

A BRIEF HISTORY OF 19 TOPOGRAPHIC SQUADRON 1827 - 1977

(Transcribed from the "Souvenir Programme 150th Anniversary 19 Topographic Squadron Royal Engineers 1827-1977")

Although not important, there are inconsistencies in the military writing presentation in this document. Maj, Major, Company, company, coy etc., as there are also in the 13 Squadron Souvenir Programme history.

EARLY YEARS.

FORMATION.

On 26th March 1827 a Royal Warrant was signed to augment the Corps of Royal Sappers & Miners by three Companies to allow three of the existing Companies to be sent overseas, one to Bermuda and two to Canada for employment on the Rideau Canal. One of the new Companies was the 19th Service Company which was raised at Woolwich. In 1829 it moved to Chatham and remained there for two years. At that time its strength was one colour sergeant, two sergeants, three corporals, two second corporals, seventy privates and two buglers.

BARBADOS.

The Company sailed for Barbados in 1831. On the 11th August of that year the island was struck by a severe hurricane which caused the loss of 2500 lives, 5000 wounded and damage to the extent of 1 ½ million pounds. Colour Sergeant Harris distinguished himself during the rescue of men from the hospital which had been destroyed by the hurricane. Shortly afterwards, under orders from the Commanding Royal Engineer, Major Reid, who had served on the Survey of Ireland under Colby, he was to execute the first recorded destruction of a sunken wreck by submarine mining, an account of which is recorded in the following letter which he wrote to Colonel Pasley.

The Arethusa was a ship of 350 tons, and went on shore in the hurricane of the 10th August, 1831, close to the Commanding Royal Engineer's quarters at Barbadoes. I had orders from Major, (now Colonel) Reid, to try to blow her to pieces, which was done in the following manner. Two old oil tin cans, which held 30 lbs. each, were filled with powder; half inch hose was then made with calico, filled and put through 1 ¼-inch lead pipe, which was then soldered to the tin cans. The ship lay on her larboard side with the keel about 2 feet out of the sand, and at low water, (which was about 3 feet deep on the outside of the ship, the side nearest the sea), we put one of the cans under her keel, about 10 feet from the stern, and brought the end of the pipe through the side of her, as it was the best place for firing. When it was high water, it was about 6 or 7 feet deep, and we then fired the charge, and made a hole in her about 10 feet long, and upon an average 4 feet wide, through her keel, planks, timbers and lining, and carried a piece weighing nearly 100 lbs. to a great distance. The next charge was put under the keel the same way, about half way from the hole just made to the bow, and that load had also a good effect, but it did not carry away so great a piece as the first. The next was loaded in the same manner, but with only 24 lbs. of powder, that was put under her keel as before, but near the bow: this load did not carry off a great deal, but shook her much. We then got the lining off the bow; there were 5 knees or timbers still remaining, which held the ship together; we put a sand-bag on the lower one of the five, containing 24 lbs. of powder; the explosion of this broke the beam it rested on and the two above it: we put nothing against it, only a bit of wood, to keep it in its place before it was fired. The next charge contained the same quantity, and was put on the lowest one of the two that remained. When that was fired, the bow dropt in pieces: the stern was done in the same manner as the bow, and every load that was fired had the desired effect: one or two missed, in consequence of the water getting in the cans.

(Signed)

Joseph Harris

Late Colour-Sergeant, Royal Sappers and Miners.

Colonel Pasley, C.B.
Royal Engineers.

In March 1832 the 19th Company was re-numbered the 15th Company and the number 19 was not used again until 1848.

THE ORDNANCE SURVEY.

On 1 April 1848 the 19th Company was raised for employment on the Ordnance Survey of Great Britain. The Royal Warrant was not, however, signed until 22nd August 1849. The establishment was one colour sergeant, four sergeants, five corporals, five second corporals, eighty three privates and two buglers. In June 1849 their rates of pay were : -

	Regimental Pay	Survey Pay
	s. d.	s. d. to s. d.
Sergeant Major	4 7 1/2	4 0
Colour Sergeant	3 3 1/2	2 9 4 0
Sergeant	2 9 1/2	2 1 3 0
Corporal	2 3 1/2	1 4 2 10
Second-corporal	1 11 1/2	1 4 2 6
Private	1 3 1/2	1 0 2 6

At that time men for the survey companies were trained at Chatham before being transferred to Southampton. In 1849 the total Military Force of the Ordnance Survey was 12 Royal Engineer officers and four companies of Royal Sappers and Miners totalling 332 men, and a civilian force of 583 assistants and 344 labourers. The importance of the military element was paramount at that time, the civilians serving, so to speak, as the “muscles for the military skeleton”. Control of all operations was under the Military Act and Articles of War. Every party, however small, was in the charge of a NCO or private who was responsible for the work executed.

The Company originally worked at Liverpool but in the next thirty years it moved constantly to such places as Doncaster, York, Glasgow, Perth, Inverness, Bristol, Edinburgh and finally Southampton where it was largely based until 1929. It should be explained that the men of the survey companies were deployed in small sections each of a strength designed for a particular task and with an appropriate level of command. Temporary offices were hired in towns convenient to the current survey task in which field work was drawn up prior to despatch to Southampton. In the early days the main employment was on the secondary and tertiary triangulation and the detail survey of the northern counties and Scotland. Special divisions were employed on triangulation, levelling, boundary perambulation, contouring and hill-shading.

On the 17th October 1856 the Corps of Royal Sappers and Miners was granted the title of Royal Engineers. It was announced in the London Gazette thus : -

“The Queen has been graciously pleased to direct that the Corps of Royal Sappers and Miners shall henceforward be denominated the Corps of Royal Engineers.”

The separation of the officers and men into two distinct corps under separate titles had long been felt to be an anomaly. It spoke wonders for the good sense and fidelity of the Sappers and Miners that they were, under such circumstances, so loyal to their officers. Officers and men who had long considered themselves one Corps were at last recognized as such. From this date the rank and file were no longer termed privates but were henceforward called Sappers.

In 1869, survey training carried out at Chatham extended to 154 days for officers and 180 days for NCOs and Sappers of the Survey Companies. The courses for soldiers embraced all the operations of practical surveying including chaining, observing angles, traversing, calculating areas, levelling, contouring, reduction of base lines, protracting angles and triangulation.

THE BOER WAR 1899-1902.

At the beginning of the Boer War the only maps available to the army were a general map of Cape Colony and an obsolete map of Natal. Arrangements were made to improve and add to these maps and the survey companies were called upon to provide the manpower for four Survey Sections which were sent to South Africa. The first two sections were employed in Cape Town, Bloemfontein, Kimberley and Pretoria. The other two arrived after active operations had ceased and were employed on surveys of the battlefields for historical purposes. In all, about 463,000 maps were published of which 308,000 were issued to troops in the field. The 19th Company probably contributed personnel for the survey sections.

WORLD WAR ONE 1914-1918.

On the outbreak of war the manpower of the survey companies was distributed throughout the army. About half the men of the 19th Company were formed into 46 Advance Park Company R.E. which Rand was commanded by Captain C.E.F. Wyncott R.E., later promoted to Major in 1918. For much of

the time the Company was based in the Canal Zone and was responsible for receiving, holding and despatching a whole range of stores as well as the overhaul and salvage of materials and the maintenance and supply of machinery to the E.E.F. A heavy commitment was the fabrication of well-drilling equipment and water supply. An illustration of the size of the E.E.F. requirement is that 70,000 tons of stores were despatched by the Company in the first six months of 1917.

The supposition that France was well mapped, and which resulted in the release of survey manpower at the beginning of the war, was, of course, soon dispelled. The maps of most of France were at 1:80,000 scale with relief shown by hachures and they were in many cases badly out of date. They were quite unsuitable for the positional or trench warfare which soon became established. From small beginnings survey units were re-established firstly to commence the re-mapping, based on a re-triangulation and then to meet the needs of artillery survey. The provision of co-ordinated bearing pickets for the allied artillery and the co-ordination of enemy artillery by flash-spotting and sound-ranging resulted in the expansion of survey so that at the end of the war each Army was supported by a Survey Battalion. A war establishment was fixed for the 19th Reserve Survey Company, R.E. at Southampton. *"This Company included the instructional staff, the officers and men under instruction, those trained and ready to go overseas, and those employed on indispensable military duties."* The strength was 14 officers and 163 other ranks. An element of this Company was employed in Dublin which suggests that the establishment was effective in 1916, since there is on record a G.O.C's order to the Ordnance Survey to make arrangements for the issue of maps at any hour of the day or night during the Sinn Fein rebellion of 24th April 1916. Later both the military and civilian staff were commended, including Sergeant Major Johnston.

THE NORTH RUSSIAN EXPEDITIONARY FORCE 1918-1919.

A military mission was formed in 1918 to go to North Russia. Its aims were to prevent large stocks of war material there falling into German hands, to assist the Russians in the training of new forces which might support the war effort, and to counter the Bolsheviks. Approximately 800 men sailed for Murmansk and Archangel on 10th June 1918 and from then until 27 Sep 1919 41 officers and approximately 1000 men became casualties.

Three NCOs of the 19th Company were selected to undertake survey and mapping work in support of the force. Sergeant-Major Wilde was initially in charge of this team which formed part of the Allied Mapping Section and included Americans from the Wisconsin Engineers. The Allied Mapping Section, with the assistance of White Russians, endeavoured to produce a series of maps of the Archangel area based on Russian forestry maps.

THE INTER-WAR YEARS.

THE ORDNANCE SURVEY.

On the return to peace the 19th Company resumed its duties with the Ordnance Survey based at Southampton. New personnel were still given basic military training at Chatham in the Training Battalion R.E. On completion of this they were posted to Southampton for a short drawing course, then to Bristol for a detail-survey course prior to employment in one of the survey field offices at Edinburgh, York, Bristol, Norwich, and, later, London.

Continuation training in the military skills was carried out on a triennial basis often at Fort Bembridge on the Isle of Wight in the summer months, and survey training in trig, topo, astro and some aerial survey was done on an annual basis. Correspondence courses in trig computing were introduced and repro training was carried out at Southampton.

Employment in the inter-war years was largely on the revision of the 1:2,500 scale plans, the technique being simple graphical revision in the field. Teams were also employed in the levelling division, which was organised from Southampton, and on trig duties including trig point maintenance and restoration, and later, the re-triangulation.

Training at Fort Bembridge ceased in about 1927 and in 1929 personnel from the Survey Companies were absorbed into the Survey Battalion. However in December 1931 authority was given for the formation of 19 Field Survey Company which was to be the training unit for military personnel of the Survey Battalion. It formed up at Fort Southwick, near Fareham, in July 1932 under Major F.O. Metford R.E. Repro training continued at Southampton where the printing machines were located. In 1939 the Company was swamped with recruits and in 1940 the responsibility for training was undertaken by the Survey Training Centre at Ruabon. On Mobilisation 19 Company reformed at Fort Widley as 19th (Army) Field Survey Company R.E. Some of the trained manpower was taken from the

Company to help form up and expand the three Corps Field Survey Companies, 13, 14 and 514 at Fort Southwick. The 19th Company was to have an eventful war which is recorded in some detail.

BOUNDARY SURVEYS & COLONIAL SURVEY WORK.

The employment of the Survey Companies on the Ordnance Survey of Great Britain coincided from the early days with the period of imperialist expansion which resulted to a continuing need for colonial boundary commissions and surveys and later, for assistance to the colonies in triangulation and topographic mapping. Work was usually carried out by small self-administering independent teams. Many of the colonial and boundary surveys are documented in the History of the Corps of Royal Engineers and in Royal Geographical Society Journals however there is no way particular surveys can be attributed to particular Companies even where names of personnel are known. It suffices to say that many surveyors, nominally in the 19th Company, were employed on this work from the earliest days to the Second World War.

WORLD WAR 2.

THE B.E.F. FRANCE 1939-1940.

The 19th Company was among the first survey units to mobilise and move to France with the B.E.F. as a G.H.Q. Troops unit. At this time the Survey order of battle was : -

G.H.Q. Survey Directorate	19 th Field Survey Company.
I Corps Survey Directorate	13 th Field Survey Company.
II Corps Survey Directorate	14 th Field Survey Company.
III Corps Survey Directorate	514 th Field Survey Company.

The 19th Company consisted of a mobile echelon of four topographical sections for field survey work and an immobile echelon of drawing and reproduction sections which were equipped with photographic plant and six double demy static printing machines.

The first echelon with four topographic sections and HQ embarked for France on the 13 September 1939 under the command of Lt Col R. Ll Brown R.E. and moved to an assembly area near Le Mans. Personnel of the Company were first employed in assisting in the receipt of maps at the railway and in the setting up of a Fd Svy Depot at Le Mans. The opportunity was also taken to re-cast the trig records of Northern France and Belgium to make them consistent. This was successfully done, the French Service Geographique accepting the work and labelling it Nord de Guerre Anglaise. On the move forward to its concentration area, G.H.Q. and its various Services were scattered around the Arras area. The 19th Company was joined by its reproduction section in early December 1939 and established Company HQ, its computers and draughtsmen in a chateau at Frevent. A somewhat derelict saw mill was taken over and converted into a machine shop to house one single colour and one two-colour printing machines, proving presses, helio and vandyke equipment and a guillotine. Other buildings were taken over for camera installation, litho draughtsmen and photo-writers. Transformers were installed to step down the local power supply from high tension 13,000 volts to 440 volts until Lister generators were erected as stand-by power units together with an R.E. DC generator for DC equipment. After much effort a small scale map production establishment was set up which was to remain there until evacuation in May 1940 and which was to undertake a great deal of the printing work required by the various headquarter branches and the three Corps. Typical tasks undertaken by the Company, which worked full time from the moment its machines were installed until the evacuation, included : - Stock printing of 1:50,000 and 1:250,000 sheets from duplicate reproduction material supplied by the War Office. Revision of Series GSGS 4040 1:50,000 and GSGS 4041 1:25,000 sheets including road revision within the British zone and some revision of topographical detail. Revision traces prepared by the drawing sections were returned to U.K. so that revision of original material could be carried out. Special mapping of the River Dyle area in Belgium was prepared to enable British troops to move forward to a defensive position on the River Dyle east of Brussels in the event of a German offensive and a special series of layered 1:50,000 sheets was issued for the defence positions. German defences of the Siegfried Line. French maps of this were obtained and updated. Road Classification Maps were prepared for a G.H.Q.(I) report on Communications in Belgium were prepared. Eastern Belgium and Western Germany. In anticipation of an advance east into Belgium a programme was initiated for 19 Company to photo-reduce French zinc-mounted 1:20,000 scale sheets of western Germany to produce a 1:25,000 series. Copies of French 1:20,000 maps were photo-reduced to 1:25,000 scale in connection with possible despatch of British Divisions into the Saar. No re-touching was allowed on negatives however results were excellent. Fd Svy Depot Assistance. On the move forward to the Concentration

Area, one topo section and Capt. Harris remained at Le Mans to assist in the move of the Fd Svy Depot to Rennes. This took about a month. On completion, the Le Mans part joined the Company at Frevent. The topographical sections were employed on check-surveys of the French triangulation and to extend it where necessary to provide the R.A. Survey Regiments with any extra control needed. 19 Company worked in the rear areas behind 13 and 14 Companies and several tasks were undertaken, Triangulation at Nantes. A dense network of control was fixed for AA gun positions. Abancourt. Control was provided for a large supply depot with AA defences, and petrol and supply depots and a railway regulating section. Panorama Photographs. Panorama photography on which ranges and bearings were annotated was initiated for every pillbox position using the Cirkut camera. Bilby Tower training. All Companies carried out Bilby Tower training. It is reported that on a visit to the Company Lord Gort suggested his ADC should climb one and himself climbed it when his ADC declined!

Two single colour and two double-colour Crabtree printing machines, a camera and other auxiliary plant were installed in an excellent factory building at Colombes (Parfumerie Kerkoff, Rue de l'industrie). Floors were strengthened for machine beds, dark rooms were constructed, installation of transformers and rewiring of the building took place. This site had just come into production when the German advance on Paris precipitated a hasty evacuation.

The German offensive was launched on 10 May 1940. One topo section went forward to Belgium where, it is assumed, it was to take part in revision and classification of roads in the B.E.F. sector. The mobile party did not move into Belgium until the 15 May due to congestion on the roads caused by Corps traffic. It set up at Ellezelles and worked on road revision and classification but had done only one day's work when it had to withdraw to Frevent on 17 May. On this day O.C. 19 Company had been ordered to set up road blocks around Frevent and to be ready to move at a moment's notice. All printing plates other small stocks and records were loaded onto trucks and consigned to the map printing establishment at Colombes on 18 May. These unfortunately did not get through and 19 Company could not print from that date. In the rapid retreat which followed, all the heavy equipment had to be left behind.

In the early afternoon of 19 May the Commander G.H.Q. Troops visited Frevent and ordered 19 Company to move to the outskirts of Boulogne. That morning the one topo section that had been working with 13 Company in Belgium returned to Frevent. Mobile echelon and part of the immobile echelon, in impressed transport, moved to Boulogne. Company H.Q. was loaded on to two trucks and all surplus stores and documents were buried. Late that night the transport returned from Boulogne and the rest of the Company loaded up and moved soon after midnight arriving at Foret d'Hardelot in the morning, where it bivouacked. On the 21st May, 19 Company, as directed by the Adjutant General in Wimereux, moved from the Foret d'Hardelot to Coppernaxfort to the south-west of Dunkerque using its own transport. Those stores which could not be moved were dumped. On the 23rd an attempt was made to recover these dumped stores but enemy dispositions made this impossible. On this same day a further move was made to a village closer to Dunkerque. The main party embarked on the Dover Abbey at Dunkerque on 26 May 1940.

At Colombes, where two officers and twenty men were supervising the installation and construction work, some urgent printing of 1:50,000 scale mapping was carried out using duplicate plates obtained from the Service Geographique in Paris. Eventually, on the 10 June, the establishment had to be evacuated. The machines were dismantled and the personnel moved to Rennes. Final evacuation was on the 16 June, the party moving from Rennes to Brest where it embarked on the 17th, arriving in U.K. on the 19th June. A reinforcement draft on its way to the unit never caught up with it and was eventually evacuated from Brest. CSM Murphy was taken prisoner when the train on which he was returning from compassionate leave was captured in the rapid German advance.

In retrospect the organisation of 19 Army Fd Svy Coy had been most unsuitable for its purpose. It was unwieldy and in view of its size and the mixture of mobile and immobile echelons its command and control was difficult. Recommendations were later made in U.K. for Corps Fd Svy reproduction plant to be mounted in self-propelled trucks rather than trailers even at the expense of machine size, the double demy size being too big to fit a truck. However a 1:25,000 sheet could just be printed on a single demy machine. It was also recommended that at the Army HQ the double demy should be retained in trailers which could be moved at short notice to cater for printing of the larger 1:50,000 scale sheets.

The Company re-mustered at Fort Widley and then went to Llandudno for a period of training. A large proportion of the unit was posted to the Survey Training Centre and to the Ordnance Survey. The remainder prepared to move to Iceland.

ICELAND 1940-1941.

The evacuation of Norway in 1940 had left the enemy in control of the seaboard. To maintain sea communications between North America and the United Kingdom it was essential that Iceland should not be occupied by German forces. In May 1940 a British force landed in Iceland and, in conjunction with U.S. forces ensured its protection from German occupation. A much reduced 19 Company, 100 strong, under the command of Major R.H. Denniss R.E. sailed for Iceland on 29 July 1940 on the S.S. Georgic. The Company consisted of 2 Topo Sections, 1 Drawing Section and 1 Printing Section. Its transport comprised 1 utility car, 5 motor cycles and 22 bicycles. On arrival the Company went under canvas outside Reykjavik. Technical equipment was set up in a small concrete building previously used as a potato store and the tented accommodation was later replaced by Nissen huts built alongside the potato store.

On arrival, the guillotine, unpacked from two crates, was found to consist of parts from two different machines which could not be assembled. Graining marbles were soon used up and a resupply from U.K. arrived just in time to prevent a stoppage of work in the printing programme. The motors for the printing machines had to be modified because of fluctuations in the voltage of the local supply. Unit generators had not been taken. Due to their inadequate transport the R.A.S.C. provided trucks whenever possible to help with progress.

Contact was made with H.M.S. Challenger whose Commander provided a trig list which was to be the basis for all subsequent survey work. Initial tasks consisted of the fixation of gun positions and provision of grid bearings for them. Survey and levelling was also carried out for the naval base, an airfield being constructed and a hospital site. A plane table survey and map of Reykjavik at 1:25,000 scale was undertaken, the task being assisted by aerial photography flown by 701 Squadron Fleet Air Arm and similar maps were undertaken at Budaeyri on the east coast. Danish mapping was obtained from the State Engineer's office and two 1:100,000 scale sheets of the east coast were printed. These were so well received that material for about twenty more sheets was provided by the State Engineer. Once settled in there was a steady demand for special maps, overprints, administrative diagrams and technical sketch maps. Amongst the maps produced were 15 x 1:50,000 sheets, 5 x 1:250,000 sheets, 1 x 1:1,000,000 sheet and a 1:5,000 town plan of Reykjavik. The Company left for the U.K. on 13 April 1941. During its short stay in Iceland it had, by its working achievements and the cordial relations established with other units, won a position as an essential and welcomed unit of the occupying force although there was, in the early stages, some doubt amongst the Force H.Q. staff as to why a survey unit had been deployed and what its functions were.

NORTH AFRICA 1941-1942.

On return from Iceland the Company reorganized at Beckhampton where it was billeted in a well known racing stables at Beckhampton House. It did not survey work but was employed on training and exercises. The establishment was built up with new arrivals and some of the old hands from France. The Company was to remain substantially the same for the next three years. During its time at Beckhampton some senior non-commissioned officers assisted on training of the local Home Guard unit, commanded by the well-known trainer Freddie Darling, on Sunday mornings, all exercises ending at the local either in Beckhampton or Avebury.

After a delay, due to lack of convoy space, the company sailed from Liverpool on the S.S. Andes on 29 July 1941. They called into Freetown and then Durban before transferring to the Nieuw Amsterdam and continuing to Port Tewfik, where they disembarked on 20 September 1941. The long journey was completed by rail to Tura, a location at the foot of the River Nile escarpment about 6 miles south east of Cairo. The Company's transport and equipment were delayed due to a ship collision in a convoy. The ship was diverted to Halifax where the equipment was transferred to another ship. Work had already taken place in the Tura caves, quarries from which stone had been taken to build the pyramids, to convert them into safe locations for printing machines, cameras, drawing offices and depot stores. Three machines were erected in September and 2 Depot's stores were also installed that month. 512 Company was to be based here for the duration of the war.

One topo section worked with the Eighth Army in the Western Desert with 512 Company and one set up a small forward map depot at El Adem. One of the drawing sections was exchanged temporarily with one from 514 Company which is believed to have carried out large scale survey at Matruh. Another drawing section was exchanged with a South African Company which had been employed since July on the survey of the forward desert tracks in the Western Desert, surveys of the Delta defences and 1:50,000 scale mapping of the El Alamein area. During this period Spr Miller was captured at Tobruk and Lt Hayes was wounded and left the Company. The South Africans also provided a willing and cheerful detachment of Basutos from the Johannesburg area. This detachment later accompanied the Company to Persia.

PERSIA AND IRAQ 1942-1943.

The revolt by the pro-axis element in Iraq headed by Rashid Ali prompted a British response to protect its treaty rights. An Indian infantry brigade and associated troops, about to embark for Malaya, were diverted to Iraq and landed on 15 April 1941. Although some hostilities occurred the Iraqis asked for an armistice on 31 May. The German attack on Russia increased the importance of the Iraq-Persia area and German fifth-column activities prompted the allied occupation of port and oil facilities at Abadan and later the joint occupation of the country by British and Russian troops. Initial survey support to the Expeditionary Force was given by No. 1 Indian Field Survey Headquarters and later Nos 1, 2 and 4 Indian Field Survey Companies.

The German offensive in the Caucasus in Spring 1942 made the invasion of Persia a real possibility and defence preparations were increased. The headquarters of the Mobile Echelon and three topo sections of 512 Field Survey Company R.E. and 19 Field Survey Company R.E. moved to Iraq in July 1942 to assist in the survey effort, coming under the technical direction of a D.D. Survey in Baghdad. At this time the Company consisted of HQ, Repro Section and three Drawing Sections. The three drawing sections moved first by rail to Suez then into vehicles with Iraqi drivers for the journey to Baghdad. The HQ and Repro Sections followed on July 6th in unit transport via Jerusalem, Baghdad and Basra to Ahwaz, a journey of 1700 miles. A grain silo at Ahwaz was selected as a suitable building for a base printing installation and Ahwaz also met the requirements for security and good communication with Persia. Printing equipment moved by sea was set up and in operation by November and the early programme included the printing of reserve stocks of 1:100,000 and 1:250,000. Large stocks of paper had been brought from Cairo as an insurance against loss had the German drive into Egypt from Libya succeeded. The climate at Ahwaz was extremely trying with summer temperatures rising to 130 degrees in the shade. The winter which followed was severe with thunder storms and floods. Living accommodation was in tents and there was little in the way of any recreational facilities.

Two members of the Company died at Ahwaz that winter from pneumonia, LCpl W. Semple on 29 December 1942 and Spr J.L. Fenner on 10 January 1943 from peritonitis. At Baghdad where the drawing section had been temporarily attached to the 4th Indian Survey Company, Spr E.J.H. Wheeler died from heat exhaustion while in the transit camp at Baghdad on 16 July 1942 and Spr G.A. Grundy died from pneumonia three days later. They were buried in the small but beautiful British cemetery in Baghdad.

The drawing sections originally worked with 4 Indian Field Survey Company in Baghdad. Later one section accompanied the whole of the air survey complement of the Indian Field Survey Companies to Hamadan in July 1942 where, under the command of the Indian Field Survey Company, they formed an Air Survey Group. By mid March 1943 this group had completed about thirty sheets at 1:25,000 scale of the defence areas in north-west Persia besides other work at 1:50,000 scale.

The Company had come under control of G.H.Q. Survey Directorate which had been formed as part of Persia Iraq Command in September 1942. In November 1942 the two topographical sections of 19 Company left Egypt and joined in the increased programme of field control which had been started in October 1942 to extend the recent surveys westward in the direction of Teheran and Nain, the work being mainly 1:250,000 mapping. Certainly they were involved in the connection between the Iraq geodetic network and the new triangulation in Persia, completing it in February 1943. Reference has also been made to them working in the mountains to the north in the Kharkeh River area where the O.C., Major Mansfield, earned a high reputation as a shot while hunting with the nomads there. The whole of the allied survey effort in Iraq and Persia had contributed to the re-survey or revision of 120,000 square miles in Iraq and 100,000 square miles in Persia at 1:100,000 or 1:250,000, or in some cases, both scales. In Persia alone, 2,500 miles of triangulation was completed. 19 Field Survey Company played a full part in these efforts in a country where terrain varied from plains at sea-level to mountains of 10,000 feet with temperatures from 0 to 130 degrees Fahrenheit. However, with the relief of Stalingrad, in November 1942, the threat to Iraq and Persia had been removed and on completion of its programme 19 Field Survey Company was ordered to return to Egypt in April 1943. The prospect of another summer at Ahwaz had not been relished and the Company eagerly packed up its machinery and stores. The move was made in several parties, the last entering the Middle East on 22 May 1943.

NORTH AFRICA 1943-1944.

On return from Iraq the Company set up at Abbassia near Cairo. March and April were busy months of intensive survey work in preparation for all possible future operations in the Middle East. The Company worked hard on the revision of mapping of Sicily and Italy in preparation for the invasion of southern Europe. The topo sections were employed in coding maps for the Sicily campaign and the printers were particularly busy producing large quantities of charts for the air forces bombing Europe.

Printing output of the survey units concentrated at Abbassia was 2,000,000 maps in May and 4,000,000 in June.

ITALY 1944-1945.

The invasion of Italy took place on 3 September 1943. The Company commenced its move to Italy on 1 February 1944, sailing from Port Said to Taranto in H.M.T.S. Dilwara and arriving on 8 February. The next move was by train to a transit camp at Naples and finally it set itself up in Arzano "where the smells rivalled the Middle East". The Company had a grandstand view of the eruption of Mount Vesuvius on 18 March. Rome fell on 4 June 1944 and the Company moved again, this time setting up in a film studio at Ponte Milvio on the outskirts of Rome.

The Company was then brought under the direct command of Allied Forces headquarters to carry out important work in preparation for Operation Dragoon, the invasion of Southern France. Work in support of this operation in July and August included the preparation of special overprints, goings maps, beach panoramas, layering of 1:50,000 mapping and Gee Lattice radar charts for control of aircraft. The Company's efforts were later to earn a commendation from General Patch of U.S. Seventh Army.

During its stay in Rome the O.C., Major Mansfield, left the Company to go to the Middle East after three years in command. His place was taken by Major J.R. Hyatt. On 29 August 1944 the first party to be repatriated left the Company after five years overseas. They were 31 men who had been with the Company since it embarked with the B.E.F. for France in 1939. By the end of 1945 the remainder of those who had embarked in 1941 became due for repatriation and the Company underwent a great change. The war ended while the Company was in Rome.

THE POST-WAR YEARS.

AUSTRIA & ITALY 1945 - 1957.

The end of hostilities was not the end of 19 Company's travels. In August 1945 Major A.J. Herbert assumed command and preparations took place for a move to Austria. Once again machinery and stores were packed and on 1 September 1945 an advance party left Rome by train on a four day journey to Austria. The main party followed by road on 2 September. A small, modern, but war-damaged factory at Simmering on the outskirts of Vienna was to be its base for the next nine months. On arrival it was found that the roof leaked, the windows were blasted and many walls were down. Printers became steeple-jacks, draughtsmen took up trowels and topo surveyors found themselves tinsmiths. Repair work on this self-help basis went on through October and production work started in November. Apart from some routine map reprinting the unit printed everything from posters to official forms for H.Q. British Troops Austria. While in Vienna the Company was issued with mobile printing equipment for the first time, and much of the field survey equipment was withdrawn. There being no field work, the majority of field surveyors were employed sorting mapping in a German map depot at Viktring near Klagenfurt, completing this task just as the Company prepared to return to Italy. The Company moved to Bologna between May and June 1946 and because of its mobile equipment, was quickly in full operation. While there one important field survey task was carried out, this being the reconnaissance for a survey of the "French Line". Lt Burrows and a mixed team of Sapper and Gunner surveyors carried out this task which was a reconnaissance for a trig scheme on either side of the proposed Italo-Yugoslav boundary in anticipation of a Boundary Commission. In October the Company moved to Lonigo with 29 Field Survey Depot and many of the men in the Company with insufficient residual service assisted in the disposal of the Depot's mapping and its disbandment in the period February-March 1947.

EGYPT 1947-1948.

In February 1947 a cadre moved to Egypt and it was here that 512 Company was taken over by 19 Company, which for a short time was styled 19 Field Survey Regiment R.E. This became 42 Survey Engineer Regiment on 31 August 1948, and for a while 19 became known as "The Topographic Squadron". At this time the Regiment was based at Camp 15 Rear at Fayid, but while the reorganisation and refitting was taking place detachments from the Topographic Squadron were carrying out field survey work in Tripoli, Kenya and Somaliland. Soon after reassembling at Fayid on 14 August 1948, 19 Squadron moved to Jordan where it was to stay for the next three years.

PALESTINE, IRAQ & JORDAN 1948-1952.

A reconnaissance of the Jebel Tubeig trig control had been carried out in 1948 and in January 1949 work commenced on this task, finishing in October. It included the measurement of a 3.5 mile base

line using Macca Base Equipment, the line being bulldozed level by plant from 17 Field Squadron R.E. Topo troops were also employed in altimeter heighting, the field checking of block plots and names collection. Throughout 1950 and 1951 field work continued including second order trig work astride the Kirkuk-Haifa pipeline. A squadron officer, 2 Lt M.G.I. Dickson, died in a motor accident near Amman and was buried in Amman cemetery. Despite delays due to lack of serviceable transport the control work on the Jordanian trig was completed in 1951, and a brief move from October 1951 to March 1952 to Mosul in Iraq allowed the completion of control work in that area. The tasks carried out included trig point identification on air photographs, heighting, contouring and field checking of 1:100,000 sheets. The work from Habbaniya was mainly trig point identification for the extension of the Iraq-Iran 1:100,000 mapping and some triangulation. In January 1952 1 Troop moved to Kuwait to carry out trig point identification, altimeter heighting and names collection, finishing in late February. In March 1952 the Troops left Habbaniya returning to the Canal Zone via Aqaba.

CYPRUS 1952-1953.

In May 1952 one troop was sent to Cyprus and the remainder of the squadron under the command of Major G.S.J. Garwood joined it there in October. The initial task was the establishment of ground control for a 1:2,500 survey of a proposed base area and this was completed by July. A pipeline survey and a camera range control task followed, both of which were completed by November when the squadron in toto was employed on an extensive 1:500 scale survey involving sixty sheets. In September 1953 the squadron commenced a move back to Iraq but 3 Troop remained behind till February 1954 to complete a survey at Ayios Nikolaos. During its stay in Cyprus the squadron took part in the Coronation Parade in Limassol.

IRAQ 1953-1958.

The squadron was to be employed in Iraq for five years on topographic mapping work at scales of 1:20,000 and 1:100,000. This was to be a challenging and satisfying period in this largely desert but nevertheless beautiful and rugged country. The squadron, initially under the command of Major D.M. Gunn, was based in Habbaniya which was to become an Iraqi Air Force base in 1956, but with R.A.F. staging facilities. The main task was again control and field work for 1:100,000 mapping, but field work was also carried out on the 1:25,000 Series GSGS 4870 mapping programme in Kurdistan. This involved the revision of topographical detail and names collection to bring Hunting's Surveys contract mapping up to a military specification.

Close liaison was established with the Iraq Civil Survey Department but the squadron was required by the Iraqi government to work in mufti, not to carry arms, to use vehicles painted in civilian colours and not to move in convoy. These restrictions gave a certain piquancy to the work. In the early days the Ordnance Corps provided the men with pinstripe three-piece demob suits, civilian shirts and ties and porkpie trilby's. The O.C. had the satisfaction of parading one troop in this dress at a mountain survey camp before the G.O.C. Middle East Land Forces, General Sir Charles F. Keightley GCB, KBE, DSO. The training effort involved in raising trilby's for the dismiss was rewarded by a subsequent improved issue of working clothes.

Field work was done from February till mid December with one month's break for military training. Predictably, vehicles suffered from the excessive cross-country driving, but from mid 1957 arrangements were made for replacement vehicles up to one quarter the establishment to be held immediately available in reserve at Habbaniya.

Although the Squadron was organized on a three-troop basis, each commanded by a Subaltern, most of the work was carried out by small parties working hundreds of miles from base. Young surveyors were required to work alone in this rugged mountain country, hiring mules and buying food from the locals. Each area of between one and three sheets (30 to 100 square miles) would take anything from three to fourteen days to cover, during which time the surveyors would find accommodation in the villages.

Major J.A.H. West the OC for the second part of this task had a very enviable period of command and in an article in the R.E. Journal described how impressed he was by the splendid results achieved by a succession of National Service troop officers.

In the period July to October 1958, 19 Squadron, now under the command of Major D.V. Hutchinson MBE, became caught up in the Iraqi Coup d'Etat which commenced on 14 July. At this time the Squadron HQ was still at Habbaniya but the troops were deployed on field work. In the post-coup period troops were restricted to camp, a curfew was imposed and access to the Squadron lines was restricted. The role of the Squadron in Iraq was treated with suspicion by the new regime and eventually it was reluctantly decided that as field work could not continue the Squadron should be returned to Cyprus.

ADEN AND THE PERSIAN GULF.

In early 1959 two troops of 19 Squadron deployed to work independently in Aden and the Oman. Squadron headquarters followed to Aden in May but in late 1960 moved on to comfortable P.W.D. bungalow accommodation just outside H.M.S. Juffair in Bahrein.

1 Troop was employed for much of the time on photo annotation, identification of control and altimeter heighting for the K668 1:100,000 series in Oman. It was based first at Muscat and then Nizwa. Work was continually hampered by dissident activity and the consequent need for escorts. In February 1961 Spr W.D. McDougall was killed when his vehicle was mined near Rostak. His driver, Spr Williams was badly injured. SSgt M. Osborne carried out some work in the Liwa Hollows by camel in the company of a Trucial Oman Scouts patrol. On completion of a detachment at Buraimi the troop moved to Sharjah and thence to Tarif on 6 November 1961. The mapping task continued along the coast towards Abu Dhabi and in June 1962 the troop returned to Sharjah where it was joined by 2 Troop in December 1962.

2 Troop had moved to Oman from Aden in December 1960, its initial base being Ibri and later, Manama. It also worked on the K668 Series in the Jebel Akhdar area. Three casualties resulted from a mined 3-ton vehicle and in another incident in May a second vehicle was destroyed. The troop hosted Hydrographic surveyors from H.M.S. Dalrymple during this period establishing good relations with their naval counterparts.

While Squadron HQ was in Bahrein the last National Serviceman in the Gulf, Spr A.N. Reid, a clerk in 2 Troop finished his service and was given a ceremonial farewell.

In February 1963 some married families were flown from the U.K. to Aden and the squadron moved to Aden in the LST Empire Grebe via Dubai and Mukalla. On their departure the Commander Land Forces Persian Gulf sent the following message "The very best of luck to you in your next location. You have all done a first class job in this area often under most trying and even hazardous conditions. Thank you all very much".

ADEN 1963-1964.

The Squadron disembarked on 13 March 1963 and its base became Falaise Camp, 5 miles outside Little Aden. The Squadron was initially under the command of Major G.J.F. Holden but Major W.D. Rushworth took over in June prior to commencement of field work, which consisted mainly of tellurometer traverse control. In July 2 Troop joined 1 Troop at Ras Ara to carry out altimeter heighting and photo annotation in the area. The two troops then went their separate ways working west and north. In early November 1963 the squadron commenced preparations for return to the U.K. and the last two members of the unit, WO2 T. Higgins and LCpl J. Shaw, left on 28 January after the final handover of stores to 13 Field Survey Squadron. Thus after almost a quarter of a century spent continually overseas the Squadron finally returned to the U.K. to join 42 Survey Engineer Regiment, based at Barton Stacey in Hampshire.

THE U.K. 1964-1977.

The arrival in the U.K. heralded a completely new way of life for the squadron and many must have missed the old days. The period of almost continuous full-time independent employment on field surveys for series mapping gave way to a more ordered and static existence.

Field tasks both in the U.K. and overseas have provided much varied employment, but increasingly these have been carried out by Troops or small detachments. Only rarely since 1964 has the Squadron deployed into the field as an entity, even in the U.K. Detachments have often included personnel from 13 Squadron and detachment officers have frequently been cross-posted from other Squadrons purely for the duration of the task. In consequence the old continuity of experience and expertise has been difficult to maintain. Mention can only be made in this brief history of some of the major surveys which the Squadron has been employed on in recent years, and naturally the overseas projects feature most but the Squadron remains heavily committed to surveys in support of the Services in the U.K.

Sarawak 1964.

1 Troop, under Captain Baker carried out plan and altimeter height control for 1:50,000 scale mapping of Sarawak utilising helicopter and light aircraft support between February and August 1964. 3 Troop, under Capt. Newberry, relieved 1 Troop and between August 1964 and February 1965 completed control of another mapping block. Helicopter techniques were developed and refined and these detachments really heralded the now accepted need for air support in rugged overseas countries.

Norway 1965.

Major Hunt took a detachment on the first of many mapping exercises in Norway.

Aden 1965-1966.

3 Troop, under Captain Ward, carried out work in Aden in support of 13 Squadron from March to August 1965 completing a tellurometer traverse connection from the Yemen border to 13 Squadron's work in Aden. Lt D.N. Joseland took 1 Troop to Aden between November 1965 and April 1966 and did further control work in the Eastern Aden protectorate and on Masirah Island.

Western Isles Astro Tasks.

A series of detachments to Scotland has contributed geodetic data towards determining the true shape of the earth. Gravity surveys have also been carried out.

Ireland 1966.

A party under Major N.J.D. Prescott MBE carried out Laplace observations at two locations 180 miles apart as a check on the Irish azimuthal variation in the trig network. This task revived the co-operation between Military Survey and the national survey in Ireland which had originated in the 1820's.

Libya 1969.

Captain A.P.J. Savage carried out an EDM traverse survey of parts of Libya for subsequent air survey mapping between January and April 1969.

Territory of Papua and New Guinea 1970 (TPNG).

A Troop under Captain M.A. Nolan deployed to TPNG and joined a programme of Aerodist mapping control work in support of the Royal Australian Survey Corps between July and December 1970. This is the only time that R.E. Survey has been involved in this technique, apart from earlier trials of the system in U.K.

Tranet 1970-1977.

In 1970 a Tranet station was set up at Barton Stacey to contribute towards the U.S. Navy Navigation Satellite system. Lt J. Critchley had been sent to Washington to learn the methods and was then responsible for initiating the station. It has continued in operation ever since and is a significant contribution towards the joint U.K./U.S. geodetic survey work.

Australia 1971.

Lieutenant B.F. Gerhard took a detachment to Australia to furnish control for an Australian photogrammetric range at Bonegilla near Lake Hume.

West Indies 1971.

Captain J.A.N. Croft, two surveyors and one assistant carried out a gravity survey in the West Indies in September and October 1971.

Kenya 1972.

An enlarged Troop under Captain G.P.G. Robinson provided tellurometer traverse and altimeter height control for a 1:100,000 scale mapping project east of Lake Rudolph.

Australia 1973.

Captain T.J. Zorichak took a Troop to Australia to continue work on the Lake Hume Range.

Wales 1973.

The O.C., Major G.R. Cronchey, achieved the commendable aim of deploying virtually the whole of the Squadron under canvas on a trig task in Wales in support of Ordnance Survey work from May to June 1973.

Cyprus 1974.

Lieutenant P. Wood carried out a Troop traverse task in the Troodos Mountains of Cyprus to provide revised control for new 1:5,000 scale mapping from April to June 1974.

Kenya 1974.

The O.C., Major J.W. Williams took most of the Squadron to North Kenya to carry out a demanding and ambitious EDM traverse to geodetic standards using Bilby towers. This highly successful detachment was carried out in very demanding conditions.

Norway 1975.

The O.C., Major M.A. Nolan and Captain J.A.C. Read took most of the Squadron to the Voss area of Norway to identify Norwegian control points and annotate all areas for subsequent production of four 1:50,000 scale map sheets using A.A.C. Alouette Mk II helicopters to obtain F95 photography of pre-marked control points.

Cyprus 1976.

Captain F.G. Noseworthy RCE took a Troop to the Troodos Mountains and Episkopi to carry on similar work to that of the 1974 season successfully using helicopter support in the mountains.

Scotland 1976.

Captain B.V. Burton's Troop carried out an important geodetic survey at RAE West Freugh to fix a number of kinetheodolite sites used for recording aircraft trials. First order plus observations and levelling were carried out.

Kenya 1977.

Captain B.V. Burton took a 50-strong detachment, transport and two Scout helicopters to Kenya from December 1976 to February 1977 and completed a geodetic loop from each end of the 1974 season's work.

Belize 1977.

Captain S.R. Campbell R. Aust. Survey is due to take a detachment to Belize to carry out mapping support for British Forces Belize four days after the 150th Anniversary.

CONCLUSION.

19 Topographic Squadron thus continues to be fully employed on challenging and demanding survey tasks in support of the Services. Between 1973 and 1976 it temporarily became a Geodetic Squadron, this name being coined to reflect the change in role from topographic work. As a result of the 1975 Defence Review the Squadron took under its wing the Air Survey Troop of 22 Squadron which disbanded. It then reverted to the older name to reflect this return to the topographic role. In its 150 years of support to the Services at home and overseas the Squadron has truly exemplified the Corps motto Ubique.

POSTSCRIPT.

1977 - DISBANDMENT.

This period might be added as a postscript to complete the story until the Squadron was disbanded and the number 16, a number of no great significance or merit was resurrected for the administrative element of the Geographic Engineer Group!

LIST OF KNOWN OFFICERS COMMANDING 19.

1848		Captain	J.S. Hawkins
1852	1862	Captain	J. Bayly
1862	1866	Captain	F.E. Pratt
1870	1872	Captain	R.M. Parson
1873	1874	Captain	G.H. Bollard
1875		Captain	A. Hill
1876	1877	Captain	F.W. Nixon
1878	1882	Captain	W. St. G. Burke
1883	1887	Major	A.A.W. Beamish
1887	1889	Captain	E.R. Hussey
1890	1891	Captain	M.E. Bisset

1892	1894	Captain	S.C.N. Grant
1894		Captain	R.U.H. Buckland
1895		Major	C.E. Haynes
1895	1898	Captain	R.P. Lee
1899	1903	Captain	W.C. Hedley
1904	1907	Captain	P.T. Denis de Vitre
1908	1910	Captain	C. St. B. Sladen
1911		Captain	J.E.E. Craster
1911	1913	Captain	G.A.P. Brown
1914	1915	Captain	J.G. Hearson
1916	1919	Major	A.C. Robinson
1920	1923	Captain	E.H.M. Clifford
1924	1925	Captain	K.M. Papworth
1925	1926	Captain	C.S.V. Cooke MC
1927	1929	Lieutenant	N.A.M. Swettenham
1929	1932	Incorporated	In Survey Battalion
1932	1933	Captain	F.O. Metford
1933	1935	Lieutenant	L.F. de Vic Carey
1935	1937	Captain	S.G. Hudson
1938	1939	Captain	H.C. Smith
1939	1940	Lt Colonel	R. LI Brown
1940	1942	Major	R.H. Denniss
1942	1944	Major	F.Q. Mansfield
1945		Major	J.R. Hyatt
1945	1946	Major	A.J. Herbert
1948	1949	Major	A. Walmsley-White
1949	1950	Major	D.J. Suter
1950	1951	Major	J.W. Taylor
1951	1952	Major	W.L. Covington
1952	1953	Major	G.S.J. Garwood
1953	1956	Major	D.M. Gunn MBE
1956	1958	Major	J.A.H. West
1958	1959	Major	D.V. Hutchinson
1959		Major	G.A. Hardy
1959	1961	Major	I.D. Hart
1961	1963	Major	G.J.F. Holden
1963	1965	Major	W.D. Rushworth
1965	1966	Major	P.J. Hunt
1966	1967	Major	N.J.D. Prescott
1967	1969	Major	H.C. Honeyman
1969	1971	Major	R.J. Clint
1971	1973	Major	G.R. Cronchey
1973	1974	Major	J.W. Williams
1974	1977	Major	M.A. Nolan
1977	1979	Major	G.P.G. Robinson
1979	1982	Major	M.J. Stanbridge
1982	1982	Major	J.D.A. Dean
1982	1985	Major	T.J. Zorichak
1985	1987	Major	J. Collins
1987	1989	Major	A.R.T. Wardrop
1989	1989	Captain	S.J. Pyatt
1989	1991	Major	S.M. Anderson
1991	1991	Captain	S.M. Clarke
1991	1992	Major	M.W. O'Boyle
1992	1993	Major	S.J. Pyatt

