



The Military Survey (Geo) Branch

Autumn Newsletter 2017 – issue 65



RPAS - Operational Concept Demonstrator

It's safe to say that technical development in the survey industry has neither slowed nor showed any indication of slowing in the near future. Equipment manufacturers are constantly developing superior instruments and software, often marrying different capabilities into all-in-one solutions. The industry has also taken to the skies and for some time now, even the hobbyist with little survey or GIS background is able to perform data capture and exploitation at minimal cost. Remotely Piloted Aircraft Systems (RPAS), more commonly referred to as UAVs, are not new but the cost, availability and the functionality has taken a massive leap forward in the last few years. Another jump ahead is the understanding of what these devices, coupled with the right software, can deliver across different industries. Agriculture, Journalism, Law enforcement and Border Patrols to name but a few are all embracing the capabilities that RPASs can provide; even Amazon want to use them to deliver customer packages. Clearly, the military have also been exploiting the uses for aerial platforms for some time, from the largest such as Reaper and Whatchkeeper providing support to ground troops with long range capability, down to the bat-sized Black Hornet with the ability to capture video and stills within a 300m range.

The Special Support Team (SST) , 42 Engr Regt (Geo) are now also looking at exploiting aerial platforms to support the likes of the Technical Response Force (TRF), Defence Nuclear Emergency Organisation (DNEO) and UK Resilience as well as a wide spectrum of ad-hoc tasks often encountered by the team. Therefore, SST conducted some low level investigations with trial licences of photogrammetric software and still images captured from a privately owned RPAS. The investigations concluded that with little more than some cheap capture equipment and some commercially available programs, there are potentially endless uses that RE Geo could exploit when using RPAS to provide Geo support to wider defence. As a consequence of this investigation 42 Engr Regt (Geo) had a business case approved which has initiated an Operational Concept Demonstrator (OCD), to fully investigate the use of such equipment within SST and across RE Geo.

The OCD is to procure 2 x commercially available Off The Shelf (COTS) RPAS; in this case the DJI Phantom 4 Pro and the DJI Inspire 2. Alongside the capture platforms SST are also going to trial a number of photogrammetry packages running on high-spec laptops which can deal with the system requirements of such memory-thirsty programs.



DJI Phantom 4 Pro



DJI Inspire 2

At present there are a number of actions happening in the preparation for the equipment arriving. Firstly, SST submitted a categorisation application and waits on a response from the Military Aviation Authority (MAA). This will hopefully give the team the necessary authority to use the identified platforms for the range of tasking/testing SST wishes to carry out over the next year. Running parallel to the categorisation, SST is filtering its soldiers through the defence delivered RPAS pilot course at RNAS Culdrose. The course provides training equivalent to the Civilian Aviation Authority (CAA) approved National Qualified Entity (NQE) and also provides knowledge of policy and skills needed to operate within the Defence Air Environment. Once categorisation and training is complete, the equipment will be purchased and the trial can begin.



Stills from RPAS which can be used to give rapid situational awareness prior to processing in photogrammetry software

A plan for the trail has been put together which will test the soldiers' ability to not only operate and test the equipment's limitations, but also investigate the type of products it is possible to generate using the photogrammetry software and ArcGIS following the export/import of the self-generated data.

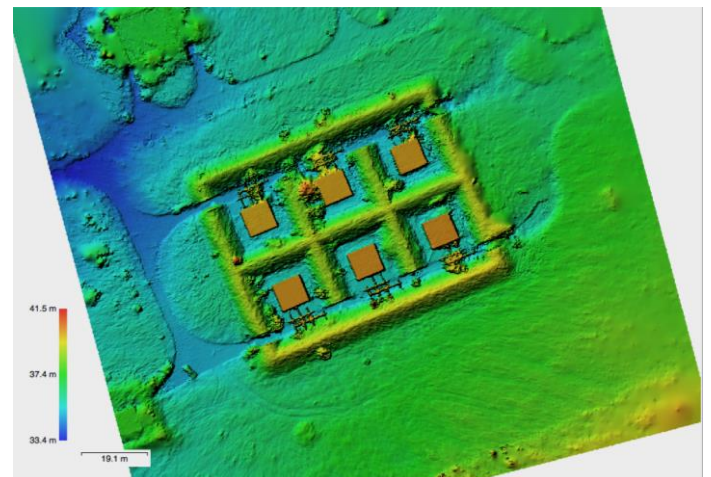
With the current generation of high resolution ortho-rectified imagery, DSMs and 3D point cloud/fully rendered models, it is anticipated that these products would provide exceptional, rapid situational awareness products to the command nodes that SST typically support.

These would be self-generated but without the need to deploy the likes of photography equipment and 3D LiDAR scanners which can be timely and manpower intensive. Additionally, with the ability of live Full Motion Video streaming the team can feed video to commanders and various agency representatives to allow them to see and explore the full extent of an area of interest and follow operator progress during a task.



Comparison of NP Imagery and Imagery generated by photogrammetry software using still images captured during an RPAS flight

There is also a plan to look at conducting comparisons to data collected using conventional survey techniques and LiDAR scanning methods. Although we are not looking to gain the precision and accuracy associated with conventional methods, the team wants to investigate how the equipment can be used alongside in-service survey equipment to conduct tasks such as large scale surveys.



Example of a shaded DSMs created using AGISOFT Photoscan

Measurable 3D model created from still images from COTS RPAS

The OCD is currently scheduled to run until Aug/Sept 18 when a report will detail findings and give appropriate recommendations to the future use of this type of equipment; potentially laying the stepping stones needed for the SST to jump aboard a technology which is already taking off. This OCD has the potential to open up an exceptional capability that could enable the wider RE Geo community to self-generate quality, timely data in order to provide a better service to commanders and decision makers across Defence.

SSgt Havenhand SST 2IC

Exercise Carto Norge – 1969 & 1970



Jim Jefferies with Negretti and Zambra altimeter at Vourak trig

(Jim Jefferies - After his Tech I Course he was posted to 47 Squadron in April 1969 and was involved in the Carto Norge Exercises in 1969 and 1970. He resigned from RE Survey in June 1971 after 9 good years just as the squadron was preparing for Carto Norge 71. He had just been promoted Staff Sergeant. Jim joined the Royal Australian Survey Corps as a Sergeant a couple of days later, signing on in London and within a week we were in Australia. Jim finally resigned after 20 years' service, 12 as a WO1, in July 1991. His last years were at the SMS, located at Bonegilla in NE Victoria, as WO1 Doctrine and Development. Jim had a good career with highlights involving digital photogrammetry, computing, digital mapping and the introduction of GPS surveying).

Exercise Carto Norge 1969

Both Ex Carto Norge jobs that I was involved with were well organized and were really a working holiday, although there wasn't much time off. However field work in the beautiful country in the County of Troms, about 69 degrees North Latitude in summer, was a joy in itself.

In 1969, the task was to produce a 1:50 000 map of the Kampen Training area for the Norwegians which is located to the North West of Bardu. In addition, a 1:25 000 map of part of the area, called Heggelia, was also produced.

On Monday 14th July 1969, 25 of us went by sea, rail, ferry and bus to Saetermoen and stayed at the Norwegian Army Barracks on the Southern edge of Bardu. The trip took four days each way, courtesy of Travel Agency Hogg, Robinson and Gardener Mountain: trucks to Liverpool St Station, train to Harwich, overnight ferry to Esbjerg, and train to Copenhagen via a ferry. In the middle of the afternoon I saw the tail of a Republic F84 Thunderjet protruding from the otherwise undamaged roof of a house in a village near the railway line. After a meal in the Tivoli Gardens opposite the Central Station, we took the overnight train to Oslo via Sweden, and then train to Trondheim, where we had a meal. Cpl Brian Garvey and I cooked a stew on a Primus stove at the end of the platform - the OC thought we were a couple of peasants! Then we caught the overnight train to Fauske near the end of the line. En route the train slowed as we crossed the Arctic Circle, which was marked by monumental spherical sun dials on each side of the track. At Fauske we boarded the scheduled Nord Norge Bussen Post Bus for Narvik. These buses had priority over all other traffic on the ferries; over four fjords along the way, we drove to the head of each queue past many tourists in their new Volvo 140s from Sweden. The scenery at each of these ferry crossings was absolutely stunning.

The first was the longest trip at Sommerset i Leirfjord (as a Somerset boy, I had to include that name!). The second was near the narrowest part of Norway; the Swedish Border was only 6.3 km from the sea! The last two of the Fjords were expecting bridges to be built in 1970 or 1971. The final leg of the journey was by a chartered bus to Bardu where we arrived late in the evening of Thursday 17th July. The weather was beautifully clear and warm and we spent many hours hanging out the windows enjoying the scenery. This really was the Land of the Midnight Sun, although we didn't actually see it! But it was daylight 24 hours each day.

The Norwegians found us a bit different; the base was full of conscripts. The heavy gear, minded by two of the team, arrived by ship at the small port of Sjøvegan; two trucks and six Land Rovers, one containing personal duty-free, as this part of Norway was officially an alcohol free zone. The Commandant allocated us an old house in the corner of the barracks for our 'club' which was out of bounds to his men!

Major Tom Linley was the OC, WO2 Frank Lyons was SSM, S/Sgts Mick Callow and 'Bunny' Burrell controlled the technical activities, and I, as a new Sergeant was responsible for the trig scheme. Sgt Dave Draycott and I, as junior Sergeants, were billeted in the barracks with the men rather than in the combined Officer/SNCO Mess, ostensibly because of a lack of SNCO accommodation but probably to mind the troops!

We spent our days on air photo identification and interpretation, using RAF 1969 aerial photography which was rather underexposed, and a trig scheme to provide more ground control for that photography. Cpl Brian Garvey and I had completed our A3 Topo Surveyor Course together in 1963 and during the Winter of 1962, had done some hill walking in the Lake District in snow and a lot of heavy rain. Here, we climbed some of the higher hills in much better weather! We had wanted to climb Istindan, a 1490m mountain just to the East of our proposed map but the OC did this himself with a party of Norwegians. We did climb a peak to the West, Boringen 1074m, to identify the existing trig point. We had a great view to the West looking over to the Island of Senja. It seemed that we were in really remote, wild country, yet when we looked to the East, the next mountain, Hoggumpen, had three enormous Early Warning Radar Golf Ball antennae on its triangular flat summit!



Kampen - observations by Jim Jefferies and Spr Johnson with 'Plug' Scrivener, Brian Garvey and the OC sheltering behind the windbreak.

We carried Artillery Survey Beacons to existing and proposed stations and subsequently visited these to make the required observations. The weather in midsummer varied from cool to hot. Lots of flies and midges! We established several new trig points including one on the top of Kampen, a rounded glacial granite hill in the center of the area of the new map.

I recall that we drove to one point at the Western edge of the area of operations and pulled up on a farm at Haugli, below the hill. The old chap there was not impressed to see us on his land and we could not communicate with him. We left and returned next day with an appropriate letter written by our Norwegian Liaison Officer.

The farmer looked at it, shook his head, took my glasses off my nose, grimaced and shrugged his shoulders and went and found his own specs. All was sweetness and light! In retrospect, his attitude was perfectly understandable of course. He lived in a remote area and we may well have been the first foreign soldiers that he had seen since the Wehrmacht had withdrawn from Northern Norway in 1945, destroying almost everything as they went!

After we had erected RA Beacons at all the stations and subsequently made observations from them, we returned to Kampen, which was the most inaccessible. Major Linley came along too. We walked about 10 km after leaving the Rovers through wooded and marshy country and it was a bit warm. The Major had taken his beret off and was stung on the head by a wasp or bee; a bit of a chuckle from the lads, good job he wasn't allergic! When we reached the top, the wind was blowing a gale and the cloud was down. I recall the Major saying to me "do you think this will last long?" and I said "It can lift just like this in no time" and made a gesture upwards. The cloud immediately lifted! He gave me a funny look and asked how I did that! The cloud came down again for a few minutes but then lifted and visibility changed from 5 metres to 50 km! The wind was very strong and we completed all the observations out with the theodolite legs at half-mast to reduce the vibration effect of the wind.

During the Exercise, L/Cpl Harry Dedman, who had made the sea voyage with the Trucks and gear, went down with appendicitis and was hospitalised in the Narvik Sykehaus. I was sent in a Rover with L/Cpl Joe Brown as my driver the 75 km south to visit Harry. He seemed quite content to be tended by the female nursing staff in the very modern hospital! He made a good recovery and was back on light duties a week or so later. After delivering a bunch of grapes and ensuring that Harry was OK, Joe backed out of the parking space very carefully (visibility in a Rover with a canopy isn't too good) when a French Citroen 2CV was backing along at the same time! There was a bit of a clang and we found that the 2CV had lost its rear bumper bar. The two French blokes, students I think, did not parle l'Anglais and our schoolboy French wasn't up to much either but we found some strong wire and tied their bumper bar back on as well as possible and they set off happily enough. They were heading for NordKapp up the main E6 road and we stopped in the town and had a cup of coffee. Half an hour later we set off northwards and soon caught them up. We had to follow them for some distance before we could overtake. They kept looking worriedly over their shoulders thinking that we would cause them more trouble but we gave them a cheerful wave as we left them behind. There wasn't a scratch on the Rover!

We were allocated one day off and a visit was made to Tromsø by bus. Our return journey to the UK was much the same as our journey to Troms, except that we departed by Ferry from Kristiansand, and trains to Winchester.

We returned to the Regiment on a Friday evening. On Sunday morning, the Regiment's Duty Driver woke me in East Road, Barton Stacey at 0600. He took me to West Road to the OC who informed me that Dave Draycott had been killed in a road accident at Highclere and Cpl Del Firth and his wife had been badly injured returning from a dance at SMS Hermitage. Their Mini didn't make the bend under the railway and they ended up hitting the bridge abutment. My task was to go to Winchester General Hospital a.s.a.p. and formally identify Dave for the Police, which I duly did. It was a sad end to a great trip. We attended Dave's funeral in Manchester the following Saturday.

After we returned to the Regiment I went to the Geodetic Office with the field observations and subsequently with the photogrammetric observations from the stereocomparator. In conversation with Mr Steve Fullom, whom I had met during my Tech I Course, I asked if the adjustment data could be plotted on the Zuse Digital Plotter, complete with the proposed map sheet corners and other geographical intersections and the map grid. I believe that this was the first time that this was attempted, the only differentiation for the types of plotted points was the size of the cross marks! This certainly saved a lot of cartographic work. The map detail was plotted on the Sqn's Wild B8 running on shifts; the main plotters were Cpls Garvey and Longley as far as I can remember. Plotting was at 1:25 000 scale, so that a portion of the Kampen map sheet of the Bardufoss area could be published at that scale. It was titled Heggelia. Kampen, Series M714, was published in 1970. The Print Note on my copy is 'Printed by 42 Survey Engineer Regiment 12/71/1889/OA'.

Ex Carto Norge 1970

In 1970, the travel was by air and, although more economical with time, was not so much of an adventure!

This year saw Major Hugh Woodrow in command of 47 Sqn and WO2 Don Kirk was SSM. The Major went off to Norway around Easter time to do a recce, taking a set of the air photos that we were to use to compile the map. Word came back that he had been arrested by the Norwegian Military Police who thought that he must have been a spy or saboteur wandering around a rather sensitive part of the country with Air Photos which had been classified 'Secret'. It was the height of the Cold War!

I was in charge of packing the trucks with all the gear, and they were dispatched by sea a week or so before the Exercise began. This year we were to be camping, so there were tents, and so on, too. We set off on a Sunday, I think, in much the same manner as last year in 3 ton trucks, to Heathrow where we boarded a BEA flight to Oslo. We were a party of 25 including a support staff consisting of a Cook, a Signals Corporal and a couple of Drivers. S/Sgt Mick Callow, Sgt Bev Hill and I were the SNCOs.

The main party flew north from Oslo to Bardufoss, and I took Spr Meagher and one other to Bergen. On that flight I suddenly realized that I had overheard Don Kirk discussing arrangements for collecting the vehicles from the small seaside port of Sjøvegan. I didn't think much of his comments at the time but my mind must have been alerted subconsciously for he had been talking about picking up one truck but not both... and I had packed tents in one truck and all the poles in the other! Jefferies' future began to look a bit bleak! A hurried Signal from Bergen to the Main Party at Bardufoss seemed to be the best bet, but as things turned out, both trucks were picked up, so all was well and a valuable lesson learned by me!

My little detachment caught a train in Bergen and travelled inland to Voss; where we were met by a Norwegian conscript driver and mini bus who took us to an Army Reserve barrack at Bomöen a few kms to the East of the town. Entrance to the camp was over a wood and chain suspension bridge which seemed to unroll in front of the vehicle which approached with some speed. We soon called the driver 'Fangio'!

The barracks consisted of wooden huts. The Officers' and Sergeants' Mess had obviously had a party the night before my arrival; there was broken glass on the floor of the Anti-Room and when the Duty Officer offered me a drink of Schnapps, he could only find tea cups! Skol!



Spr Johnson observing at Steinvatn and Cpl Benny Bowles booking.



Spr Meagher and Jimmy Hamilton field checking the Mjölfell

Fangio was allocated to us for the week that we spent field checking. Having studied the new and old maps of the area, I had some idea of what I wanted to do and we set to work the next day. We visited the Northern end of our area first and went a few kms further to the Stalheim Hotel where Kaiser Wilhelm II liked to visit before WW1. The Stalheim Mountain is reminiscent of the German Steel Helmet of that time, but I wonder which name came first, the mountain or the helmet?

We checked, as much as we could in the North, from the vehicle, but then had to revert to Shanks Pony to visit the higher valleys, carrying our Plane Table and other gear. After a couple of days in the North, we spent the rest of our time in the South, which was closer to our accommodation. Here we did much more walking, and the lads were beginning to get the idea of Plane Tabling techniques. We managed to find time one evening to do a little tour of the Voss area conducted by the Adjutant. The natural Ski Jump high on the hill above Voss, one of the first for competition, was impressive. Standing on the lip of the jump and trying to imagine taking off from there was truly awesome!

Our task completed, we returned to Bergen by train on the Sunday and were accommodated in the Citadel Fortress which was also Army Headquarters. We had a brief look around the town in the rain, and took a trip around the harbor.

All the shops were closed. Next morning we went to the Airport and flew to Trondheim via Alesund in a Braathens SAFE Fokker F28 which had been introduced into service only earlier in the year. The SAFE in the airline's name was not related to an equal number of take offs and landings, but to 'South America and the Far East'! By the time we flew with them, they had become a domestic airline. The views of the Fjord country were magnificent, only spoiled by a very vocal and loud American woman 'Gee Elmer, look at this – LOOK at that!!' Poor Elmer *extension* looked really embarrassed

A change of planes to a Scandinavian Airlines DC-9 in Trondheim brought us to Bardufoss where we were met by Don Kirk with a Rover. Bardufoss Airfield was a combined Civil/Military Base. Norwegian Air Force Lockheed Starfighters lived in an underground base with a great steel door in the mountainside near the end of the runway, and were obviously at a high state of readiness. The Russian border with Norway was not so very far away!

So we rejoined the main party under canvas at Akkasaeter, a remote farmstead about 3km from a made road. The tented camp was already well established, but the menu was limited. The supply system had provided 5 Man Ration Packs for the exercise; Chicken Supreme or Chicken Supreme! The cook did his best and spent many hours down on a pier, fishing in the fjord! His efforts were well appreciated; the fish was beautifully fresh – sea to pan within hours! We were well fed!

Technical work again consisted of photo identification of Trig Points and interpretation of detail on the air photography. I don't recall any theodolite work this year but there was quite a bit of altimetry heighting. Although I spent much of my time working in the office, we ran several traverses to densify vertical control. One in particular comes to mind; it was roughly North South to the East of the proposed map sheet. It was a two day affair. I led a party of ten and used two Rovers as far as we could but then reverted to walking.

We started from a known height at sea level near Storsteinnes on Ballsfjorden and worked our way up the North ridge of Holltind. All went well but the stony track became slippery, and the Rover lost traction. I asked the driver if he had

selected 4wd. He had, but we were in trouble! We were using two Rovers at the time to get as high as possible; the second was having no problems; a look under the front of my Rover confirmed that there was no front drive shaft, and the vehicle had just had a major service in the UK! I asked the driver of the second Rover to close up behind us and gently push. So we went on using 6wd! We had intended to traverse Storvasstind to finish the job but some of the party were not fit enough to complete the walk, so we modified our plans and we closed off the Northern part of the task by traversing back to the start point and then driving South, around the area, and walking northwards where we bivouacked at 2300hrs near a Trig at Vouak. The following day, we left the less fit to man a base station there while the others climbed to the foot the Southern ridge of Storvasstind and established a height point there.

I remember one particular sunny day; I was the only person at Akkasaeter; everyone else was out in the field, and the cook was fishing, probably with the Signals Cpl, who spent much of his time reading, and possibly rereading paperback Western novels. I was in the attic of the Farmstead calculating Altimeter traverses, and had turned my radio to a station playing classical music. Looking out at the Scandinavian view of Birch trees and Mountains, to music of Grieg and Sibelius, was quite spellbinding!

Our communications with the Regiment were difficult. Every schedule was interrupted by Russian interference. Quick selection of an alternative frequency was quickly followed by more interference. The Cold War was real in those days!

One day, we had a visit from the Director of Military Survey, Brig Walmesley-White who was known somewhat disrespectfully as 'Wibbly Wobbly', and the CO of the Regiment, Lt Col Burrows. They particularly wanted to see the Midnight Sun, which was not visible from our Latitude at the time. The OC took D Mil Svy in one Rover, and I drove the CO in another, and we travelled north to seek the Sun.

By the time we reached suitable Latitude, the cloud had descended and it turned out to be a futile trip. We stopped on the bank of a major salmon river beside a cascade and waited for a while for the sky to clear, and amused ourselves playing 'Ducks and Drakes' with pebbles before driving back to base.

On 29th July, on an off day, a small informal group of three, Cpl Garvey and L/Cpl Roberts and myself, climbed Blatind 1380m. The weather was fair, but visibility was poor. The view was limited to the glacier 500m below the summit.



Spr Stones observing at Orrefjell with Spr Johnson booking.

The following day we struck camp and travelled by bus to Tromsø where we spent the night before leaving by air. The departure was not without some comedy; our Scandinavian Airways DC-9 boarded, and our Cook could not find a seat

and was beginning to show signs of panic. We calmed him and told him to stand and wait. The cabin crew finally found an old Lapp lady who had boarded the wrong aircraft! Oh for the days before security became so important! The cockpit door was open the whole flight, and an off-duty pilot, who also did not have a seat, stood behind the Captain! En route, we landed at Bodo after flying alongside the airstrip and doing a tight 180 degree turn and dropping onto the runway. It was the steepest turn I ever experienced in a civilian aircraft, and the spare pilot, I swear, was still stood there, but parallel to the ground below! A change of aircraft in Oslo and a further stop in Copenhagen to a BEA Trident and it was on to Heathrow and trucks back to the Regiment.

The Aero-triangulation, and adjustment proceeded well and the Geodetic Office again produced Zuse graphics for the plotting and cartography. The map was finally published after I had resigned to join the Royal Australian Survey Corps, but Bev Hill was kind enough to send me a copy which I still have. After I had left 47 Sqn, I was told that an anonymous note appeared on the Sqn Notice Board saying ‘Come back JJJ – all is forgiven!’

Jim Jefferies
January 2017

3 CANADIAN FIELD (REPRODUCTION) SURVEY COMPANY RCE - From D-Day to VE-Day

1st FLIGHT, BOOKHAM, JUNE 44

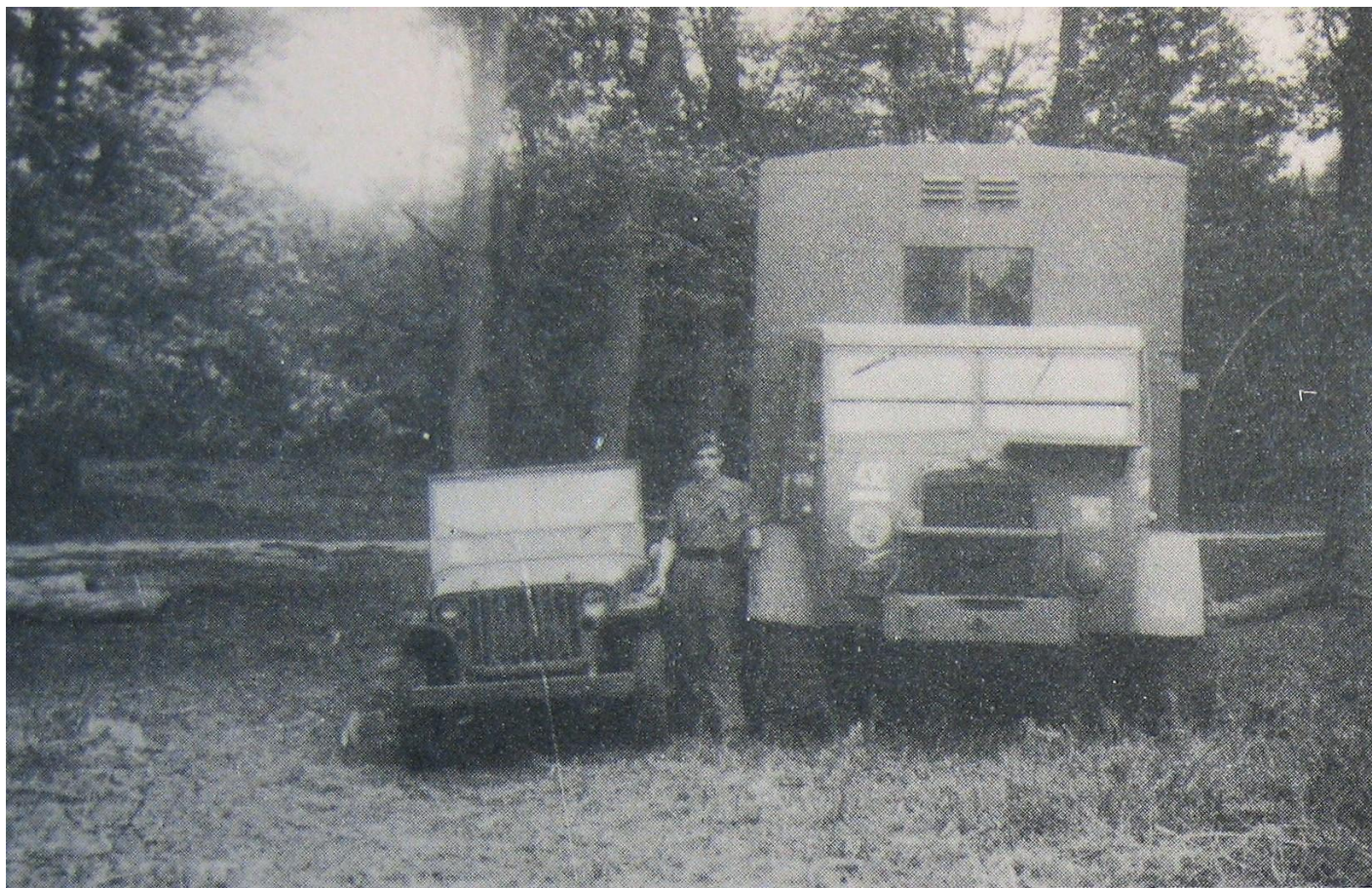


Back row, (left to right)—Spr Oldfield, L. A., Spr Slade, W. T., Spr Oliver, W. D., Spr Demars, E., Spr Baker, J. R., L/Cpl Ambrose, B. W., Spr Hickey, W. A., Spr Tomlinson, A. E., Spr Kline, R. L., Spr Marshall, G., Cpl O'Toole, J. E., Spr Scrimshaw, C., Spr Wilson, W. D., Spr Androschuk, G., L/Cpl Downing, H. A., L/Cpl Weiss, C. F., Spr Lovatt, J. K., Spr Nickorak, N., L/Cpl Blood, R. M. Fourth row—Spr Cundy, P. M., Spr Allen, D. R., Spr Pruden, Spr Dwyer, J. C., Spr Lamb, C. C., Spr Rohaly, J., Spr Cassidy, E. J., Spr Thomson, J. L., Spr Neil, J. Y., Spr Hynes, J. W., Spr Comley, E. G., Spr Kenney, G., L/Cpl Briggs, F. C. V., Spr Hoffer, H., L/Cpl Corscadden, L. A., Spr Watson, J. C., Spr Simpson, J. D., Spr Hollinger, C., Spr Andrews, C. W., Spr McLeod, D. Third row—Cpl Jemmett, F. J. E., Cpl Dennahower, G. A., L/Sgt Quinn, W. G., Sgt Austin, W. J., Sgt Large, J. A., CSM Lebeau, J. E., Lt Turner, E. S., Maj Wass, L. F., Lt Dadson, S. F., CQMS Karrison, H. E., L/Sgt Bateman, E. R., L/Sgt Boschi, G. P., Cpl Dupuis, J. C. M. R., Cpl Robertson, W. J., Cpl Brown, R. M., L/Cpl Frith, T. J., Cpl Strong, K. C. Second row—L/Sgt Wood, M. F., L/Cpl McDonald, J. A., Spr Lavers, R. W., Spr Clarke, E. H., Spr Smith, H. V., Spr Gunderson, R. C., Spr Gallant, J. R., Spr Gilley, K. N., Spr Lacombe, P., Spr Bruce, G. H., Spr Swaffield, A. E., Spr Norris, J. E., Spr Fouchard, G. W., Spr Brown, F. W., Spr Watkins, H. H. Front row—Spr McDougall, A. A., Spr Smith, Spr Cutts, H. P., Spr Miller, J. S., Spr Asselin, A., Spr Rhyno, G. A., Spr Kerr, J. I., Spr Magwood, V. E., Spr Shewchuk, W., Spr Estabrooks, G. A.

The company's 1st Flight at their concentration area Bookham Surrey in June 1944 prior to their move to France on 28th July

“So this is France” What a galaxy of thoughts must have run through the minds of all as the low coastline of the continent loomed ahead... thoughts of home, wife and children. This was the day for which we had trained for four years and the overriding query of all “What’s ahead” could only be answered by “Time will tell”. Certainly it was a day no one will forget.

In common with most other units, the Company was broken into two flights for the move across the Channel. Each flight consisted of roughly half the personnel and equipment with Map Photo travelling on the First Flight.



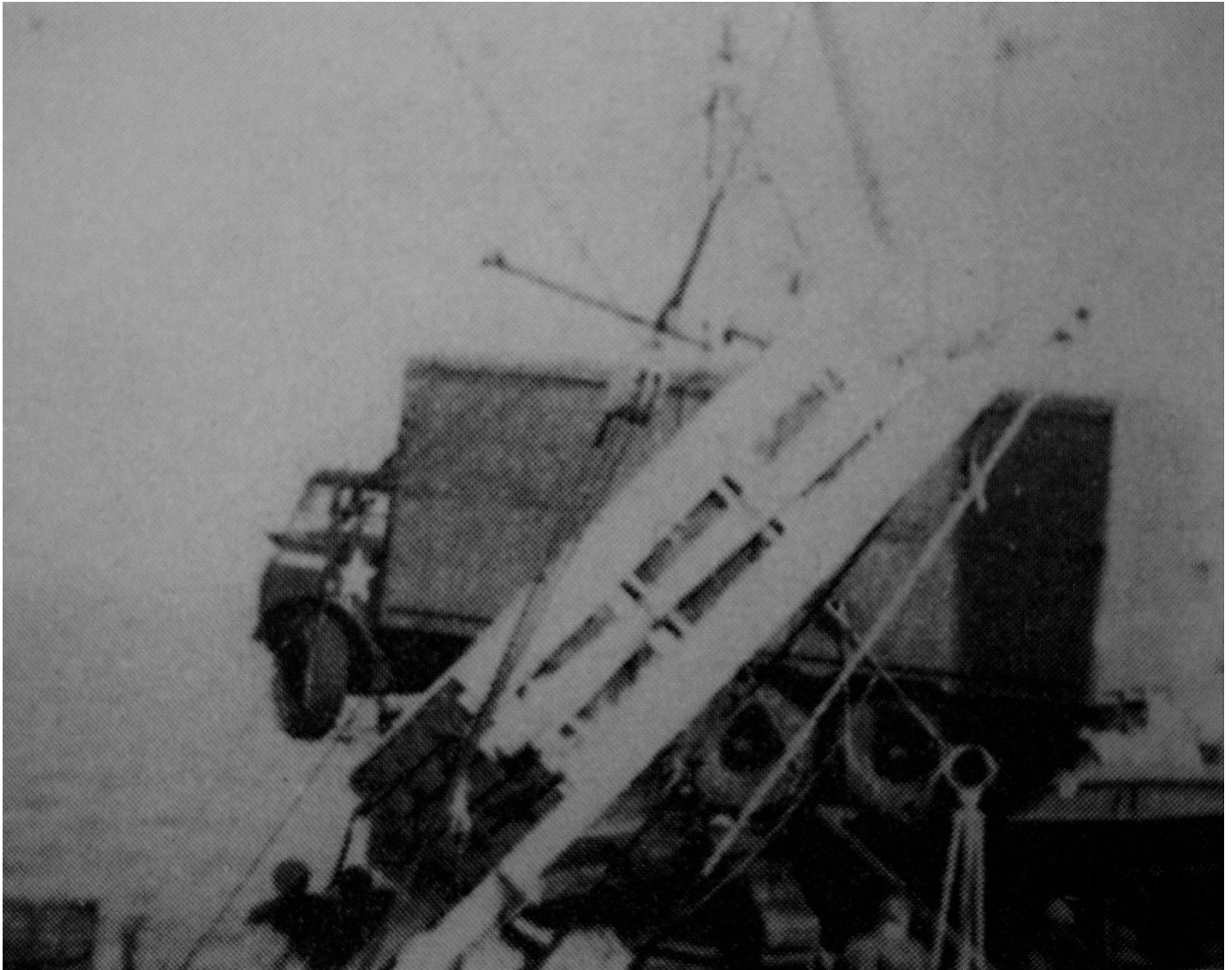
Preparing the transport in the concentration area prior to embarking at Gosport Hampshire on 28th July 1944

The first flight of the Company was loaded on two Landing Craft Tanks, each of which carried two Fodens, two Motor Generators and two three-tonners plus a Thornycroft from 2 Map Photo Section. The total personnel were 89 all ranks, under Major Wass and Lieuts. Dadson, Turner and Alsop.

The complement of the first LCT landed on the beach near Arromanches without incident and that of the second LCT landed over a small pier due to the fall of the tide. As fast as the vehicles came ashore they were dispatched under Provost direction along a signed route to the de-water-proofing camp where a hot cup of tea provided a pleasant welcome to the Normandy beach-head. After de-water-proofing the vehicles were formed in a Convoy and passed to a camp where they were held until after dark. No convoys at this time were allowed to leave the immediate area of the beaches during daylight. After dark an officer from DD Survey Staff and a Provost guide led the convoy to the Unit's first location, a low field near a stream at Fontaine Henry.

Few of us will forget the first night ashore - - we landed expecting Lord knows what, and found the peaceful quiet of England except for the odd blast from some arty battery, but after dark things took on a different complexion. Our air umbrella plus ack-ack made a daylight raid on the beaches pure suicide, but at night they were willing to take a chance and this was one of them - first the searchlights then all hell seemed to break loose as the ack-ack opened up. Many of us were familiar with England's ack-ack but it was nothing compared to this. Those who had not attempted to secure cover for their beds lost no time in diving under the nearest truck. It was not bombs that were the worry, but the splinters from the bursting shells, and by the next night everyone had improvised cover of some sort.

Next morning the Lorries were prepared for work and by noon everything was well-organized and two sections were operational. MPS located themselves in one of a huge series of caves which housed the complete section and would have taken a couple of Fodens as well. They refused to admit that nerves had anything to do with the location, but rather that their equipment and work was so important no chances could be taken.



Unloading from an LCT on arrival off the French Coast at Arromanches

Our next-door neighbours in the field were the mobile shower section of a Mobile Laundry, and they proved to be the best neighbours a Unit could have in this dusty and dirty area. The rest of the laundry moved to a new location when Survey won the first of many battles on priority of locations, probably on the assumption that troops could fight without underwear if necessary but they could not fight without maps.

We had little idea as to how much or what type of work we would be called upon to do, but we were not left long in doubt. By the time we were set up, Operation Totalize was on the planning boards for the Army. This op, which was designed to break the enemy's line along the Caen-Falaise road a few kilometers south of Caen, was the first major operation of the Canadian Army as an Army. For it, we produced nine Going Maps, seven Defence Overprints and a Fire Plan plus six engineer intelligence traces for a total of 480,000 impressions.

On 4 Aug., about half-way through the work for Totalize, the remainder of the Company under Capt Thornton and Lieuts Gill and Richards arrived at Fontaine-Henry after an eventful trip. The main part was made in a Liberty Ship but about two miles from the beaches the equipment was transferred to LCT's by crane, and came in over the beaches as did the first flight, but rumour has it that not a few grey hairs were earned watching the Navy and RE's swing 20 tons of vehicle from one ship to another. However, the transfer was made and our '*hats off*' to them for a grand job.

On 7 Aug the attack to break out of the bridge-head went in preceded by a terrific aerial and arty bombardment. It was the first time in the history of the Company we heard guns roar in earnest while firing from maps we had printed and marked a definite milestone. About noon on the 8th Aug the second phase of the attack started heralded by heavy bombing and proved the most disastrous day in the war for Survey.

Lt-Col W.K. MacDonald and part of 2 Coy were waiting to move forward following the advance when they were caught by aerial bombs which fell short of their mark. To make matters worse they were in the vicinity of an ammunition dump which went up. Lieut Logie and 9 others of 2 Coy were killed and Lt-Col MacDonald and a number of others seriously injured. Most of the injured were evacuated to England by air and on 10 Aug. Major Gamble replaced Lt-Col MacDonald as AD Survey.

By this time the heavy concentration of troops in the bridge-head had pounded the roads to pieces and pulverized the ground into the worst possible dust conditions. In many places the dust churned under the wheels of vehicles like water. We all shuddered to think what a few days' rain would do.

Operation Totalize was a complete success and resulted in the destruction of the German line in that area so on 25 Aug the Company less 3 Repro moved to Ouville near St. Pierre sur Dives. 3 Repro remained at Fontaine-Henry to handle last minute work pending the move of Army HQ.

The move to Ouville heralded a series of moves. On 31 Aug, 3 Repro rejoined the Company and the next day all moved to Brionne. From Brionne the next move took us to Londinieres on the 5th and then to St Omer on the 9th. During this, work remained heavy due to the speed of advance, and no attempt was made to print 1:25,000 cover for the whole area but only where opposition was encountered or expected. A history of this period would be a history of one of the most amazing periods of the war

The advance was so rapid that pockets of the enemy were by-passed and in many cases left until hunger drove them from their strongholds and then French Patriots, the Maquis, quickly rounded them up. Many times the peasants reported to us the presence of these pockets, but our job was maps and fighting was only to be indulged in if necessary to protect ourselves. Doubled guards were kept posted during this period. On 9th Sep, 3 Repro left from Londiniere to prepare a fire plan and barrage trace for 1 Br Corps' assault on Le Havre.

The 25th September found us in Ghent, Belgium for our first taste of civilization since landing on the continent. Here we occupied the once palatial Palace des Fetes, but more recently used by the Germans as a vehicle assembly plant. However it was a roof, something we hadn't had anything to do with since leaving Merrie Old England, and was big enough to drive the Fodens inside. It was here too that we first made contact with the Belgian girls and that, if for no other reason, will make Ghent a landmark in the minds of many. The story of Ghent will never be fully told, but suffice to say "It was a good go". Perhaps another item of Ghent should be mentioned and that is the bath. For years we had got along with a minimum of facilities to keep the "Come Hither" smell, but here in the heart of war-torn Europe we found huge bath tubs with copious supplies of hot water and even attendants to see one didn't fall asleep and drown. No five-inch line painted on the tubs here.

Our work to this point had largely been the printing of 1:25,000 sheets ahead of the advance with some defence overprints and goings maps thrown in. These days fully justified our existence but proved we did need a bigger organization than we had both more machines and more men to work these machines. As long ago as Spartan we had reported we could not operate machines 24 hours a day with the present establishment, but we had found it necessary to do so and the strain was making itself felt. At this time steps were taken to bring over more reinforcements and several months later resulted in the re-organization of the Company.

On 10 Oct we moved to Hoboken a suburb of Antwerp and were comfortably cocooned in a factory and some other buildings. It was here that 3 Coy's association of café owners was formed. Unfortunately the books of this Association burned from spontaneous combustion, and memory is hardly capable of reconstructing the organization. "Survey will never forget Hoboken".

This period however had its grim moments for it was here we again met up with our old enemy, the V1 or Buzz-Bomb. The Belgians called it a ("Fly-Bomb"). And here too we met up with Hitler's V2, the long-range rocket. Many are the arguments that waged on the merits of the two weapons but from our point of view at least the buzz-bomb gave you a run for your money for you did have a chance to dive under the table and wonder whether it had your name on it, but not the rocket – the bang was the first indication of its presence. We were very lucky and received no serious damage from these weapons, but we did lose a few windows and part of the roof.

Hoboken also proved one of the busiest periods as we prepared for the battle for the Scheldt Estuary which was preceded by the Leopold Canal crossing. One job involved the making of five composite maps for which the Camera Section produced over 100 positives and negatives with the final negative ready for printing in less than 10 hours.

This proved the necessity for contact equipment and authority was obtained for the design and construction on local purchase of a contact printer and a drier. These were constructed by Plantins in Brussels and later installed in a 3-ton lorry which had been lined with plywood and fitted with water tanks and other equipment essential to a darkroom.

One particular job handled at Hoboken is worthy of special mention as it shows the fine line to which we now work. 1 Coy drew a large scale map of a portion of Walcheren Island, the negatives of which we received at 1715 hrs. From these we printed 1000 copies which were collected by a representative of DD Svy at 2000 hrs and delivered to a Commando Brigade who used them for a dawn attack.

By this time defence overprints had become a standard drill with as many as 20 going through in a single week. In the interests of legibility we had adopted the practice of redrawing all the traces, resulting in uniformity throughout the series regardless of who did the original interpretation.

On 12th Oct, Major L. F Wass vacated the command on posting to DD Survey in charge of reproduction and Major A.V. Holland assumed command.

On 10th November, No's 1 and 3 Repro and HQ moved to Tilburg, Holland. As a parting gesture a rocket blew off most of the roof of our living quarters and altogether we were not sorry to leave this hot spot. In Tilburg we took over the school at 13 Korte Schystraat, part of another school and part of a factory. The remainder of the Company moved the following day.

First impressions of the Netherlands were depressing to say the least; we were forbidden to purchase anything except souvenirs, not that there was anything to purchase as the Germans had stripped the place clean and the female pulchritude was of a type that required time in getting used to after the Belgian. Beer and spirits were totally unobtainable and altogether life was rather grim, but work was very heavy so free time was not too plentiful. Later as we became better acquainted with the locals we began to make friends and to appreciate what they had been through. By comparison with the Belgians we found the Dutch rather a stolid people, but sound and thorough in all they did.

During the latter part of November we received two additional presses in anticipation of a change of War Establishment. This brought our total machines to six with the helios remaining at four. Reinforcements from England were attached to the Company to man these machines until absorbed by the new WE.

By this time short leave to Brussels had commenced and the running of leave vehicles from Tilburg to Brussels became a regular thing. One of these cracked up spoiling the beauty of Lieutenant Alsop, QMS Spearman and several others, but fortunately no one was injured seriously although the only part of the truck salvaged was the rear axle. One unexplained phenomena of these leave trips was the inability of the vehicles to get back through Hoboken without being detained overnight by fog or breakdown.

On 21 Dec the Germans broke through on the American sector creating a tense situation in Tilburg due to the presence of fairly heavy concentrations of the enemy across the Maas with the known intention of attempting to retake Antwerp. Personal arms were carried by all and precautions were gradually increased until one platoon was under arms at all times. This change in the general situation caused a complete change in the priorities of the work in hand as all machines started working on maps of the Ardennes Sector.

During our stay in Tilburg we accumulated a large number of camp followers consisting of every kiddie of the neighbourhood so on 23 Dec we held a Christmas party in the auditorium of the school. It was a huge success and every one of the 300 kids there received at least a bag of sweets, and this, in many cases, was the first candy they had had during the war. The Unit Christmas Day dinner was certainly the best attended in the history of the Company and one of the best meals consisting of canned turkey, frozen pork, pudding and a tot of rum followed by cigars donated by the German Army. No relaxation either of stand to regulations, or hours of work, was permitted over the Christmas Season.

During this period security regulations were strictly enforced causing the odd amusing incident. One of the Officers returning to the billet was checked by a roving patrol and to his embarrassment found he had no identity card. Asked who his O.C. was he stated "Major Holland". With the comment "*Sounds phoney to me*" he was taken in tow by the picket and forced to prove identity. Of course this could only happen to attached personnel.

New Year's Eve offered nothing in the way of real amusement but at least a band was formed and paraded the street in front of the quarters. About 10 o'clock New Year's Day a flight of Jerry planes passed overhead under heavy ack-ack fire. These were the first we had seen for a long time and served to remind us that there was a German Air Force.

Leave to Canada, always a subject for fond thought became a reality when Corporals Brown, Robertson J.W. and Stein and Sapper Cassidy left on the first draft with the intimation others would follow each month.

On 20th January, 3 Cdn Fd Svy Coy was disbanded and immediately reformed as 3 Cdn Fd (Reproduction) Svy Coy. In point of fact, the actual reorganization was on paper only, for the Company had been operating on the new basis for some time. The new establishment called for two Repro Platoons each with a Captain and a Lieutenant and SSgt and equipment of three presses and two helios, a Map Photo Platoon with a Lieutenant and Sergeant plus the normal HQ establishment.

Most of us were more than a little homesick during the period as the weatherman did his best to remind us of Canada with fairly heavy snow and clear crisp weather. Coal was scarce and wood details had ample opportunity to work in the bush - there was no lack of volunteers for this. About this time, we commenced to employ civilian cooks and civilians to clean the buildings. While undoubtedly it released some of our people from these jobs the CSM was noticed to age considerably during this period and it's not unlikely we would have found him doing the fatigues himself had we continued.

Operation Veritable, the operation to break the Siegfried Line began to occupy our time and a tight schedule was laid on to keep a steady flow of work coming out. We committed ourselves to 11 Defence Overprints every 30 hours and found we could maintain this rate without difficulty. We completed the work for this operation on 6th February, a total of 22 defence overprints plus exceptionally heavy 1:25,000 coverage.

With the advent of spring the heavy traffic knocked all the roads to pieces and many of the main routes were limited to one-way traffic. The bottom also fell out of the field occupied by 2 Platoon and Map Photo forcing them to move to the road blocking it off to all traffic. It provided an excellent setup and an ideal spot for rubber-necking on the part of the locals.

Our second draft for rotation leave to Canada left on 13th February and counting points became the favourite occupation of all the old-timers. Lucky members of this draft were Sprs Leafloor, Smith A.R., Phillimore, Cleford and Patterson.

On 22nd February a single honour fell to part of 1 Platoon when they were ordered to the Reichswald Forest near Cleve Germany to produce a fire plan for 2 Cdn Corps. This was the first Repro equipment, British or American, to cross into Germany.

With accommodation almost impossible to secure ahead of Tilburg our next move took us under canvas a few miles from Oss, Holland. For sleeping accommodation we acquired the American type two-man tents, plus a few marquees for messes and workshops. Our camp site was ideal for the purpose located on a sandy knoll with scrub vegetation it was dry in any type of weather and provided shelter from winds. Improvisation became the order of the day for there were no buildings anywhere in the area and even our movies had to be held in the open. For this we lined up seven trucks in the shape of a "U" and covered in the centre with tarps - at least it was well ventilated and smoking was no detriment.

Work during this period was spasmodic but one job produced a new record. At 1600hrs 14th March, negatives for three sheets of CA24 were received with an immediate priority order for 14,000 copies each. These were delivered at 1000 hrs next morning - 126,000 impressions in 18 hours.

During the last half of the month considerable work was done in preparation for the Rhine crossing "D" Day which came on 24th March heralded by the heaviest concentration of bombers we had ever seen.

Our present location lay in the path of the bombers and also in the path of the V1s headed for Antwerp - Hitler's secret weapon looked rather puny as it streaked its lonely way across the sky while hundreds of heavy bombers headed for Germany. Truly the air war had back-fired on Germany.

Our biggest quota for rotation leave to Canada left on 6th April consisting of Captain Thornton, S/SSgt Austin, Sgt Wood, Sgt Hanes, Sprs Norris, Andrews, MacDougall and Slade.

Our next move took us across the Rhine and back into Holland near Almelo on 18 Apr. We were forced to change our location at the last minute when Sigs developed a higher priority and we ended up in a farmer's field. Main advantage of the location was the supply of eggs – one had only to lean on the fence with a package of cigarettes and the eggs appeared.

A further Canada draft warned the following: - Captain Turner, Spr's Cairncross, Watkins, Grenier and W. Hollinger, Lt-Col Gamble, Major Keefer, Major Smith and Lieutenant Bartlett were also warned. Survey seemed to be rapidly disappearing.

“Cease Fire”, the order we had been awaiting for nearly five years became a reality on the 4th May as the Germans in Holland, Denmark and North-West Germany signed unconditional surrender. Our celebration was quite mild compared to the Dutch people who celebrated the new freedom of the country after four years of oppression and hardship. For them the hardship is not over, but it should steadily improve as supplies and food are brought in.

We had come to know mud fairly well, in fact it might be said we were on intimate terms with mud on many occasions of our campaign, but never had we encountered mud as now. We did not mind the fact it was deep, black and sticky, but when we had to use clothespins to close off the smeller (sic) we decided to move. We suspect years and years of fertilizers had combined to create an odour the likes of which we had not encountered before. A careful recce located a slightly wrecked hotel and a stretch of dry road near Rijssen and we moved there on the 7th May using the hotel for messing, draughting and offices. It was formerly a V1 site and was damaged by Buzz-bombs which had not cleared the launching sites. On the 8th the Company assembled to hear Prime Minister Winston Churchill make the official announcement ending hostilities with Germany at 0100 hrs on the 9th May, 1945, and ending the war history of the Company. “Let's go home” became the favourite expression.

The End

Mike Nolan

(Transcribed from a souvenir booklet and follows on from the time the Company was formed in Canada in September 1939 and subsequently operated in the UK from February 1940 – as described in the Summer Newsletter 2016 – No 60)

MILITARY CONVENTIONAL SIGNS TO BE USED ON MAPS, SKETCHES OR ANNOTATED PHOTOGRAPHS.

<p>Batteries and Gun Emplacement.</p> <p><i>General.</i></p> <p>When scale allows, individual emplacements, fixed by photo, are to be shown.</p> <p>Nature of Artillery: 6" How., 18 Pdr.</p>		<p>Obstacles.</p> <p>Wire Entanglements</p> <p>Abatis Single (on posts) XXXXXXXXXXXX Multiple (on posts) XXXXXXXXXXXX Coiled or Danneret XXXXXXXXXXXX Chevaux de frise -X-X-X-X-X</p>		<p>Troops and Headquarters.</p> <p><i>Titles will be written alongside the appropriate sign and the authorized abbreviations used.</i></p> <table border="1"> <tr> <th>Cavalry</th> <th>Artillery</th> <th>Infantry</th> <th>Tanks</th> <th>Armoured Cars or Centres</th> <th>Transport</th> </tr> <tr> <td>○</td> <td>□</td> <td>○</td> <td>■</td> <td>□</td> <td>○</td> </tr> <tr> <td>○</td> <td>□</td> <td>○</td> <td>■</td> <td>□</td> <td>○</td> </tr> <tr> <td>○</td> <td>□</td> <td>○</td> <td>■</td> <td>□</td> <td>○</td> </tr> </table>		Cavalry	Artillery	Infantry	Tanks	Armoured Cars or Centres	Transport	○	□	○	■	□	○	○	□	○	■	□	○	○	□	○	■	□	○
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<p>Anti-Tank Gun.</p> <p>Projected □ Under Construction ▢ Completed ■</p> <p>(Nature of gun to be stated, i.e., 2pdr. or 25mm)</p>		<p>Dumps.</p> <p>Supply Petrol Ammunition Engineer</p>		<p>Individual Units - General</p> <p>Column of Route</p>																									
<p>Machine Gun.</p> <p>Projected ○ Under Construction ○ Completed ●</p> <p>Machine Guns (for use on maps of 1:50,000 and larger) (Specially in field sketching)</p>		<p>Hutments</p> <p>Dug-outs</p> <p>Signal Office (Telephone or Telegraph)</p> <p>Wireless Telegraph Station</p> <p>Radio Telephony Station</p> <p>Beam Station</p> <p>Direction Finding Station</p> <p>Visual Signalling Station</p> <p>Hospital Clearing Station or R.A.P.</p>		<p>Headquarters.</p> <p>G. H.Q. Army Corps. Div.</p> <p>Bde. (Cav. or Inf.) Regt., Bn. Arty. Regt. Sqn. Coy. or Bty. Tp. or Pl.</p> <p>A.A. Div. A.A. Bde.</p> <p>A.A. Regt., Bn. A.A. Bty., Coy.</p>																									
<p>Bren Gun.</p> <p>Projected ▲ Under Construction ▲ Completed ▲</p>		<p>Gas.</p> <p>Gas Projectors</p> <p>Gassed Areas (Shaded Yellow when possible)</p>		<p>Boundaries.</p> <p>Inter-Army " Corps " Division " Brigade " Battalion</p>																									
<p>Observation Post.</p> <p>Projected ○ O.P. Under Construction ○ O.P. Completed ● O.P.</p> <p>Note: Arrows show line of fire of gun or (in concrete) direction of loopholes</p>		<p>Tanks.</p> <p>Tank Trap</p> <p>Road Block</p> <p>Mine</p> <p>Minefield</p> <p>Anti-Tank Rifle</p>		<p>Examples -</p> <p>Fd. Regt. R.A. (in column of route)</p> <p>Unit deployed - one company</p> <p>Defended locality - one platoon</p> <p>Troops in defence - showing portions of two battalions</p> <p>Bn. H.Q. Area</p> <p>Reserve Coy.</p> <p>Note: These examples show the use of signs and are not to be taken as standard dispositions.</p>																									
<p>Anti-Tank Ditch.</p> <p>Projected - - - - - Under Construction - - - - - Completed - - - - -</p>		<p>Inundations.</p> <p>Projected - - - - - Under Construction - - - - - Completed - - - - -</p>		<p>Bridges.</p> <p>Weight capacity of Bridges and Culverts in Tons</p>																									
<p>Mortar.</p> <p>Projected ○ M Under Construction ○ M Completed ● M</p> <p>Nature of Mortar to be stated, i.e. 3" or 5" (before)</p>		<p>Embankments & Cuttings.</p> <p>Height of Embankment in feet +9 Depth of Cutting in feet -10</p>		<p>Water.</p> <p>Width of Waterway in feet 16w. Depth " " 5d.</p>																									
<p>Anti-aircraft.</p> <p>A Section of Guns Machine Gun Searchlight Visual Plotting Station</p>		<p>Woods.</p> <p>Average diameter of Trees in inches 5d. Average spacing of Trees in feet 10s.</p>		<p>Signs will be shown in red for British (and allies) and in blue for enemy.</p>																									

O.P. 1183 War Office, 1940.

42 Engineer Regiment (Geographic)



Present 42 Engr Regt (Geo) CO Lt Col N Bell formally welcomes incoming CO Lt Col Hammett



Geo products being used in support of the relief effort for Hurricane Irma



42 Engineer Regiment (Geo) scanning the Canadian Forces School of Military Engineering (CFSME) at Gagetown New Brunswick.



42 Engineer Regiment (Geo) inspiring the Army's future leaders at the Royal Military Academy Sandhurst Arms and Services day

British Dragon Boat Association National Finals 2017

High from our emphatic win in the recent St Neots Dragon Boat Festival 19 August 2017 where the Wyton Warriors swept to victory I received an email shortly after from the St Neots Dragon Boat Team (SNDBT) who hosted the event, saying the team made up of members from 42 Engineer Regiment (GEO) had qualified for the National Finals 23/24 September 2017. A significant step up from racing 18 other charity teams!



Wyton Warriors after winning the St Neots Dragon Boat Festival. "Whatever you do don't get any drink on the Mayor."

Slightly panicked about the logistics of entering, how to raise the money required and how to register, we then had SNDBT make us an offer. In an unprecedented move they wanted the Wyton Warriors to race under the SNDBT banner as part of their second crew, best of all they would pay all fees and take on the organisational burden. This is one of the largest teams in the country and finished 5th in the National League Premier Division so this offer was truly an honour and showed they had some (possibly misplaced) faith in our abilities.

What followed was a blur of trying to get as many people as possible to paddle (a few original team members were unavailable) and organising training sessions kindly run for free by SNDBT. Eventually we ended up with 12 members, 2 of which had never paddled before and after 3 training sessions, (which not everyone could attend) set off for Nottingham and the National Water Sports Centre for the National Finals. If we sound unprepared, we were. We were going to be racing in an S20 class (20 man boat) with SNDBT members we had never met or raced with.

We arrived at 0745 as instructed, to be told we weren't racing until 1445, which went down well. In fact we did race earlier, filling in for some of the more exhausted SNDBT members in their second string team.

At 1445 we started the first of 4 races in the S20 Mixed, 12 men and 8 woman plus drummer and helm. St Neots Too as we were known did well in the heats, putting in some respectable 200m times of around 59, 57 and 58 seconds keeping up with the big boys. We made the Plate final and gave it everything. We finished an unexpected 2nd and missed out on 1st by 2 100^{ths} of a second which was gutting. SNDBT were elated however, we had exceeded their expectations by some margin, second at the National Finals, beating Premiership sides.



Members of Wyton Warriors training alongside SNDBT on the Great Ouse



SNDBT 'St Neots Too' minus a couple of members

Almost immediately afterwards we had the 2KM event, which was a timed best effort against all the other teams. This was challenging to say the least, and where we finished outside of the placing's with a time of 11.01min. Tired and wet we returned to Wyton. SNDBT let us keep the S20 Mixed trophy as a memento of our success, a very kind gesture and greatly appreciated.

SSgt Turrall

Exercise High Trig Facebook Page

Exercise High Trig took place in Nepal between 1982 and 1985 and was possibly 19 Topographic Squadron's greatest achievement. It was the last major first order triangulation survey of a country and produced a network of 68 trig points ranging from almost sea level up to almost 17,000 feet in some of the most remote and rugged terrain on earth.

Jon Zorichak was the OC for the third deployment and has created a Facebook page containing some stunning photos and telling the story of the task - it is well worth a visit to <http://facebook.com/HighTrigNepal>

For those not familiar with Facebook:

- Click on the link above which will take you to the page
- Scroll down to the bottom of the page to start at the beginning
- Click on the map to start the slide show
- Read the text on the right hand side
- Click on the arrow midway down the right hand side of the map image to move on to the next slide
- Having seen all four slides click on the cross that becomes visible in the top right corner of the black area bordering the image and text to return to the main page
- Scroll up to next image and repeat.



The iconic High Trig image - Mick Barnes observing and Bob Taylor booking at almost 17,000 feet – probably the highest field survey observations ever carried out by a British Military Survey soldier

The Editor received the following communication from Dr Michael Fradley of Oxford University, which he feels may be of interest to members: **Endangered Archaeology of the Middle East and North Africa project.**

We use satellite imagery and aerial photography to identify and assess the changing condition of archaeological sites across the MENA region. As part of this we draw on, where possible, historic aerial photography that can give us a greater time-depth analysis of an area, and sometimes even identify sites that have subsequently been destroyed. RAF photography is particularly useful, especially the mapping missions that were undertaken for the Royal Engineers across the various British territories from the First World War onward. I really wanted to draw your attention to our project in case it was of interest to your members, given that in some cases we are able to re-use some of the aerial photography that RE surveyors previously used to construct maps. We are currently digitising many of the vertical photographs from the missions in Yemen dating back to the 1950s. We are also running an appeal to use scans of imagery in any private collections that they are happy to share with our project: <http://eamena.arch.ox.ac.uk/the-eamena-aerial-photograph-appeal/>

For any interested members in your group, much of the original aerial photography taken for the GSGS is now finally being declassified by the DGC and passed on to the National Collection for Aerial Photography in Edinburgh. They have already digitised material for Egypt and Malta from the 1920s-30s: <http://ncap.org.uk/search/archive/20?free-text=yes#free-text=yes&zoom=2&lat=3429800.20425&lon=2528868.74315&layers=BT>

Some even have the contour annotations drawn directly on the frames: <http://ncap.org.uk/frame/20-1-3-3-17?search=archive/20&free-text=yes>

Announcements - Deaths

Capt Maurice Broomfield – Maurice served between 1931 and 1945. Apparently Maurice died some time ago but we have only just been informed. The records show that Maurice was posted as a Lieutenant to 516 Field Svy Coy RE on 22 November 1944 and employed as a Topo Officer. The Company was then based at Maddaloni in Southern Italy. Maurice was promoted Captain on 4 July 1945 and appointed 2 i/c of the company. The Company was disbanded on 22 September 1945 at Titanus Film Studios in Rome.

Capt Douglas William Gale – We have been informed of the sad death of Douglas. Many will have known “Duggy” or “Windy” who served as a Captain from 1963 to 1972 and did the London College of Print course. He was a member of the DSA, and he attended Jay Coulson’s funeral recently, in Suffolk, so some may have met him quite recently. Douglas died in the early hours of Saturday, 30th September 2017 and his funeral was held at Cotton Church, Suffolk, on Monday, 16th October 2017 at 2.30pm. His family and friends are sent the Branch’s sincere condolences.

David Wheadon – David died last month after a very long illness. David had been a National Serviceman as a Photographer. The Branch extends commiserations to his family and friends.

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Will members please inform the Secretary of any changes to their contact details and in particular their e-mail address! Thank you

Visit www.militarysurvey.org.uk

Another large tranche of photographs are due to be uploaded in the near future

The Branch FaceBook Group membership has now exceeded 200 but I am sure that there are many ex-survey/geo colleagues out there who need to be reminded that they are most welcome to join!!

MILITARY SURVEY BRANCH REA

IT'S A REUNION

FREE ENTRY AND FREE CURRY SUPPER

NON MEMBERS £10 PER PERSON (NB £5 pp. cash back if you subsequently join)

SUPER BAR @ MESS PRICES

FREE TRANSPORT LATE TO LOCAL HOTELS ONLY - M4 JUNCTION

1830hrs for 1900hrs FRIDAY THE 13th OF APRIL 2018

Location: SGTS MESS - DENISON BARRACKS - HERMITAGE

Plus; do please note we generally only meet once a year and we must vote in officers of the Branch and approve the accounts therefore we are compelled to hold an annual general meeting (AGM). Those interested in attending the AGM should note that this will take place on the same day at the same venue but at an earlier time. It will not interfere with the opportunity for members attending the reunion to chew the cud, enjoy the food and of course the good cheer.

THUS OUR ANNUAL GENERAL MEETING WILL BE AT 1700 for 1730 ON THE SAME DAY

FRIDAY THE 13th OF APRIL 2018

Please do try to attend both of the above and support your Branch.

The Committee with the kind permission of Commanding Officer and of course the RSM, the President of the WO & Sgts Mess, extend an invitation to members to attend this reunion and if so desired the earlier AGM in the Sgts Mess Hermitage on Friday night the 13th April 2018.

FURTHER DETAILS AND THE ENTRY FORM ARE AT THE LAST PAGE

PLEASE SEND IN YOUR RETURNS NOW

BUT NO LATER THAN THE 1st APRIL 2018

THE MILITARY SURVEY BRANCH OF THE REA

IT'S A REUNION

FREE ENTRY AND FREE CURRY SUPPER

NON MEMBERS £10 PER PERSON (NB £5 pp. cash back if you subsequently join)

1830hrs FOR 1900hrs FRIDAY THE 13th OF APRIL 2018

PRECEDED BY AN ANNUAL GENERAL MEETING 1700hrs FRIDAY THE 13th OF APRIL 2018

Please note that the bar will be open before 1830hrs. Food will be served at about 2000hrs.

Accommodation: A small number of rooms may be available but do note that as the barracks are no longer under the command of RSMS that this may be too difficult. Hotel facilities are available at junction 13 of the M4 motorway and at Chieveley too; we will provide transport free back to these locations late evening.

Dress: Smart casual or better if you wish!

WARNING: - Hermitage has become a high security Barracks and ENTRY WILL ONLY BE PERMITTED to those who have returned this entry form with their details; IDENTITY CHECKS WILL BE REQUIRED TO GAIN ACCESS TO THE CAMP.

It is vital to establish firm attendance figures early and so once again we would request that you return this form as soon as you can:

SO PLEASE SEND RETURNS BEFORE THE 1st APRIL 2018 TO:

M. Perry, 101 Craven Road, Newbury, Berks, RG14 5NL

Problems? [Then contact me on] mandpdperry@sky.com or Tel; 01635 37510

.....

From: Forename:.....	Surname:.....	I am a member – YES//NO
		<u>Non-members £10 pp. cheque please</u>
Address: -	Tel No: -	
	E-mail: -	
Type & Make of transport:.....	Registration No	

I *shall/*shall not be attending the Reunion on Friday 13 APRIL 2018.

I *wish to/*will be unable to: - attend the AGM beforehand.

Guests: Wives/partners are welcome 1 2.....

DO PLEASE - REMEMBER THE GEO SOLDIERS SUPPORT FUND

I enclose a cheque to support this for £..... payable to “Military Survey Branch REA”

If you have any special dietary needs or require **disabled access** please detail these below and every attempt will be made to accommodate them.

NB: Military units do not cater for severely disabled conditions (for obvious reasons) and we apologise in advance for any shortcomings that might cause individual inconvenience.