one training Bobbin in the tank park we ran the tank back and unrolled the carpet and replaced the damaged reel with the sole surviving training one. 'The best laid schemes of mice and men——", we found the training reel was a good 12in narrower than the carpet! It was a physical impossibility to cut through all the steel tubes in the short time left, and in desperation I had the men reel on 4ft chesspale on each side of the Bobbin and wired together at the ends. It was amazing how much we managed to get on, added to which there was a nice gap in the middle for the Tank Commander to see through instead of clinging to the top. When I asked Sergeant Sawyer at a later date how he managed with it, he told me it was the only one that worked and that he had "B" vehicles and tracked carriers following him up."

ACTION ON THE BEACH – 2 TROOP 79 ASSAULT SQUADRON RE

Extract of a letter from Lieutenant (now Major RARO) A J Nicholson:

"THE Div History is accurate in giving the bare bones of the action as I saw it. The times are mere guesses of course. As we approached the shore. I saw HMS *Renown* (I think) firing and a destroyer sinking away to our left. Nearer the beach a shell/mortar bomb hit a landing craft to our right (1 Troop?) and it seemed that a Marine who was about to ditch the chesspale bundles was hit (killed?). Geoff Desange's craft, with Sergeant Bartley, hit the beach first – I had instructions to stay in the water till called forward (Geoff in 2 Able had an SBG bridge, Bartley had a log carpet and I had a "bobbin" with chesspale carpet with a Boase Bangalore). As I sat in

the water between two ramp obstacles I noticed a wire running from a Tellermine on one ramp down into the water just ahead of my AVRE and up to another mine on the second ramp. I had already ditched my ducts and the tide was coming in fast so I could not go back. With some misgivings (!) I told my driver (Sapper Upton) to advance, the wire snapped and we came ashore unhurt. Shortly after, Geoff called me up the beach to give him support. The flails had been through the minefield but as they circled out again both were hit and brewed up. I have a rather horrid recollection of seeing at least one of the crews trying to climb out and being caught by the flames or a sniper and falling back into the turret.

"About this time the bridge was hit and fell outside the minefield. Geoff ordered Bartley's tank to lay his carpet but he was hit several times (four I think) and brewed up, blocking the gap. Bartley and Sapper Coombs were wounded – the rest got out and took cover behind Geoff's tank.

"While this was going on I had stopped 20 – 30yds from the 50mm anti-tank gun in a pillbox marked on the overprint. He kept banging away at my AVRE and I was told later we had six or eight hits, I forget just how many. One brought down the carpet, so we were blindfolded. Another ripped up the co-driver hatch so we could not load the petard and also jammed the turret traverse. The jettison gear for the bobbin frame failed to operate. My demolition NCO, Corporal Thomson, passed a dustbin out through the turret which I loaded into the petard but by this time we could not see to fire. Geoff had meanwhile got his "dem" NCO, Sergeant Purkess, out of the tank with a mine detector but when I joined Geoff behind his crippled tank, Purkess was also there. The prospect of detecting mines in a hail of bullets and mortar bombs had, not unreasonably, deterred him!

"We did what we could for the wounded (Bartley and Coombs) and Geoff meanwhile decided to blow up the sandbank with hand-placed explosive charges. We got shovels, PE etc, and, accompanied by Sapper Price, Geoff's co-driver, we ran through the (cleared, we hoped) minefield and dug some holes in the face of the bank. We then realised we had no detonating fuse and, rather stupidly, Geoff and I both ran back to the AVREs to get some. My dem NCO threw out a reel to me and I started back to the sandbank. Geoff was just emerging from the shelter of his tank when he pitched forward and lay still. I thought he was dead but anyway pulled him under cover, probably with Sergeant Purkess' help, realized there was nothing to be done and ran back with the Cordtex to join Price on the sandbank. We connected up the charges, lit the safety fuse and Price took cover. I was about to follow when I saw a lot of infantry (recollection says they were Commandos) coming through the minefield gap. It was very noisy, as you will remember, and I had a lot of difficulty in persuading them that the sandbank was about to erupt. However I think they did stop or go back and I dived after Price into the hoped-for safety of the lee of the sandbank. The next thing I knew I was being hit slowly and systematically by an invisible black-smith with a 14lb hammer and pointed chisel. The rest of my history is not relevant to the present purpose but from hearsay I know that the charges did go off and perhaps eased the task of the bulldozer (though I have some doubts on this score). The pillbox was silenced and I found myself in it some time later (and it was still there in 1965), my crew piled out and finished off the machine-gunner in the first floor of a house above the "gap" (also still there in 1965 – the house not the body of course). My crew brought me some whisky (my own) as I lay on a stretcher in the pillbox – luckily I refused the whisky but it was a nice thought.

"On Sunday 11 June, I found myself in Pinderfields EMS Hospital, Wakefield and a few weeks later I met Sergeant Bartley again, who was in the next ward. He said he'd never be able to walk again. In November I joined 557 Training Regiment at Parham Park and the first man I saw was Bartley – marching a squad!"

ACTION ON THE BEACH – 1 TROOP 77 ASSAULT SQUADRON RE

An account by Sergeant T R Kilvert RE, Comd AVRE 1C

This account also forms part of an article by Captain R A Stewart, 22 Cheshires:

"We stood to at dawn on board the LCT 100A at 0500hrs. Breakfast was on, but nobody really wanted it, being more or less sea sick. I had the AVRE 1C started up, all guns loaded and a last minute check over the tank. It was now about 0610hrs and the coastline stood out in the haze; we were coming in fast. About half a mile out everyone mounted their tanks. Almost in, 400 yards to go when 1C had a violent shake. We had been hit. Damage not known because the LCT had sustained damage a bit forward and we had to get off at once.

"The LCT stopped: H Howe and G George (Flails) in front moved off; again 1C was hit. Going down the ramp now and the water was almost up to our cupola. Again we were hit, but on our bobbin, it being at a crazy angle. Coming up out of the water, hit again, and at last dry, and following 1A up the sand. Hit a mine, one bogie gone, but following on 1A's track, we were ordered to put up a windsock, 1A having lost his. Struck a second mine, two bogies gone and left track, gone.

"Lance Corporal Fairlie and Sapper Vaughan jumped out to put up a windsock. Fairlie was blown up by a mine as he came round the tank. I ordered "Abandon tank. Take all arms", and jumped out myself. Destroyed Slidex and code papers. We were all out now, petrol was pouring out of 1C and filling mine craters.

"Everyone lay down whilst I looked for the Lance Corporal's remains. None found, so I returned and organized the crew into a fighting patrol. Just then Lance Sergeant Freer from 3 Troop joined us; he had swum ashore from his tank which had been on our LCT. Moving up the beach we passed Captain McLennan in 1A, stood on the gap top. I ordered a defensive position and to consolidate in front of 1A on the crossroads.

"Asking the Troop Leader to cover us, we moved forward behind the leading flail, until he reported no more mines on the road ahead. Again we consolidated. I went back to the beach to bring up the Troop. Captain McLennan had now advanced through the gap and was followed by 1B, who stood at the exit a little to one side. I collected Lance Sergeant Freer's crew and a couple of infantrymen and brought them forward to our advanced position.

"Again we moved forward (we thought) until a bend in the road cut them, 1A and 1B, from view.

"We advanced in short bounds to the high wall of the large farm. Here we split up into three parties, one covering the main road or killing zone, another as rear protection and the third as house clearance.

"It was then that fire came at us from three sides, but bursts from our two Brens brought a lull. Shooting open the garden door, I advanced, covered by my Lance Sergeant and Sappers Lewis and Hand, up the two paths and raked the whole front of the house and part of the farm with fire, killing, we later found, eleven of the enemy.

"We rushed the house with hand grenades and searched it from top to bottom. Going out into the yard we found the air raid shelter and the civil occupants of the farm.

"Sapper Hand, who spoke the lingo, obtained the information that the big house (on the corner of Hermanville itself) housed about two hundred of the enemy. I then reorganised the party, sending two runners back to Captain McLennan. Using the road ditch and the garden wall as vantage points we advanced about sixty yards then Sapper Vaughan opened fire with a Sten gun on an enemy party coming down the road towards us.

"Immediately every one of us opened fire and, with the two Sergeants with hundred-round magazines on their Bren guns, this scattered the enemy. An SP gun then came up, followed shortly after by the infantry and Lieutenant Tennant on foot. We then handed over to a RA Major and moved to our RV in a field opposite. On Captain McLennan's instructions, we used a detector and tested for mines.

"Later the OC arrived and we assisted in the removal of two injured members of the crew.

"I reported to the OC and we moved into Squadron rally RV."

With 73 Field Company RE – 6 June 1944

COLONEL I T C WILSON MBE, MC, B Sc

The Author joined the Army in 1942 and was commissioned while still aged 18 in 1943. He retired in 1979 counting himself most fortunate to have been in the Sappers for nearly 38 years during a period of so many opportunities for widespread and interesting service. Perhaps his main love was airborne soldiering, he managed four airborne tours in four different units. He is now a master in a preparatory school where he teaches mathematics, science and rugby.

Our landing craft beached on JIG GREEN WEST sector of GOLD Beach in Normandy four minutes ahead of the assault waves. The sea was rougher and we touched down in deeper water than we had become accustomed to in training.

I was the Commander of 3 Platoon of 73 Field Company, whose task was to clear the beach obstacles in support of 231 Brigade of 50 Northumbrian Division. To this end the Company was organized into six teams, each of which was to blow up obstacles to make a 200 yard lane, and then mark it so that landing craft could continue to come in on the rising tide. Each man carried eight 3-pound plastic explosive charges and a set of short-delay igniter sets. Spare explosives and lane markers were in folding boats which were towed ashore by AVREs of the Armoured Engineers with whom we shared six Landing Craft Tank (LCT).

It is now forty years since that D Day, memories fade and distort, a subaltern's view is somewhat blinkered, and I was only aged nineteen. Nevertheless vivid impressions remain.

With some three month's special training, mostly in the New Forest, and several full-scale exercises behind us, we boarded our LCTs from concrete hards in the Beaulieu area on 3 June and set out for France the following day. It was a tremendous anti-climax when we turned back after clearing the Needles because the Invasion had been postponed. I had not by then learned that events in war seldom follow a planned sequence. It seemed a long, uncertain wait until we set out again on 5 June, and then the sea was even rougher, particularly in a flat-bottomed craft. We were towing a special spigot-mortar craft for fire power in the landing; it was last seen at midnight, upside-down as the tow-rope parted; the three crew disappeared. Many of the Sappers were seasick and quite a few were too upset to take the morning rum ration; even the LCT crew felt queasy, one of them remarking "You lot are all right, you get off here, we have to cross the Channel again"!

At dawn the coast of France became visible, exactly matching the low-level oblique air-photograph showing our landing point. This example of the thoroughness of our briefings swelled the vast feeling of confidence, so much so that I thought the shell splashes straddling our LCT could only be drop-shorts from the rocket ships. However the sight of six Sherman DD tanks sinking in quick succession as they were launched sobered the euphoria a little.

The actual landing was rather confused, very wet and some equipment was lost. However all my Platoon got ashore; both the other platoons failed to disembark

Colonel I T C Wilson MBE MC B Sc

their full strength, one section even returned to England and joined us days later. The disordered landing, rapidly rising tide pushed by the wind, and the fact that some obstacles were of heavier metal than those we had practised on, caused snags; and casualties hampered progress in our task. At one stage I noticed a wounded Hampshire soldier lying at the base of an obstacle line which we were about to blow up. Looking around I could see only one man who seemed to be unoccupied – my OC! I yelled at him to carry away the wounded man, which he did. Neither of us spoke of the incident later!

The assault waves of 1st Hampshires had rushed up the beach and disappeared inland but the follow-up companies lined the head of the beach which was under some fire from a village called Le Hamel to our right. Towards high-tide these infantrymen moved off to the left, leaving us feeling rather exposed. It would have helped to know at the time that they were in the process of a left-flanking attack which successfully silenced the enemy. We did though take the opportunity to collect a few prisoners of our own. Another sobering moment came when I looked at these terrible Germans, who since 1939 had been portrayed as cruel and soul-less automatons, and found their uniform belt buckles bore the inscription "Gott Mit Uns".

Our initial clearance lanes were ragged, unmarked and by no means perfect, but the Invasion went ahead anyway. We completed the job, when the tide fell again, with help from some of our prisoners in defusing mines fixed to obstacles.

It was a long day; we started rather short on sleep, wet with little chance of drying out, food was almost non-existent and danger tends to be tiring. But old soldier's tales can be tiring too; besides space is limited. I will end with a quote from *The Times* of 20 June 1944, writing of the work of the obstacle clearance teams and describing them ". . .true successors of those dauntless Sappers who blew in the Cashmere Gate at Delhi".

With 24 Airfield Construction Group

LIEUT COLONEL P F WHITE OBE BA

At the end of May 1944, I was CRE of 24 Airfield Construction Group. My Headquarters was in Southend, as also was that of the Group commanded by George Hancock – later killed when his car ran over a mine. We received our orders to go into concentration at Southampton. I sent off my HQ party, but as I was expecting some important equipment, I waited behind for a few days. On 1 June the equipment arrived, and having seen it, I went to call on George only to find that he had left that morning. At my HQ was a telegram from my Chief Engineer:- "Expected to see you South Coast. Understand you are on the East Coast. Suggest you move to the South Coast".

Next morning I set off in the rear party's Jeep with my batman, and called in on the Airfields HQ near Horsham. They were delighted to see me as they had some papers for George and myself. They told me that there was no particular hurry, and gave me supper and a bed for the night.

On arriving at Movement Control HQ at Southampton on 3 June, I was somewhat surprised to see a large notice on the wall "D Day 5 June." I was sent away to have lunch after which a launch would be waiting for me at the Hard. There it was, manned by three naval ratings and their WRNS friends who they were taking for a trip. It was a beautiful afternoon. We called at Cowes to pick up a Boffin who wanted to go to Southampton.

Then started one of the most amazing journeys I have ever enjoyed. My LST was nearly at the head of the fleet somewhere off Yarmouth (IoW) and Lymington. We progressed along the line of ships – five, or was it six? abreast. There were all sorts and conditions of boats. There were Naval Ships and Minesweepers, and varieties of Landing Craft. The Coronation Review of 1953 was chicken feed. The Boffin came too.

I reached my LST to cheers of my HQ, who thought I was going to miss the boat. I asked the sailors to take me to George Hancock's LST which was in the next line. They said that they had been invited to tea on one of destroyers and would come back in an hour. I reported to the American Captain of the LST who showed me a signal which he had just received: "D Day postponed to June 6". In due course I was taken to deliver his packet to George. I bid a grateful farewell to the crew of the launch and to the Boffin. I hope he had enjoyed the outing as much as I had.

The next couple of days were uneventful except for the Service on Sunday morning. This I found very moving. There were lumps in many throats. I had a chat with my batman, in civil life a milkman, about the invasion: he told me later that he did not believe me and that he thought that it was just another exercise. When we set off on the evening of June 5 we were almost leading the line, but, as we were due to land in the second wave, we had to heave-to in a very nasty swell off the south of the Isle of Wight while watching, (that is those of us who were not overcome by the swell), the rest of the fleet go past us: Another awe-inspiring sight.

On that beautiful sunny morning of 6 June we awoke to find ourselves steaming down channels marked by red and green buoys laid by minesweepers. We came in sight of land soon after 1000hrs and stood on deck watching the goings-on around us. It was rather like an Aldershot Tattoo because there was no fighting within view; and no German aircraft in the sky.

During our wait, the front ramp of our LST was lowered on to a Rhino Ferry which we had towed behind us. (A Rhino Ferry is a raft made of steel cubes of about 3ft sides. I can't remember exactly how many, but it must have been about twelve cubes square). My car was first out so was guided to the front edge of the raft. There was very little freeboard and no rail. It was a bit nerve racking as other vehicles bumped out from the LST. While loading was proceeding, a Padre, carrying a fold-up motor cycle, asked if he could sit on the bonnet of my car in order to avoid getting his feet wet. At 1300hrs our raft was pushed ashore by two outboard motors; a ramp was lowered, and we landed dryshod without the necessity of our water-proofing. The Padre thanked us, unfolded his bike, gave the kick-starter one kick, and set off to find his unit. I hope he did.

We then moved off up the beach and along a road head to tail; no 30ft spacing here. We were "shooed" off the beach as fast as possible by the Beach Parties. With the aid of maps and air photos I set off to find my airfield site. I was turned back on one road by a couple of British soldiers who warned me that there were Germans some few hundred yards away. George Hancock and his IO were not so lucky. They were taken prisoner for a few hours, but then escaped. My advance HQ, a party of eight, landed in two cars. We had a rendezvous in a French village. When I got there the inhabitants gave us small punnets of strawberries, quite green, but they were all they had. When our other car turned up, there was in it a strange being. He was apparently American, and obviously not a soldier. He was slung around with cameras and his pockets were bulging with flash bulbs. He had lost the American Army, and had asked us for help. We were promised our pictures in some Chicago newspaper. I never saw them.

By this time the sky was becoming overcast, the wind was getting up, and it was getting cold. (The Met man was only just right). We found a hay stack which gave us shelter. After supper I detailed pairs to keep two hour sentry-goes. I was due on at midnight so I wrapped myself in my great-coat and crawled under my car and went to sleep. (There were a few German aircraft about and out AA chaps were shooting at them.) On waking, my watch read 0030. I, furious at not being awakened to take my turn, emerged to find the seven of my staff stumping up and down, slapping themselves to keep warm. I decided to let them continue and went to sleep again till dawn.

Having sent my IO to deliver our guest to Corps HQ and the others to find a camp site, I went down to the beach. My troops did not disembark until "D+1", so there was nothing much to do. What chaos the night gales had caused. I found some

chaps breaking the concrete wall at the top of the beach to make another exit road. I and an equally cold and temporarily unemployed infantry Brigadier got hold of sledge hammers and soon had our circulations, working again.

My RSM was o i/c signposts, so all our troops arrived at the camp site by evening. By dawn they were out on the airfield site, hard at work. At noon on "D+3", a party of fairly big brass waited for about an hour to welcome the first RAF planes to land in France. These actually arrived twenty-four hours later. They did not believe the completion date we gave them!

Ides of March, Burma 1944

LIEUT COLONEL H N F PATTERSON MA, FRICS

"THIS is something I've wanted to do all my life, Sir", remarked Sergeant Kemp, as we walked down the line with the traditional mixture of dignity and haste. The mixture was evidently not quite correct for we were promptly thrown flat on our faces as the bridge went up. Bits of metal and brick hummed through the air and thudded down all around us but no one was hit. The scene was the Mawhun Bridge on the Mandalay-Myikyina railway, at about 2100 on 15 March 1944.

It all started about a month earlier, when 50 Column (1st Lancashire Fusiliers) was given the bridge as their initial objective in the operations of Michael Calvert's 77 (Chindit) Brigade. We, that is the Commando Platoon, were thus able to rehearse the demolition whilst waiting to "go in". Full dimensions were provided, together with high and low-level air photographs, so that we were able to make mock-ups of the girders and a sand model of the approaches to the bridge.

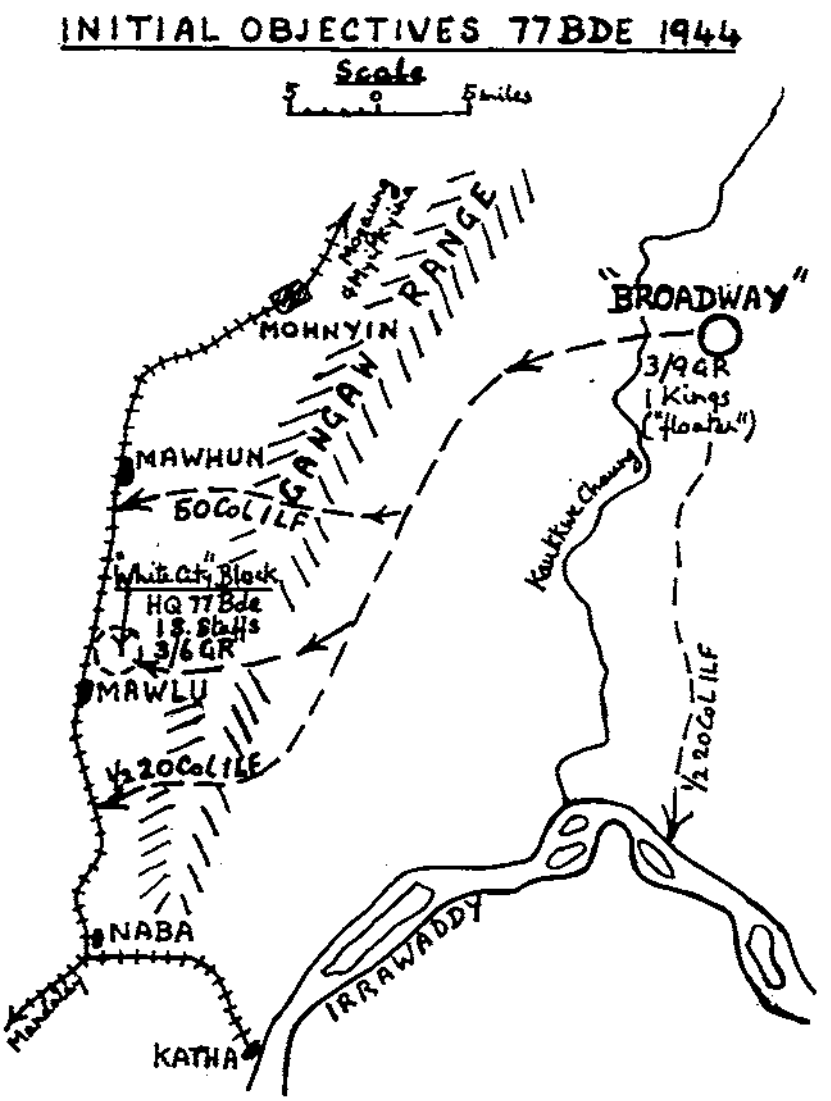
A dress rehearsal at night on a similar bridge in Assam was enlivened by the unscheduled arrival of a crowded train. This, rather surprisingly, detonated the primacord which was connected to dummy charges and in turn set fire to the sleepers on the bridge. The result was quite impressive, resulting in pandemonium and the immediate departure into the surrounding jungle of several hundred passengers and the crew of the train. The latter were eventually located and persuaded to drive on but of the rest no more was seen. Compared with the rehearsal, the real thing was quite a tame affair.

We went in by Dakota on the night of 6 March, landing at "Broadway", the strip secured by the glider-borne first wave the night before. There were ten of us, three mules and several hundredweights of explosives on board our aircraft – called, mysteriously, "Jig Jig Jalopy".

We took off from Lalaghat, near Sylhet, at about 2200 in bright moonlight, passing over Imphal, the jagged Chin Hills and then the Chindwin itself. The next landmarks were the Indawgi Lake and the Myikyina railway, glinting in the moonlight. A few minutes later we saw a miniature Blackpool ahead – a mass of flares and landing lights. After circling for five minutes or so, we came down and were unloaded inside another five. Unloading fast was important when about a hundred aircraft had to use the strip in a night.

Broadway was a clearing in the jungle about a thousand yards long and five hundred wide – a rare thing in that part of Burma. It lay in the flat marshy basin of the Kaukkwe Chaung. There were few inhabitants within twenty miles and the whole valley was impassable to MT, which made it ideal as a stronghold inside enemy territory.

There were a number of smashed gliders lying about – they had piled up badly owing to one crashing in the centre of the clearing early on. One glider of Sappers from Peter Davidson's platoon of 1st Kings had crashed in the jungle, killing all on board. It was impossible to get the bodies out and Peter decided that the only thing to do was to burn the wreck where it lay. With the exploding ammunition and grenades, this made an awesome funeral pyre.



Sketch Map. Initial objectives 77 Brigade 1944

About midday on 8 March the column moved off towards the railway forty miles to the west. For the first four days we cut our way through thick and marshy jungle, which made for slow going. On the 12th and 13th we crossed the Gangaw Range, climbing to about 4000ft, taking our first supply drop on the night of the 13th and pushing on as soon as we had collected four days rations.

After cutting through thick jungle, the head of the column reached the main road running parallel with the railway just south of Mawhun, where they were ambushed by a few Japs and enlisted Burmese. By the time the skirmish was over it was about 1830 on 15 March and the demolition party then set off for the bridge, which we reached at nightfall. We could see figures bolting in the direction of Mawhun and took these to be the Burmese guards standing not upon the order of their going.

The party comprised the Sapper section and a dozen specially trained Fusiliers. An infantry platoon and a Vickers MMG covered us while we worked. There were eight separate charges of Nobel 808 and eight beehives – about 350lb in all. The charges had been made up in advance and the bridge was ready for demolition by about 2100.

Our orders were to wait for a train, unless the Japs knew we were there, in which case we were to blow the bridge as soon as possible. As all seemed quiet, however, we tried to raise Column HQ on the R/T to ask permission to wait for a train – but without success. So we packed up the electric exploder and Sergeant Kemp and I each lit our half-minute fuses. Ironically, a train came down the line at about 0300 next morning, depositing a company of Japs at Mawhun station before shunting hurriedly back northwards, the crew having no doubt heard of the happenings at the bridge. If Column HQ radio had been working and we had been allowed to wait for a train the demolition could well have been more spectacular. As it was, there was a certain amount of noise. They heard it at Broadway, forty miles to the east. Mike Calvert, about to establish the main block at Mawlu, sent us a signal "Both saw and heard your bang – keep it up."

As to "keeping it up", there was limited scope in the vicinity of Mawhun but on the following night we did our best to comply, spending an enjoyable couple of

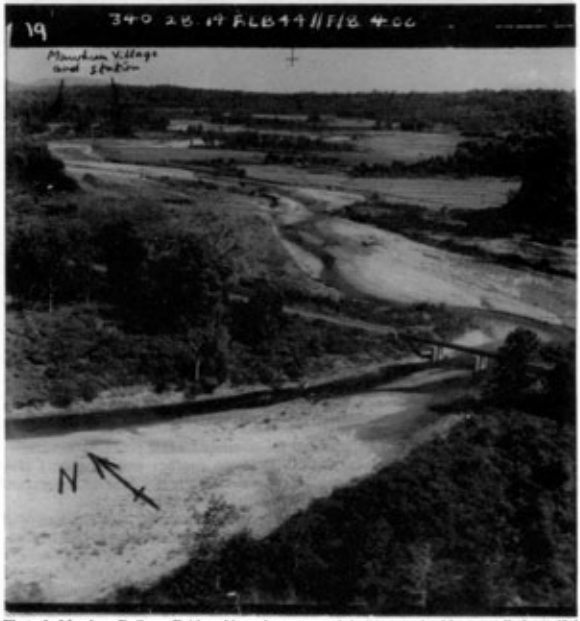


Photo 1. Mawhun Railway Bridge. Note the nature of the country in this normally beautiful and peaceful valley

Photo 2. Preparing to be unfriendly to the Japs, south of Mawlu. Identifiable are four Lancashire Fusiliers, three South Staffs and four sappers

hours at the station, where we wrecked the overhead water tanks, pump-house, points and repair crane and burnt out about ten coaches and wagons. I also "bought" myself a ticket to Mogaung. Uncharacteristically, the Japs had evacuated the area and we were thus able to give our destructive instincts full rein.

The activities of 77 Brigade over the next three months have been recounted elsewhere. The ferocious battles at Mawlu and later at Mogaung resembled in miniature something between Agincourt and Passchendaele. The Author and his little command had the good fortune to spend most of their time engaged on what might be described as a rather rough and protracted game of Boy Scouts – patrolling, skirmishing and generally making a nuisance of ourselves to the Japs. We lost a lot of weight but most of us survived.

What else comes down the arches of the years? The inspiration of Wingate and

Forty Years On (2)

our utter dismay at his death: A memory of a unique way of life, for there can be nothing quite like those months "on column" – and I still wonder that men from the industrial north could adapt so well to a jungle existence: Our mules, without whom we would have had no wireless communication with base and hence no supplies, nor would we have had any "teeth" in the shape of mortars, MMG's and explosives. We became very fond of those tough and intelligent four-legged Chindits. I have not seen a mule for a long time but when I do so I shall certainly salute him!

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Forty Years Ago – Kohima

MAJOR C D YULE MBE, MA, F Inst E

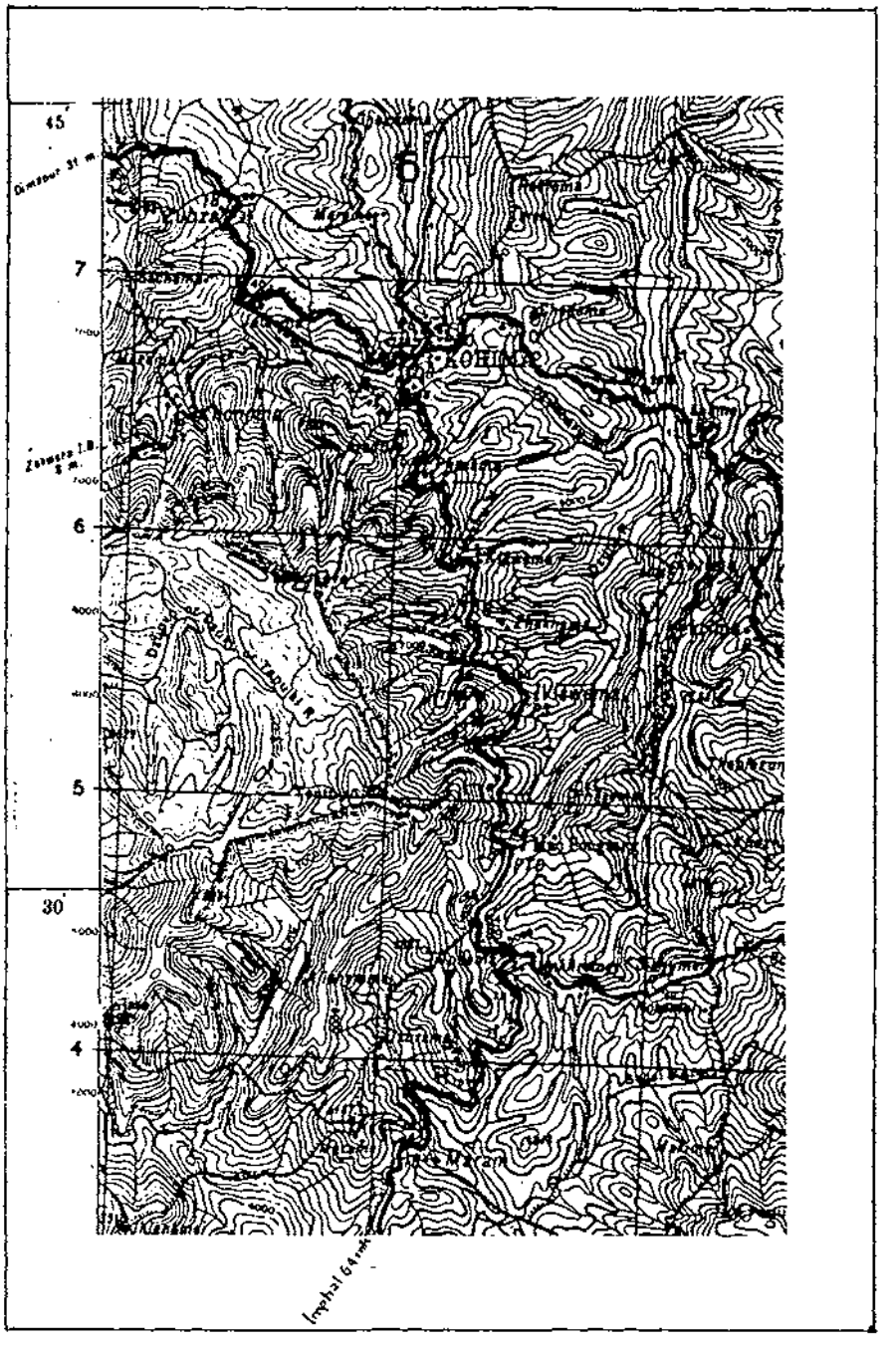
The Author was commissioned from "The Shop" in July 1939. He served in France from mid-May to mid-June in 1940 with Perowne's Rifles. He joined 5 Fd Coy RE as 2IC in April 1942 as it was mobilising for service overseas and served with 2 Div RE in India and Burma until 1946. As OC 21 Fd Pk Coy RE he was awaiting orders to sail to Japan as part of the Commonwealth Occupation Force, when he was summoned home for a Supplementary Course which included two years at Cambridge where he obtained an honours degree. There followed a series of regimental and staff appointments including four years in Northern Army Group and Rhine Army, broken by a year at the Staff College, Camberley. He retired at his own request in 1958 for a second career mainly in industry with Thorn Electrical Industries and Thorn EMI. He is married with two sons.

PROLOGUE

When, at the beginning of May 1944, I arrived at Dimapur as acting OC 5 Field Company along with other units of 2 Infantry Division, the battle for Kohima had already been joined a week or so earlier. We could hear the gunfire.

2 Div's arrival on the scene, as the spearhead of XXXIII Corps, had been piecemeal and the leading units had been rushed forward, only just in time, to halt the Japanese advance into the Dimapur plain. The division had undertaken an extraordinary approach march of about 2,000 miles from its training grounds at Ahmednagar, near Bombay, starting a month earlier, when the siege of Imphal, whilst serious, was not desperate. 2 Div had not seen active service since Dunkirk except for a short spell for 6 Inf Bde in the Arakan in 1943. The division had sailed, fully mobilised, from the UK in March 1942. expecting to take part in the invasion of Madagascar or to be landed in the Middle East. Instead, it was landed in India where it became the "Imperial Reserve" and for the next two years trained intensively in every phase of warfare in the jungles around Belgaum and in a number of dryshod and amphibious exercises off the Bombay coast. Sapper training too had covered every task, with the emphasis on improvisation, for engineer equipment was in short supply in India. 2 Div RE comprised 5 Field Company and 21 Field Park Company (Regular), 208 Field Company (Territorial Army) and 506 Field Company (Emergency Reserve). It was probably unique at that stage of the war to

Major C D Yule MBE MA P inst E



Copy of part of Sheet 83K India & Burma (1943), ¼ inch to 1 mile. The contours at a vertical interval of 250 feet indicate the ruggedness of the country. From Zubza (MS 35) to Maram (MS 80) is 25 miles as the crow flies, but 45 miles by road.

find a division of such maturity, efficiency and high spirits under an energetic and highly respected Commander, Major General John Grover.

THE APPROACH TO CONTACT

The sudden move of the division from Ahmednagar was ordered in the last week of March. Major Harry Beazley, my OC, was "in the know" but when, on the eve of our departure, he met with a motor-cycle accident, I found myself as acting OC without a key to the company safe and having had no sight of our movement orders. Nevertheless, early next morning, I led one of the large divisional convoys northwards up the "grand trunk road" towards Allahabad thence east to Calcutta, a journey of about 1,200 miles which took a fortnight. At Calcutta, there was a fresh sense of urgency brought on by the news of the Japanese siege of Kohima and advance towards the Dimapur plain beyond.

Communications in East Bengal (now Bangladesh) and Assam, across the two great rivers, Ganges and Brahmaputra, were primitive and the move of 5 Fd Coy illustrates the complexity of the problems. One platoon moved (complete) under command 4 Inf Bde A second platoon[1] moved with another group by rail, but without its transport and equipment. The MT, loaded with our equipment, embarked at Calcutta with a skeleton MT section for a sea voyage to Chittagong.

The rest of us set off by rail north-eastwards; five hours by broad gauge, then five hours by metre gauge to a place called Sirajgang on the West bank of the Brahmaputra. We then had a six hour night trip downstream on a river steamer to Juggernatgang. (It should have taken three hours, but we spent another three on a sandbank. The steamer was of similar vintage to the old Mississippi steamboat). A further day's journey southwards by rail took us to Chittagong. After a frustrating wait of several days for our MT, we yet had a ten day journey over the roughest of roads to cover the 600 miles north-east to Dimapur.

Thus we arrived, travel-worn and coated with dust, to hear the sound of battle up in the hills. There we parked our transport with a rear party and sorted out the essential equipment to carry into the battle.

The distance from Dimapur to Kohima as the crow flies is about twenty-five miles. By road, it is forty-six miles. After the first eight or ten miles across the plain, the road rises steadily, chasing the contours of the mountains, climbing to a height of about 5,000 feet. With a high cliff on one side and a sheer drop on the other, opportunity for getting a vehicle off this single artery was rare. Only tracked vehicles and a few jeeps were allowed in the battle zone. Convoys of 3-tonners brought the ammunition and the division's other daily needs forward. I have never been prone to travel sickness, but I was no match for that first journey in the back of a 3-tonner, as it twisted and turned up the road. We passed Milestone 36 and about one mile on stopped at a military police post and a sign which said "No Vehicles beyond this point".

THE BATTLE SCENE

Although the main grain of the country was north to south, there were many transverse and secondary ridges which offered ideal defensive positions. Just such a ridge at Milestone 36 had been the scene of the first major engagement against a strongly defended Japanese position about two weeks earlier. A set-piece attack by 2 Cameron Highlanders, led by their CO Lieut Colonel "Jock" Somerville McAlastair, was pressed home with extraordinary dash and gallantry. The ridge was taken and held, after heavy casualties, but there were many more Japanese dead. That opening battle set a pattern that was to be repeated many times, but never more decisively. The Japanese advance was stopped, but the situation of the garrison at Kohima (headed by a battalion of the Royal West Kent Regiment) was becoming more desperate each day. Garrison Hill was about the size of Chanctonbury Ring, with the perimeter being squeezed into a yet smaller area by constant Japanese attacks. The air-dropping of supplies into such a small area was difficult and hazardous and the garrison was tired out, starved and short of ammunition. 4 Bde with their one RE platoon under command were despatched into the mountains on the

right to attempt a right hook. 5 Bde with 208 Fd Coy under command, crossed the valley to the left to advance to the Naga village and 6 Bde advanced frontally up the road and secured a narrow corridor to relieve the RWK and reinforce the defence. However, the main Kohima ridge (known as Jail Ridge) stretching between Garrison Hill and Naga village remained firmly in Japanese hands. Garrison Hill was an extraordinary sight. The trees, shorn of their leaves by bombardment, were festooned with supply parachutes, many of them still supporting their precious canisters of fresh water, food and ammunition, out of reach and under Japanese fire. The District Commissioner's bungalow area and tennis court were a rabbit warren of bunkers and slit trenches with Japanese and British only yards apart. This was the battle situation so far. My first priority was to relieve Lieutenant Jackson's platoon (exhausted in their work to support 4 Bde) by a fresh platoon, Lieutenant Ivor Ransley's. On the same day, Robert Fife, then Adjutant, was promoted as the new OC 5 Field Company; Robert was a Scotsman from Edinburgh, unflappable, with a dry sense of humour. There could not have been a better appointment as OC and I was happy to revert to my proper role as his second-in-command.

It would be tedious to give a blow by blow account of the successive battles to winkle the Japanese out of the rest of Kohima, but some comments affecting the Sapper role may be of interest. A besetting problem was the deployment of firepower off the road. Despite massive artillery and machine-gun support, with low level strikes by RAF "hurribombers", the Japanese stuck to their positions and, too often, the last one hundred yards of an infantry attack, (the point at which supporting fire had to be lifted), proved impossible. The division was supported by a battalion of Grant tanks, (if my memory is correct, 4 Royal Tanks), but in order for them to give close support, it was essential to deploy them off the road where they could fire their machine guns and 75mm main armament over open sights right into the Japanese bunkers. The Japanese had few anti-tank guns, but a column of tanks, stationary on the road was vulnerable to their small two-pounder armour-piercing shells as well as to 75mm and 105mm gun fire.

The division moved and fought on foot. Only tracked vehicles and jeeps could get off the road at infrequent points. Although the road was well surfaced and two-way, it was easily blocked by a rock fall, an artificial obstacle, by one or two mines or by a disabled tank. Clearance of obstacles in full view of the Japanese was hazardous.

THE JAPANESE

The Japanese were a tenacious, hardy and skilful enemy. They remained in their cramped isolated fox-holes, well concealed, for weeks on end and when the time came they used their weapons until they were killed. They did not surrender. They were adept at infiltrating and surrounding captured ground. Isolated snipers took their toll, especially of senior officers. (Our officers carried a rifle or Sten gun – more useful and less conspicuous than a pistol!). They excelled at night with small patrols and "jitter" parties, drawing fire from all but the steadiest troops. In the later stages of the battle, a less experienced Indian battalion reinforced the Kohima garrison. On their first night they reported large scale Japanese attacks and put on a fine display of pyrotechnics. By morning they had spent all their first line ammunition without a single dead Japanese to show for it. Later, a Gurkha battalion in a similar situation kept their powder dry!

Even in daylight, but especially after dark, the division organized itself into a series of defended boxes, well dug in and generally of battalion group size. This "hedgehog" formation applied equally to gun areas and divisional troops. Perimeter defence was an "all arms" responsibility. If isolated, boxes were supplied by air.

Jimmy Landon, OC 208 Fd Coy with one of his subalterns and a RE detachment were ambushed and killed in broad daylight on ground which their brigade had been occupying only twenty-four hours earlier.

SAPPER TASKS

The Sappers had to adapt to these conditions. First and most important was their infantry role. Their tools were mainly picks, shovels and machettes. I do not remember seeing a compressor or section tool truck until later in the advance south from Kohima. Water supply, generally a problem in India, was simple; mountain streams were numerous, pure and clean. A prime Sapper task was to improve the mobility of armour on and off the road by clearing obstacles and constructing ramps or culverts. The construction of command posts, improvement of defences, clearing and marking tracks for infantry, mules, medical evacuation and, again, for armour were continuing tasks. One Sapper officer with his platoon spent much time developing a zig-zag track up a mountain side, cutting steps and revetting them with brushwood. He learned the hard way what he had never been taught at the SME that mules do not take kindly to steps, preferring a steady incline.

21 Fd Pk Coy had three Size 4 angle-dozers (Caterpillar D4). They had trundled up from Dimapur on their tracks and thereafter worked throughout the hours of daylight in the battle area. One was nearly always to be found with the leading armour. Others would be widening tracks, clearing rock falls or wrecked vehicles, or side-cutting hill tracks. They were ubiquitous. It is a tribute to the sturdiness of the machines and to the tireless work of the tiny plant section that they remained operational throughout the battle. Routine maintenance had to be done in the dark. The plant operators, not renowned for their smartness and discipline during our long periods of training, became legendary for their courage in the battle. One of them smoked a "Sherlock Holmes" pipe while he worked. The General, when he passed, was given, not the expected salute, but a cheery wave of the pipe. John Grover, always a stickler for soldierly discipline, returned the wave! One dozer operator, with blade raised, charged a Japanese bunker and survived. They often worked under fire – perhaps they could not hear it above their own noise. The sound of a dozer, however, made them very vulnerable and targets for enemy fire. The only people who did not always appreciate their work were the Royal Corps of Signals as they struggled to repair and place out of harm's way their telephone cables. One plant operator was killed and I believe two others were wounded. At Kohima and in the later Burma battle, the little plant section collected one BEM, one MM and two Mentions in Despatches.

There were many colourful characters, none more so than our CRE, John Garwood. Impulsive, dashing, he seemed to show no fear. He was usually to be found close to the action. Those who rashly accepted a lift in his jeep often came to regret it. It used to be said, not without some truth, that the advance up the road was led by the CRE's jeep, followed by a troop of tanks and an infantry platoon in carriers. Unorthodox and eccentric he may have been, but his style of leadership was infectious and made others less afraid. Moreover, his personal appraisal of the situation, on the spot, often ensured a faster response in Sapper support and material. It was tragic, after surviving all the perils of war, that John Garwood should drown a year or so later in West Africa. whilst attempting to rescue members of his family.

Sappers and armour worked in close co-operation. Often, a Sapper officer, with his platoon not far behind, would travel as an extra man in one of the leading tanks passing RE information over the armoured net. It was an uncomfortable way to travel as Graham Speed, a subaltern of 208 Fd Coy found when his tank, attempting to turn round, disappeared over the "cud-side", rolling over several times. Graham emerged with the tank crew, having bitten off the end of his tongue and with bruises all over.

THE NAGAS

The local people, Naga tribesmen, were by Asian standards tall and well-built. They were fierce, proud and thrifty people with a reputation for head hunting! The men carried spears and some of their leaders carried rifles, mostly old muzzle-loaders, useless as weapons, but highly prized status symbols. They lived very simply in wooden dwellings clustered into small villages generally near the tops of

ridges. Many of their villages were destroyed by bombardment or by fire. The Nagas heartily disliked the Japanese, but despite all the suffering due to the fighting, they remained intensely loyal to the British. The credit for this was due to the administration of the District Commissioner, Charles Pawsey. Through his presence with 2 Div many of the Nagas worked for us in a non-combatant role as porters and stretcher-bearers. The agreed standard payment was one ounce of salt per man per day! Some risked their lives to bring useful information of Japanese strengths and movements. Others brought trophies, such as grenades or shells, presumably after spearing their custodians. They moved about their business up and down the hills in single file carrying large burdens on their backs, the weight being taken on a head-band. They made a curious and very distinctive chanting sound as they moved. Each man gave a kind of musical grunt every four paces. The effect of these grunts at different musical pitches and a beat apart, was a four note musical jingle repeated endlessly. The sound carried far across the hills. Their usual beverage on the move was a refreshing rice beer, which they carried in a horn slung over their shoulder. Their clothes were simple, but with attractive woven patterns. As stretcher-bearers they showed great compassion and gentleness. Being carried a mile or more over rough ground, up and down steep slopes, must have been painful for any casualty, but I remember watching a group of stretcher-bearers zig-zagging up a steep track, always keeping the stretcher level, turning it round to keep the sun out of the casualty's eyes and carefully moving aside leaves and branches as they passed. I watched two others help a "walking-wounded" man, sharing their rice beer with him.

ADVANCE TO IMPHAL

Kohima was finally cleared by the end of May, but Imphal was yet seventy-five miles away, fifty of them over the same rugged country. Additional units of XXXIII Corps were now coming forward whilst 2 Div pressed on. There were several major stands by the Japanese requiring the same kind of set-piece attack as at Milestone 36; Aradura Spur (MS 48); Kigwema (MS 54); Viswema (MS 60); Mao Songsang (MS 67); Maram (MS 80) and others. The Sappers encountered a number of blown bridges and often a few anti-tank mines (including captured British Mark 5 without fuse) and sometimes an unfused mine on top of a fuzed mine. Launching a Small Box Girder or Bailey bridge across a gap on a hair-pin bend and a steep slope with vertical cliffs at either side of the hair-pin posed interesting problems. The marshalling of a column of bridging vehicles on the only road and unloading into a very small construction area needed careful organization. The division finally met the defenders of Imphal at Milestone 115 on 22 June and, within hours, columns of ten-ton and three-ton trucks were rumbling southwards from Dimapur.

MONSOON RAINS

A week or so later the heavy monsoon rains broke while the division re-deployed amongst the hills towards the River Chindwin to deal with any remaining Japanese. 5 Fd Coy's main task, in support of 4 Bde, was to keep open thirty miles of jeep track between Imphal and Ukhrul. For two months we were wet through, with only bivouac tents for shelter. Each day's work of ditching and culverting was washed away a day later. The monsoon rainfall in those parts is about 300 inches, nearly ten times the UK annual rainfall!

EPILOGUE

As an epilogue, there was one other Sapper task undertaken while the division rested after the monsoon and made ready for the next campaign in Burma. A military cemetery was established at Kohima on the site of the tennis court on Garrison Hill. We found a rough hewn granite stone, twelve to sixteen feet long and weighing as many tons. Lieutenant Raymond Bee ("Buzzer"), an architect, who had joined 21 Fd Pk Coy from 208 Fd Coy designed the layout and construction of the memorial. A REME craftsman, who had been a monumental mason, expertly carved with hammer and chisel an inscription including Laurence Binyon's famous verse which begins:- "They shall grow not old as we that are left grow old. . ." The

erection of this great stone vertically on to a four foot high plinth was done in much the same way as the Druids must have raised Stonehenge. We procured some 4½ or 5in rope from Stores and our good friends the Nagas willingly provided the muscle power. With their characteristic grunting, they heaved away when one of the ropes (obviously rotten) parted. There was a moment's apprehension as a gang of Nagas fell base over apex in a most undignified way, but the Nagas burst into gales of laughter, splitting their sides. They were even more eager to have another go. It was a joyful interlude in an otherwise melancholy task.

2 Div had sustained 2,500 casualties, but the Japanese dead were about twice that number. There were criticisms, but I never heard any within the division. We had expected a tough, bloody battle yet morale remained very high. There was a spontaneous outcry of disapproval when it was learned that John Grover was relieved of his command to become Director of Military Training; it was an extraordinary display of loyalty and confidence shared by all ranks.

In telling a tale from memories which are forty years old, there are probably errors and certainly omissions, especially of other people, units and formations that took part in the campaign, for whom a whole book would be needed.

Note 1: The designations "Section" and "Sub-Section" for the sub-units of a "Field Company" had at some stage in the war been replaced by "Platoon" and "Section" (why, I shall never understand). The designations "Troop" and "Field Squadron" applied only to engineers with an armoured division.

The First Bailey Bridge in Mainland Europe

COLONEL S M HOLLWAY OBE, MC, TD, DL

Commissioned into TA in 1931. Served BEF in 5 Div 1939/40. With 5 Div RE in India, Persia, Middle East, Sicily/Italy 1942/43. Allied Forces HQ in Italy as SO1 RE 1944/45. CO 107 Corps Engr Regt RE (TA) 1947/53. Dep Comd 15 Engr Gp 1954/57. Member West Lancs T and AF Assn. Managing Director family firm of Timber Importers until retirement.

I wish to acknowledge the help I have received from Maj C G Tomkinson MC, TD in the corroboration of details and for providing the photographs.

At 0430hrs on 3 September 1943, four years after the outbreak of war, Allied Forces set foot again on the mainland of Europe when 5 Division of Eighth Army crossed the Straits of Messina and landed in Calabria at Gallico Marina to the north of Reggio.

Calabria is mountainous, with few roads, and the coast at the southern end is rocky with steep cliffs which rise vertically from the sea. There are a few sandy coves which have some access to the only road which winds round the many promontories and is frequently on a shelf cut into the side of the cliff. The railway follows

Colonel S M Hollway OBE MC TD DL

Photo 1. General view of site

much the same course but, in order to maintain alignment and gradient, there are frequent tunnels.

There was only light opposition to the initial landings which were carried out by 13 and 17 Infantry Brigades which had 252 and 38 Field Companies respectively in support. 15 Infantry Brigade with 245 Field Company in support, landed on the afternoon of 3 September and advanced up the western side of the peninsula.

In the early stages of the advance there was considerable enemy rearguard action and their engineers had full scope for demolitions. The first major obstacle was encountered just north of Scilla where a long stretch of cliffside road had been blown into the sea. However, there was a railway tunnel some two miles long which

Photo 2. The temporary track to bypass the debris of the demolition

had not been mined but which the enemy had partly blocked at the north end by blowing in the roof where the road passed over the tunnel. Fortunately, at the south end the road and railway ran alongside each other at the same level and it was an easy matter for the Sappers of 245 Fd Coy to divert traffic on to the railway bed. A bulldozer was sent through and enough debris was quickly cleared to give a useable route for the vehicles of the Division. However, due to the uneven track and the lack of light and ventilation, passage was very slow and congestion at the south end of the tunnel was so serious that it was necessary to send some vital Brigade vehicles round the obstacle by sea.

At this stage it must be explained that Bailey Bridging equipment was only just arriving in the theatre and, not only was it in short supply but only 38 and 253 Fd Coys had had any instruction in using it.

On 4 September reconnaissance reports by Lieutenant C D Drew of 38 Fd Coy indicated that there was a major demolition in Bagnara some two miles further ahead. This village is built on the slopes of a steep escarpment and, in addition to the steep gradients, the narrow alleys were only negotiable by mules and country carts. The main road ascends to the top of the escarpment in a steep gradient with hairpin bends then, still climbing, round the outer face of a precipitous "sugar loaf" rock until finally, after a right angled bend, across a brick and masonry viaduct which spanned both lower loops of the road and which was higher at the village (east) end.

The enemy had demolished the viaduct by blowing both piers and, in addition to the high level gap, the debris had completely blocked the road at both points where it passed underneath.

38 Fd Coy (Major C G Tomkinson MC, RE) were given the task of bridging the obstacle and, accompanied by sporadic mortar fire at the start, the clearance of mines and debris was commenced. The mass of debris on the road was so great that there was no possibility of speedy clearance and it was necessary to bulldoze a temporary track on the south side of the obstacle to connect two levels of the main road.

Detailed reconnaissance showed the requirement for a 120ft DS Bailey Bridge. However, due to lack of space it was not possible to assemble the bridge on the home side of the gap and it would, therefore, have to be launched downhill from

Photo 3. West end of bridge from North

Photo 4. West end of bridge from South

Photo 5. East end of bridge from South

Forty Years On (4 & 5)

the other end. There was a further complication in that the demolition had left part of the arch still in position at the west end and that, to provide a sound bankseat, it would be necessary to carry out a further sizeable demolition.

Meanwhile a track had been made through the steep narrow alleys of the village by demolishing houses and, the enemy having departed, the bridging lorries were hauled up one by one by the bulldozer.

Work on the bridge now started and in spite of heavy rain continued until midnight 4/5 September when a halt for rest was called. Work started again at first light and by 1400hrs on the 5th the first Bailey Bridge on mainland Europe was completed.

This was a most creditable operation by all ranks of 38 Field Company and particular credit is due to Captain J Godsell RE and Lieutenant C D Drew RE for the planning and execution of a difficult project which, due to the extraordinary site, must have been one of the more spectacular small Bailey bridges of the war.

A personal Footnote by Major C G Tomkinson MC TD: I was reminded, when looking through photographs to illustrate this article and seeing a beached LCI on one of them, of a meeting at the site with a Commando Sergeant who asked me "why we had taken so long to get there" and then said "Hello, Mr Charles, don't you remember me? I was one of your apprentice joiners before the war." I am very glad to say that he is still employed by my firm and that he is one of our senior Site Agents.

Captain Godsell emigrated to Canada soon after the war and was latterly in charge of Canadian Aid to Central and South America and later in Africa where he had the misfortune to be involved in an airplane crash. After this he was Canadian High Commissioner to Bangaladesh and has now retired and living in Gloucestershire.

Duncan Drew I regret to say, died in September 1972.

Italy – Primus Inter Pares

COLONEL J H FRANKAU MC

Authors Note: Except perhaps for Cassino, I do not believe that there were any "battles", "major episodes" or "major occasions" in Italy in 1944: my memories of it are a continuous, dangerous grind, – advancing a bitter ⅔ miles a day, so if you get nothing better from the "D-Day Dodgers", you may care to publish the following farrago.

THE first D-day in Italy in 1944 was 18 January, when the Fifth United States Army attacked across the Garigliano. On 19 January 571 Field Company started to build the first of the three pontoon bridges which we maintained in face of fire and flood for the following nine weeks. We were one of the twenty-one RE companies in Fifth Army. The second Fifth Army D-Day was the Anzio landing on 22 January. "United States" was a misnomer, because the assaulting divisions were four British and only one American, although the command was American. Perhaps because of this, there ensued three months of the most bitter static warfare in Europe since World War I. The dams were breached by Eighth Army's attack at Cassino on 11 May. Having rejoined Eighth Army, we were twelve miles East of Rome on 7 June – on the axis which General Clark should have taken, had he not gone for the Eternal City rather than for the German army – when we heard of the landing in Normandy the day before. I cannot remember giving NW Europe much further thought and we never heard anything of Burma; but then we were rather busy.

During the year we advanced 220 miles (rather farther than from Normandy to the Ardennes) and served in two Armies; in X British and in II Polish Corps. We supported ten Infantry divisions: three British, three Indian, two Polish, the New

Zealand and an American; also an Armoured division and 9 Independent Armoured Brigade, who did not have their own Sappers.

We built more than thirty-one bridges. The designed length of the floating ones was over ⅕th of a mile – though in fact much longer, because we had to replace many rafts damaged by shellfire. The dry-span bridges totalled more than ⅔rds miles; and some of those that I remember were not recorded.

Although statistics about bridging are easy to quote, in fact we spent far more time on other activities, such as mine clearance, mule tracks, jeep tracks, tank tracks, tank fords, roads, quarries, air OP strips and water points. "Roads" implied more than a little gentle potholing: there could be as many as twelve large craters in seven miles. The repair of a blown corniche involved massive rock-filled timber cribs; and often, when Bailey was in short supply, small bridges were replaced by culverts and high embankments.

We had, at various times, fourteen sub-units under command, from skilled to unskilled. Some of the notable semi-skilled ones were two platoons of US Engineers, an Italian Artieri company from a battalion one of whose companies was working for the Germans; and a troop of LAA Royal Artillery, whom we trusted to build anything up to 80ft span, quite unsupervised.

Our peak was in October, when I commanded a X Corps Troops task force amounting to 640 souls and 80 vehicles or plant, under POLCORPS. We built five multi-span bridges totalling 1140ft in twenty-six days. The Army Commander noticed our efforts in a letter dated 1 November to the CRE. (A South African – it should never be forgotten how many SAEC served in RE units: we had one in the Company):

". . .General Anders has told me two or three times recently how impressed his troops are with the work of X Corps Sappers.

I know what a fine performance it was to complete that high level bridge at S SOFIA just before the flood water carried away the low-level one. I fully realise what long continuous work the Field Companies of X Corps have carried out, and also what long service overseas many of the men have now completed.

". . .much of their work in the forward areas under heavy fire has shown what a fine fighting spirit X Corps Sappers always have."

General Sir Richard McCreery knew us well, having been Commander, X Corps.

During the year we had one officer and six ORs killed; and three and twenty-two wounded. The officers at the end of the year were completely different from those at the beginning. I myself left in December with many regrets, except in one respect: mines were getting too difficult. Well-laid *Topfmines* and *Glassmines* were impossible to detect and *Schumines* nearly so; and it was suicide to tamper with *Riegelmines* – or indeed almost any mine, because of the skilful use of the standard release mechanism by the Germans: they knew that they were never coming back! Mine clearance techniques in the Falklands do not seem to have improved much on ours.

Well, the summary of our War Diary is in the Corps Library – can any company in BLA or Burma match it? (War Diaries are in the Public Record Office at Kew). It is, however, likely that several in Italy could do so; but 571 was perhaps unique as the highest RE unit Prime Number in Italy – hence the title: "Prime Among Equals".

We Weren't News

MAJOR A G MARSDEN

THEY had been saying for some time that it was going to happen, but when it did it was a shock. I never thought that I would be involved. It was the sort of thing that happened to other people. The sort of thing that now, forty years on, makes a spectacular picture on the "telly", to be seen from the comfort of an armchair.

That spring morning I woke in my hospital bed to the sound of thunder and a

severe hailstorm. It was very dark. When eventually I got up and went to the window I saw that everything was black. The ground was black. The nearby roofs were black. The sky was black, and over to the West it was blacker than black, but pierced from time to time with lightning and other flashes. It was like something out of a horror film.

Vesuvius was erupting.

The "hail" consisted of small pieces of lava, like clinker, a quarter to half an inch in size. All morning it continued to fall, and by midday it was about six inches deep. Then it gave way to a fine pink powder, which got into everything, and eventually reached the same depth.

That afternoon I went out for a walk. There was a general clearing up going on in the town, with people on the roofs shovelling the stuff off. It would eventually be gathered into heaps and carted away. This would be a tremendous job, and how it was carried out with a wartime shortage of transport, and where it was dumped I do not know. A heavy snowfall is bad enough, but at least snow eventually disappears of its own accord.

Outside the town it was a sad sight. Every tree, every vine stripped. Not a blade of grass or a corn stalk to be seen. There would be no harvest that year, nor any year until the deposit was cleared away or dug in. The war had missed that part of Italy, but although homes and lives had been spared, this was probably worse.

The buildings on the whole stood up to it pretty well. An unfortunate Italian clearing the roof of our ward fell through and broke his leg, but I think that was an isolated case. However, it led to the top floor of the hospital being evacuated. As it was only a two storey building, it made things pretty crowded downstairs, and the congestion became worse when we began to receive patients from a hospital much nearer the mountain which was being threatened by flowing lava.

The following morning the wind had changed. The sky was a clear blue, except for an enormous pillar of dust, some thirty miles away, glowing pink in the early morning sun. One of the most beautiful sights I have ever seen.

When the newspapers from home eventually arrived we read of the eruption. There was no mention of us, but we read that most of the dust had blown out to sea, though some of it had fallen on Capri.

Now *THAT* was news.

Summer Interlude

MAJOR A G MARSDEN

In the summer of 1944, 4 Division was resting near Assisi. To keep us from getting bored we were ordered to dam a stream to make a bathing pool for the Infantry. It was a beautiful job, with every sandbag beaten to shape, and the correct batter. . .

Just as it was finished the OC went on leave, and I, who had had nothing to do with the job, was there to receive the thanks and congratulations. ("Jolly good chaps, the Sappers. Turn their hands to anything.")

A couple of days later there was a storm, and next morning it was as if the dam had never been.

There followed a tricky interview with the Brigadier, at which it was agreed that the dam should not be rebuilt, not because the Sappers could not do it, but because it was an unwarranted waste of sandbags. So honour was satisfied, and the Brigadier hoped that my chaps would not be too disappointed. He need not have worried. I had heard the comments of the Sergeant in charge of the job.

Sandbags and the Sergeant's views apart, it was to my mind the right decision. The pool was a dangerous place, full of deep holes. During the short time it was in use, one non-swimmer had got into difficulties, though we managed to get him out before any harm was done. The local peasants said we were mad to try to dam the stream, and I reckon that they were quite right.

A Boundary Affair in the Far West

LIEUT COLONEL R S HAWKINS MA, C Eng, MI Mech E

In North America, the Queen's dominions in the early 19th Century consisted of the Colonies of Upper and Lower Canada (later Ontario and Quebec) and, to the North and West, the vast territory known as Rupert's Land. Beyond the Rocky Mountains, on the mainland, lay New Caledonia (later British Columbia) and in the Far West, Vancouver's Island (VI)[1] on the Pacific seaboard. The Hudson's Bay Company (HB Co), by its Charter held concessionary trading and trapping rights over Rupert's Land and territories to the West. It also traded, with doubtful authority, in the Territory of Oregon, south of the Fraser River, the Company's employees there being French Canadians.

Vancouver's Island was separated from the mainland on the East by the Strait of Georgia, about twenty-five miles wide, and on the South by the narrow Strait of Juan de Fuca, over which could be seen the northern coastline of Oregon. In the Strait of Georgia were many islands, the largest being Orcas, mountainous, rocky, barren and unsuitable for human settlement. Adjacent to it lay the Island of San Juan, and other smaller islands (Fig 1).

The HB Co, under its Charter, had governed the Colony of Vancouver's Island since 1848; in 1858 the lease expired, and it became a Crown Colony. The Governor, James Douglas continued in his appointment, severing all connection with the Company, and becoming a servant of Her Majesty's Government. In the early 1840's the Company had established a sheep and cattle station on San Juan. Generally known as Bellevue by the Company staff, this beautiful little island, sixteen miles long and six miles at its greatest width, had fine pasture land and was well wooded with cedar, black spruce and Douglas fir. Wild game included deer and an occasional wolf or panther. This little Arcadia was used as a honeymoon station for young officers of the Company. Nevertheless it was here that the bizarre sequence of events known as the "San Juan affair" originated; it started with the shooting of a pig, and ended more than a decade later, with the binding arbitration of the Emperor of Germany, Kaiser William 1. The "affair" never altered the course of world history, but it nearly brought about military conflict between Great Britain and the United States.

The boundary between the Canadian Colonies and the United States had already been established; its western limit was the "North-West point of the Lake of the Woods" (Long 95°W, approx) agreed under a convention of 1818. Further west the land was unmapped, with no boundary surveyed, marked or even agreed. This unsatisfactory state of affairs was dealt with by the joint agreement of the Governments of Great Britain and the United States, embodied in the *Treaty of Oregon* of 1846, often known as the *Treaty of Washington*[2]. Article 1 of the Treaty stated: "From the point on the 49th parallel of North latitude, where the boundary laid down in existing Treaties and conventions between Great Britain and the United States terminates, the line of the boundary shall be continued Westward along the said 49th parallel to the middle of the Channel which separates the Continent from Vancouver's Island, and thence Southerly through the middle of the said Channel, and of Fuca's Strait to the Pacific Ocean; provided however that the navigation of the whole of the said Channel and Straits, South of the 49th parallel remain free and open to both parties".

In 1856, gold had been discovered on the Fraser River in New Caledonia, and by June 1858 the gold rush was at its peak. Many thousands of miners, prospectors and assorted adventurers, mostly Americans, migrated into the Fraser River area. The Colonial Secretary, Sir Edward Bulwer-Lytton, authorized Douglas to carry out the duties of Governor, and later appointed Colonel R C Moody RE as Lieutenant-

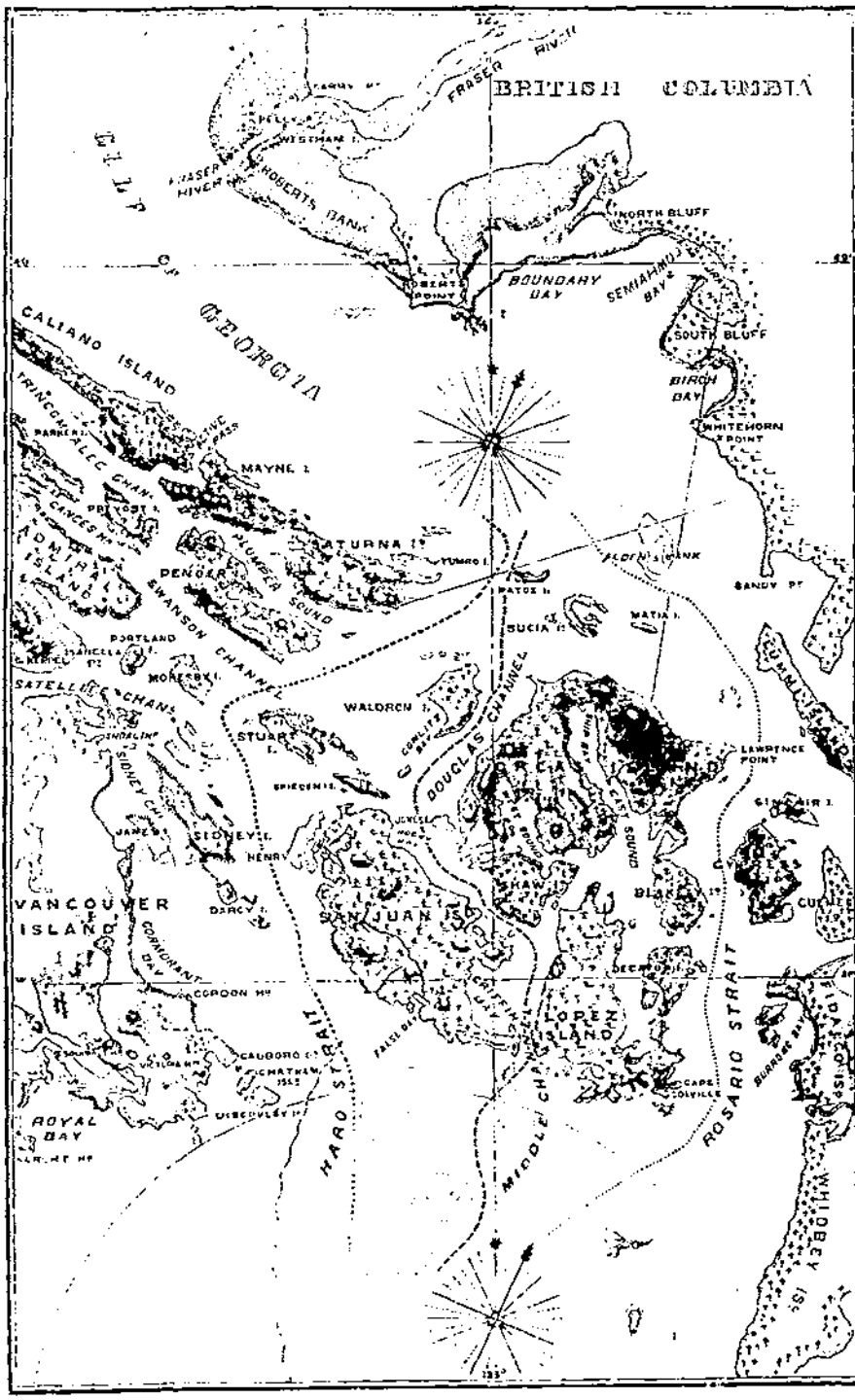


Figure 1. Chart of Strait of Georgia showing San Juan Archipelago (c 1865)

Governor of the new Colony of British Columbia (BC), with additional duties as "Commissioner of Lands and Works". He arrived at Victoria on Christmas Day, 1858, accompanied by his wife, Captain W D Gossett RE, the Colony's treasurer, and Mrs Gossett.

Meanwhile Captains R M Parsons and J M Grant RE with an advance party of thirty-two NCO's and men of the Royal Engineers had reached the country. The main body, under the command of Captain H R Luard, RE with two subalterns and a further 118 men and families arrived in April, 1859. One of the first engineering tasks was the establishment of the Colony's new Capital at Queensborough (later New Westminster).

By this time the two Governments had started to put into practice the terms of the Treaty, by surveying and charting the relevant areas, and marking out the boundary. The US Government appointed Archibald Campbell as its chief representative and Commissioner. Her Majesty's Government appointed three Commissioners, of whom the senior was Captain J C Prevost RN; he was in overall control of the work, with direct access to Campbell for discussions and negotiations. Captain G H Richards RN was appointed to chart the waters of the Strait of Georgia and Juan de Fuca, so that the water boundary, when agreed, could be clearly defined. The third Commissioner was Major (later Lieut Colonel) J S Hawkins RE, with the specific task of surveying the line of the 49th parallel from Point Roberts Eastwards to the Rocky mountains, a distance of about 450 miles.

Captain Prevost set out from Plymouth on his ship HMS *Satellite*, a screw steam corvette of twenty-one guns, on 28 December, 1856. He sailed across the South Atlantic, navigated the Straits of Magellan, called in at Valparaiso, and, after a five month voyage reached Esquimalt on Vancouver's Island. A few days later he crossed the Straits to Semiahmoo in Washington Territory (WT) and opened discussions with Campbell.

As no charts of these waters then existed at all, the Admiralty quickly arranged for the steam surveying vessel, HMS *Plumper* (12 guns) to be recommissioned under Captain G H Richards RN; the ship was sent to Portsmouth for fitting out, but owing to long service off the African coast, most of her planking was rotten. Repairs, fitting out and the building of a new chart room took four months; in March, 1857 she achieved six knots in speed trials, a speed which her Captain later found "inadequate for the rushing currents of the inner waters of Vancouver's Island and British Columbia". Nothing daunted, he set out the following day, and using all sail and as much of the available sixty HP as he dared, they followed the course in the *Satellite*. He reached Esquimalt on 10 November having spent six weeks at Rio de Janeiro with a broken propeller shaft.

Major Hawkins received his Commission on 15 March 1858, which the Queen had been "graciously pleased to grant under the Royal sign, Manual and Signet". The party selected to carry out the field work consisted of fifty-six NCO's and men of the Royal Engineers, who assembled under Lieutenant Charles Wilson RE at Brompton Barracks, Chatham. The whole party complete with surveying equipment sailed from Southampton on the Royal Mail paddle steamer, *Parana* (2048 tons) on 2 April 1858. They reached Colon in twenty-four days, crossed the Isthmus of Panama by rail and boarded HMS *Havannah*, a sailing vessel of nineteen guns. With no steam power, she was at the mercy of prevailing winds, and took a 8,000 mile course south of the Galapagos Islands, reaching Esquimalt on 12 July after a voyage of seventy days. Hawkins established a base at Esquimalt and set about his task as Commissioner for the land boundary.

The *Plumper* had started her survey operations in March, 1858, and except for the difference in opinion between Prevost and Campbell on the line of the water boundary, events proceeded smoothly. By mid 1859, many disappointed gold seekers were straggling back from the Fraser River, and about thirty of these US citizens "squatted" on San Juan on their migration Southward. The Island was then a flourishing livestock farm with sheep, cows. pigs, horses and a salmon fishery, run

by nineteen of HB Co staff. It was generally recognised as under the protection of the British Crown, and it is noteworthy that this arrangement met with no overt comment by the US authorities.

On 15 June, 1859, an American, Lyman A Cutler, frustrated gold seeker and squatter on San Juan, was irritated by a pig, property of the HB Co, rootling in his potato patch. The infuriated Mr Cutler took up his loaded musket and, amid a fine cloud of powder smoke, discharged a ball which mortally wounded the offending animal.

The San Juan affair had started! By a sheer coincidence, the little HB Co Steam launch, *Beaver*, visited the Island the following day, with Government Officials on board. Cutler refused to pay the assessed compensation ($100) for the pig's demise, and the local JP allowed him time to reconsider, with an alternative of facing a civil law action at Victoria. On 26 July, a magistrate, John de Courcy, arrived from Victoria and persuaded Cutler to pay up.

The Military Commander of the Department of Oregon was Brigadier General William S Harney. He had established several infantry posts in the Northern area, as a counter to threats by marauding Indians; there had, in fact, been some unpleasant incidents, and San Juan Island was exposed to such threats. In mid July, Harney paid a courtesy visit to James Douglas at Victoria, and, on his way back, called in at San Juan. The US squatters again asked for some military protection against Indians, and also recounted the pig episode. On 18 July, the General ordered an infantry Company from Fort Bellingham to garrison San Juan. On 27 July, Captain G E Pickett and his Company of sixty-six men with two "field pieces", landed on the Island, set up a tented camp in the South East and organised defensive positions. Several notices were posted, with these words:-

Military Post,
San Juan, W. T.
27th July, 1859

Order No. 1

1. In compliance with Orders and instructions from the General Commanding, a military post will be established on this Island on whatever site the Commanding Officer may select.
2. All the inhabitants of the Island are requested to report at once to the Commanding Officer in case of any instrusion by Northern Indians, so that he may take such steps as he may deem necessary to prevent any further recurrence.
3. This being United States Territory, no law other than those of the United States, nor courts, except such as are held by virtue of such laws, will be recognised or allowed on this Island.

By Order of Capt G E Pickett
(Signed) *JAMES W FORSYTH,* Second-Lieutenant
9th Infantry, Post Adjutant

On 29 July, John de Courcy, the San Juan magistrate, informed the Colonial Secretary of VI in writing of the occupation, about which he had strongly protested to Captain Pickett. Governor Douglas was quite rightly outraged by this high-handed action by US Military Forces, and sent a copy of the offending Order to Lord Lyons, HBM Minister in Washington. The reason for his objection concerned the alignment of the Boundary through the Strait of Georgia, vaguely stated in the Treaty. The North-South water route through the Strait of Georgia was confined to two navigable channels (Fig 1); to the East was the Rosario Strait, most commonly used by the HB Co and other coastal trading vessels. If the boundary ran through this channel then San Juan and the adjacent Islands would become British or Canadian Territory; naturally Captain Prevost claimed that this was the proper alignment, in the terms of the Treaty. Campbell, not unexpectedly, claimed that the Boundary should run through the navigable Haro Strait to the West of San Juan, particularly as this would cause the islands to become US Territory. The San Juan-Orcas group of islands had, in the past, been organized as Island County in

Washington Territory; revenue dues had been claimed from the HB Co for landing their cattle, but territorial rights were so nebulous that this procedure was allowed to lapse.

The following day, Lieut Colonel Hawkins RE on a routine journey from the mainland in the HB Co Steam launch *Otter,* arrived in Esquimalt. He later wrote this despatch to the Foreign Secretary, Lord John Russell, in London:-

"On my reaching Victoria from the Fraser River on the 30th July, 1859 on business connected with the Commission, I found the place in a state of very great excitement owing to the occupation of the Island of San Juan by United States troops on the 27th July, of which I only then heard. My position as HM Commissioner for the land-Boundary in some measure connected me with the question; and I was at the moment the only Military officer on the spot, Colonel Moody RE the senior officer in the Colonies of British Columbia and Vancouver Island, being at New Westminster and ignorant of the recent grave occurrences. This brought me into communication with Governor Douglas:- and having waited upon him on the morning of the 1st August, in company with Captain de Courcy of HM Ship *Pylades,* the senior Naval Officer present, at his request we attended a meeting of the Executive Council of Vancouver Island which was called by His Excellency to consider and advise upon the state of affairs. Captain Prevost of HM Ship *Satellite,* the first Commissioner for the water-Boundary, was away at the time with his ship; and as I had an intimate knowledge of the water-Boundary question, I volunteered to proceed *at once* to England, if the Governor thought it desirable to send verbal information by me in the hope of reaching San Francisco in time for the Mail Steamer of the 5th August, for which opportunity there would not be time to prepare detailed despatches. I believe that Captain de Courcy had urged Governor Douglas to send Captain Prevost home on such an errand; but on my stating my willingness to go, he and the Council considered it a very desirable step – it was not decided upon however until late in the Evening; and as there was no vessel at command at all likely to reach San Francisco in time for the Mail, excepting the *Pylades,* Captain de Courcy undertook to convey me thither. We left forthwith – unfortunately when outside the Straits of Fuca we experienced bad weather and contrary winds; and after persevering until the night of the 3rd August when it was hopeless that we could arrive in time, as Captain de Courcy was the senior Naval officer and consequently most anxious to return with his Ship to the scene of operations he bore up on his return, though he did so very reluctantly, as I intimated to him that I was prepared to proceed homewards by the overland route from San Francisco via St Louis &c. On the morning of the 5th August we fell in with HM Ship *Ganges* bearing the flag of Rear Admiral Baynes, the Commander-in-Chief on the Pacific Station. Captain de Courcy and I immediately waited on the Admiral, and informed him of what had occurred and of the part we had taken in the matter; and I have reason to believe that his opinion was entirely favourable to our proceedings.

"The Ships reached Esquimalt on the evening of the 5th August, and I called upon the Governor on the following day. I was then unwilling to proceed to England, as my principal object which was to carry home detailed intelligence in the absence of despatches was defeated by my not having been able to reach San Francisco in time for the Mail Steamer of the 5th August; but as the Governor then wished me to go, and I understood that the Admiral also was favourable to my proceeding, while it was probable that I should be able to give much valuable information, especially on points of detail which might not appear in the despatches, I did not think fit to withdraw my offer to go. I started accordingly on the 8th August, with despatches to your Lordship, the Secretary for the Colonies, the Admiralty, and HM Minister at Washington. I left San Francisco by the Mail Steamer of the 20th August; and arrived at New York on the 12th September, and proceeded that night to Washington, where I delivered my despatches to and had an interview with Lord Lyons on the following day. I left New York for Liverpool on the 14th and

reached London on the morning of the 26th September, when I immediately delivered my despatches, and reported my arrival at your Lordship's and the War Offices. From that time until my return to my post, I was in constant communication with the Foreign and War Offices.

"I may further report to your Lordship that I started on my return on the 28th January, 1860; and in compliance with your orders of the 21st January I proceeded to Washington for the purpose of taking instructions from Lord Lyons. While there, by his Lordship's arrangement I had two interviews with General Cass, the Secretary of State to the United States Government, on details connected with the joint demarcation of the Boundary. Lord Lyons has probably informed you of what passed on my referring myself to him by your Lordship's orders. On receiving my instructions I immediately continued my journey, leaving Washington on the 19th and New York on the 20th February; and I reached Esquimalt, VI, and resumed charge of the Boundary Commission on the 28th March, 1860.

I have the honour to be,

Your Lordship's most obedient humble Servant,

J S HAWKINS, Lieut-Colonel – R[1] Eng[rs]. H.M. Commissioner."

On 29th July, James Douglas had formally written to Captain M de Courcy RN, Senior Naval Officer on the spot:-

"I have to call upon you, in the name of the Queen, to assist me to prevent this occupation of Territory which is regarded as a Dependency of this Government, and I beg you will immediately dispatch a powerful vessel of war to San Juan . . . to prevent the landing of any further US armed forces . . . and also the erection of fortifications of any description by the party already on the Island."

As de Courcy was forthwith involved in his abortive dash to San Francisco, he was saved a rather embarrassing commitment. The note was passed on to Captain G T P Hornby RN of HMS *Tribune* (31 guns). He was senior to de Courcy and on 4 August advised Douglas in writing that it would be better to keep men (Royal Marines) on board for the time being. He pointed out "our notorious power to land when and where we liked": landing would only weaken our position, based as it was on sea power, and further, "neither Government is likely to attempt to exercise sovereign rights within the disputed Territory." Douglas wrote to the Colonial Secretary, Sir Edward Bulwer-Lytton on 8 August "I could not abandon the Island to such an occupation (by US troops) and I determined to land a body of British troops so that the occupation might be a joint one; . . . but Captain Hornby did not deem it advisable to carry out my instructions." The Colonial Secretary wrote in reply, "The colonists must not be left to suppose that against external agression, Great Britain will not render them the aid due to the dignity of the Crown, and the safety of her subjects."

Douglas had also requested military assistance from Colonel Moody at New Westminster. As local military Commander, Colonel Moody accompanied forty-four Royal Marines reinforced by Lieutenant Lampriere RE and fourteen Sappers on the *Plumper* on 1 August. Lampriere was instructed to take with him "Revolvers, ammunition for ditto, entrenching tools, carpenters' tools, camp equipment and such other stores as may be required." The *Plumper* had some trouble with the shoals in the Fraser estuary, but by 4 August the Marines had been transferred to HMS *Tribune*, in Griffin Bay, San Juan Island and the Engineers had been disembarked at Esquimalt.

The British force available was, in fact, over-whelming in power; it amounted to four warships carrying a total of 167 guns, of which only half at any time could bear, being mounted broadside. There were also 400 Royal Marines and 300 RMLI, to say nothing of the Royal Engineers. There was then a fine show of Naval force in Griffin Bay, San Juan Island, with HMS *Tribune* (31 guns) and *Satellite* (21 guns), matched by USS Propeller *Massachusetts*, Stern-wheeler *Enterprise* and Schooner *Jefferson Davis*. Any chance of a naval conflict, however, was marred by lack of motive; no shots were fired except those directed at wild game.

On 30 July Captain Prevost, as instructed, had delivered a verbal protest to Captain Pickett, who informed him that "the magistrate had held a court at which a US prisoner had been heavily fined for shooting a boar belonging to the Hudson's Bay Company". Prevost also wrote a strong note to Campbell, who had wrongly informed the US Military Department that San Juan was US Territory; neither side had territorial rights until the Island's ownership was decided by agreement or negotiation. The ensuing correspondence became very acrimonious.

On 5 August on Admiral Baynes' advice against any overt use of force, Douglas wrote a formal but courteous protest to General Harney. The following day, the General replied from Fort Vancouver, WT:-

"As the Military Commander of the Department of Oregon assigned to that Command by Order of the President of the United States, I have the honour to state that, by such authority invested in me, I placed a military Command upon the Island of San Juan to protect the American citizens residing on the Island, from the insults and indignities to which the British Authorities on Vancouver's Island and the Establishment of the Hudson's Bay Company have recently offered them, by sending a British ship-of-war from Vancouver's Island to convey the Chief Factor of the Hudson's Bay Company to San Juan for the purpose of seizing an American citizen and forcibly transporting him to Vancouver's Island to be tried by British laws. I have reported this attempted outrage to my government, and they will doubtless seek redress from the British Government. I shall retain command on San Juan, to protect citizens until further notice."

The Company rule had of course ceased to exist, and, in any case, the General's reply had the great distinction of being completely at variance with Captain Pickett's notices set up in the Island. James Douglas sent a most courteous reply, pointing out the more flagrant errors, denying any truth in the General's indictment, and, in particular, sending a copy of the US Secretary of State's letter to the Governor of Washington Territory:-

"Officers should abstain from all acts on the disputed grounds which are calculated to provoke any conflict, without implying the concession to the authority of Great Britain of an exclusive right over the premises". The General had in fact acted without authority from Washington, DC. By 12 August however, the US garrison had been increased to about 400 men, with eight 32pdr guns, six field-pieces, and much powder and shot. Defences were being constructed, and the Island was under American Revenue Law, denying entry without permit from Port Townsend, WT. This force had landed under the guns of HMS *Satellite* and *Tribune,* who had been ordered not to fire.

Official US despatches were sent from Port Townsend, WT by pony express, taking the route Carson City, Salt Lake City and Omaha to St Louis, a track distance of 2,800 miles. From St Louis there was rail and Telegraph Communication with Washington, DC. The despatches took several weeks in transit, and reached General Cass, Secretary of State, on 3 September. The steamer route via Panama was longer in distance, but transit time was about the same.

Lord Lyons forwarded the information by steam packet from Boston on 7 September, and it was in the hands of the Foreign Secretary, Lord John Russell in London seven days later. The information was scanty, and Lieut Colonel Hawkins was invaluable as a source of direct news and personal knowledge on the more recent state of affairs at San Juan. He reached London via Liverpool, and was closeted with the Foreign Secretary on 26 September. The news in outline was first published in London in *The Times* on 19 September, 1859.

Four weeks later, the New York press published news, which ominously presaged events to come. A militant abolitionist, John Brown, with his associates, had captured the Federal arsenal at Harper's Ferry on the Potomac River, inflicted many casualties on the US guards, and freed recaptured slaves due for return to their Southern owners. He was taken prisoner, tried and hanged.

Meanwhile, Lord Lyons at Washington DC had discussed the situation with

General Lewis Cass, US Secretary of State, who admitted that the military occupation of San Juan was without the President's approval. He had appointed as mediator, General Winfield Scott, veteran of the war with Mexico and General-in-Chief of the Army; he was fourteen years senior to General Harney, and was ordered to proceed to the North-West frontier in an attempt to find a temporary solution to the military confrontation. Relations between the two countries continued to be amicable, and General Scott carried Lord Lyons' despatches to James Douglas on his sea journey from New York to Oregon.

He sailed on 20 September and reached Port Townsend, WT a month later. On 25 October he wrote to Douglas, proposing a "temporary adjustment, having been drawn to this frontier by the apprehension of some untoward collision of arms between the forces of the United States and those of Great Britain." His proposal was that each should occupy a "separate portion of San Juan with a detachment of Infantry, Riflemen or Marines not exceeding 100 men, with their appropriate arms only, for the signal protection of their respected countrymen, and to repel any descent on the part of hostile Indians." This proposal was directly opposed to General Harney's implicit intention to "protect citizens" against any landing by ships of the Royal Navy, or unathorized British subjects.

General Scott was shortly appointed to supercede General Harney, and by mid-November he had reduced the US garrison to 100 riflemen, as was eventually agreed with Douglas. There was to be a joint military occupation, but Admiral Baynes was unwilling to release Royal Marines for garrison duty on the island, as they were required for shipboard and other specific duties. However, by December 1859, a further 100 Royal Marines had arrived at Esquimalt "for service on Vancouver's Island", supernumerary to establishment and borne on the books of HMS *Ganges*, the squadron flagship. Nevertheless, two winter months were to pass before British plans for a landing were put into effect.

Early in March, 1860 Captain Prevost and a naval party had reconnoitred and chosen a camp site in the North-West of the island. Baynes had declined the services of an RE officer for this task and for camp constructions, pointing out to Douglas that he was "above all things desirous to avoid the appearance of having placed troops on the island with any covert object." He thought it unwise, in any case, for an Engineer officer to proceed to examine different localities. Captain R M Parsons RE, Senior Engineer officer in British Columbia had reached Esquimalt with a detachment of RE for duty on San Juan Island. Later he wrote to Colonel Moody:- "I arrived at Victoria, VI on 15 March and reported myself to HE, the Governor, acquainting him with the instructions I had received from you. The Governor explained to me his views of the nature of the occupation of the island. I went back to Esquimalt and called on Admiral Baynes on 19 March, who expressed views similar to those of the Governor. However, he offered me a passage on HMS *Satellite*, which I then refused."

"I have only to add that I did not think it would meet with your wishes, that I should proceed to San Juan merely as a spectator of predetermined arrangements."

Royal Marines numbering just under 100 all told, under the command of Captain G Bazalgette RM, landed on San Juan on 23 March, 1860, and set up at first a tented camp in the North-West of the island. This force with the inevitable turnover of personnel, remained as the British garrison on San Juan for over twelve years. The island was under joint military occupation, for the whole of this period.

With the passage of time the British camp became a professionally built hutted camp with barracks, officers' quarters, commissary, block-house, gardens and steamer jetty (Figs 2 to 5) complete with service roads. The work was carried out by local craftsmen and contract labour under RE supervision with building materials from Vancouver Island. The Engineers were cunningly disguised in civilian clothing, and worked overtly for the Lands and Works Department of British Columbia, which was in any case their specific role; the area of the British camp on San Juan was regarded unofficially as part of the Colony.

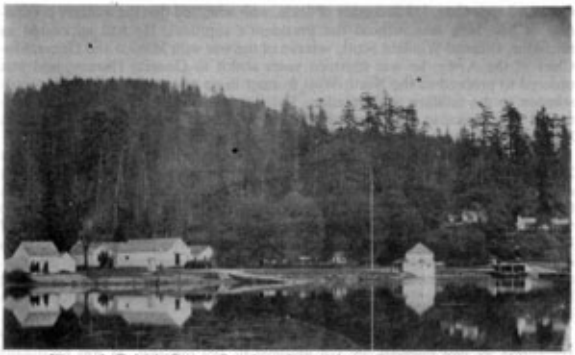


Figure 2. British Camp. San Juan Island from Garrison Bay (c 1870)

Events on the mainland, however, had turned the thoughts of the US Government away from the San Juan affair, for there had been ominous talk of secession among the Southern states. In time, several seceded and Confederate artillery bombarded Fort Sumter on 12 April, 1861, causing the Union garrison to surrender. The country was racked by civil war till peace was signed at Appotomax on 9 April, 1865.

For the next few years relations between Great Britain and the US were strained and diplomatic exchanges became acrimonious. The causes of dissention were the Fenian (Irish-American revolutionary) armed incursions into Canada from US soil, the agreement over inshore fisheries in the Gulf of St Lawrence, and the Confederate use of British built ships as commerce raiders; there were three such ships, CSS *Florida, Shenandoah* and the renowned *Alabama,* the latter built by Lairds of Birkenhead and clandestinely sold to the Confederate Navy. Overhanging all this

Figure 3. British Camp. San Juan Island showing steamer jetty, ornamental garden and the blockhouse (c 1870)

A Boundary Affair in the Far West (2 & 3)

Figure 4. English Camp. San Juan Island. The blockhouse overlooking Garrison Bay

was the still unresolved San Juan affair and the Far Western boundary alignment.

Early in 1871 the British Minister at Washington, DC, Sir Edward Thornton and the US Secretary of State, Hamilton Fish, set up a commission to settle all outstanding disputes. The outcome was the Treaty of Washington of 8 May, 1871, by which the fishing dispute was settled, but the Canadian claims for damage by the

Figure 5. British Camp. San Juan Island. Officers Mess and Living Quarters

A Boundary Affair in the Far West (4 & 5)

Fenian incursions were "passed over". The *Alabama* claims were to be settled by an international tribunal at Geneva, which eventually awarded the US $15,500,000 against Great Britain. The disagreement over the boundary was to be submitted "to the arbitration and award of His Majesty the Emperor of Germany, who shall decide finally, and without appeal, which of those claims is in most accordance with the true interpretation of the Treaty of 15th June, 1846."

It was thought that His Imperial Majesty, William 1, being father-in-law of the Princess Royal, eldest daughter of Queen Victoria, would look favourably on the British case. However he set up a court of inquiry on neutral territory at Geneva, summoned jurists and lawyers and considered the case on its merits. The British

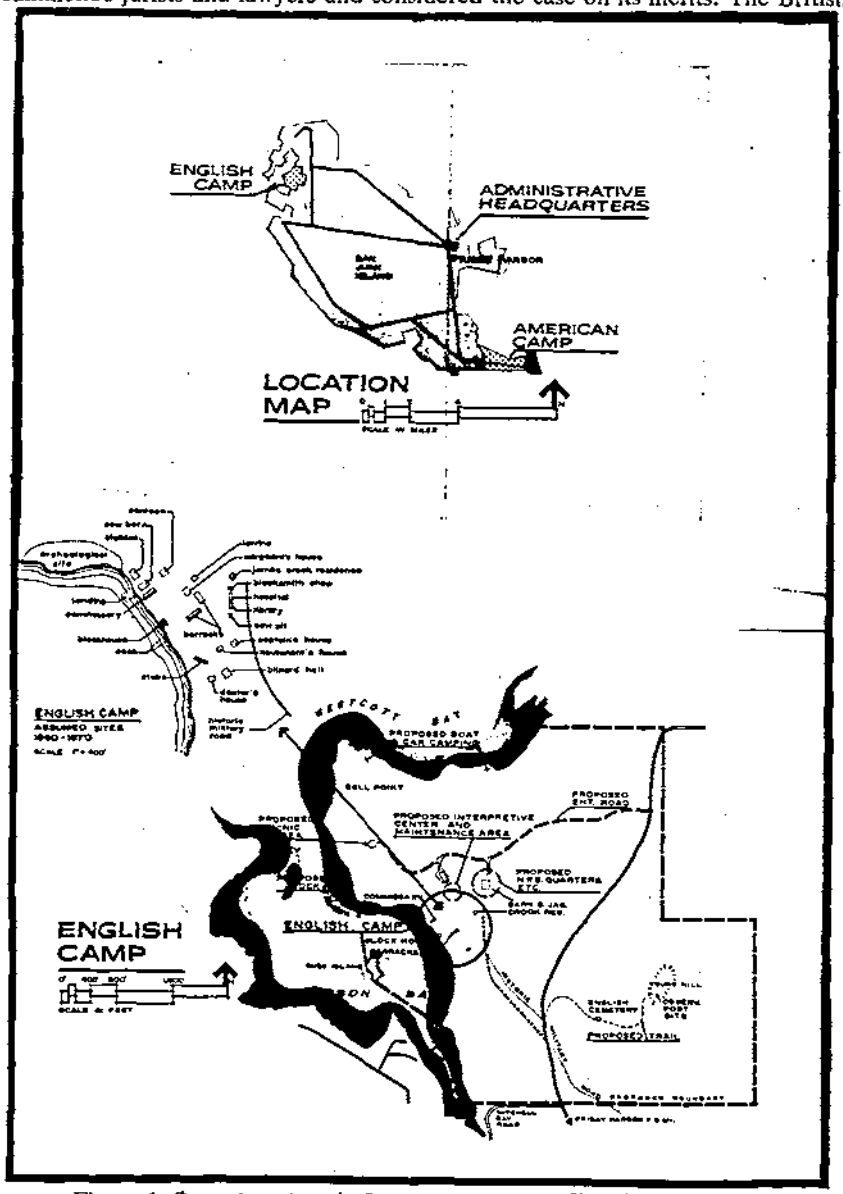


Figure 6. Camp locations in San Juan National Historical Park

case was presented by Admiral Prevost, the US case by George Bancroft, Minister at Berlin. The Emperor's award in writing was handed to Lord John Russell and Mr Bancroft on the night of the 23 October in Berlin. The wording was succinct and clear:-

"The claim of the United States that the boundary should be run through the canal of Haro is most in accordance with the true interpretation of the Treaty of 15th June, 1846.

Signed at Berlin, 21st October, 1872
WILLIAM."

San Juan was US Territory; Canada and Great Britain had lost! There was impotent thundering in *The Times* of London, and a more philosophical outlook from the *Daily British Colonist* of British Columbia: 'While mourning the loss of the San Juan Archipelago, calm second thought seeks to extract what crumbs of comfort it may. The first comforting thought is that the award of Kaiser William has directed the attention of the civilised world to this portion of the Queen's dominions, to an extent which can hardly fail to bring good results."

The end came on 21 November, 1872, when, at sunset, the Union Jack over the British camp was hauled down for the last time, by the senior Naval officer present. The following day the Royal Marine contingent marched proudly but sadly to the steamer jetty, where a US Guard of Honour was drawn up, and considerable courtesies were exchanged between British and US officers. At last, with three resounding cheers from both sides, the Marines boarded the steamer, and sailed away from San Juan for ever.

The *Graphic* of London carried this Epilogue:- "There will be lamentation at the breaking up of the English camp, and Colonists of British Columbia will lose one of their most charming excursion spots. What is to become of the pretty little bungalows, which have been erected by the English, is yet to be told. Doubtless they will have compensation, for their houses are excessively comfortable and picturesque, and the San Francisco belles will pic-nic in some of them next summer." The San Juan affair had passed into history.

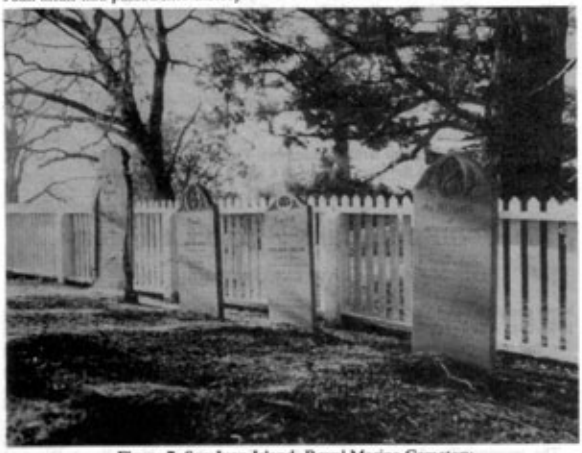


Figure 7. San Juan Island. Royal Marine Cemetery

A Boundary Affair in the Far West (7)

To mark the centenary of the story's end, the US Department of the Interior planned and created a National Historical Park on the Island, surrounding the two military encampments. (Fig 6). In the foreword to the proposals, "San Juan Island – a Master Plan" (National Park Service – June 1968) were these words:-

"The Establishment of the San Juan National Historical Park commemorates the peaceful settlement of Boundary issues between the United States and Great Britain, marking the first time in our history that these two countries had no Boundary dispute".

The belles of San Francisco, with their escorts, arriving by automobile ferry or light aircraft, travel by good roads to recreational and picnic areas, to car and boat camp-grounds. They visit the "interpretive center", displaying the story and artefacts of the Boundary affair, locally known as the "Pig War". In the US military camp two historic structures survive in addition to Pickett's redoubt, and, a short distance away, Cutler's potato patch. Twelve miles to the North West lies the British camp, on the shore of Garrison Bay; here are preserved the block-house, the men's barracks, the Commissary and the remains of the masonry blacksmith's shop. Near Young Hill overlooking the camp, is the carefully tended cemetery with the graves of six Royal Marines (Fig 7). Overhead still flutters bravely the Union Jack, exactly as it did more than a century earlier; above the US camp site, overlooking Griffin Bay, "Old Glory" floats as a benison upon the ghosts of Captain Pickett and his soldiers of the 9th Infantry. All this is a tribute to the common heritage and endeavours of pioneers in the Far West, preserved on American soil for the generations to come.

Notes:

1. Vancouver's Island was the name in common use at the time both in Correspondence and in the Treaty of Oregon (1846). It later became Vancouver Island.
2. The Northern half of Oregon was created Washington Territory (WT) in 1853, but was not admitted to the Union for many years as Washington State.
3. The terms "British Camp" and "English Camp" are interchangeable in this article. The US National Park Service use the term "English" (Fig 6) whereas we, and the Canadians refer to it as "British"!

Acknowledgements:

The Figures used in this article are presented by the courtesy of the following institutions:

Public Archives, Ottawa: Figure 1
Provincial Archives of British Columbia: Figures 2, 3, 5
US National Park Service: Figures 4, 6 and 7

Richmond Park Bomb Cemetery

MAJOR H CHARLESWORTH MBE, ERD

Most people will know or have heard of the Blitz of London and other cities during 1940–1945 when Goering and his Luftwaffe set out to terrorise the civilian population and bring industry to a standstill by obliterating London with massive bombing raids, firstly by daylight, then by night bombing and finally using V1 and V2 rockets. It is perhaps not so well known that a substantial percentage of bombs, flares, incendiary bombs, rockets, Ack-Ack shells and other assorted ironmongery, failed to explode or were fitted with delayed action devices and these had to be dug up, defused and removed for safe disposal.

The responsibility for removal and disposal rested with No 1 Bomb Disposal

Group controlling twelve Bomb Disposal Companies, Royal Engineers, strategically placed throughout the Greater London Area, and each comprising HQ and twelve Bomb Disposal Sections.

Regulations prohibited the transport of fused bombs through London but an area in the centre of Richmond Park was earmarked and laid out as a bomb cemetery where defused bombs ranging in size from the 1800 Kilo (4000lb) "Satan" to explosive incendiary 1 Kilo bombs, phosphorus bombs and miscellaneous debris were rendered harmless. The cemetery was also used for experimental purposes, testing new RAF bombs and devices, and making safe captured enemy mines, rockets and booby trap equipment for MI5.

As a subaltern with No 2 BD Coy I had a section operating the cemetery and led an interesting and exciting life with plenty of variety and several slices of luck in avoiding major casualties. It was here that the Earl of Suffolk, who had a special dispensation from the War Office, and, it was rumoured, from Winston himself, succeeded in blowing himself up, together with his secretary, a Staff Sergeant and three Sappers, when trying to prove, unsuccessfully!, that a clock fuse in a 250 Kilo bomb could be rendered safe by drilling through the clock with an electric drill.

The method used for rendering bombs safe was to remove the filling cap, and using a steam generator, melt the explosive filling, usually cast TNT, for subsequent disposal by burning in a pit. Quantities of a ton or two would burn safely giving off clouds of acrid black smoke. However, familiarity breeds contempt, and on one occasion, several tons of explosive detonated leaving an enormous crater, but fortunately with no casualties as the Sappers were queueing for "tea and a wad" at the NAAFI van which had just arrived.

One of the interesting developments perfected at Richmond Park was a technique, code named "Field Photography", for taking X-ray photographs of the fuse pockets of bombs in order to identify booby traps before defusing. Experiments were also carried out in freezing bombs with CO2 or liquid oxygen to immobilise the batteries in a booby trap fuse actuated by mercury switches when the bomb was moved. The writer takes particular pleasure from having stripped and rendered safe the first captured HS 293, a radio controlled jet propelled glider bomb, used by the Germans in the Mediterranean, and claimed to have sunk the Italian battleship *Roma*.

Unfortunately the days of the cemetery were numbered when the RAMC built a hospital and rehabilitation centre in the park. Occasionally we failed to destroy a number of 3.7in Ack-Ack shells. These were blown up in the demolition pit, and two shells took to the air and landed undamaged at the centre, one on the parade ground and one on a bed, luckily unoccupied.

London District therefore decided to close the cemetery and remove to safety the remaining bombs. These were mostly 1000 Kilo "Hermans" so called because of the rotund configuration reminiscent of the Field Marshal. These bombs were part powder filled and considered unsafe to steam out owing to the formation of sensitive picrate crystals. A combined operation was therefore planned with our colleagues in the Mine Disposal Section of the Royal Navy. The bombs were transported in small numbers by truck to Chiswick and loaded on a lighter and thence to the Pool of London where they were loaded on a minesweeper.

The following day we embarked on a leisurely trip down the Thames Estuary to a point opposite Cliffe Fort. Explosive charges were placed in the fuse pockets and connected to a buoyed cable for detonation at slack tide. The timing had to be precise as twenty minutes either side of slack tide, the tide race would carry the cables away. One would expect that the detonation of two tons of explosive under water would provide dozens of stunned fish for 2 BD Coy Mess but in the Summer of 1943 the Thames Estuary was so polluted that not even a sprat was stunned.

Thus ended the saga of Richmond Park Cemetery, which now reverted to the peace and quiet of the rehabilitation centre and the Deputy Rangers daily horse ride to beat the bounds.

Waziristān 1937 to 1939

12 FIELD COMPANY QVO MADRAS SAPPERS AND MINERS

LIEUT COLONEL H E M NEWMAN

The Author was commissoned in 1919 and joined 3 YO Course at the SME. In mid 1922 he was posted to 54 Fd Coy then part of 3 Div. Between 1924–29 he served in India with the Madras S&M, spending 2 years in Waziristān with 9 Fd Coy. 1929–35 saw him back in UK with CRE Welsh Area and Ord Svy based on both Edinburgh and Southampton. He returned to India in 1936 first to the Madras S&M and Waziristān again before joining a skeleton Bde staff as CRE in Burma posed with the task of assisting the Sixth Chinese Army to move from Yunan via Kengtung through Taungyi where he was based. He escaped from this area on foot by the refugee route to Assam. He contracted malaria and was medically boarded back to Bangalore. Between 1944 and 1949, when he retired from the Active List, he was successively AD Svy Southern Command, AD Svy 21 Army Gp BAOR and AD Publications Ord Svy. A self styled Madrasophile he hated the 5-year rule which prevented continuous service with the Sappers and Miners.

THERE was a gap spanning about a decade before World War II in the Historical Records of the QVO Madras S&M due to preoccupation during that War with the unprecendented expansion. The account which follows derives from the compilation which I was asked to prepare to help fill it. Luckily my wife had kept my correspondence covering this period, because without it I should have been helpless. Also luckily many details were supplied by the late Lieut Colonel J B (Birdie) Sutherland DSO, OBE and by Colonel A M (Arthur) Field OBE, MC, particularly for the three months of 1938 when I was on privilege leave in the UK.

To assist the reader I list a glossary of words which may be unfamiliar to younger readers. Their first use in the text is in italics.

algad: a dry or nearly dry watercourse
badmāsh: enemy
band: wall
baniah: see footnote 2
bhisti: water carrier
bhusa: chopped straw
kajāwahs: two per camel, not unlike stretchers
karēz: artificial channel watering terraced fields
khad: scree
khassadars: locals paid by the Political Agent (PA) to keep order in their area
lashkar: a tribal gathering bent on aggression
mālik: Head man
manza: a plateau
nallah: any valley, deep or shallow

Lieut Colonel H E M Newman

narai: a mountain pass
paggri: turban
pakhal: felt covered rectangular metal tank to hang from a pack saddle containing six or seven gallons
tangi: where a watercourse narrows to a gorge
raghza: or
rōgha: nearly level ground dropping abruptly to a watercourse
To further assist I list the pronunciation of vowels in names etc:

"ā" as the "a" in past			"e" as the "e" in pet		
"a"	"u"	punt	"i"	"ea"	peat
"ai"	"i"	pint	"ō"	"o"	post
"ē"	"a"	pate	"o"	"o"	pot

"u" as the "oo" in Poona (now spelt "Pune")

In my limited experience the vowel "a" in romanised Indian place names was seldom in assonance with the "a" in "pat". Calcutta, Bangalore and Travancore were among the exceptions perhaps due to English mispronunciation.

12 Field Company (Fd Coy) detrained at Bannu on 8 March 1937, some four days after leaving Bangalore, for a two-year routine stint in Waziristān. I was in command and with me were Lieutenants J A G (James) O'Ferrall and M A (Michael) Biddulph. Birdie Sutherland was earmarked to join us on his return from leave to replace one subaltern, and Arthur Field was already in Razmak with our advance party relieving 15 Fd Coy, who were due back at Corps HQ in Bangalore; but weeks for us and months for them would elapse before either Coy reached its destination.

It had so happened that in the autumn of 1936 the parents of a Hindu girl had brought an action against a local Muslim for abducting their daughter, both parties thereby exacerbating the ever latent communal discord. The case dragged on and became a grist to the dissident mill of the Faqir of Ipi (Ipi being a village near Mir Ali). He seized the opportunity to rouse the Daur Wazirs and other Wazir hotheads, and threatened to march on Bannu to prevent the return of the girl after the tribal elders had at last agreed to surrender her.

Bannu's small cantonment was bounded by its perimeter barbed wire fence. Its principal occupants were the Bannu Brigade, which, on operations, was referred to as the Tōchi Column (or Tōcol) named from the nearby Tōchi River: Included in it were quarters for wives and families, but none of these might proceed any further westward.

12 Coy was quartered in the Bannu Rest Camp while units of 1 Division (1 Div) passed through to Mir Ali, whence in a few weeks they were to advance into the Khaisora area to the south to engage Ipi's *lashkar.* Unfortunately, as so often happened, the enemy slipped away retreating to the remote village of Arsal Kōt in the Shaktu valley. These operations, and the generally dangerous conditions, drastically reduced the convoys between Bannu and Razmak, and soon damage to the road was to stop them altogether.

We in 12 Coy, stranded and impatient to move, began partial mobilization. The peace establishment and pay-and-mess-book accounts were not affected, but equipment ledgers were closed, rations and fodder were issued on the active service day-to-day principle and eventually, after much importunity, the mules and equipment which had been handed over to 15 Coy's advance party back in Bangalore were restored. Locally, and elsewhere with sections detached, we were occupied on trivial minor works and on reconnaissances under escort for forward planning. Eventually, when the repairs to the abutments to a bridge in the Shinki *Tangi* had barely begun, orders came on 2 May to move next day to Saidgi en route for Dosali. There on 5 May we joined Tōcol under the command of Brigadier Maynard. Tōcol with 1 Div and the Razmak Brigade (Razcol) together formed a single Wazirforce, and we were about to play our part in a bold and unusual frontier operation.

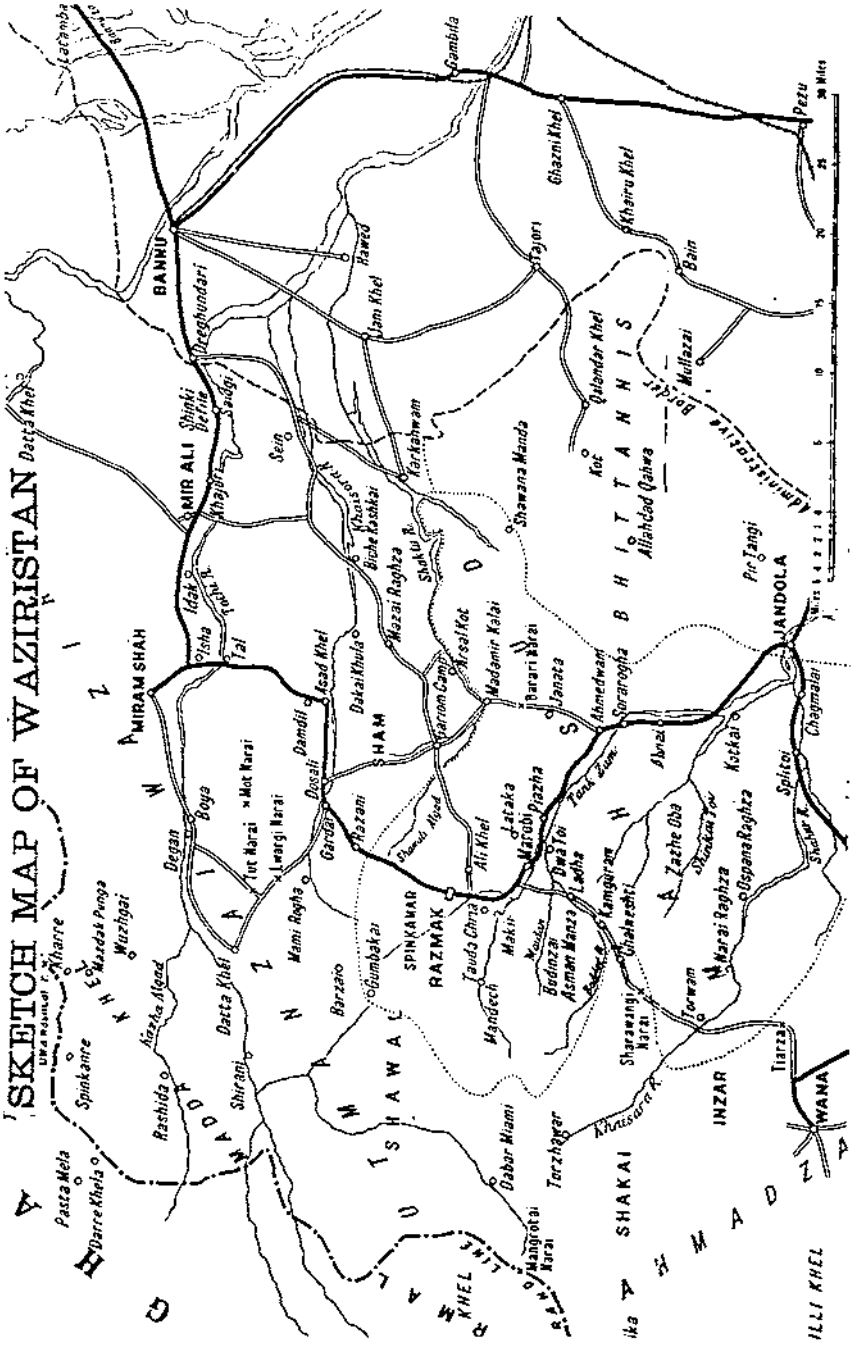

SKETCH MAP OF WAZIRISTAN
BANNU
MIR ALI
MIRAM SHAH
DATTA KHEL
SPINKAMAR
RAZMAK
SHAWAL
SHAKAI
INZAR
WANA
ILLI KHEL
BHITTANNIS
Miles

Photo 1. Michael Biddulph, Author, James O'Ferrall in Dosali Camp shortly before the night advance on May 9/10 to Coronation Camp

Dosali camp (Photo 1) lay some fifteen to twenty miles short of Razmak on the Waziristān circular road. It was close to a fortress-like permanent post on the northern bank of the Khaisora River which was manned by a detachment of the Tōchi Scouts. The Scouts were lightly armed militia, led by infantry officers seconded for the purpose, and they recruited Pathān tribesmen from alien regions to obviate blood feuds, and worked under the control of the Political Service to maintain law and order.

Armed reconnaissance, false rumours, and in fact all possible ruses had been used to persuade the enemy that our destination was Razmak, and even the units taking part were only told the true objective at about 1830hrs on 11 May. It was no less than an advance that very night on to the Shām Plain six miles south as the crow flies, but ten or eleven by the route to be taken. This was not by the Dosali *Algad* skirting the village of that name, but climbing up and along the knife-edged Iblanke Ridge which rises some 900ft above the river bed. To have been caught up here by any tribesmen from the adjacent parallel ridges to either side could have been disastrous, and by now particularly dangerous since the Faqir was reported to have assembled a large retinue by dispensing magic charms against wounds and death and by promises of loot to volunteers from beyond the Afghan frontier.

Tōcol set out in strict silence at 2100hrs leaving units of 1 Div in Dosali Camp to maintain it and later to develop the L of C (Lines of Communication). Tōchi Scouts led the way and soon we were wading the river and the climb began. The narrow ridge enforced a single file formation so that most of us spent more time at the halt than moving, but everyone kept closed up to prevent losing direction in the pitch darkness. The inevitable noise and confusion became terrifying. Boots clattered on rocks. Dislodged boulders tumbled down the *khad*. Pack mules lost their foothold and fell headlong scattering their loads, and their drivers followed as best they might to retrieve them. Not a few animals had to be destroyed. As dawn broke the column was still strung out along the ridge and rifle fire broke out ahead, soon to be followed by the crump of 4.5 howitzer shells from the mountain gunners; but the enemy had been deceived and the comparatively light resistance was quickly overcome. Nevertheless we did not reach our destination till around 1300hrs by when

the camp piquets had been established on the hills around. It was named Coronation Camp because on this day, 12 May, King George VI was crowned.

Our necessary supplies were dropped by parachute, but the water situation nearly spelled disaster. We were told to establish the brigade water point in an adjoining *nallah* running from east to west and we were forbidden to move beyond the right turn north where the *nallah* extended beyond piquet protection. However and wherever we scratched the flow was insufficient. At last someone broke bounds and water in greater abundance was discovered beyond the bend, but by the time the brigade major was so informed and the piquet line extended it was dark before the last *pakhal* was filled, and the last mule watered.

The algad track was fit for light tanks and animal transport by the 17th and on that day three battalions of 1 Div and 3 Fd Coy (Bengal Sappers) under Brevet Major Hasted, arrived in camp. MT could not make it for another week. These reinforcements were to hold Coronation Camp while Tōcol, with 3 Coy and 12 Coy, (less one section to maintain the camp water supply), advanced to Gariōm on the 18th, five miles to the south, encountering resistance all the way.

Gariōm lay at the far end of the plain at the confluence of the Shām Algad and a sizable tributary from the west. On 20 May a storm broke cascading hail stones up to ¾in in diameter. Several sepoys caught in the open without their *paggris* fell stunned, and a thousand maddened animals ripping their tethers from the ground stampeded over and through the perimeter. Hail turned to heavy rain with thunder, and when this stopped devastation reigned. The algads were hurtling torrents full of debris a hundred yards, instead of a yard or two, wide. Tent holes were awash covering bedding, equipment and arms. Cooking pots, saddlery and ration bags lay under hailstones inches deep. The surrounding hills were alive with mules and horses. Luckily for us the freak storm had cowed the enemy during Tōcol's embarrassment. The animals returned to camp for their evening fodder and during the next day order was restored.

At 0100hrs on the 28th the column, less a maintenance party for Gariōm, made for Pasal Camp just short of the Shaktu River and one and a half miles from Arsal Kōt, encountering opposition only after daybreak. Next morning it was on to Arsal Kōt itself to find it evacuated. Rumours of vast caves able to hold 250 men and horses proved false; only four or five small caves were found, heavily infested with fleas, and none more than twenty feet deep, so that a mere fraction of the explosives carried were used to destroy them. 3 Coy dealt with the southerly caves including the one supposed to have been Ipi's, while we destroyed those to the north, and also flattened everything in the village left standing after the RAF bombings.

After having restored communications with Razmak, 1 Div relieved Tōcol on the Shām Plain on 1 Jun, and we, with Tōcol, marched South peacefully, apart from a little sniping one night, to join the Takki, or Tānk, Zām near Sora*rōgha* on 7 Jun. Ipi had tried to embroil the Mahsuds whose country this was, but he had lost face and the local *māliks* sensing possible contracts to build roads kept a tight hold on their hotheads.

On 11 Jun Tōcol reached Tauda China, one day's march from Razmak, whence two 60pdr guns arrived by escorted MT to meet us. Next morning these were trained on Makin. After a couple of hours the Mahsud inhabitants, thus threatened, yielded up a notable *badmāsh* upon whose extradition the PA (Political Agent) had insisted. At long last 12 Coy reached its destination, by the back door so to speak.

Razmak derived its name from being situated between Razāni (Wazirs) and Makin (Mahsuds) and had been established in 1923 to keep the peace between these warring tribes. It was a permanent perimeter encampment 6,800 feet above sea level on a 1 in 50 sloping plain, the mountains lying reasonably well back. The barrack blocks built of local stone contained the Brigade HQ; six infantry battalions (one of them British), leaving two to hold the camp when four were operating;

a Mountain Artillery Regiment HQ with two batteries of 4.5in howitzers; and amongst numerous ancillary services a Military Dairy Farm, where buffaloes were fed on *bhusa*, some imported green fodder and concentrates. Amenities included hockey and basketball pitches, squash rackets, a bazaar, a cinema showing Indian and British films alternately, communal facilities for various Christian denominations, and buildings within unit lines for gurdwaras (Sikhs), mosques (Muslims) and temples (Hindus) to suit the interchanging units who served in the District for two years.

During the rest of June, while 15 Coy was employed in Razāni, 12 Coy worked in Razmak about the camp, and, restricted to short periods on "road-open" days, in repairing a short concrete slab bridge towards Razmak *Narai* which had been destroyed by the enemy.

On 10 July we were deployed for work on the new roads, being joined at the end of the month by 15 Coy (Captain E H T (Lawney) Gayer) and by 14 Coy (Captain Ll Wansborough Jones) from Wāna. There were to be two new roads, one roughly east by north from Razmak to Biche Kashkai (south of Mir Ali to which a road already existed), and the second south from Dosali to Ahmedwām (north of Sorarōgha). The two roads crossed at Gariōm where a new permanent Scouts' post was also planned. In this manner the previously remote Shaktu Valley was to be made easily accessible. The roads would be unmetalled, fit for MT, and wheresoever possible would run along watersheds (even up and over the Iblanke Ridge) to be tactically safer than in valleys and to reduce the need for cross drainage. The CRE Wazirforce (Lieut Colonel Cyril Martin VC) and his Field Engineers decreed the general alignment, leaving the Sapper companies to peg it out in detail, to supervise infantry working parties where the going was clay or gravel, and themselves to work on the rocky sections. The Madras companies worked from Razmak. The other roads were all dealt with either by the units of 1 Div, or by local Pathān contractors.

For many weeks Razcol and Tōcol, each with a detached section from 12 Coy, alternated in garrisoning Asman *Manza* which overlooked the Mahsuds' principle town and arsenal Kāniguram. The camp was practically unsnipable, and the threat enabled the PA to maintain the good behaviour of the influential māliks.

From mid-August to the beginning of December a fervent Madras Sapper, Major G R (Mike) Gilpin, supervised the three Madras companies as local CRE.

On 8 Sep at 0915hrs 12 Coy was ordered to stop work and make for camp, and in two hours time, armed with enough explosives to demolish twelve watch-towers, was on the march to Tauda China. Next day we proceeded to Asman Manza with Tōcol, leaving Razcol with 14 Coy at Ladha. The objective was to punish Sher Ali, a local chieftain, who had been burning *khassadar* posts. Accordingly, on the 12th, Tōcol advanced west up the Baddar Valley on light scale, ie without tents and with two days' supplies. Sher Ali had fled, but the māliks, swearing loyalty on the Korān, led us to seven scattered shacks, no towers, which they declared to be the total of his properties thereabouts. The PA acceded to this improbable yarn and ordered them to be destroyed. They were so ramshackle that, razing them manually, some timbers fell unexpectedly and inflicted on us our only casualties for that year. One Sapper suffered a broken leg and Jemadar Ayyana a sprained back. They accompanied us back to Asman Manza on the 14th in camel *kajāwahs* thence to Razmak hospital by motor ambulance. Razcol arrived on the 17th to garrison the camp to enable Tōcol, again on light scale, to march next day to Torwām, a village on the Khaisāra (*cf* Khaisora) River towards Wāna. It was a peaceful operation with just one tower, one dwelling house and two shacks for destruction. We returned to Asman Manza on the 20th.

Having left a section with Razcol in Asman Manza we set out with Tōcol back on the 24th staging at Ladha for one night. Ladha to Razmak is 15 miles and Tōcol, without piqueting help from Razmak, was stretched for troops, so that we were ordered to man the three or four camp piquets before dawn till the final withdrawal

of the rearguard. The Sappers were delighted with their unusual role, but we lacked the infantry's automatic weapons, signals equipment, and recognition screens, their training and practice. I kept my fingers crossed.

Birdie Sutherland joined us in October as planned and we said goodbye to James O'Farrell who left us in November. We worked then mostly from Ali Khēl, a sniper-prone camp beyond the Engamāl Narai. When khassadars were one night suspected of having contributed to the sniping, their next issues of ammunition included tracer and with this they incriminated themselves.

Eventually the C-in-C was driven ceremoniously over all the new roads on 29 Nov, and next month peacetime procedures were resumed.

In spite of rumours of enemy groups and movements 1938 opened quietly. Conditions in 1937 having precluded any individual training, the opportunity was seized to organise crash courses in education, and in military subjects to qualify NCO's and some promising Sappers for promotion; also, moreover, workshop courses for some 5th rate tradesmen to improve their rates of pay, and to the sending of higher rated men to Bangalore workshops for the same purpose. An apathetic trend amongst all ranks was transformed into one of enthusiasm which persisted throughout all our subsequent activities.

Arthur Field had been detached with a section of 3 Bde in Mir Ali since December 1937 spending much of the winter on camp improvements. He reported one day in early April that they were being kept in constant readiness to deal with mines. The menace began relatively harmlessly with spent cartridges charged with explosives and a detonator, became more serious when cylinders about 3in × 1in were introduced, and still more so when old cigarette tins included a charge of pebbles and nails to simulate shrapnel. Many were buried just below ground surface in the berms of roads on which infantry in single file were wont to move in operations. When scattered on or near rough tracks they were hard to detect. Often dung was scattered over loose earth for camouflage. During the months this phase lasted a few Sappers always preceded the vanguard on operations to seek out and destroy the mines. On one occasion Michael Biddulph fell victim and was hors de combat for two months. On another Birdie Sutherland was constrained to shoot a mule which had lost a hoof. Arthur was also called upon to booby-trap the stay wires of some telephone poles in Shinki Tangi using guncotten slabs in order to prevent Ipi's men from interfering with the Bannu-Razmak communications.

It was late May, when I was on three months privilege leave ex-India, that 12 Coy resumed operations, and these were in general less protracted and often perhaps more perilous than the 1937 series. In the first an enemy lashkar had assembled near Lwargi Narai, two days march from Razmak and midway between Razāni and Datta Khēl. Razcol joined 3 Bde from Damdil at Razāni on 31 May under Wazstrike (Waziristān District Tactical HQ) which was by then stationed usually in Razmak. On 2 Jun they advanced NW against strong opposition to Māmi Rōgha preceded by Birdie, now acting OC, with an escort of light tanks to reconnoitre the water supply. On the 5th, 12 Coy repaired some damaged bridges and retaining walls forward from Māmi Rōgha while the column advanced to Lwargi only to find that the reservoir there, which had taken a month to fill, had already been destroyed. 3 Bde with Arthur's section pushed forward from Lwargi to enable the mechanised column to relieve Datta Khēl which had been under siege by a lashkar armed with light "field guns". The force returned to Māmi Rōgha whence 3 Bde with Arthur's section were again sent forward to Lwargi to replace the khassadar's post there, which had proved ineffective, by a temporary post for a garrison of Tōchi Scouts. This consisted of an eight foot high perimeter wall surrounded by sandbags and it took a week to build with the reluctant help of infantry and gunner working parties. Tōchi Scouts occupied it on 14 Jun and all that night Māmi Rōgha was heavily sniped and several small calibre shells landed in the camp but failed to explode.

Next day the channel bringing water to the camp was sabotaged in a valley to the

north, so that on 16 Jun 3 Bde mounted an operation to mend it and disperse the lashkar responsible. The advance guard with a Sapper reconnaissance party, who cleared rocks from the water channel, met stubborn resistance at once which intensified at Sarkai village two miles away. Beyond it the advance was assisted by the RAF bombing the surrounding hills, and the Sappers were able to reach the point where the channel had been breached, repairing it with sandbags and a stone *band* the while under constant sniping. 12506 Spr[1] displayed such high spirits and devotion to duty under fire, giving inspiration and confidence to his comrades, that he received an immediate award for his conduct. The following day 3 Bde was relieved by Razcol and returned to Razāni and Razcol returned to Razmak shortly afterwards.

On 10 Jul Razcol again met 3 Bde at Māmi Rōgha to mount a second operation under Wazstrike. The objective was Kharre near the Afghān border where Ipi's HQ was reported to be occupying some caves. On 11 Jul the column moved to Dēgan in the Tōchi Valley. Next day Birdie with a Major from Wazstrike reconnoitred in light tanks the road to, and the water supply prospects at, Wuzghai where the force was due on the 13th. The actual measurement of the water flow was performed under sniper fire. During the advance the Sappers cleared mines from the road without casualties, but several undetected mines damaged men and mules of other units. On the final stretch up a nallah, where a track for MT was required, snipers killed one Sapper mule and hit the British NCO's motor cycle. (One British Warrant Officer and one Sergeant accompanied every outstation Coy to supervise workshop training and the company equipment.) At Wuzghai Camp beyond the Tōchi, Birdie was walking to an orders group with the CO of the Green Howards and his Adjutant when the latter was killed by a sniper, and the waterpoint there was constantly under fire. The Sappers were unscathed but there were casualities to men and mules, and one Indian infantry British Officer was killed. On the morrow the column overcame strong opposition to climb the 4,000 feet to the Bazuma Narai, itself 7,000 feet above sea level. The landscape beyond was so formidably steep, broken and heavily wooded that the Kharre objective was abandoned and the exhausted column bedded down where it was without even the possibility of a perimeter defence. Fortunately the enemy was too busy recovering his casualities to interfere with the vulnerable troops. On the return march three towers at Wuzghai were blown. The charge in one of them failed to detonate, whereupon, covered by the Sapper demolition party, the rearguard having halted on the Tōchi side of the village, Birdie returned alone and entered the tower to investigate. All three demolitions had been provided with parallel trains of fuse in case one failed. He found the primer in the first train had detonated without igniting the instantaneous fuse, but that the primer's detonation had severed the time fuse of the second train on the far side of the cellar. He cut and relit this second fuse and just escaped to a ditch as the tower disintegrated. The stony nallah back from Wuzghai again inflicted casualities from mines because the rough terrain made it almost impossible to locate them. The two brigades dispersed back to their original locations on 18 Jul.

On that day Arthur Field handed over to the newly joined subaltern P A (Pat) Adams, who was a novice to the frontier. Arthur left for home leave from which he did not return. Birdie was therefore required to accompany the 3 Bde Sapper section for the third of these operations on an expedition to the lower Khaisora with the brigade so as to enable the Scouts to search the village of Zerpasai. It began with a difficult night march and the village was duly surrounded by dawn. The quarry had decamped. The PA chose a tower in another village for demolition.

12 Coy was honoured by the following awards for outstanding conduct during these operations:-

Captain Sutherland	DSO
Lieutenant Field	MC
Jemadar Kondayya	IOM (2nd class)

13710 Naik (Corporal)	IDSM
12506 Sapper	IDSM[1]

Regrettably I have no copies of the citations. The exploits of the two British Officers and of 12506 Spr have perhaps been sufficiently indicated, and I recall that the two others were decorated for notable courage and efficiency in mine detection.

That August Mr Hore Belisha, Minister for War, introduced a promotion scheme to reduce age for rank. I was promoted among the many Sapper Captains forming a group then known as the "hungry hundred." The group stemmed from the large batches passing through the Shop (the old RMA Woolwich) during the latter part of the First World War; large in order to compensate for the heavy casualties among regular officers, particularly subalterns. Armistice Day suddenly provided us with a normal life expectancy. Promotion was a financial boon, but the jobs available were unaffected, and the prestige of rank was diminished.

Following those operations came yet others perhaps less strenuous. For instance on 9 Sep Razcol on light scale, ie without tents, though most officers now took lilos for their bed-holes, set out for Torwām, this time ostensibly to collect two 4.5 howitzers from Wānacol. On the 12th the CRE and I motored forward from Chalwēshti to the khassadar post on the Sharawangi Narai which needed 500 yards of new barbed wire entanglement to be erected next day. All was peaceful. Next morning at 0230hrs the infantry set out to storm the narai before dawn and they succeeded without opposition. We, starting at 0500hrs arrived and began work when rifle fire opened from many directions. We were not under direct fire, but it persisted and the job established itself as the noisiest in our entire two years. At Torwām we met, with Wānacol, a detachment from 9 Fd Coy under Captain Lionel Paton and Lieutenant "Buzz" Lloyd. We shared the water point duties. Despite searching for them no mines were found throughout this expedition.

Then on 29 Sep Razcol, with two of our sections, marched for an unknown destination. We made Datta Khēl by the MT track from Gardai, leaving one section with Michael Biddulph under Scouts' protection on the Lwargi Narai to dismantle their temporary post. Next day we left Datta Khēl for Murki *Karēz* on hard rations, meaning tea and sugar and pre-cooked Shakapura biscuits for Indian troops, and hard "ships biscuits" for the British. Actually there were evening rum rations for all barring Muslims who received extra tea. Murki Karēz, SW of Datta Khēl, had been visited by Razcol in peaceful conditions but they had never camped there. This year it had for some while been a proscribed area over-flown by the RAF with orders to drop bombs on any movement noticed in it. I went forward in a light tank to reconnoitre the water situation and found 9,000 gallons an hour gushing from an underground source. All was quiet. The water point was later installed in record time, only to be pulled back by the Commander (Brigadier H V Lewis) for safety. Shooting started before dismantling was complete, and one *bhisti* received unscathed a bullet through his paggri. Diverted to a channel the water became so gritty that it fouled the pump valves, and access for animals was difficult. The narrow valley was flanked both sides by steep scrub-covered jagged hills making the pinpointing of sniper positions impossible, and the fighting continued till 2230hrs. Next morning three of the four battalions reconnoitred a further 1,000 yards into the nallah stirring up the hornet's next once again, and once more 2230hrs marked the enemy's lights out. We had spent that day mending the karēz to produce an ample clean water supply at the camp site. No less than eleven unexploded RAF bombs, all of 1918 vintage, were detonated within the proscribed area, all still potentially dangerous in the wrong hands. Then on the way home from Lwargi we dealt with several mines. Reaching Razmak on 6 Oct I recollect speculation in the Officers' Club and Messes that night that Ipi's propaganda might well be proclaiming a victory, emphasising that about fifty of his troops (as estimated) had repulsed 4,000 men with 1,500 animals and costing us four men and five animals killed. Had it been worth the effort?

Birdie Sutherland left us for leave three days later. The next column occupied

from 9th to 20th December. It was decreed necessary and urgent to overawe the Manzai Mahsuds for failing to control their hotheads. Razcol, with Wānacol, which included 9 Fd Coy under Lionel Paton and Bob Lindsell established a camp about four miles up the nallah leading NW from Kōtkai which is situated at the confluence of this nallah with the Tānk Zām. Wānacol remained there while Razcol on light scale operated forward into the heart of dissident territory expecting strong opposition. It never materialised, and the māliks burned the dissidents' houses, which was to have been our task, under the eyes of the PA. It had been noised abroad that Razcol would return the way it had come, and it transpired that a battle would have ensued had we done so, Instead Razcol proceeded forward to Ladha in peace. That night it rained heavily until there was an inch or so of water in our foxholes, but it soon turned to snow which fell uninterruptedly until the next evening. Visibility was limited to a few hundred yards, and an enterprising enemy could have wreaked havoc. The hard going was physically exhausting, but for once not a shot was fired on this usually contested last leg to Razmak.

There was no respite for us at the beginning of 1939. In the first week, leaving administrative and workshop details behind, the rest of us marched the two stages to Damdil, coming there under the command of 1 Bde. This project was for building a road to run roughly due east along the Khaisora River and to join the existing network at Biche Kashkai. As the District Commander, Major-General Quinan, having tea in our mess tent, told us; it would be not only a useful short cut in troublous times, but would also dispel the belief held by the tribesmen that roadworks were to stop. Work began on 11 Jan with a large infantry working party down the river bed from where it diverged from the circular road. They returned to Damdil that night, but next day the road was completed to within 1,000 yards from their first camp site at Zerpazai, which they then occupied with one of our sections. The rest of us reverted to Damdil. The road was found to be adequate for 6-wheeled trucks, but owing to the wet state of the nallah bed one 4-wheeler sank to its axles. The last 1,000 yards was finished by noon on the 13th, and we, less one section with the Bde and less our mules and drivers, departed by MT for Mir Ali. Michael Biddulph, aware that two motor ambulances were to accompany the convoy, spotted one such broken down by the roadside, and when it reached Mir Ali he ordered it into the local MT workshop for checking. Work was under way when plaintive calls came from the inside. It was the CO of the 3/17 Dogras sick of a fever and due urgently in hospital. This ambulance had not belonged to our convoy!

On the 15th we moved by MT to Biche Kashkai with armoured cars and a half a battalion for escort, all of whom camped with us alongside the local permanent Scouts' post. The two ambulances were with us, together with three American "Caterpillar Diesel Road Builders", then locally known as "Monsters" (but later universally as bulldozers, with their MES (Military Engineering Services) operators under a Staff Sergeant; also a section under Lieutenant "Buzz" Lloyd from 9 Coy who had some experience with these machines in Wāna whereas we had none. Work on the road began on the 17th westwards along the north bank of the river. The CRE and I, reconnoitring forward, came upon some unexpectedly soft shale and a complex of intricate and deep sided nallahs which the air photographs, taken with the sun shining into them, had not revealed. The south bank proved to be easier, so, next day, with District approval, we began on a fresh alignment, the Sappers clearing obstructions on the raghzas, the Monsters coping with the cut and fill around the nallahs. That evening the 9 Coy details and the machines moved to 1 Bde's new camp at Dakai Khula whither also we went on the 20th. The work was finished two days later, one less than scheduled, and the CRE driving over all the new road at 30mph congratulated all concerned. In fact the time allowed provided for no drainage, so this road was unlikely to survive rough weather. It had been a peaceful episode apart from three long range shots one evening into Biche Kashkai camp, of which one wounded an RIASC mule, and another had smashed the glass of a Petromax lamp in our company *baniah's*[2] tent. This marked the end of road

work for us. I was back in Razmak on the 24th coping with mountains of accumulated paper, and I spent the remaining few weeks handing over to the advance party of 10 Fd Coy and supervising our packing. Two sections meanwhile remained detached with brigades down country: splendid training for their subalterns whose exploits are unchronicled.

There were congratulatory letters from the Brigade and District commanders, and at last we made our final bow on the Waziristān stage at Bannu station on 27 Mar, carefree and unaware of the fate that would find 12 Coy, alas without me, mobilised in Egypt after so very few months, and waiting for the imminent catastrophe.

Footnotes:

[1] The VCOs (Viceroy's Commissioned Officers), ie Subedars and Jemadars, were addressed by name with the suffix "Sahib". However, owing to the scarcity of Dravidian personal names any unit might contain a dozen or so (for example) Munisamis, and thus to avoid confusion each other rank was addressed by his regimental number, even by his own comrades.

[2] The Company *baniah* was a civilian merchant who contracted to supply a canteen and the ex-ration messing requirements, eg vegetables, to our satisfaction, plus a regular contribution to company funds.

My Return to Ile Stagadon after Forty-Two Years

CAPTAIN E BAKER MBE

The Author joined the ranks of Kent Fortress RE TA in 1937 and was commissioned in The Buffs (Royal East Kent Regt) in 1942. With them he served in the Middle East and Italy and after WW2 in the Far East.

ABOUT one month after demolishing two large Esso oil refineries at Vlaardingen, near Rotterdam, in May 1940, the unit in which I served was sent to the great naval port of Brest to carry out a similar task. The raid on the oil storage tanks and harbour installations was carried out successfully after landing from HM Destroyer *Broke*; but unlike the Vlaardingen raid, post-operation plans came unstuck. For, after completing our task, we were unable to find the *Broke*, which was moored among hundreds of other craft in the, by then, darkening harbour. The moon rose simultaneously with a huge pall of black smoke from the fires we had started. In the distance we could hear the boom of German artillery fire, followed by the inevitable whine and crunch of bursting shells. Our only hope of escape was to commandeer a motor boat and so make our own way home. We selected what looked like a seaworthy craft, stole some food which had been left in baskets on the dock side,

Captain E Baker MBE

and clambered aboard. The engine was started and we steered for the harbour entrance. Just as we thought we were clear, the engine suddenly spluttered to a halt and we drifted helplessly until we managed to attract the attention of two French sailors by firing revolvers into the air. They happened to be approaching in another boat. In hesitant French we explained our predicament and the Frenchmen agreed to take us back to England. At about six o'clock the following morning, when roughly half way between Brittany and Cornwall, and feeling desperately tired, hungry and rather seasick, the engine of this second boat chuffed to a halt and our hearts sank. We tried for hours to start the thing, but our efforts were fruitless.

After drifting for a day and a half, we sighted a tiny dot on the horizon. A groundsheet was lashed to a broomstick to make an improvised sail, floorboards were ripped up, and we paddled furiously for a whole morning. Slowly the dot on the horizon grew taller and taller into the shape of a pepper pot, and much later into a lighthouse. When we were within a mile or so of the rocky shore surrounding the lighthouse we signalled SOS by semaphore and, to our great relief, two figures standing on the huge rocks near the lighthouse responded. Within half an hour two Breton fishermen were sailing out to take us ashore.

On landing we were informed that the Germans were only a few kilometres away and were advancing towards the nearby small fishing port of Kervenny. Local people brought us bread and water, and hustled us along to a beach side café a few minutes walk away, where we hurriedly changed into old civilian clothing which the villagers had kindly given us. The village padre then led us across at low tide, through two and half kilometres of seaweed covered rocks to a very small island where we were forced to lie low for nearly ten days under the noses of the Germans who by then had occupied the mainland. Clandestine visits were occasionally made at night by Frenchmen who brought us meagre rations and news of the enemy movements.

On the tenth day of our seclusion a fishing boat approached the island, and we naturally thought that the Germans had spotted us and were coming to investigate. The boat beached and two men jumped ashore—two French fishermen who had learned of our plight. They told us they were prepared to take us back to Cornwall. We landed at Newlyn harbour on 27 June, 1940 much to the surprise of our people at home who had given us up as lost.

Forty-two Years Later.

Over forty-two years later, in fact as recently as 17 September, 1982, I returned to Lilia, near Kervenny, determined to find the Priest of the French Resistance who had helped us to escape, and the Island of Stagadon on which we were marooned.

After making enquiries of local people who well remembered the incident, I contacted the present priest who, after making several telephone calls, traced the priest who had guided us to safety. He is now seventy-two years of age and living at Rosporden, east of Quimper. A school mistress at Lilia offered to drive me seventy kilometres to meet him. One may guess the emotional meeting which took place. There was much embracing, followed by animated conversation and explanation of what occurred during our landing, and subsequently during the German occupation. I learned that when we landed the Germans were at Plouguerneau, only a few kilometres away, telephoning for accommodation at Kervenny. We didn't, of course, realise at the time what a narrow escape we had had from being captured. Our conversation continued through a mini banquet which the priest had prepared. A bottle of champagne was uncorked and we celebrated with numerous toasts.

After returning to Kervenny a day or so later, two Breton fishermen who also remembered 1940, offered to take me across to Stagadon. While walking round the island, which incidentally is only about four hundred yards long by one hundred yards wide, my mind was filled with nostalgic memories of the past. Most islands change little over the years, but the tiny stone crofter's cottage where our party of fourteen soldiers and one sailor had sheltered, is now uninhabited and in ruins, but the priest's spirit and his kindness lives on in my memory.

Queen Elizabeth II Army Memorial Museum—Phase Two

CAPTAIN M G THOMPSON RNZE, BE (Hons) (Civil), B Sc, NZCB

Commissioned in 1975 the Author's first appointment was Plant Tp Comd, 5 Sp Sqn. In 1978 he returned to University and completed an Engineering Degree in two years. In 1980 he was posted to 3 Fd Sqn as 2IC. In early 1981 he became OC 3 Fd Sqn. In October 1982 he was posted to Waiouru as Project Engineer, Army Memorial Museum Extension Project. In July 1983 he left the Army to take up an appointment as a County Engineer.

FOREWORD BY LIEUT COLONEL S D JAMESON RNZE

In 1980 my predecessor one removed, Lieut Colonel H E Wedde RNZE, forwarded to the Institution an article on the Queen Elizabeth II Army Memorial Museum. That article was subsequently included in the June 1980 issue of *The Royal Engineers Journal*. Since the Museum was opened, it has enjoyed keen support from the public and the Museum staff have been hard pressed to keep apace with the administration associated with the many donations of medals, artefacts and militaria items generally.

Such donations enabled the Museum to expand a number of its habitat and general interest displays. However, it soon became apparent that the displays had outgrown the space available and that there was a danger of the Museum becoming either a lifeless storehouse of military history or an overcrowded shop window. Consequently the Museum Trust Board decided that the time was right to proceed with an extension to the existing building. As with the original building the extension would be constructed by Army Engineers. 2 Field Squadron (Palmerston North) had been responsible for the original structure; this time their Papakura counterparts – 1 Field Squadron – were to be given their chance.

Obviously a number of lessons had been learned from the 2 Field Squadron effort and these were taken into consideration once planning commenced. The task itself proved a challenge and offered 1 Field Squadron's junior tradesmen – by far the majority of whom were apprentices – the opportunity to deal with commercial type structures. For their part, the more senior members involved were practised in a wide range of management skills. But no more on the task; I will leave that to the Project Engineer – Captain Mark Thompson – to tell the tale.

BACKGROUND

Since the opening of the Queen Elizabeth II Army Memorial Museum four years ago (Vol 94 No 2) over 500,000 visitors have passed through its doors. This level of patronage is much greater than was anticipated and clearly shows that among the New Zealand public there is a keen interest in the nation's military heritage. (Based

Captain M G Thompson RNZE BE B Sc

on this turnover, on average one New Zealander in six has visited the Museum.) Such interest was further demonstrated by the steady flow of military artefacts from a wide range of contributors and it became apparent that the museum facilities would have to be extended if the various displays were to be presented to best effect.

The extension proposed by the Trust Board took the form of a two-storey reinforced concrete structure. The available floor space within the Museum would be increased by almost 1400m^2. Building site works were completed in early October 1982 and construction of the structure and services commenced on 19 October 1982. The personnel for this task (with the exception of the Author) were drawn from 1 Field Squadron (Papakura) approximately 380km north of Waiouru. The average strength of the work force was forty All Ranks and, to reduce the "downtime" lost to travel, the project was completed in a series of fifteen day tours of duty (TOD), with a six day break between TODs.

The building materials cost had been estimated at NZ$450,000 in July 1982; this date fortuitously coincided with a Government imposed wage and price freeze that was subsequently extended to January 1984. Initial planning in late September/early October 1982 had indicated that 160 working days would be needed to complete the project to handover stage.

Intentions

From the outset the project management team's intentions were to complete the extension building:

(a) inside the 160 working day period estimated (ie, by 22 June 1983);

(b) below the materials cost estimate of $450,000; and

(c) to a satisfactory construction standard (as determined by the civilian architectural firm retained for this project).

Actual Achievements

The actual achievements on this project were:

(a) The project was handed over 149 working days after commencement;

(b) The final materials cost (after extras had been deducted and surplus equipment and materials auctioned off) was $461,000 or 2.4 percent over initial estimate;

(c) Complimentary comments on works standards, both in architectural and mechanical/electrical services areas, had been received from the civilian Architects and the building industry generally.

A further investigation of the financial aspects of the project revealed that there had been a +5 percent movement in the building materials price index (in the main due to price increases in imported building materials). In the light of this increase, the final materials cost now became a 2.6 percent under expenditure rather than the 2.4 percent over expenditure initially calculated.

Although this preoccupation with project finance may seem to be misguided in the realm of Army engineer activity this aspect, together with strict checking of works standards, provides excellent command mechanism for controlling work output and directing quality control.

The Museum exterior project involved two main phases:

(a) structural – where the problems were mainly technical; and

(b) architectural – where logistic problems predominated.

The majority of the outer fabric of the extension consists of forty-six reinforced concrete tilt slabs. These slabs were poured on the periphery of the work site, steam cured, lifted from the moulds, overturned, surface roughened, transported to and stacked at the building edge. These panels weighed between 7.6 tonnes (rectangular standard panels) and 3.8 tonnes (rectangular/ triangular buttress panels). Approximately thirty standard panels and all six buttress panels were poured, cured, roughened and stacked within a ten day period. All panels were then erected within an overlapping six day period.

Photo 1. Day 25. End wall of Phase 1 Museum in background. Extension floor pad and ramp in foreground.

Architectural Phase Observations

In this phase Army engineers were responsible for almost all construction and services installation. The design and supervision of both the fire sprinkler and security alarm systems, however, were carried out by civil contractors.

In meeting these responsibilities the major problem was the timely flow of materials from the suppliers (380km away). Other difficulties included the coordination of civilian specialist sub contractors. From the outset a small tightly knit management team was established to generate the appropriate plans for materials flow. At the same time this group had to be sufficiently involved in project detail to be able to alter these plans quickly when materials supply problems occurred (as they frequently did). The controlling group for the project overall was a triumvirate comprising the Project Engineer (Captain), a Troop Commander (Lieutenant) and a Foreman of Works (Warrant Officer Class One). Beneath this group were the remainder of the project administration staff, viz three junior NCOs. These NCOs

Photo 2. Day 40. Last wall panel is swung into position

Queen Elizabeth Army Memorial Museum
Phase two 1 & 2

Photo 3. Day 43. Panel walls complete. Commencing erection mezzanine floor posts and beams

were responsible for the usual routine administration (A, Q and Transport) matters associated with a troop deployment as well as assisting the controlling group in implementing the materials plan. This ratio of direct labour to project staff (34:6) was probably the lowest that could be effective in maintaining both progress and effective command. Although this ratio remained constant throughout it is interesting to note that the individual responsibilities of the six project staff (wth the exception of the Project Engineer) changed three times during the task.

The next most important lesson of this phase related to the reliability of Army trade training. Although Army engineer tradesmen are trained along the same lines as their civilian counterparts, there appears to be less pressure on the soldier tradesman to specialise. On the extension project this "broad brush" capability yielded two clear advantages:

(a) an ability to improvise or alter (within the limits of the plans); and
(b) a readiness to absorb new technology.

Photo 4. Day 46. Laying Dycore flooring units starting at SW corner

Queen Elizabeth Army Memorial Museum
Phase two 3 & 4

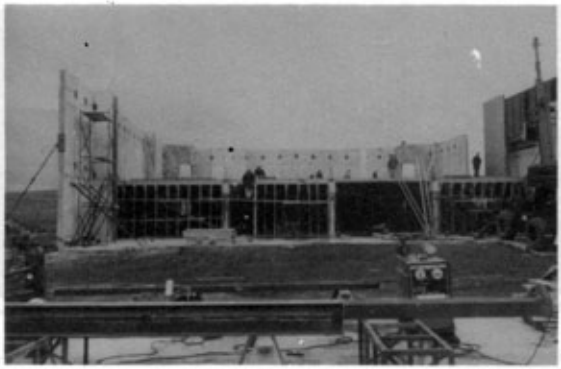


Photo 5. Day 50. Looking West. Showing boxing to concrete beam and edge of Dycore flooring

Typical of this readiness was the attitude displayed regarding the construction and installation of the air conditioning system. Apart from the manufacture of packaged units, such as heat pumps, humidifiers and the electronic control board, all activities were undertaken by two electricians (a Senior NCO and a Sapper) and two plumbers (a Junior NCO and a Sapper apprentice). All problems relating to the installation of the systems were referred to the appropriate civilian supplier and

Photo 6. Approx Day 70. Commencing roof sarking. Continue erection East wall which incorporates long run steel for future extension if required

Queen Elizabeth Army Memorial Museum
Phase two (5 & 6)

Photo 7. 23 July 1983. After the opening ceremony the Chief Engineer presents the Prime Minister with an RNZE plaque. L to R:– Chief Engineer, Lieut Colonel S D Jameson; OC 1 Field Squadron, Major G E Goldsworthy; Prime Minister, Rt Hon R D Muldoon CH; Project Engineer (and Author), Captain M G Thompson; Construction Team Commander, Lieutenant G E Pullen; and Foreman of Works, WOI T N Archer

consultant mechanical engineer and the problem was usually resolved within forty-eight hours. At the final inspection and comissioning of the system the mechanical engineer complemented the tradesmen concerned on their high standard of workmanship, their enquiring approach to the task and their suggestions on minor improvements to the system. Thus, apart from the kudos of professional approbation, benefits gained included:

(a) greater control over work output by maximising the use of Army engineers, ie fewer civil labour difficulties;
(b) financial saving to the Museum Trust Board;
(c) broader experience for Army engineer tradesmen; and
(d) further validation of the versatility of Army engineer tradesmen.

Summary

In the final analysis, all objectives laid down at the start of the project, were attained. In the course of achieving those objectives a number of lessons were learnt. This ongoing educational process enhanced the effectiveness of the command group enabling it to quickly absorb the lessons and adjust plans, intentions, methods, etc, as the situation dictated. However, two further aspects contributed greatly to the achievement of the objectives. These were:

(a) the fine Sapper tradesman attitude and morale demonstrated during the project; and
(b) the excellent administrative support provided by Army Training Group, Waiouru in whose area the project occurred.

* * * * *

DON'T FORGET THE RE MUSEUM APPEAL

Queen Elizabeth Army Memorial Museum
Phase two (7)

The Buzz-Phrase Generator

THIS amusing snippet is thought to have originated from a Civil Service or Canadian source and arrived via a PA at the Embassy in Oslo and Chief G3 (Cbt Engr) at RSME! It is not therefore attributable!!

"I have pointed elsewhere to the baleful influence of American gobbledygook on certain sorts of writing, both academic and official. Defence is a subject which has suffered badly (owing, some say, to the Harvard influence imported by Mr McNamara into the United States Department of Defense). But the phenomenon has not gone uncriticised, even on the other side of the Atlantic.

"The Canadian Defence Department is credited with the invention of the following 'buzz-phrase generator'.

Column 1	*Column 2*	*Column 3*
0. integrated	0. management	0. options
1. overall	1. organizational	1. flexibility
2. systematized	2. monitored	2. capability
3. parallel	3. reciprocal	3. mobility
4. functional	4. digital	4. programming
5. responsive	5. logistical	5. concept
6. optimal	6. transitional	6. time-phrase
7. synchronized	7. incremental	7. projection
8. compatible	8. third-generation	8. hardware
9. balanced	9. policy	9. contingency

"The procedure is simple. You think of a three-digit number at random and take the corresponding word from each column. Thus, 601 gives you the buzz-phrase 'optimal management flexibility', 095 gives 'integrated policy concept', 352 gives 'parallel logistical capability', and so on. The authors claim that the buzz-phrase generator gives its users 'instant expertise on matters pertaining to defence', enabling them to invest anything they write, not with any particular meaning, but with 'that proper ring of decisive, progressive, knowledgeable authority'.

"I have seen a British development of this invention which has three columns of no fewer than sixty lines each and includes not only most of the vogue words mentioned elsewhere in this book but many others too. This may be over-elaborate for practical use, but its compilation speaks well for British civil servants.

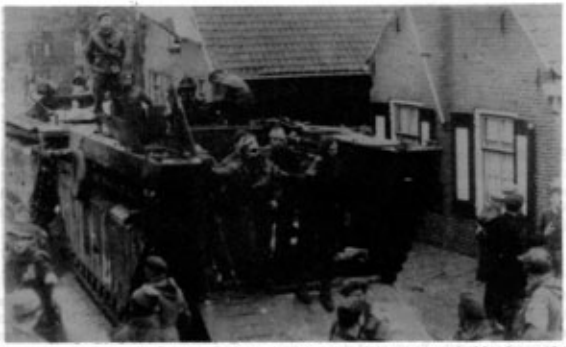
"It is wonderful how slight the difference is between some of the serious writing produced nowadays on defence matters and some of the parodies produced with the aid of the Canadian or British buzz-phrase generator."

Correspondence

Colonel J G Hanson DSO, BA, C Eng, MICE, FIMH
The Tiled House
Walsham-le-Willows, Suffolk IP31 3AA

LIBERATION OF THE ISLE OF WALCHEREN 40TH ANNIVERSARY – NOVEMBER 1944

Sir,—At some distance away from the Beaches of Normandy and D Day 1944, there is a small community of Dutchmen intending to celebrate their own 40th Anniversary of their liberation in Serooskerke which lies in the municipality of Veere in the North East part of Walcheren. A Memorial, in the form of a tablet with the badges of 48 Commando Royal Marines and the Royal Engineers, is being prepared to be sited alongside the place where a *Buffalo* (Landing Vehicle Tank)



Two of the four LVTs (Buffaloes) involved. Some of those wounded in the explosion can be seen dismounting prior to receiving first aid in the Town Hall

was destroyed by a sea mine laid on a flooded road, and fifteen Marines with their LVT crew of five Sappers lost their lives.

The occasion happened after the landings had taken place at Westkappelle where Squadrons of 5 Assault Regiment RE had lifted the Troops of 41, 47 and 48 Marine Commandos with their supporting arms on the various tasks, and on the morning of 8 November, 1944, the Germans surrendered. At Westkappelle the RAF had bombed the very large dyke protecting Walcheren from the sea, a large gap was created and the island was flooded. The Regiment having taken part in the operations in Normandy and the crossing of the River Seine, when they were equipped with Churchill AVRE, were re-equipped with LVTs (Landing Vehicle Tanks) for the River Scheldt operations that followed later. 79 Assault Squadron RE on 8 November, 1944, was detailed to take A Troop, 48 Marine Commando from the Westkappelle area across Walcheren to make contact with the Division moving from the East in North Beveland. For this purpose the Squadron Commander collected together four LVTs from his dispersed Assault Troops round Westkappelle, embarked A Troop 48 Commando and set off through the floods across the north part of Walcheren. No difficulties or opposition were encountered until driving into Serooskerke which formed an island of houses proud of the surrounding flood waters. After a short pause and checking that the departed Germans had not been seen to be laying mines or preparing demolitions, the detachment left this large village on the road towards the South, but on rounding the corner at the first crossroads the second LVT, or *Buffalo*, disappeared in a massive explosion.

The local community wish not to forget the event and last commemorated it on 5 May, 1980, in respect of the 35th Anniversary. This year the 40th will be celebrated on and about 8 November, 1984, they expressing the view that "it is a good thing to do that, especially for our youth/young people. It is necessary that from time to time we remember what you and your people and the people of the other Allied Countries did for us. Lest we forget".

In early 1970 there was considerable activity in the corridors of the E-in-C's Office and RSME to trace those members of 79 Assault Squadron RE who crewed the three LVTs that remained intact, but without success. Fortunately A Troop 48 Commando is well represented, but if any readers can help with identifications would they please get in touch with me as the Dutch would very genuinely like to meet them.—Yours sincerely, John Hanson

Colonel G J Olley MBE
HQ Engineer Resources
Long Marston
Stratford-upon-Avon
Warwickshire CV37 8QR

The Falkland Islands

Sir,—Bearing in mind the very considerable involvement of the Corps in the construction and reconstruction of facilities in the Falkland Islands over the last eighteen months, readers may be interested in the following extract from *The Second World War – Works Services and Engineer Stores* published by the War Office in 1953:

FALKLAND ISLANDS

"Three months after the start of work at the Faroes, namely in August, 1942, 727 Artisan Works Company, and 400 pioneers were sent to the Falklands to provide base facilities and accommodation for the garrison of 2,000 men. 325 Nissen huts and 700 bays of 24ft Nissen hutting were erected besides several buildings in timber and local materials. In view of the conditions which prevailed amenity hutting was on a generous scale.

"Work was done in very adverse circumstances, the climate is bad, and snow falls every month except January. Port facilities were poor, everything except sand, aggregate and peat had to be imported, and roads did not exist except within a mile of Port Stanley. In the circumstances the constructing party accomplished a remarkable achievement by finishing the job by the end of December, by which time 430,000fs of covered buildings had been completed.

"A small power station (185kW) was constructed, and extensive drainage carried out as the countryside consists almost entirely of water-logged peat.

"The cost was not recorded, but the value must have been in the neighbourhood of £500,000."

Taking into account that manpower intensive hutting was used instead of the current modular systems, the scale of accommodation achieved in four months was remarkable. Perhaps we still have something to learn from history?—Yours sincerely, John Olley.

Lieutenant E M P Evans B Sc
49 Sunnyside Avenue
Westdene, Benoni
1500 South Africa

The Cartesian Diver

Sir,—My father showed me a Cartesian Diver about 1901. We called it a "Bottle Imp", after R L B Stevenson's retelling of an old legend. The Imp was a thin glass with a tail and the bottle was a cylindrical glass jar. The top, which one pressed to make the Imp sink, was of rubber.

It must have been a well known toy, as *Punch* about 1908 used a drawing of it as a cartoon to represent John Bull's attempts to suppress the Mad Mullah in Somaliland.

There was a full account of the Imp in Ozanam's *Recreations;* an English translation of which from the French, printed about 1820, was in my father's library.

I bought an Imp from a shop in Johannesburg about 1935, but one had to supply the bottle oneself. The amount of water allowed into the Imp himself had to be carefully adjusted.—Yours sincerely, E M P Evans, late Royal Engineers

Lieut Colonel J E Nowers RE, B Sc
Pionierschule und Fachschule
Des Heeres fur Bautechnik
Cosimastrasse 60
8000 Munchen 81

Curious Toys For Curious People

Sir,—As every NATO Engineer who has attended an ENTEC course knows, the Magic Propeller, described by Brigadier Sir Mark Henniker in the December 1983 issue, was invented in Bavaria.

Here it is known as the 'Wheee . . . Wheee . . . Machine". Having got the propeller revolving at a goodly speed, the direction of rotation is changed instantly merely by shouting "Wheee . . . Wheee. . ." Several changes in quick succession must be achieved to demonstrate complete mastery of the machine. There is no change in the stroking action on the propeller shaft but, of course, there must be a trick to it. I can do it but until I read the Brigadier's account, I had thought it was related only to the quality of the beer one was drinking at the time. Certainly quantity is relevant!

We have several other curious toys for curious people here in Bavaria, including – as recent Commandants RSME can testify – a very effective lung-testing machine. This is an essential aid to assessing physical fitness before venturing into the rarified atmosphere of the Bavarian Alps. I can arrange a demonstration if required.—Yours sincerely, J E Nowers

Lieut Colonel J P Fitzgerald-Smith B Eng C Eng MICE
Scroy House, Ossemsley
Nr New Milton, Hants BH 25 5TJ

3 Field Squadron Do It Again

Sir,—I must compliment Lieutenant Ince on his article (December 1983 Journal) describing the use of the MGB (Medium Girder Bridge) portable pier using the independently erected pier method for emplacing the piers over water. I feel he can be justly proud of his Squadron's achievement in executing the build, which until then had only been performed as a trial.

It is in his final conclusions that I reluctantly must take issue: "That the bridge is not a combat bridge". From my initial discussion with Lieutenant Ince when he came to see me, I am sure that what he meant was that the method of pier emplacement is not a combat bridging technique, and he will recall that I recommended the use of two 3-pier rafts for the demonstration. I was then informed that the demonstration organisers were insisting on a 3-span bridge over piers, and that equipment such as guy clamps and long SWR guys were not forthcoming at that time although they are now available. In fairness to the Author, he does point out in the opening paragraph that the 3-pier rafts when used as intermediate supports can be positioned within eight minutes – what also ought to be pointed out is that the raft positioning never comes on the critical path. With trained troops, a 60m span MGB can be built without its mid term improvements such as MACH build, New End of Bridge, Deck Pallets, Connector Posts, should be completed in two hours by forty men. However, with these improvements, a build time of one hour should be possible. It is no argument to say that such a gap ties up a lot of equipment and only when MGB is as plentiful as Bailey is it likely to be used.

I would ask the Author and those who read the article to answer one question:- "A gap of say 60 metres required 60 metres of bridge to fill it. It not by MGB, what other bridge could be used?"

Three AVLB or combination bridges requiring three Chieftain bridge layers

and three No 8 Tank bridges – always assuming that the bank heights, river bed depth are suitable.

Three AVLB on MGB raft stepping stones: again this requires three Chieftain bridge layers, three No 8 Tank bridges – four pontoon trailers, twelve MGB pontoons – two raft saddles. This method might not be suitable on a crossing with high banks where the approach spans might be too steep.

In both the above solutions, there would probably be great pressure to replace the assault bridges with another bridge to release this valuable equipment. In passing I must mention that there are many sites where the M2 cannot be used.

There is no stronger admirer of the Bailey Bridge than myself; after all, it was the combat bridge of my war, but I am afraid that people who cite the use of the Bailey in the same context as the MGB can never have built a really big Bailey. The same bridge that could have been used in these circumstances would have been a regimental task and would have taken about forty-eight hours to complete and taken several times as much transport to move the equipment.

I suspect Lieutenant Ince may have really meant that MGB is not an assault bridge, and he would be quite right used in its conventional form; but I would refer the author to Colonel Grove's article in the March 1983 Journal on "Lessons from Exercise Red Claymore" describing a recovery of the MGB in a little over a minute. Although not mentioned in the article, I was the originator of this scheme as well as that of the concept to use the bridge as an assault bridge; an idea which 26 Regiment were keen to try. The times achieved closely confirmed my predicted times and I am confident that the assault MGB would be equally successful if the auxilliary equipment I proposed were developed. I would like to make one further point. The object of every good demolition is to make a gap wider than the enemies' assault equipment capability – should a gap just outside of the range of the No 8 be formed, there is *NO SINGLE* piece of equipment that could bridge the gap – might this not be a case for the MGB assault bridge with its 25% increase in span?

Lieutenant Ince would like the build repeated on future Staff College demonstrations which is rather a wasted opportunity as it would show the bridge in a way I would not recommend. I would rather see an MGB recovered in one minute and launched in five minutes: or a MACH built 2-span bridge on a 3-pier raft completed in under the hour by about twenty-four men.

In conclusion, I hope my views on the excellent article will help to correct an impression which might have been left in the readers' minds that the MGB is a cumbersome and time consuming bridge, whose only use in modern war is relegated to a role where we would currently use Bailey or HGB. It is in fact, the finest and most versatile bridge in the world bar none, and with the mid term improvements will be serving future generations of Sappers for a long time to come.—Yours faithfully, J P Fitzgerald-Smith.

Major D A L Seekings B Sc, DMS, FBIM
Flat 5, 24 Clapham Road
Bedford

Translation Please!

Sir,—Since my retirement, I have always enjoyed the "Appointments and Postings" section of the "Pick Axe": it is good to watch the progress of former friends and colleagues.

Alas! The information is becoming more and more difficult to decipher: the demise of the old staff gradings was confusing enough, but what am I to make of Colonel John Edwards' latest appointment? AD ROW D CTS(FE) CDS . . . what *does* it all mean?

Is it too much to ask you to help the old – and the ignorant – with translations of some of the more obscure sets of initials?—Yours Sincerely D A L Seekings.

Editor's Note: There have been two or three letters and telephone calls on this subject in the last twelve months. The problem of translation of obscure intitials will always be with us! "Obscure" to some, is "as plain as a pikestaff" to others. The most difficult area is with the NATO appointments which are sometimes one-off and sometimes have security connotations if translated. Even if translated many of them would remain incomprehensible to Active List and Non Active List Members alike, regardless of age! Page 58 of the *RE List* gives the most used initials; suggestions for additions to this list would be welcome at any time, though inclusion cannot be guaranteed. As a matter of interest, in this specific case, ROW means "Rest of World"!

Major C E E Sloan RE, B Eng
Weapons 4, MOD (Procurement Executive)
St Christopher House
Southwalk Street, London

What's In a Name?

Sir,—All Field Squadrons are interchangeable, or should be, and any Squadron has a construction capability. This latter point has been proven beyond doubt on the Falkland Islands, where UK and BAOR based Field Squadrons work alongside Field Squadrons (Construction) on identical works. Are we, therefore, misleading our service colleagues by continuing to call those units with ADR expertise: "Construction Squadrons"? I would say most definitely so.

It would be sensible to recognise that construction is a general Sapper task and at the same time identify specialist, plant orientated, RAF support Squadrons with their role once more. What can be wrong with their original title of Field Squadron (Airfields)?—Yours sincerely, Cedric Sloan

Brigadier E G Willmott OBE MA FBIM
Deputy Commandant
The Royal Military College of Science
Shrivenham
Swindon, Wilts SN6 8LA

Post Graduate Training at RMCS

Sir,—I think the many officers who have been to Staff College would be aghast at Colonel Drake's thought that a "comparatively academic atmosphere" is detrimental to preparation in peacetime for war. It is not necessary for officers to be in a "military environment surrounded by all allied military trades and disciplines". Indeed great imagination and intellectual skill is needed to think of war in peacetime; an academic atmosphere is conducive to the cultivation of imagination which leads to innovation – and we all know that innovation will be essential in fighting a future war. The Staff College do it brilliantly. I contend that RMCS would provide the Corps a similar service.

Your readers may not be aware of the great changes now under way at RMCS. In brief: RMCS will continue as a joint military/civil establishment but in August all academic teaching is to be contracted out to the Cranfield Institute of Technology; from September our engineering degree courses will have an essentially common first year, many common elements in the second year and only in the third year will undergraduates have specialised training. That specialisation will be according to the needs of the Corps – not to the needs of "civilian academics". To this end a Joint RSME/RMCS Liaison Committee was set up last year and under the aegis of

the present EinC is flourishing. I am sure your readers will agree that these are great advances and are most welcome.

Cranfield will bring to RMCS direct experience of working closely with British industry especially in the high technology areas. I contend that the skills of project engineers working today in the North Sea and construction engineers working today in the Gulf are facing difficulties similar to those which the Corps face in war and we can learn much from them. The indisputable role that the Corps can play in peacetime through the construction of engineering works on behalf of the community both at home and overseas must not be overlooked. Not only do such works benefit the community but executed under the guidance of professional engineers it provides essential training and experience. We must not stop at just highway and bridge engineering but comprehend engineering "in the round" – to my mind, Royal Engineers should be equivalent in their knowledge to such as Brunel.

We are corresponding on post-graduate training. We are also in the realm of PQE training rather than that done for the Army Staff Course; let me therefore confine my further remarks to our MSc courses. I entirely agree with Colonel Drake that the four courses at present are directed at enhancing the ability of officers in peacetime to help in providing the best equipment for the battlefield: the courses are in the Design of Information Systems, Guided Weapons Systems, Gun System Design and Military Vehicle Technology. But we are contemplating other courses. The freedom from Civil Service restraints which the Cranfield contract allow us enables us to expand in this area. I believe the Corps could gain a considerable advantage by using the experience and skills of the joint military and academic staff here at RMCS. We have excellent facilities. RMCS is a good place on which to found education and training in engineering design and management.

It is worth noting in this context that engineering principles do not change in the transition from peace to war even though tactics might!

I do acknowledge the potential loss of knowledge from RSME should the military instructors be removed. But there may be a way of arranging that they spend some time each year at RSME and the rest at RMCS. We must endeavour to complement the activities of both establishments, not compete.

I freely and cheerfully admit Colonel Drake's accusation that I view the activities of RMCS as though through rose-tinted spectacles – RMCS is a great place. Therefore, more is the pity that our great Corps does not use it to the same extent as our daughter Corps viz the R SIGNALS and REME. It is noteworthy too that the RAOC run several courses here. I am sure RE professionalism would be enhanced by the use of RMCS for post-graduate training.

I do urge Colonel Drake and your readers to look at RMCS in its new guise with many new staff rather than relying on their past experience. Hopefully the Corps may then make use of this splendid Army facility.—Yours sincerely, Ted Willmott

Memoirs

BRIGADIER SIR BRUCE WHITE KBE, FCGI, C Eng, FICE, FI Mech E, FIEE

Born 5 February 1885, died 29 September 1983, aged 98

BRUCE GORDON WHITE was educated at Marlborough and the Central Technical School for Electrical Engineering (now Imperial College). After working as an Assistant Engineer at the Derbyshire and Nottinghamshire Power Company in Stafford, he joined the family firm, Robert White and Partners. In 1910 when a volunteer in the Artists Rifles he wrote and published, at his own expense, a booklet entitled "Maxim Guns. Instructional Manual for Mechanism."

Doubtless this book led, when WW1 started, to his being sent to the USA on a

mission to purchase arms with a younger, but appreciably taller, Sapper Officer called Reith, later to become Lord Reith. One of his major tasks in WW1 was the construction of the "Mystery Port" near Richborough Castle in Kent which he described in a Journal article (December 1978).

Between the wars it was consulting work with the family firm, much of it in India which he came to love – indeed, he long gave substantial support to two Indian villages.

WW2 found him in his mid-fifties, an age at which many might feel no need to re-embark on military adventure – but not he. What achievement in the next six years!

As a Major in Tn5, the Harbours and Inland Waters Branch of Transportation, he soon realised its potential role and proceeded to build up its resources in men until eventually it reached some 1400 officers and 60,000 men not to mention vast quantities of equipment including ships.

The two military ports at Gareloch and Loch Ryan have received little public attention but they were feats. More often known as Faslane and Cairn Ryan, he wrote them up in a Journal article (March 1958), both are still in use. Decided upon in December 1940 they came into progressive use from mid 1941 onwards and were completed in 1943, providing excellent training for the nucleus of the Port Construction Companies which proved vital in the war of movement in N Africa, Italy and NW Europe. In 1943 he became the Director of Ports and Inland Water Transport at the War Office.

"Mulberry" was the pinnacle. Much development work had been done already but the start signal was not given until the Quebec Conference in October 1943. The list of those then engaged in the project reads like a *Who's Who* of the British construction industry. This is not the place to publish a paper on Mulberry but it should be said that the sad relics still to be seen at Arromanches are the few elements which failed and that the bulk of the port was floated away and scattered in minor, but often crucial, uses throughout Western Europe.

It has been said that Sir Bruce was not a commodious, still less a complaisant, commander; it is not unknown for those striving for magnificent achievement to be somewhat unconcerned with being seen as "nice chaps"; after the war he was kind and helpful to junior officers who had served under him and, in setting up the new firm of Sir Bruce White, Wolfe Barry and Partners, he brought in many engineers who had been active with him during the war. The firm worked on projects in many parts of the world, the largest was probably the harbour at Ad Damman in Saudi Arabia.

He was active to the end; a combined cross-Channel tunnel and bridge exercised him particularly. Age did not impair his imaginative grasp of engineering problems.

He lies in the family grave at St Peters, Hersham – the Church he attended regularly. To mourn a man of ninety-eight is to mourn for death itself. To his family and friends every recent year has been a respite, rewarded by his continuing energy and liveliness. The end, lamented, cannot have been a surprise.

AJH

A TRIBUTE TO LIEUT COLONEL F C COOK

FREDERICK CHARLES COOK died on 23 December 1983, only a few days short of his 86th birthday.

DCTS writes:

"I feel that, as a class, the role of the BNCO in India is totally unsung. I knew Freddie Cook as a BNCO in Bangalore where he served with the Madras Sappers and Miners from about 1922 to 1930. He joined 13 Field Company of that Corps just before I did in 1926. He was then a Sergeant in charge of the Company equipment and stores; I was then a Subaltern charged with looking after the Q side of the Company under Jack Steedman, so I got to know Freddie Cook very well indeed.

"He was a complete countryman, ready always to face anything new to him with

total unconcern. 13 Company spent three years on the NW Frontier, generally in the Manzai Brigade – but often detached for various Sapper jobs such as road building, emergency repairs to bridges etc. We had no mechanical equipment at all, except for a lighting set for the various messes, offices etc when on *ghasht*. Our transport was by AT cart, mule or camel. Nothing ever flustered Freddie Cook. He was perfectly at home in changing the loads of Company equipment, stores, explosives etc, from AT cart to mule or to camel, and back again, with no fuss or bother. He was always there with a smiling face, whenever he was wanted – a truly remarkable man."

In 1914 he joined the Corps although under age. He saw service in France and was wounded by the time he was seventeen. It was discovered forty years later that the bullet was still lodged against his spine but it was never removed.

From 1930 to 1941 he was an SDO (Sub Divisional Officer) and then an AGE in India. From 1942 to 1953 he was OC of a number of Engineer Stores Depots in India until he became SO1 Engineer Stores and Plant Southern Command, India. Having retired he became an RO and was a Staff Officer in the Engineer Branch in Hong Kong.

Since 1928 he had been associated with the REA and for several years was Vice-President of the Hong Kong Branch. He held the REA Merit Badge and Certificate. Freddie was one of the "old school" who came up the hard way on true merit and devotion to the Corps.

To his widow Lorna we send our deepest sympathy.

DCTS, WGS

MAJOR GENERAL HARKIRAT SINGH

"It is with deep sorrow and great grief that we have to record the demise of Major General Harkirat Singh (Retd) on 14th March 1983 at the Army Hospital, Delhi Cantonment after a brief illness. He was 72.

"The General was commissioned into the Madras Sappers in 1933 after his training in "The Shop" at Woolwich, England. His first posting was to 85 Field Company at Razmak in the erstwhile NWFP. He then did an extended tenure in the MES in the NWFP Region and Manipur-Burma sector during the Second World War. He also served for a brief tenure in Japan on completion of hostilities. In between he attended the course at the Staff College, Quetta.

"Partition brought rapid promotion and he became Chief Engineer Southern Command in December 1947. From there, he took over as Chief Engineer Western Command in March 1950. After having been Chief Engineer of two Commands he went on to command an Infantry Brigade before returning to Poona for a second tenure as Chief Engineer Southern Command, from where he moved as Commandant, CME. In January 1957 a signal honour was done to him in that he was made Director of the Corps of Electrical and Mechanical Engineers in the rank of Major General, being the first Indian DEME to hold this rank. After this he was appointed Engineer-in-Chief in 1960, an appointment he held till he retired from the Army in April 1965. He continued his

Major General Harkirat Singh

close association with the Corps throughout his life and was Colonel Commandant till 1971.

"General Harkirat Singh was well known not only to one and all in the Corps of Engineers but also to the engineering fraternity in India and abroad. He was elected President of the Institution of Engineers (India) for two tenures in the early sixties, a distinction rarely achieved.

"For a man of his technical eminence, retirement from the Army only meant working in a different sphere. In 1965 he was appointed Adviser to the Planning Commission on housing, construction economics and urban development. He was actively associated with the Hindustan Housing Factory, BEML and HEC Ltd. He was also one of the most ardent supporters of all activities connected with the Institution of Engineers (India).

"Among his many achievements as E-in-C, two stand out conspicuously. He was responsible for the reorganisation of the MES and the creation of the now commonly accepted concept of Zonal Chief Engineers. It was also during his time that the Border Roads Organisation, which is now such an important facet of the Corps, came into being.

"The General was a man of many talents and fine taste, who in addition to his technical eminence enjoyed all the good things in life. Music and Urdu poetry featured prominently among his interests. In addition, he was a gardener "par excellence", and the Corps Mess gardens at the CME owe a lot to him. All officers of the Corps have also seen films at the "Harkirat Singh" Open Air Cinema which remains full even during the rains. Generous with his hospitality and a good conversationalist, the General was the life and soul of many a party.

"With his departure, the country has lost one of its most distinguished engineers and the Corps one of its most valued advisers. He was a man who thought and acted big. He lived life to the full, savouring every moment and bringing to it a tremendous zest, which was endearing and infectious. On behalf of the entire Corps we extend our heartfelt condolences to Mrs Harkirat Singh, their son and two dauughters.

"May his soul rest in peace."

The Institution of Military Engineers

BRIGADIER C C PARKMAN CBE, ERD, TD, C Eng, MICE, MI Mech E, MI Mun E

Born 18 May 1903, died 21 August 1983, aged 80

CHARLES CLAUDE PARKMAN was educated at Barry School for Boys and Cardiff University and began his civilian career as a docks and harbour engineer at Barry Docks. In 1929 he was commissioned as a 2nd Lieutenant in the RE Supplementary Reserve of Officers. On mobilisation in 1939 he was Captain, 21C, of 105 Field Park Company RE (SR) and went to France with the BEF. By the time of the Dunkirk evacuation he was commanding the Company. He continued as OC with considerable success whilst the unit reformed and retained at Misson on the Nottingham/Yorkshire border where, in addition to his military duties, he took over "management of the village" including establishing a one-way traffic system and other "illegal" but useful controls to

Brigadier C C Parkman CBE ERD TD

the benefit of the military and the satisfaction of the residents.

He was resourceful, popular, ebullient and successful and it was no surprise when, in 1942, he was moved to London to a Planning Organisation working from one of the underground HQs. After a tour in N Africa he went to Italy and in 1945 was promoted to Brigadier and appointed Director of Engineer Production Allied Armies in Italy.

He did not join the Territorial Army until 1949, prior to that he was RARO Supplementary Reserve, and became CO 113 (Cheshire) Assault Engineer Regiment (TA) until 1953 before being appointed Deputy Commander 24 Engineer Group, a post he held until he left the TA in 1961. From 1956 to 1962 he was Honorary Colonel of 113 Regiment.

In 1948 he joined the existing Liverpool consulting engineers Ward, Ashcroft as a partner and his own name was added to the company's title. He was with them for thirty-three years before he retired, as Chairman, in 1981. During this time the activities of the company expanded from those of a provincial concern to those of an international company with practices in Nigeria, Portugal and East Africa. He remained a director and consultant to the Parkman Group until his death.

He was held in high esteem in the civil engineering profession and from a contractor's point of view his firm was a pleasure to work for as he was very much aware of a contractor's difficulties. His unfailing cheerful disposition helped to create the best of atmospheres. Indeed a contributor to this Memoir who knew him for over fifty years remarked that the only time he ever saw him despondent was when, on the road back to Dunkirk, he had to abandon his plant and equipment.

In spite of a busy professional life he retained close links with the Corps and was an enthusiastic member of the Blythe Sappers.

GWD, NCE, HEH, TT

LIEUT COLONEL C A SWETENHAM MC

Born 5 February 1906, died 13 May 1983, aged 77

Lieut Colonel C A Swetenham MC

CLEMENT ALFRED SWETENHAM was educated at Cheltenham College, where his mentors urged him to try for an Oxbridge Scholarship; but he was determined to be a soldier and passed second on the list into "The Shop" in 1924. After two years he was commissioned into the Corps in 14 YO Batch: and CPJ, who was Head of the Batch, writes of him as follows:-

"Clem Swetenham was one of the more important members of my Batch; not because of his military qualities; because no-one would describe him as a military man. It was his stirling qualities of loyalty, brainpower, common sense, and his hatred of sacred cows that marked him out as a man apart. I knew that if I managed to win his support I could rely upon him to see me through and back me up in any situation. He would pounce severely on anyone who dared to speak ill of a friend.

"We were together at The Shop and during our courses at the SME and at Cambridge; so that I had ample oportunity to judge his qualities. Clem was an academic rather than a practical man. His high-powered and well developed brain was of

great value to himself, and to those with whom he worked; for he was generous and helpful to those less well equipped mentally. He was also something of a cynic, and often appeared contemptuous of the less scintillating efforts of others. He had, however, a highly developed sense of fun, and could put a man quickly in his place, sometimes in a way that did not help him in his chosen career.

"I well remember a lecture at the SME on a hot afternoon in the Construction School. The Batch was being lectured by an able but rather stuffy instructor. Clem was seated at the back of the room, leaning against the wall, with one leg resting on the form. He was not actually snoring; but looked as though he might do so at any minute. The following exchange then occurred:

Instructor: Swetenham! Wake up and tell me what I was saying.

Swetenham: You were saying: So and So, and So and So, (accurately reported); but as a matter of fact you were incorrect. You should have said: This, That and the Other.

We could all sense that he was absolutely right; and loud laughter followed. Luckily the Instructor also had a sense of humour, and no life-long enemy was made.

"I don't think I saw Clem again, after Cambridge, until in *Operation Market Garden,* XXX Corps reached Nijmegen in 1944. I found him as a member of a Civil Affairs team. I asked him if this was really what he wanted to do. 'No' he said emphatically. 'I want to command a Field Squadron.' We managed to put him where he wanted to be, and within a month he had won a Military Cross! He was a man more military than I had judged him, and in the best tradition of his military forebears. In his widow's home you will find a brass rubbing, dating from Norman times of a distinguished Swetenham soldier.

"I judge Clem to have been most able, loyal and complete: a splendid friend".

With this judgement all who knew Clem Swetenham will heartily agree. Perhaps, however, a few more notes may find a place here.

At Cambridge Clem was urged by his Supervisor to transfer to academic life, but again he resisted. He was posted to a Field Company in Aldershot, where he fell for horse-riding. He fell indeed, and he fell often; for he had no natural talent. He was never tired of exercising the Company's troop horses; and during the winter of 1928–29 he hunted with local packs on fifty-two days. From nearly all of these he returned to barracks battered and muddied by many falls but still undaunted.

From Aldershot he went to India and joined the Kirkee Sappers and Miners. Of this period JHSB writes:-

"When war broke out in 1939 Clem was on leave from Wana visiting the Island of Tahiti. He immediately hastened to return by the fastest possible means – figuratively sharpening his sword on the voyage – and arrived back in what must have been a record time for such a journey."

He later fretted under the bureaucratic thraldom of GHQ New Delhi, till he returned to the UK for a comparable fate in Civil Affairs in Holland; to be rescued by CPJ as narrated above.

Another light is cast upon this most unusual soldier by GNG, a War-Service-Only Officer who served under Clem in Germany at the time of the Rhine crossing. He writes as follows:-

"Major Swetenham took over command of 629 Field Squadron shortly before the Rhine Crossing. The former OC was in hospital, and for some months I had been in temporary command. It was an experienced and efficient unit, and it is understandable how the unexpected arrival of a Regular OC was hardly likely to be universally approved. But luckily Clem and I soon established a personal relationship and I found him to be a jolly good OC, an excellent organiser with the welfare of the Sappers very much in the forefront of his mind.

"He placed himself in one of the storm boats that was to take the first flight of Gordon Highlanders across the Rhine in the assault. He was wounded in the face; but did not give up. He recrossed the river to reconnoitre the enemy bank and having reported it clear, he ordered the subsequent waves of boats to follow.

"After the War Clem was a leading spirit in starting the Squadron's Old Comrades Association with it's Annual Reunions, and over the years he won the affection and respect of us all, by his friendly manner and the keen interest he took in everyone's welfare. At his passing he was sincerely mourned, and we who are left send our sympathy to his widow and their children".

Two footnotes may conclude this Memoir. In later years Clem regularly organised the Kirkee Sappers' and Miners' luncheon at Minley; and those who took part are much in Clem's debt for the hard work he put into the event each year, and "the charm and wit with which he graced it".

After retiring from the Army he joined the Sperry-Gyroscope Company, wherein he described his position as "administrator and nursemaid to the boffins". He was admitted to the Military Hospital at Aldershot in May, 1983, and died peacefully on the 13th of that month.

He married Angela Whitman in 1952, and leaves a widow, a son and a daughter, to whom we send our sympathy.

MCAH

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