



The Military Survey (Geo) Branch

Summer Newsletter 2021 - issue 80

WARNING ORDER

MILITARY SURVEY (GEO) BRANCH REA

IT'S A REUNION on Friday 8th of OCTOBER 2021

FREE ENTRY AND A FREE CURRY SUPPER

NON-MEMBERS (£5 per person) (NB: £5 pp cash back if you subsequently join the Branch)

Attending Members will receive a Branch Lapel Badge - Free

SUPER BAR @ MESS PRICES

FREE TRANSPORT LATE TO LOCAL HOTELS ONLY - M4 JUNCTION

1830hrs for 1900hrs FRIDAY THE 8th OF OCTOBER 2021

Location: WOs' and SGTS' MESS - DENISON BARRACKS - HERMITAGE

The Committee with the kind permission of Commanding Officer, the RSM, the President of the WO & Sgts Mess, extend an invitation to members to attend this reunion in the Sgts Mess Hermitage.

NB: OUR ANNUAL GENERAL MEETING WILL BE AT 17:00 for 17:30 ON THE SAME DAY

Do note that we only meet once a year **BUT AS WE HAVE NOT SEEN YOU SINCE APRIL 2019 (ZOOM ASIDE) SO PLEASE PLAN TO COME AND JOIN US.** We must vote in officers of the Branch and approve the accounts therefore we are required 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.

*****Please note that due to Covid restrictions there will be no accommodation available in Hermitage Station*****

Please do try to attend **with wives/partners** and support your Branch.

RETURNS REQUIRED BY 24th SEPTEMBER 2021

A returns form can be found on the last page of this Newsletter

Returns to Mark Kieras – Functions Organiser – contact details are:

Tel: 07974355646

Email: REA-MILSVY-Functions@outlook.com

Address: 5 School Road, Compton, NEWBURY, Berkshire, RG20 6QU

COVID – Geo Supports the National Effort

by WO1 Roy Moulding RE, FST WO1, 16 Geo Sp Sqn RE

Roy Moulding joined Geo in 1999 and trained as one of the first 'Data Technicians'. He completed three full tours of Afghanistan and some shorter ones (airfield surveys). He then served in 14 Sqn in Germany and again with it back in Wyton but have spent time in all the Geo bazaars except the school. His last tour was in Milan in the NATO post before taking up the role in 16 Sqn Field Survey Troop as the WO1. Roy moves to Chatham in October after being successful on the Corps commission board.

I will take you back to a cold January 2020 when all were arriving at work as normal, having watched the news with some concern. A news piece was delivered detailing a new virus originating in China that had caught the reporter's attention. At this point no-one foresaw the effect the virus would have on our lives.

Two months later, I received orders to deploy to the Local Resilience Forum (LRF) based at Cambridgeshire Police HQ in Huntingdon for a two-week sprint, modifying their existing Flu Pandemic plan. This eventually turned into a six-month deployment. The UK first locked down in March and 42 Engineer Regiment (Geographic) turned into a ghost town. I continued to support the LRF at the grass roots level while other 42 personnel deployed around the country delivering Geo support to the Joint Military Commands (JMCs); to track the spread of the virus and the UKs response to it. A permanent team deployed to Standing Joint Command, briefing at two-star level on the geography of the situation.

At this time, it was decided that a dedicated team was needed as reach back to deliver software tools and web-based dashboards to allow Commanders to quickly digest the tsunami of information. Examples include the delivery of ArcGIS Online (AGOL) dash boards complete with low level analysis tools, and the Hydra cloud-based analysis suit allowing deep dive analysis to be carried out. This was a powerful team delivering excellent decision-making tools. It has now been recognised with its permanent status as the Operational Support Team (OST) headed up by a Capt.

During the lull in work many of the soldiers were still employed at home with online training courses, weekly Zoom/Skype call activities and Strava fitness routines. Squadron Sergeant Majors continued to guide and mentor the younger soldiers from afar. Mess meetings continued virtually with votes still being taken. The virtual world suddenly became the norm with Skype now the vehicle to conduct meetings. It was an interesting time as it became clear that working from home allowed some individuals to increase their efficiency. A certain guilt manifested from being away from the laptop for too long, missing an important email or web chat.

My role had also changed. I was now part of the PPE planning and delivery team working alongside the NHS. We were delivering huge quantities of equipment out to the local authority locations all over Cambridgeshire and Peterborough. One of my roles was to act as the link between local government and the Ministry for Housing, Community and Local Government (MHCLG), along with completing the Strategic Response Plan for the region. I was later augmented by three other military personnel who then reached into the LRF depts to help co-ordinate plans in local authority departments such as communities, excess deaths, and local authority liaison.

42 Engr Regt (Geo) continued to support all levels of the military and government. We provided analysis products for possible test sites Liverpool surge testing being one of the main contributions. Tracking case numbers allowed Public Health England to focus resources where they were most needed. The majority of the support was delivered real time across open-source networks. Throughout we faced a challenge to screen the data in order to make it possible to send over less-secure 'official' systems.

Outside of this extra work, business as usual did not stop within my team. They were concentrating on delivering the next phase of Geo IT equipment. The initial plan to bring in a full hardware and software update was changed. A software only solution was decided on to get us to the goal of delivering Geo support through the network by 2025. At this point Geo would be absorbed into the military cloud network with thin client laptops connecting to the processing power of the servers. The concept of employment for geo support delivery is still being discussed but opportunities to deliver within all levels of headquarters still exist. There will be some cross over between the Operational and Tactical bearers with a link proposal already in place. The results of this would mean the Geo analysts would not be responsible for the delivery of the IT equipment to carry out their work. They would simply deploy to the location and log in to a HQ server to then deliver products and services on the existing network.

As you can see, the delivery of Geo support has changed significantly in a short period. Less paper and more projectors/computers screens mean a lot less CMYK stained fingers but many more keyboard calluses. Our younger soldiers are now being encouraged to study coding languages such as Python and Java and deliver ‘widget’ tools to automate processes. Server system administrators are now the wizards delivering web map services to consuming platforms all across Defence and further afield in NATO and with other partner nations. Embracing continuous and rapid change is a fairly new skill for some of us older soldiers but the speed at which the computing world evolves requires the constant ability to adapt, which we are all used to.



The NHS staff, Team Rubicon (now RE:ACT – Ex forces volunteer group) with WOI Roy Moulding RE standing at the rear, and Sgt Dorman from the RLC, to the fore. Sgt Dorman is a logistic specialist that I put in a MACA request for to come and help. I have not got enough fingers to count all the boxes. The warehouse was based in the local Cambridgeshire area. I cannot give any more details as it is still full of PPE and the local authority will get very twitchy if I start advertising that.

You could argue that something else that is evolving even quicker, is our master’s latest name. You may have heard that we now come under the National Centre for Geospatial Intelligence (NCGI) banner. Within this we have pillars delivering different disciplines. We at 42 come under the NCGI-D pillar, the deployed element of the jigsaw. Alongside us we have NCGI-F, Foundation, delivered mainly from the Defence Geographic Centre in Feltham. NCGI-A contains the deeper analytical part of the centre and sits at the Wyton site along with the final piece, NCGI-T, responsible for delivering the technology now and in the future, enabling our analysts to keep up with the changing demands.

Operational deployments also continue, not at the same frequency as in the past but with more variation. We have a variety of ranks deployed in Estonia, Afghanistan, and Mali. Exercise commitments take the soldiers round the world including a recent jolly to the USA in a Div sized deployment. Unfortunately, COVID restrictions prevented the normal downtime and R&R activities, and isolation on return was a challenge. Opportunities to travel also exist in the posting plots with increased Geo representation across NATO members. WO2’s still take many of these places and invariably have a positive experience which they use to develop those within their Sqns. I had the honour of spending two years just outside Milan, Italy with fantastic friends and connections made across the multi-national family.

There is some sadness as I pen this, as I move on from Geo later this year, having gained a Commission and a move to HQ Royal School of Military Engineering, Chatham. I had a recent opportunity to socialise with some JNCOs and could not help but sell the trade, the community, and the camaraderie that I have had the privilege to experience over the 23 years of my career. It is not often you get to reflect with younger soldiers on your times and experiences. 'Cheers dits' may have been heard from some of those that have not had the opportunities...yet.

Captain Denis John Halliday MBE RE

Trawling through the late Alan Gordon's scanned archive I caught sight of a Citation for the Legion of Merit, headed The White House, Washington and signed by Harry Truman, President, and dated 10th May 1946. This being a very unusual document I thought it warranted further investigation. Sitting alongside the Citation was a document headed Experiences in Military Survey During World War II by D J Halliday, Nayland 1996. Unfortunately, the full text of the document was not attached, but a synopsis of the contents was, which outlined the war time military career of Denis John Halliday, from his commissioning as a cadet (179559) after training at STC Ruabon, North Wales in March 1941 to his demobilization in 1946 and then his time with the TA.

2/Lieut Halliday joined 13 (Corps) Field Survey Company RE on 4 April 1941 at Tadcaster. On 1 June 1941 2/Lieut Halliday took an advance party from Tadcaster to the Clyde to embark for the Middle East sailing via South Africa and eventually joined 512 (Army) Field Survey Company RE at Abbassia Camp Egypt on the 24 July 1941. He worked with 512 Company temporarily and was subsequently attached to HQ British Troops Egypt (BTE) as a temporary Survey Assistant on 28 June 1942.

The main body of 13 (Corps) Field Survey Company RE arrived at Suez Egypt from the UK on 6 September 1942. Soon after Lieut Halliday (promoted Lieut on 22 September 1942) re-joined his unit and was involved in survey tasks in the Lebanon region in late 1942. He was working in the Marjayoun area, the work was affected by bad weather, with the detachment being snowbound part of the time.

Lieut Halliday left Souk el Gharb for Abbassia with an advance party on 11 April 1943; and on 17 June 1943, 13 (Corps) Field Survey Company RE moved to Malta. The Company embarked for Sicily (Operation Husky) on 15 July 1943 and then moved from Syracuse to Francofonte. Lieut Halliday assumes command of No 1 Topo Section vice Lieut Lees RE on 30 August 1943.

The Field Sections of 13 (Corps) Field Survey Company RE moved to Italy in early September 1943 and re-joined the Company at Mellitto Italy on 29 September, under command of 8th Army. On 1 October 1943 Lieut Halliday attended a meeting with DAD and OC to discuss the computation of trig values from captured Italian Trig Lists. The Company moved to Biccari on 12 October 1943, with two Topo Sections attached to 3 Survey Regt RA. Company moved to a Monastery near Casalbordino on 10 December 1943.

The Company remained billeted at the Monastery near Casalbordino in early 1944, with the weather being particularly inclement. A Polish Repro Section from 12 Polish Corps Fd Survey Coy was attached to 13 Coy from 7 February 1944. Lieut Halliday was listed as Oi/c Drawing Section in February 1944. The Company moved to Mugnano di Napoli on 30 March 1944 and Lieut Halliday attended an Anti-malarial course on 1 May 1944.

The Company urgently moved to join 8th Army HQ at Castrocielo on 5 June 1944 and moved again to Orvieto staging through Rome on 19 June 1944. On 10 July 1944, the Company moved to Arzano, Naples. Lieut Halliday, was appointed President of a Court of Enquiry concerning the loss of a jeep. On 2 September 1944 the Company moved to new billets at the Flour Mills, Maddaloni, Nr Caserta. Lieut Halliday travelled to the South of France on a courier job on 26 September 1944.

1 Survey Computing Unit Royal Engineers

A warning order was received by Lieut Dennis John Halliday RE, on 1 November 1944, which required him and two surveyors to undertake the task of some essential 'geodetic computing'.

At the time 13 (Corps) Field Survey Company RE were billeted at the Flour Mills, Maddaloni, Nr Caserta, Italy and Lieut Halliday and the two surveyors were to be attached to 310th Bombardment Group (Medium) US Army Air Corps (USAAC), Ghisonaccia, Corsica. They left by air to join the Bombardment Group on 4 November 1944, and the party was increased by a further four surveyors on 30 January 1945.

The SHORAN Computing Party as they were known worked throughout the period 4 November 1944 to 17 February 1945 for Central Mediterranean Forces (CMF) and provided the computations for SHORAN BOMBARDMENT – (SHORAN – is a radar system of blind bombing. All computation is done on the ground prior to take off, and the aircraft navigates itself by means of the equipment on board to a pre-determined bomb-release point)

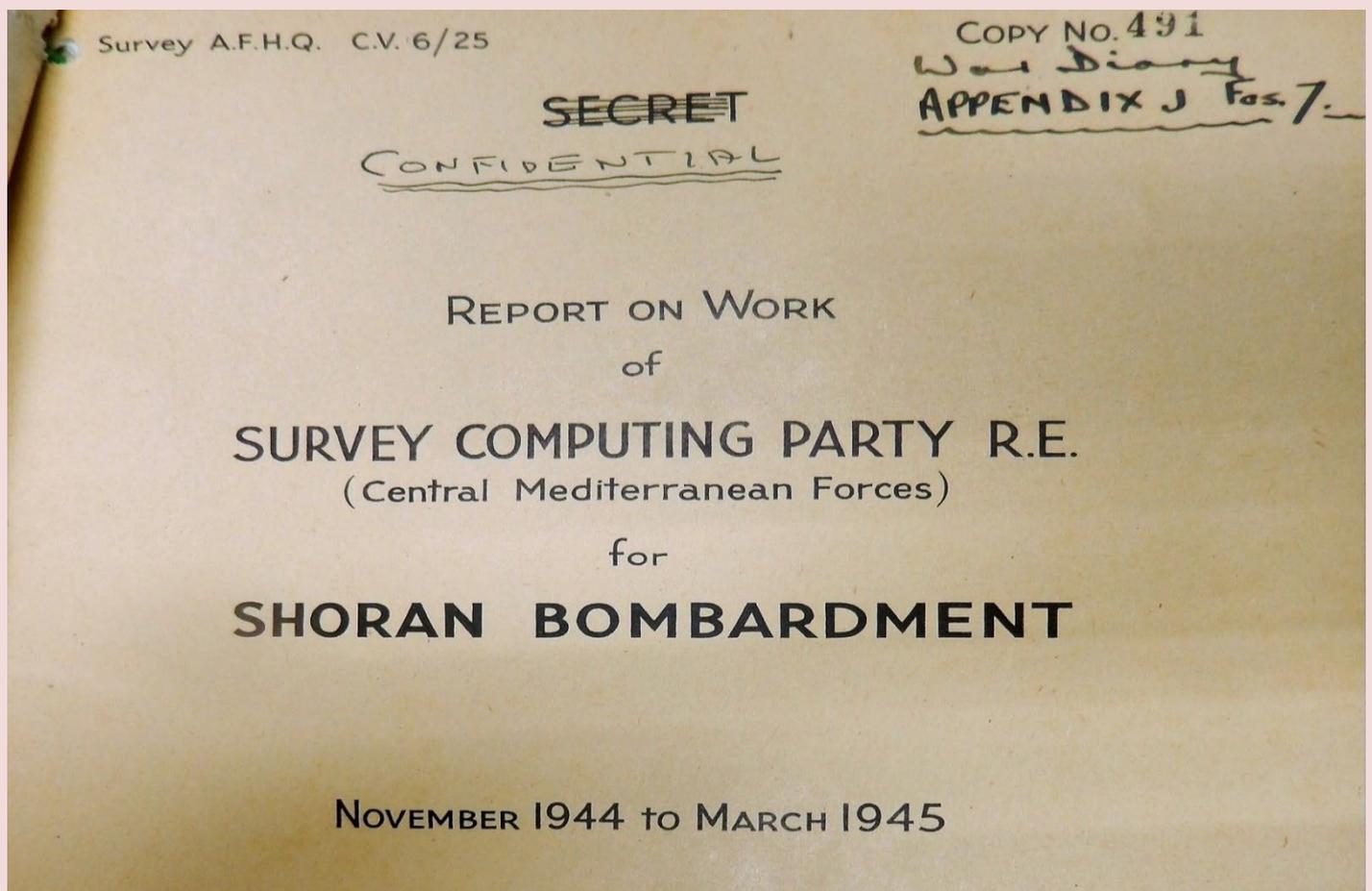
It was planned to replace Lieut Halliday with Capt Seymour, however owing to requests from HQ TAF and for other operational reasons this arrangement was not proceeded with. Major G S Burrows RE the OC of 13 Field Survey Company RE visited the party in Corsica from 14 to 18 February 1945.

Lieut Halliday was promoted to A/Captain wef 1 March 1945. Lt Col Thompson RE arrived from UK and joined the party in Corsica on 10 March and was expected to stay for a month. One man of the detachment Spr Gravely was replaced by L/Cpl Brazier from the Middle East on 17 March 1945, he took with him computing forms for the “Shoran” computations.

Capt Halliday visited AFHQ on the 29 March 1945 to discuss with Brigadier Brown D Svy the publication of the report and working of the Computing Section attached to 310 Bomb Group of 57 Wing USAAC. Capt Halliday returned to Corsica on 1 April 1945 having supervised the preparation of the originals of the “SHORAN” report on the sections work. On the 3 April 1945 instructions were received for the publication of the Report.

On 25 March 1945 Capt Halliday was posted to ‘H’ Survey Computing Unit RE, leaving the Company on 6 April 1945. The party working in Corsica with 310 Bomb Group are now attached to ‘H’ Survey Computing Unit RE and moved with the Computing Unit from Corsica to mainland Italy on 7 April 1945 and were located at Wing HQ, Fano.

The Report on the Work of SURVEY COMPUTING PARTY RE (CMF) for SHORAN BOMBARDMENT was published on 31 March 1945 and is 42 pages in length (attached are a few selected pages from the report which give an idea of the complex calculations undertaken and the information provided to the bombing crews by Capt Halliday and his party. The report can be read in full at The National Archive (TNA), Kew, London – File WO 402/371).



S E C R E T

Survey A.F.H.Q.
Ref. No CV6/25
31 March '45.

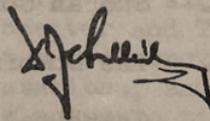
From
Capt. D. J. Halliday, R.E.,
H.Q., 57th Bombardment Wing (Medium),
A.P.O. 650, U.S. Army.

31 March 1945.

To : The Director of Survey,
Allied Force Headquarters,
Central Mediterranean Forces.

Subject : Report on Shoran Computing Section.

The report which follows is an account of the work undertaken by the Shoran Computing Section detached from 13 Field Survey Company, R.E., to 310th Bombardment Group (Medium), during the period 4 Nov 44 - 17 Feb 45. It has been amended to include new developments up to 31 Mar 45.



D. J. Halliday,
Capt., R.E.,
O i/c Survey Computing Party, R.E.

S E C R E T

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Report on the work of Shoran Computing Section,
attached to 310 Bomb Group, Nov '44-Feb '45

1. This report covers the work of the Shoran Computing Section attached to 310th Bombardment Group (M) during the first three months of combat operations. It is a straightforward account of the methods actually used and tried by experience, and as such may be of use to subsequent organizations planning to bomb with Shoran equipment. It must be appreciated, however, that these methods were evolved in the Italian theatre of operations, where all target areas were covered by good 1:25,000 maps and a detailed triangulation, and that they may not necessarily be applicable to conditions in other theatres without some modification.

2.(a) SHORAN is here used as a radar system of blind bombing. All computation is done on the ground prior to take-off, and the aircraft navigates itself by means of the equipment to a pre-determined bomb-release point.

Full details are contained in the "Manual of Airplane Equipment AN/APN 3" and the "Handbook of Instructions : Bombing Position Computer Type K-1 (Electronic)".

(b) The equipment consists basically of Indicator, Computer, Transmitter and Receiver, which are airborne, and of two Ground Stations, each with Receiver and Transmitter. Pulses of amplitude modulated high frequency radio waves are transmitted by the ground stations, and re-received by the airborne set. Precise electronic timing in the Indicator unit of the interval between the transmission and return of the radio signals at the aircraft makes possible the measurement of distance between the aircraft and the ground stations. The pulses returned by the two ground stations are separated by using different carrier frequencies. A further device, known as "scrambling", enables as many as 20 airborne sets to operate at the same time from the same pair of ground stations.

- 2 -

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The ground station is represented as the point $x = 1.25\sqrt{k}$, $y=0$, where k is the altitude of the ground station above sea-level.

Any hill on the direct line between the ground station and the proposed target is plotted at the correct distance from the ground station and at the correct vertical height above the sea-level parabola. i.e. A hill of height h feet at distance s miles from the ground station is plotted as the point $x = s - 1.25\sqrt{k}$, $y = \frac{(s - \sqrt{k})^2 - h}{1.25}$.

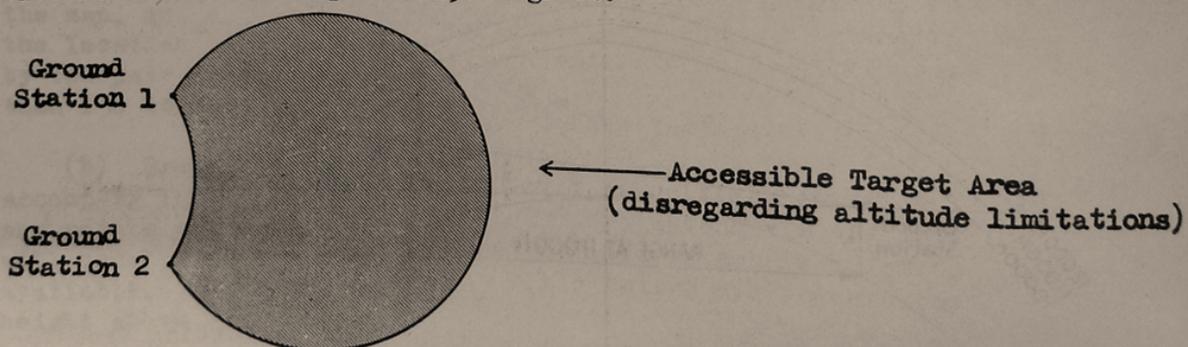
The required aircraft altitude is plotted as a parabola similar to the sea-level parabola but at the appropriate vertical distance above it.

Then the range at this altitude is determined by finding where the straight line joining the ground station and the top of the highest intervening hill (or rather, the one which causes the most obstruction) meets the altitude curve, distance being measured from the ground station to the point of intersection along the horizontal scale.

By drawing a series of altitude curves the same method may be used to determine at what altitude one needs to fly in order to reach a certain target.

(c) For hills very close to the ground station (say, less than 15 miles) it may be found convenient to enlarge that portion of the above graph adjacent to the ground station, in order to determine more accurately the "angle of sight." This angle, once determined, may be plotted on the normal graph so as to determine the range.

(d) Angular limitation. It must not be overlooked that the range from a pair of ground stations is also limited by considerations of the angle subtended at the aircraft. This limits the possible target area to a crescent-shaped zone, at the apexes of which lie the two ground stations. The outer circle is the locus of points at which the ground stations subtend an angle of 30 degrees, and the inner circle the locus of points at which the ground stations subtend an angle of 150 degrees.



(e) From experience it appears that it is unwise to operate too close to either of the ground stations. A suggested minimum distance is thirty to forty miles. Closer than this, the sine of the angle subtended by the two ground stations changes so rapidly that the Computer unit is unable to measure

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SUGGESTED PRESETTING DATA FORM
COMPUTER - MODEL AAF TYPE K-1

COMPUTED BY D. J. H.

DATE 16 Jan. 1945

Description of Target and Stations

Sacile Railroad Bridge (for Manual Release)

L Station: No. 2

H Station: No. 1

Computed for:			Item No.
a. True Altitude	12000 ft.		(7)
b. True Air Speed	235 Mi. per Hr.		(9)
c. Indicated Air Speed	mi. per Hr.		(chart)
d. Type Bomb	1000 lb Gp		(10)
e. Target to "H" Station	142.028 miles		(1)
f. Target to "L" Station	174.228 miles		(2)

	Approach No. 1	Approach No. 2	Approach No. 3	Approach No. 4
Rate Station Connecting Gear Train (Position)	Behind L	A head H	A head L	Behind <input checked="" type="checkbox"/> L
Drift Station Connecting Gear Train (Position)	Right H	Right L	Left H	Left <input checked="" type="checkbox"/> H

Setting No.	Item No.	Item No.	Item No.	Item No.
1. Target to Rate Station (setting)	(41)	(44)	(42)	(43)
(setting)	(40)	(38)	(39)	(37)
2. Target to Drift Station (setting)(deg)	(29)	(30)	(31)	(32)
3. Ground Track Azimuth Manual	(19)	(20)	(21)	(22)
4. Station Angle Setting (deg)				302.7
5. Trail Distance (ft)	$\frac{11500 \text{ ft}}{485}$	$\frac{12500 \text{ ft}}{531}$	(11)	(11)
6. Time of Fall (sec.)	27.31	28.52	(12)	(12)
7. Speed Control (revolutions)	(14)	(14)	(14)	(14)
8. Rate Station Dial Release Pointer (setting)	(45)	(46)	(45)	(46)
9. Drift Station Dial (setting)	(46)	(45)	(46)	(45)
10. Station Inter-Change Switch (position)	H Drift	L Drift	H Drift	<input checked="" type="checkbox"/> H Drift

Warning: Computer Check counter, and indicator Rate Station vernier counter, must read zero when reversing Rate connecting gear train. Computer Target to Drift Station counter (2), Trail counter(5) and indicator Drift Station Miles vernier counter must all read zero when reversing Drift Connecting Gear Train. Be sure to allow sufficient time for the computer to run out the previous correction with the computer switch in COMPUTE position. PDI Switch Left

S E C R E T

Target S. Michele R.R. Bridge
 Geodetic Coordinates E 578172 Map Sheet No. 21-IV-SE (GSGS 4228)
N 637 260
 Constant E + 43 N -38
 Final Grid Coords E 578215 N 637 222
 Geographical Coords. 46° 11' 24".81 N 11° 07' 23".56 E
 Elevation 690 feet

Ground Stations Rate No. 2 Drift No. 1
 True Azimuth 145° 21' 02" 178° 41' 11"
 Geodetic Distance 219.1850 Miles 143.3276 Miles
 Shoran Correction for Altitude 15000 feet .0677 Miles .0664 Miles
 Shoran Distance for Altitude 15000 feet 219.2527 Miles 143.3943 Miles

Computed for Altitude 15000 feet
 True Airspeed 235 MPH
 Type Bomb 1000 lb GP
 Approach No. 4

Aimed 100 feet (~~Over~~ for (Manual ~~Radio~~ release

Setting No.		Trail Time of Fall
1	<u>9.237</u>	
2	<u>3.382</u>	Alt <u>14000</u> <u>572</u> <u>29.56</u>
3	<u>275.3</u>	Alt <u>15000</u> <u>615</u> <u>30.69</u>
4	<u>146.3</u>	Alt <u>16000</u> <u>658</u> <u>31.80</u>
5	<u>615</u>	Alt _____
6	<u>30.69</u>	Alt _____
7	<u>11</u>	
8	<u>19.2</u>	Computed by _____
9	<u>43.4</u>	Checked by _____
10	LF LF Rate	
11	Right or Left	

Date of Mission 15 Jan 1945
 Remarks Attacked by 1 box of six aircraft.
Mission successful. Bridge destroyed.

Coords. of Centre of Bomb Pattern (I) E 578 170 N 637 270
 (II) E _____ N _____
 (III) E _____ N _____

Rate Error Negligible feet (Over (Away from Station
 (Short (Towards Station
 Drift Error Negligible feet (Left (Away from Station
 (Right (Towards Station

Results Plotted by _____
 Checked by _____

Captain Halliday moved with the unit to the UK and was based at Greenford Middlesex from August 1945. He was demobilized in 1946 and joined Army Emergency Reserve unit 529 Field Svy Sqn RE at Fernhurst from 1954-57.

Captain Denis John Halliday RE was awarded an MBE on 20 September 1945 for his work on the SHORAN BOMBARDMENT. The following citations were submitted in support of the award:

Recommended by - Brigadier R LI Brown Director of Survey AFHQ.

Period 1 January 1945 to 31 March 1945

For outstanding service in the execution of geodetic and ballistic computations necessary for the use of blind bombing equipment. As officer in charge of a small party attached to 57th Bombardment Wing, US Army Air Forces CMF, to undertake this duty, Captain Halliday has been indefatigable and eminently successful in producing the data daily required to enable targets to be engaged by non-visual methods.

The success of the many blind bombing missions flown by the wing has been dependent on the accuracy of his work. This accuracy was ensured by Captain Halliday's initiative in investigating and arranging the mathematical formulae involved, and so organising the work of his party that the chances of arithmetical error were reduced to negligible proportions. The computations are considerably involved.

The work involves long and arduous hours often by night. Captain Halliday has by his example maintained a consistently high standard of efficiency and enthusiasm in the personnel of his party.

The above facts are within my personal knowledge. Nevertheless, I attach hereto, in support of my recommendation, a letter and a memorandum from the Air Forces concerned.

Air Commodore, Senior Air Staff Officer
HQ Mediterranean Allied Tactical Air Force – 18 April 1945

This attached recommendation, which I strongly endorse is forwarded for your consideration.

The accuracy of Capt Halliday's work with the 57th Bomb Wing has been of the highest order, and his industriousness and ingenuity an example to all. His efforts have been one of the determining factors in the success with which the 57th Bomb Wing has been able to employ this radio-controlled blind bombing equipment.

Dudley D Hale Colonel Air Corps
Chief Signal Officer, Mediterranean Allied Tactical Air Force – 17 April 1945

It is recommended that official notice be taken of the work performed by Capt Halliday. An evaluation of his work with 57th Bomb Wing follows.

Captain Halliday (then Lieut) was attached to the 57th Bomb Wing during the latter part of September 1944 with three other ranks for the purpose of doing computations in connection with certain blind bombing equipment. While certain basic material was available on which to base his computations the techniques involved were such that for maximum bombing effectiveness considerable organising and original investigation were required.

Captain Halliday not only accomplished the necessary work which permitted the daily management of targets under non-visual conditions but developed simpler techniques for other organisations to use this equipment and under his own initiative made thorough investigations of the basic formula involved, thus increasing the bombing accuracy of the entire wing.

With his excellent assistance the 57th Bomb Wing was permitted to make full use of the equipment offered. By his complete understanding of the problems involved and his energetic attack of the problems presented he has assisted materially in improving operations of the wing.

Captain Denis John Halliday was invited to the U.S. Embassy Grosvenor Square, London for the presentation of the Legion of Merit in the Degree of Legionnaire on 10 May 1946. The Citation reads as follows:

White House, Washington

CITATION FOR LEGION OF MERIT

Degree of Legionnaire

Lieutenant (Acting Captain) Denis John Halliday, Royal Engineers performed outstanding services in the Mediterranean Theatre of Operations from September 1944 to May 1945. When a blind bombardment device was introduced, Captain Halliday was requested to join 57th Bombardment Wing, Twelfth Air Force, in order to organise and direct a computing section which would assure the successful exploitation of the new bombardment techniques. Through the personal efforts of Captain Halliday, the U.S. Army Air Forces' efforts in Northern Italy were greatly enhanced, due to the exceptional initiatives, ingenuity, and personal skills displayed by this officer. It was solely through his efforts that the proper application of this equipment became available to the 57th Bombardment Wing; and it was because of his efficient instructions that great results were attained.

Pressed for time, Captain Halliday accurately siting beacons for this device, discovered and speedily corrected an error in the original survey of the Island of Corsica of such great magnitude that it had nullified the accuracy of his computations. His personal endeavour and clear analysis in the utilisation of this new blind bombardment device was of exceptional value to the Allied air effort in all theatres of operations; and his initiative, exemplary devotion to duty and superior professional attainment reflects the highest credit upon himself and the Allied Forces.

(signed) Harry Truman

Investiture 10th May 1946



North American B-25 Mitchell, medium bomber as flown by the 57th Bombardment Wing in 1944/45.

The 57th Bombardment wing was based at Serragia Airfield, located approximately 26 km west-southwest of Porto-Vecchio on Corsica. Now abandoned, its last known use was by the United States Army Air Force, Twelfth Air Force in 1944/45.

Primary sources

- The Gazette London – issue 35133, supplement 2101 – 11/4/1941 – Halliday Commission
- The Gazette London – issue 37274, supplement 4672 – 20/9/1945 – MBE Award.
- The Gazette London – issue 38122, supplement 5353 – 14/11/1947 – US Legion of Merit
- The Gazette London – issue 39132, supplement 475 – 26/1/1951 – Reserve Officers RE, granted hon. rank Capt TNA WO 373/73/868 – Citation MBE Award.
- TNA War Diary – SHORAN Bombardment Report – 1944/45 – File WO 402/371
- TNA War Diary – No 1 Survey Computing Unit RE – 1945 – File WO 166/17087
- TNA War Diaries – 13 (Corps) Fd Svy Company RE – 1941-45 – Files WO 166/3561 & 8044, 169/4023 & 10578, 170/1607 & 5154

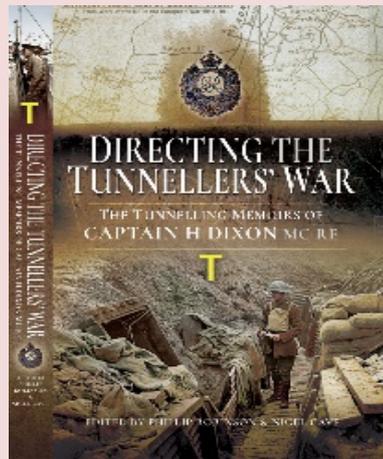
NB: The citations have been transcribed as the scanned copies from TNA are poor.

Researched, transcribed, and compiled by Noel Grimmett – 7/2021.

For Your Information

Philip Robinson branch member and ex-Military Surveyor - has jointly produced a book 'Directing the Tunnellers' War' based on the tunnelling memoirs of Capt H Dixon MC RE. Phillip has had a long interest in Tunnelling and the Tunnelling Companies of the Royal Engineers. Along with his co-author, Nigel Cave, Phillip wrote 'The underground war from Vimy Ridge to Arras.' and has appeared on at least one television programme about Tunnelling in the First World War."

For further information on this publication see - www.pen-and-sword.co.uk/Directing-the-Tunnellers-War-Hardback/p/14583



A Blast from the past



The Union Jack Club Singapore 1955/56. A place to go on leave in between jungle ops: also, a curry at ZAM ZAMS, which was the Regiment's favourite curry place. Left once through a window as there was a riot and a curfew going on. HAPPY DAYS. Posted on Facebook - [BAOR Photos](#) – Alexander Clark 15/07/2021



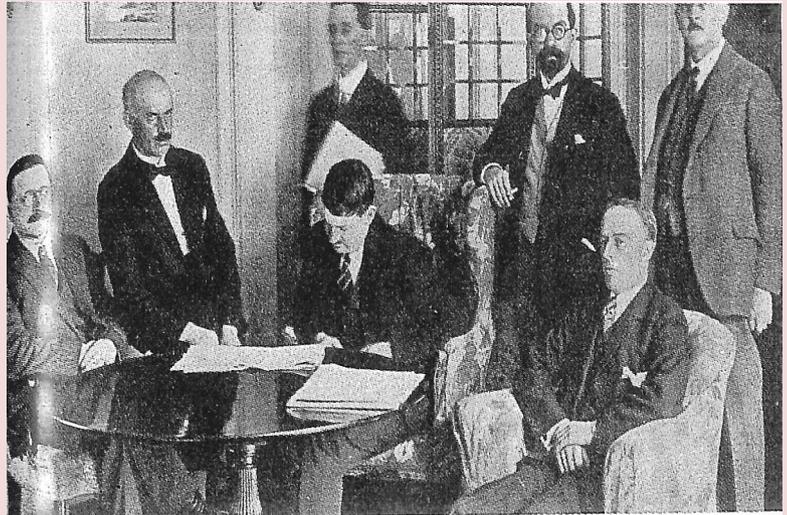
Just to re-jog a few memories. The Brit Club Beach Rd as it was in the 60s/70s. This was taken on my second return to Singers 2 years ago. No change on the outside but it is now an exclusive club. FB Post comment - John Duncan 18/07/2021

THE DIVIDED ISLAND - The Irreconcilable Border

Following BREXIT, the Protocol on Ireland/Northern Ireland has become a very contentious issue. The United Kingdom's withdrawal from the European Union presents a significant and unique challenge to the island of Ireland, and reaffirming that the achievements, benefits, and commitments of the peace process will remain of paramount importance to peace, stability, and reconciliation. J N H Douglas in his article - THE DIVIDED ISLAND - The Irreconcilable Border, published in 1976, and as laid out below, describes in detail the historical background and complexities to the current border situation. The man-made border between Northern Ireland and the Irish Republic is 412 kilometres long and is crossed by 180 or more roads. It cuts across field boundaries, streams and even passes through houses. The border runs through one of the most complex frontier areas in Europe today and it exists between two members of the European Economic Community.

Political boundaries do not exist in nature they are cultural features which result from human decisions and are found only where men establish them. They give recognition to man's sense of territory and, allied to the concept of sovereignty, enable human groups to organize security, give expression to cultural heritage and plan for the future. In this context the Irish Border - the term used in Ireland when referring to the political boundary - in both its origin and function can be recognized easily. It was established in 1920 to allow two sets of Irishmen with opposing national aspirations to live apart because they could not live together.

The seeds of partition were sown in the 17th century with the plantation of Ulster. The Scottish 'planters' were mostly small farmers, not unlike the native Irish in material wealth but different in religion and cultural heritage. These differences gave the planter the distinctiveness of outlook which took on new political significance as the Irish Home Rule debate developed in the late 19th century. Within this group, support for the union with Britain increased directly in proportion to the growth in demand for Irish independence. The use of phrases such as 'the temporary exclusion of the north' by members of the Irish Catholic Nationalist Party before 1914 reflects early recognition of the intractable character of the problem and that partition might provide a way out of the dilemma.



The Irish signatories to the proposals for the Anglo-Irish Treaty

World War I pushed the Irish question into the background in Britain but in Ireland the 1916 Rising further estranged the northern unionists. By nurturing militant Irish nationalism, the Rising erected new psychological barriers and increased the possibility of partition. At the end of World War I, Ireland plunged into violent turmoil but events in the south and in the north were distinct. In the south, the Irish Republican Army fought the British Army and the Black and Tans, in the north, bloody sectarian warfare, particularly in Belfast, engulfed nationalist and unionist.

The British government's attempt to disentangle these violently conflicting strands came in the Government of Ireland Act of 1920. This Act created two Irelands and two parliaments, in Dublin and Belfast, each with strictly limited powers. To separate the new units, the Irish border was delimited and thus came into existence the new state of Northern Ireland composed of the six north-eastern counties. However, to provide a medium for cross-border cooperation which could eventually lead to reintegration, the Act set up a Council of Ireland. Partition brought little satisfaction to any of the groups involved. At Westminster it was looked upon by many members as a distasteful expedient. In Ireland the northern unionists were not fully satisfied. They thoroughly disliked having to leave behind co-religionists in the remaining Ulster counties of Cavan, Monaghan and Donegal, but a nine-county Northern Ireland would have left unionists in a minority – Unionist and Protestant now being synonymous, and so they had little alternative but to accept the border as set out. They distrusted the Council of Ireland, despite its limited powers, and were determined that it would never work. Although partition was complete anathema to the southern nationalists, their major preoccupation with the continuing war of independence meant that the Act of 1920 was largely ignored. There was also in the south a deeply held belief that partition could not be other than temporary; it was viewed merely as a means of achieving breathing space to allow peaceful political progress. This widely held view must not be overlooked as an important factor helping to explain the acceptance of partition by the southern signatories to the Anglo-Irish Treaty, which finally ended the war of independence a year later in 1921.

To the new Irish Free State by far the most important component in the 1921 Treaty was the British undertaking to set up an Irish Boundary Commission. The Commission was composed of three members, one from Northern Ireland, one from the Irish Free State and, as Chairman, an eminent South African judge. It was to base its work upon Article XII of the Treaty which stated, 'The Commission shall determine, in accordance with the wishes of the inhabitants, so far as may be compatible with economic and geographic conditions, the boundaries between Northern Ireland and the rest of Ireland. Such general wording left the task of the Commission open to a variety of interpretations.

In the south, expectations that the border would be relocated to include within the Irish Free State counties Fermanagh and Tyrone, and large parts of Londonderry, Armagh and Down. The rump of Northern Ireland would then prove economically non-viable and so would in time be reintegrated. In Northern Ireland fear of dismemberment led to a refusal to recognize the Commission.

In the event the Chairman, Mr Justice Feltham, chose a restricted interpretation of Article XII which ensured only limited boundary change. He assumed, rightly, that Catholicism and Irish nationalism could be equated, but concluded that a bare religious majority was not enough to justify change. He also established that no territorial unit should be rendered incapable of surviving as a separate entity, economically or politically.

The Commission, after sorting the evidence, reached agreement in October 1925 but before consultation with the governments concerned had taken place, a forecast of the award was published in the Morning Post newspaper. The leak gave explicit information in the form of a map and led to political turmoil in the Irish Free State and in many northern border areas where it shattered hopes of reintegration. The Free State Commissioner resigned, the Commission was dissolved, and its proposed award suppressed.



The suggested changes to the border leaked to the Morning Post

In December 1925, in return for certain financial considerations the Irish Free State government, together with the Northern Irish and British Governments, signed an agreement which established the international legality of the Irish border as set out in 1920. The proposed award of the Boundary Commission, made public in 1968, shows that the Morning Post forecast was substantially correct. The limited amount of change proposed can be gauged the fact that, if the award were to be implemented today, fewer than 20,000 Roman Catholics would be transferred to the Irish Republic and the relative sizes of the religious groups in Northern Ireland would change by less than one per cent.

The Irish border therefore came into being in an atmosphere of general dissatisfaction, distrust and, amongst many, disbelief in its permanence. Its location, based on county boundaries originating between the 12th and 17th centuries, engendered little enthusiasm and created a sense of foreboding as to its suitability for its future international role. It is 412 kilometres long, more than three times the straight-line distance between Newry and Londonderry which are at either end. On its tortuous route it cuts across agricultural holdings - 14,000 in 1925 - through settlements, houses and across at least 180 roads. In south Armagh, for example, there are sixty-two cross-border roads - one for every 1400 metres - of which only five are approved for cross-border traffic. As the border randomly follows minor streams, hillsides and hilltops and has never been demarcated fully, there is much potential for genuine confusion as well as deliberate abuse. Between 1973 and mid-1976 the Irish government had noted 304 border incursions southwards by British soldiers and twenty-two northwards by Irish soldiers. Whilst the demise of the Boundary Commission meant the continued use of such a physically confusing boundary, by far its most significant legacy was the continued non-correlation of the political and religious divides. The considerable intermixture of religious groups in north-eastern Ireland shows that the Commission faced an impossible task to achieve even an approximate correlation of state area with religious distribution would have involved considerable movements of population. Yet the failure to bring about even limited adjustments has meant that Northern Ireland has sizeable border areas which consistently have resisted their full political integration into the state.

The imprint of the border is seen and felt most sharply in the areas adjacent to it. These are the zones which have experienced greatest hardship yet greatest opportunity. Hardship results from the border barrier function which restricts the movement of traffic and commodities. It separates towns from hinterlands - evidence given to the Boundary Commission in 1925 suggested that the border removed from Londonderry 75 per cent of its trade hinterland - and in some cases it divided towns and villages into separate parts and placed the parts in different countries, one instance of this is Pettigoe, a village in County Tyrone. At the same time, diverging political economies with unequal tax rates, subsidies, and concessions, created cross-border price gradients so that, whilst each part of Ireland adjusted to the new economic climate, the border zones tested the economic weather and prepared to make the most of the opportunities it provided. A border way of life evolved, characterized by adaptation, speculation and a quick-witted knowledge of both man and land.

The boom period for smuggling and the border economy was during the 1930s and 1940s. From 1932 to 1939 the 'economic war' between Britain and the Irish Free State produced very steep cross-border price gradients. Due to British import restrictions the price of cattle south of the border fell to under half that obtainable in Northern Ireland. Smugglers' trails enabled the southern border farmer to alleviate hardship while many of their northern collaborators made considerable profits.



The Irish border is no respecter of the dictates of human geography. Following the median line of the Term on River the international boundary cuts directly through the village of Pettigoe (left) between Co Donegal and Co Fermanagh

Irish import tariffs, on the other hand, made reverse flows of manufactured goods worthwhile. Wartime shortages in Northern Ireland encouraged smuggling of butter, tea, sugar, and other basic foodstuffs from the south. The lower cost of alcohol in the Irish Free State – the Free State became the Republic in 1949 – encouraged cross-border movement and, despite the violation of neutral soil and the possibility of internment, many British and American troops from bases in Northern Ireland became eager patron of public houses in the south.

Smuggling continues today though on a more selective scale. Higher pig prices in the Irish Republic encourage the movement southward of between 1500 and 5000 pigs per week. Whilst low price gradients on many goods resulting from Anglo-Irish trade agreements have reduced smuggling, EEC regulations have changed the nature of cross border commodity movements. A £52 per head duty-free concession on EEC boundaries has legalized small-scale commodity flows. So, where price differentials do exist - butter is 20p per pound and petrol 12p per gallon cheaper north of the border - purchasers can move openly on approved roads provided quantities carried remain within duty-free limit. Business in certain goods is obviously booming in the northern border zone and the growth of Jonesborough market in south Armagh, within walking distance of the border reflects how the border dweller can still appraise the 'economic weather' and use it to advantage.



A line of concrete blocks bars the Lettercran road at Shaw's Bridge in Pettigoe to motor traffic this has caused a gradual change in the people's attitude towards the use of their environment. Pedestrians can pass between the blocks, but the 'dead end' has become a dump for old cars.



This open-air market with more than two hundred stalls has become well-known throughout much of southern Ireland. As shoppers will testify, the £1.30 outlay on a special coach trip from Dublin is a good investment when up to £20 can be saved on a month's groceries.

The barrier function of the boundary caused hardship by channeling cross-border traffic through a small number of widely-spaced approved crossing points – sixteen in all. The barrier effects on Rosslea, a village in south Fermanagh, highlights the common experience of most Irish border settlements. Before partition, Rosslea had its strongest economic links with the towns of Clones, which is six kilometres away, and Monaghan, which is fourteen. Creation of the boundary and the location of approved crossing points effectively placed the village twenty-nine kilometres from Clones and forty-eight from Monaghan.

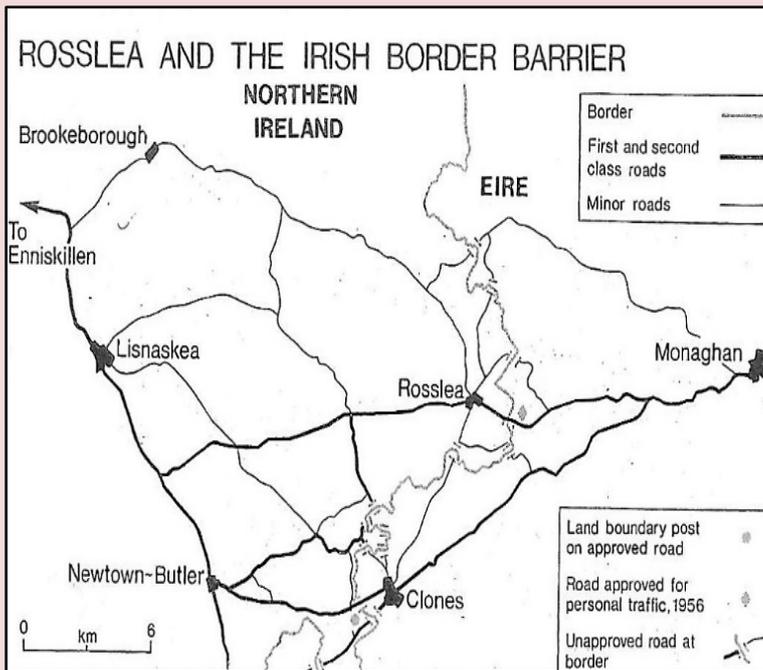
As all the local roads, with the exception of those leading northwards, became unapproved, Rosslea was left isolated at the edge of the new state on the road to nowhere. Economic links had to be re-orientated northwards to more distant centres, including Enniskillen, thirty-nine Kilometres away and the isolation was keenly felt.

When in 1956, after much pressure, the direct route to Monaghan was approved for private and commercial traffic, the Member of Parliament for the area warned local children that in future in crossing the street they would need to look both ways instead of neither. Yet, while commerce was interrupted, and economic links severed the border never became a barrier preventing the movement of people. Unapproved roads were used regularly by border farmers in their work and by local people in visiting friends and attending church. Such use of unapproved roads was eventually legalized by the issue of concessionary passes to border dwellers. This helped to remove much uncertainty and tension from border travel. By the late 1960s a generally accepted balance was in existence and the enforcement of restrictions on personal movement on unapproved roads was so infrequent that few border-dwellers bothered to update their passes.



Official traffic across the border has been limited to a small number of designated crossing points, although local communication has continued along numerous unapproved roads. British Army blockades of the smaller routes have intensified the barrier effect.

Balance in border life is fragile, and the Northern Ireland conflict of the past seven years has added a new dimension and new sharpness to the political, diplomatic, and military functions of the Irish border. In the unsettled climate of the 1970s, border dwellers have experienced drastic restrictions on cross border movement. Without the right of hot pursuit across the border, the British army has implemented a policy of closing unapproved roads either by cratering or building barriers. Once again patterns of life have been forcibly interrupted and old tensions have re-emerged. On the twenty-nine kilometre stretch of border between Belcoo and Beleek in south Armagh, each of which has an approved border crossing point there are nine unapproved roads passable for motor traffic, as in the Roslea area, before 1970 these roads were used extensively by all sections of the border community. During October 1971, the British army, despite local protest and confrontation cratered eight of the nine unapproved roads effectively closed the border in this area to vehicle traffic. By July 1974, five of the eight cratered roads had been refilled by local people and were again being used. Once more the army returned, re-cratered the roads, blew up bridges and, in some cases, also erected steel and concrete barriers. his time not only was the stretch of border sealed but, for the first time, movement on foot across it became hazardous. As local traffic has dwindled, shopkeepers and publicans have felt the economic effect of road closures and retail patterns in the area are again adjusting to another set of politically created optimum economic locations.



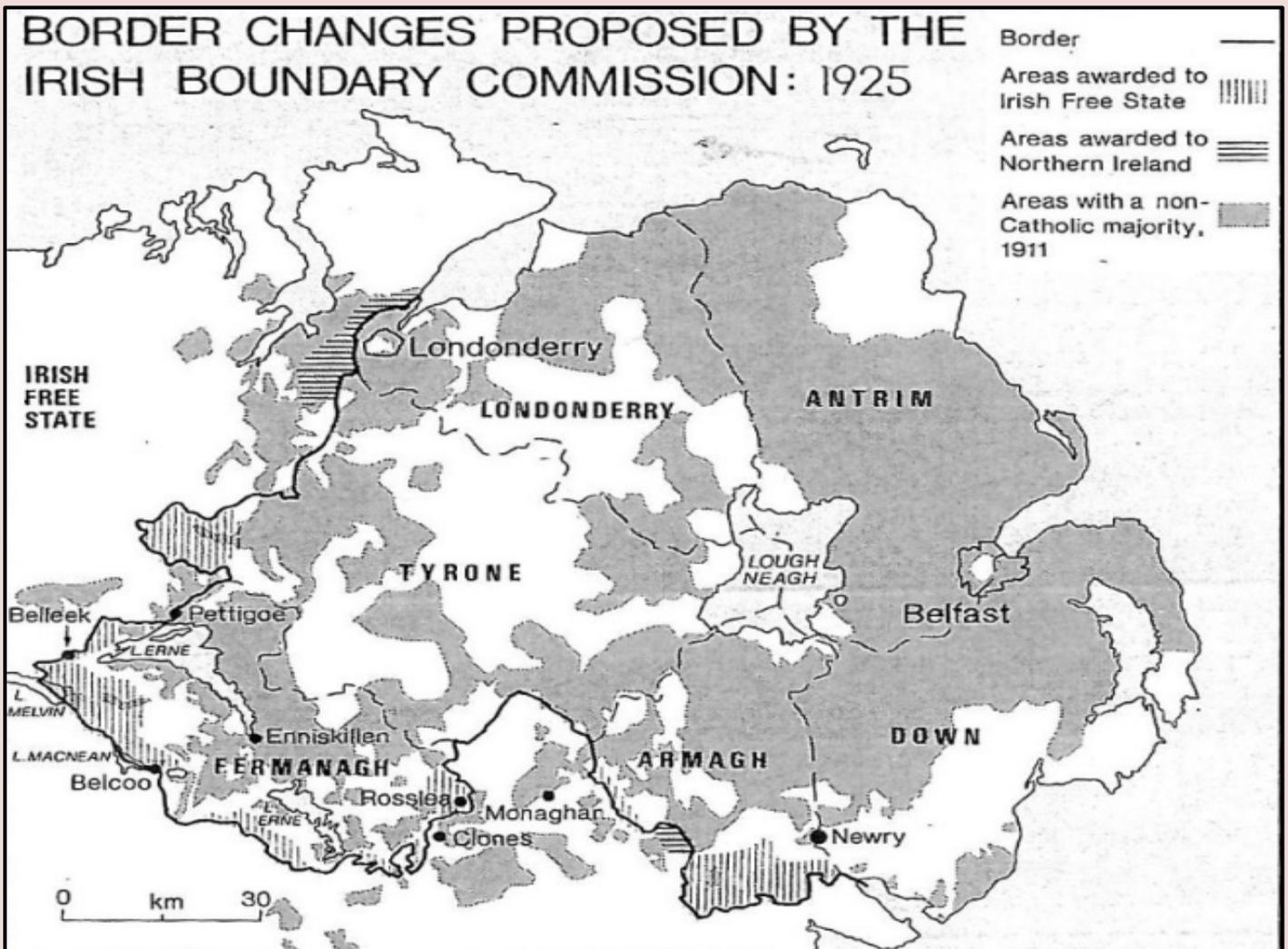
When these restrictions on personal movement at the local level are related to the present state of cross-border commercial traffic the changed character of the Irish border function becomes clear. It is a striking paradox that the border which, since its creation, operated to restrict trade economic links but allow personal movement, has in the 1970s almost completely reversed its role.

Whilst the people of the border areas find themselves more rigidly separated than ever before, the port of Warrenpoint in Northern Ireland on the northern shores of Carlingford Lough is expanding rapidly, thanks largely to growth in trade with the Irish Republic. The port which has modernized with British and EEC money, receives twenty-five per of its exports to Britain and 50 per cent of its exports to Europe from the Irish Republic, whilst 61 per cent of its grain imports are destined to travel south of the border.



While the border separates neighbours EEC trade has reduced its net effect. The port of Warrenpoint, on the northern shore of Carlingford Lough, was modernized with British and EEC money and has expanded, with a significant amount of trade with Eire.

British and Irish membership of the EEC reflects the growth of European integration, and the diminishing economic significance of European boundaries is truly reflected by the Irish border. It is possible also that more peaceful conditions in Northern Ireland will reduce the legal and political significance of the Irish border. Yet the border will remain as the manifestation of a spiritual divide which no amount of policymaking will remove and will not be supplanted by the superimposition of a European identity.



Note:

ANGLO IRISH TREATY - ARTICLES OF AGREEMENT AS SIGNED on December 6th, 1921

On behalf of the British Delegation.
 Signed:
 D. LLOYD GEORGE.
 AUSTEN CHAMBERLAIN.
 BIRKENHEAD.
 WINSTON S. CHURCHILL.
 L. WORTHINGTON-EVANS.
 HAMAR GREENWOOD.
 GORDON HEWART.

On behalf of the Irish Delegation.
 Signed:
 ART Ó GRÍOBHTHA (ARTHUR GRIFFITH).
 MICHEAL Ó COILÉAIN.
 RIOBÁRD BARTÚN.
 EUDHMÓN S. Ó DÚGÁIN.
 SEÓRSA GHABHÁIN UÍ DHUBHTHAIGH.

(Researched, Transcribed and Compiled by Noel Grimmatt on 31/12/2018 and updated 7/2021)

Notification of Deaths

Francis J (Slim) Donovan



No 3 Advance Print Technician Course - 6 February to 7 July 1967

Lcpl Sheppard, Cpl Scothern, Cpl Kirby, Cpl Kingswell

Cpl Hodgson, Sgt Patterson, QMSI Donovan, SSgt May, Cpl Bradley

Slim Donovan died on Sunday 30 May 2021 at Southampton General Hospital Hampshire, age 92.

Slim joined the Ordnance Survey A/T Boys at Llangollen on 31 July 1945. In 1946 the unit joined STC at Longleat. I assume he qualified as a Surveyor Trig and Topo but moved to Print in 1948 upon returning from Sapper Training at No1 TRRE at Malvern. He trained to be a Machine Minder and was posted to 14 Sqn at Bielefeld in Germany. From Germany he was posted to 42 Regt in the Suez Canal Zone but after about a year he moved to the Map Depot which was in the same camp. I think he moved from Suez to SMS in about 1954 where he was in charge of training in the Machine department. Slim was posted to 84 Svy Sqn Singapore from June 1961 to February 1964. (Tom Jackson).

Slim was responsible for the training of numerous survey printers at Harrogate, Chepstow and Hermitage.

His widow Joyce was married to Slim for 66 years and has written the following: -

Slims career was a neat one 24 years in the Army printing maps (1945 to 1969) – a year’s training – then 24 years as a probation officer (1970 to 1995).

The Army provided good companions and variety of travel, although 3 weeks on the *SS Nevasa* in 1961 from Southampton to Singapore was not ideal when we had 9-month-old twins, but memorable.

The probation service certainly had more variety. We came home one day to hear strange sounds from our coal shed. Slim opened it to find a teenage lad covered in coal dust. He said, “My mum locked me in ‘ere. She said, “the probation officer would sort me out.” He returned the dusky lad home to mother.

Slim also spent over six years in two prisons before he’d even thought of committing a crime.

He retired in 1995 then enjoyed 3 years full time at Southampton University attaining a BA in History.

He will be remembered with humour and affection from his wife Joyce and twins Trini and Peter.

Graham Simpson

Graham passed away on the 12 July at his home in Marsden West Yorkshire. He enlisted in 1996 at the age of 21 having previously completed a machine toolist apprenticeship. On completing his training as a printer, he was posted to JARIC at RAF Brampton. Further postings followed at 42 Svy Regt, Barton Stacey and Hermitage. Two tours at 14 Topo Sqn in Germany and then at the School of Military Survey as an instructor, finally concluding his service as an instructor at Chepstow Apprentice College in 1988, in the rank of WO2.

Graham remained at Chepstow working in the Graphics dept. for the MOD, further postings followed in Bristol and Bath. On retirement he moved with Dorothy to Marsden to be nearer his only son Ian. He became a National Trust walking leader and pursued his other hobbies of model railways and stamp collecting. All who knew or served with Graham, respected his professionalism, comradeship, and willingness to help others. He will be greatly missed by Dorothy, Ian and his grandchildren Robyn and Roan.



Captain Richard Newberry RE

We have been advised that Dick Newberry recently passed away at age 87. He enlisted at AAS Harrogate in the early 1950's and subsequently served at SMS and in Germany with 14 Fd Svy Sqn RE.

Captain Fergie Simpson RE

We have been advised that Fergie Simpson recently passed away. He served in the Far East as SSM of 84 Svy Sqn, and with 42 Svy Engr Regt and 135 (TA) Svy Sqn. He lectured in Cartography at Kingston College of Further Education and retired in 1985.

John Raymond Dunn

John Raymond Dunn passes away on 9 October 2019. He served as a Storeman Survey from Apr 57 to Oct 73.

Audrey Kidney

Andrew Kidney, son of Audrey Kidney has informed us that she sadly passed away at his home in early December. She was the widow of Jimmy Kidney (WOI Photo) and a widow member of the branch.

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MILITARY SURVEY (GEO) BRANCH REA REUNION - RETURN

Friday 8th October 2021(1830hrs for 1900hrs)

PRECEDED BY AN ANNUAL GENERAL MEETING 1700hrs FRIDAY THE 8th OF OCTOBER 2021

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

Accommodation: Due to the COVID19 pandemic and the increased manning at Hermitage Station, no rooms are available. Hotel facilities are available at junction 13 of the M4 motorway and at Chieveley too; we will however provide FREE transport back to these locations late evening.

Dress: Smart casual or better if you wish!

Security: Hermitage has become a high security Barracks. **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.

PLEASE SEND RETURNS BEFORE THE 24th SEPTEMBER 2021

Please send return (or any queries and questions) to Mark Kieras via the contact details above.

From: Forename: Surname:

Member – YES//NO

Non-members £5 pp. cheque payable to “Military Survey Branch REA”

Address: Tel No:

..... e-mail:

Make and model of vehicle: Registration No

I ***shall/*shall not** be attending the Reunion on Friday 8th October 2021.

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

Enclose a cheque 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. Please note - 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.