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The archaeological survey of remains from the 1982 Falklands war

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ABSTRACT

This paper provides an introduction and progress report on the first season of fieldwork carried out by the Falklands War Mapping Project. In March and April 2022, a team including two Scots Guards veterans travelled to the Falkland Islands and surveyed field fortifications and artefacts related to the Battle of Tumbledown (13–14 June 1982). The focus was on the western and southern flanks of the feature, with a notable series of Argentine dugouts recorded on the low ground at the southern base of the mountain. The first five days were spent in COVID-19 quarantine in Stanley, followed by eight days dedicated to the Tumbledown survey and site visits – a further three days were spent on Pebble Island by two of the project team. This project marks the first occasion on which the veterans of a battle have been engaged in the archaeological survey of their own battlefield.

ARTICLE HISTORY

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Origins of the project

The Falklands War Mapping Project has carried out the first archaeological survey of the material remains of the 1982 conflict which saw the Argentine invasion of the islands on 2 April 1982 and fighting between Argentine and British ground forces between 21 May and 14 June when Argentine forces surrendered in Stanley, the Falkland Island's capital.¹ The initial season of fieldwork, intended to be a pilot for a potentially long-term project, took place over 15 days in March and April 2022. The project, which represents a major development in Conflict Archaeology, was a long time in the planning and it will be useful to provide a brief summary of its history here.

In 2012, the thirtieth anniversary year of the war, Dr Tony Pollard from the Centre for Battlefield Archaeology at the University of Glasgow,² made the first of three visits to the Falkland Islands which pre-dated the fieldwork in 2022. The intention of this visit, which was supported by a travel grant from the University of Glasgow, was to scope the potential for the archaeological survey of the battlefields from 1982, which thanks to their isolation and relative youth were believed to be well preserved. Before leaving the Falkland Islands, Pollard met with representatives of the Falkland Islands Government and

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pitched the idea of a survey which would make a contribution to the management of this aspect of the islands' cultural heritage and also engage veterans and islanders in a worthwhile community-based activity. The proposal met with a positive response and a report on the results of the reconnaissance was produced (Pollard 2014). Following a negative press story about the idea of carrying out archaeological work on an event as recent – and in some respects as controversial – as the Falklands War, the term archaeology was abandoned in the title of the report and, indeed, the project which eventually took place – with 'mapping' seen as a more neutral term than the more baggage loaded 'archaeological' which in the popular imagination immediately brings to mind shovels and trowels and holes in the ground.³ The issue of any controversy related to such a project was however to remain an academic one as little progress was made in putting the proposal into action – not least because of the difficulties in funding such a project.

Despite a lack of movement on getting a project off the ground, Pollard made two further visits to the Falkland Islands, the first of these in the company of a veteran of 45 Commando and the Battle of Two Sisters. This 2016 trip was first time that Kevin Harris had returned to the islands since 1982. The expedition was specifically intended to explore the possibility of engaging veterans in a project such as that proposed in the 2014 report, with a return to the battlefield of Two Sisters in the company of local battlefield guide Tony Smith being the climax of the visit. The answer to the question of viability definitely seemed to be a positive one, with Harris identifying some improvement in his PTSD symptoms resulting from the re-visitation. Yet again, however, this positive step forward did little to bring about a project, though the passage of more time appeared to be easing nervousness about such an initiative.

Pollard's third and final visit prior to things moving onto a more positive footing took place in 2019 when he led a battlefield tour on behalf of the British Army for a group of serving personnel from the Army Air Corps. While visiting the Goose Green battlefield, the group was placed in a line and encouraged to look for physical remains related to the battlefield lying on the ground as they advanced. This informal exercise in archaeological field-walking resulted in the identification of a scatter of British 7.62 cartridge cases, which thanks to the presence of belt links was identified as ammunition fired from a General Purpose Machine Gun (GPMG). The location of these rounds on the northern slope of Darwin Ridge, to the east of the gulley in which Colonel H. Jones was killed, probably placed the firing event in the assault that followed the loss of the Commanding Officer of the 2nd Battalion of The Parachute Regiment (Fitz-Gibbon 1995, 124). A dug in position on the top of the ridge appears to have been the target for this sustained burst of fire. Again, all the indications were that an archaeological survey – albeit operating under the form of a mapping survey – would be a worthwhile exercise. That visit also made clear that the physical remains were degrading, with more objects removed since the 2015 visit with some decayed entirely away; if a survey was going to happen it would have to begin soon.

Events took a positive turn in early 2020 when the Falkland Islands Government commissioned Dr Tim Clack from the University of Oxford and Dr Marcus Brittain from the Cambridge Archaeological Unit to carry out an archaeological intervention on the remains of a Second World War installation located on the outskirts of Stanley where it occupied land scheduled for development. The site was the so-called Falklands Camp, which between 1942 and March 1944 accommodated Task Force 122, a military force consisting of over 1800 men from the 11th Battalion of the West Yorkshire Regiment. In addition to excavating and

recording remains related to various structures, including Nissen huts, Clack and Brittain recovered various artefacts – including munitions and personal effects – relating to the use of the site in 1982. The Second World War buildings had gone by 1982 but the concrete stances were re-purposed by Argentine forces. The FWMP notwithstanding, in excavating this material this 16-day pre-development evaluation can lay claim to being the first formal archaeological investigation of remains from the Falklands War (Brittain and Clack 2021). The write-up of the results of these Falklands War related excavations is in preparation.

While on the Falkland Islands, Clack developed good working relations with staff from the Falkland Islands Museum and National Trust (FIMNT), including the Director Andrea Barlow and newly appointed heritage officer Emma Goss. As a result of this engagement the idea of a wider survey of the remains of the Falklands War resurfaced, with Clack having a long-term interest in the conflict, in part thanks to a family member being a veteran from 1982. On his return to the UK, Clack contacted Pollard to explore the possibility of collaborating on a project, and it was at that point that the Falklands War Mapping Project was born. In addition to establishing good links with potential project partners in the Falkland Islands, Clack had also secured funding for the first season of the project through a research grant from the Chingiz Gutseriev Fund from the University of Oxford's Social Sciences Division. At this point COVID-19 made its first impacts on planned visits to the South Atlantic. A planned second British Army battlefield tour to be led by Pollard was cancelled as was a planned survey trip to Pebble Island by Clack. Nonetheless, enthusiasm for the project remained high.

As co-directors of the Falklands War Mapping Project, Clack and Pollard agreed that involving veterans should be core to any initiative which sought to record the material remains from 1982. As summarised later in this paper, *Waterloo Uncovered* played a vital role in recruiting and supporting two veterans from the Scots Guards who had fought in the Battle of Mount Tumbledown, which naturally became the focus for the pilot survey. *Waterloo Uncovered* provided expertise in veteran wellbeing in the form of Lieutenant Colonel (Retired) Rod Eldridge, who is an ex-army psychiatric nurse and also medical lead for the military charity *Walking with the Wounded*. The FIMNT provided facilities to the project and contributed Emma Goss as an invaluable member of the team. After a very long gestation, it looked as though the Falklands War Mapping Project was set to enter the field in December 2021.

However, the COVID-19 crisis was to place a final and almost terminal barrier to the progression of the project. In the first instance, planning for deployment during a period when lock-down restrictions had slackened, in December 2021, when the South Atlantic summer promised at least reasonable weather, was abandoned due to uncertainty over flight reliability. Although quarantine conditions were in place on the Falkland Islands through the first part of 2022, flights were available for a period of time in March and April 2022. Concerns over the availability of plane seats, accommodation, and access to battlefield sites due to veterans visiting the Falkland Islands during the 40th anniversary of the war were alleviated by the unfortunate circumstances of the ongoing crisis, which led to the abandonment of large-scale commemoration events. Although permission was obtained from the Falkland Island Government during this time, the team would be required to spend the first five days after arrival in quarantine, with the team split between three houses provided by the Falklands Islands Government (which made an additional valuable contribution to the project by providing islander-rates for the team flights).

An eleventh-hour set-back impacted directly on the team, when Clack and Stu Eve (the project's digital survey specialist) fell ill in the days before departure. Clack came down with (what turned out to be) a non-Covid related illness while Eve tested positive for Covid. This meant that they could not travel with the rest of the team and would have to take a later flight once recovered. As it happened, this meant they arrived on the islands to start their quarantine just as the rest of the team were released from quarantine in Stanley (there was adequate overlap following their quarantine and they stayed on six extra days to complete survey and recording work). What with the loss of five days in the field due to quarantine and the delayed arrival of key members of the team, the project might have seemed doomed before it started but these challenges were adapted to by everyone and the project proved a hugely productive and enjoyable experience for all involved.

Art and public engagement

In addition to the archaeological survey, the Falklands War Mapping Project engaged an artist as a member of the team. Doug Farthing is a post-Falklands War veteran of The Parachute Regiment (2 Para), and has served in Iraq, Afghanistan and on other operations. Recruited by Clack as part of his 'Art and Conflict Heritage' initiative at the University of Oxford, Doug's remit on the project was not only to create artworks reflecting project activities and the landscapes of the islands but also to work with young people in the Falkland Islands' schools using art as a means of exploring themes such as conflict, memory and reconciliation. He was assisted in this public engagement programme by Beth Timmins, an anthropology DPhil student at the University of Oxford supervised by Clack. Some of Doug's paintings and the work of the pupils were exhibited at a special event hosted by the Historic Dockyard Museum in Stanley. A more extensive exhibition of Doug's work was hosted in an exhibition organised and curated by Clack at the University of Oxford. The multi-media art created by Doug, other artists and the children of the Falkland Islands can be seen in the monograph which accompanied the exhibition and is available as an Open Access download (Clack and Pollard 2022). Given the constraints of space, the public engagement aspect of the project, which included textile art by Katie Russell, photographic and archival work by British and Argentine veterans, and local participation in the archaeological survey, will not be discussed further here, but again the 1982 *Uncovered* volume provides a useful overview of the project's holistic character.

Historical background

The Falklands War, which is one name given to the conflict between Argentina and Britain following the invasion of the Falkland Islands in early April 1982 and the final surrender of Argentine occupying forces on 14 June 1982, saw its fortieth anniversary in 2022.⁴ The conflict has attracted the attention of academics, including historians, for at least twenty years, but this project represents the first intervention by archaeologists.⁵ This late arrival is perhaps unsurprising, given the still nascent character of conflict archaeology, and the difficulty of getting to the Falkland Islands, which are located in the South Atlantic some 8,000 miles (12,875 km) away from the British Isles (Figure 1), and 400 miles (644 km) from the eastern coast of Argentina. (This proximity has been used by Argentina as an argument for sovereignty.)



Figure 1. Location of Falkland Islands and route south of the British task force.

The Falkland Islands are a British Overseas Territory, first becoming a colony in 1833, but are claimed as national territory, known as the Malvinas, by Argentina, which itself gained independence from Spain in 1816, initially as the United Provinces of Rio de la Plata (Freedman 2005a, 6). Outright conflict was avoided until 1982, with the United Nations arbitrating on various occasions in the period following the Second World War. A perceived loss of interest in the islands by the British, in part coupled to defence cuts



Figure 2. Mountains to West of Port Stanley formed the basis of the main Argentine defences.



Figure 3. Scots guards veterans Jim Peters and John Lettrick. Tumbledown behind and to North (west to left).

which would see the reduction of a British military presence in the South Atlantic, was taken by Argentina as a cue to invade in April 1982 (Middlebrook 2001, 32). There were strong motivating factors within Argentina to claim the Malvinas, a sentiment guaranteed to bind together a nation suffering an economic downturn on the watch of an oppressive

military government responsible for the 'disappearance' of thousands of citizens with left wing sympathies (Freedman and Gamba-Stonehouse 1990, 4). The Argentine military hoped Britain would enter into serious negotiations once the islands were under occupation, and did not expect the determined military response now so closely identified with prime minister Margaret Thatcher, who had her own reasons to enter into a potentially vote-winning conflict, which, as in Argentina, included a floundering economy.

The Argentines invaded the Falkland Islands on 2 April 1982 and after a brief but fierce firefight with a small force of British Royal Marines took control of the islands, with troops initially brought in by sea reinforced by air via the airport close to Stanley. Within weeks, around 13,000 Argentine personnel were stationed on the Falkland Islands, most of them on East Falkland which is where the majority of the c.1800 islanders lived (Middlebrook 1989, 63).⁶ The British response, as noted above and largely unexpected by the Argentines, was a Task Force of ships, many of them taken up from civilian trade – including the world's then most luxurious cruise liner, the QE2 – which sailed south carrying elite British troops from 3 Commando Brigade (Villar 1984, 170). Also sailing as part of the Task Force were the aircraft carriers HMS *Invincible* and HMS *Hermes*, both of which were equipped with Harrier fighter bombers.

As the Task Force sailed south, the US entered into an intensive programme of shuttle diplomacy, and on the surface displayed neutrality but this turned into tacit support of Britain when the process ended in failure. An eleventh-hour intervention by Peru also failed to avert conflict (Freedman 2005b, 319). Ascension Island marked the half-way point on the journey south, and here the US handed the airfield they were leasing back to the British. After a temporary stop over to re-stow supplies loaded at speed prior to departure the Task Force continued south. A widely held belief among members of the British military that negotiations would bring about a resolution prior to reaching the Falklands was shaken on 2 May by the sinking by a British submarine of the Argentine Cruiser ARA *Belgrano*, which was positioned just inside a 250-mile total exclusion zone imposed by the British and centred on the islands. The sinking remains controversial to this day, though the commander of the *Belgrano* regarded it as a legitimate action (Allison, 2017). Two days later, it was the crippling of the British Frigate HMS *Sheffield*, with the loss of 20 of her crew, by an air-launched Exocet missile, which for many removed the last hope of a peaceful resolution.

British forces, in the form of 3 Commando Brigade (3 Cdo Bde), consisting of 40, 42 and 45 Commando (Royal Marines) and the 2nd and 3rd Battalions of The Parachute Regiment (2 and 3 Para), made an amphibious landing on the western side of East Falkland in the sheltered waters of San Carlos on 21 May. This was not a replay of D-Day from the Second World War, and losses were very small, largely because the Argentines chose not to defend the beaches (Figure 2), though a unit located to the north of the inlet was neutralised by the Special Boat Service (SBS) just before the landing ships arrived (van der Bijl 1999, 112). Several days were taken to establish a defended beachhead, but, with an order to move inland, commander of 3 Cdo Bde, Brigadier Julian Thompson ordered an attack on the Argentine garrison holding the settlement and airfield at Goose Green, to the south of the landing beaches. The resulting battle, fought on 28 and 29 May by 2 Para under the command of Lieutenant Colonel H. Jones, lasted for around 16 hours and was the first land battle in the campaign. The Argentines were dug in down the length of an isthmus and the British fighting advance was at one point stalled along a ridge which

created a natural barrier to the north of their objective. Colonel Jones was killed while storming a position on this ridge and there would be more casualties before the Argentine garrison surrendered after further heavy fighting the next day (Fitz-Gibbon 1995).

The Battle of Goose Green cleared an Argentine threat from the right flank of the British advance on Stanley, located on the eastern end of the island. This involved a move on foot over rough terrain over a distance of more than 40 miles (64 km), with an airlift option removed when the *Atlantic Conveyor*, the ship carrying the Chinook transport helicopters, was sunk by two Exocets on 25 May, with the loss of 12 men (one of four Chinooks survived as it was not on board at the time). Famously, 45 Cdo and 3 Para moved by foot across the island with their kit – the Royal Marines ‘yomped’ and the Paras ‘tabbed’.⁷ With most of 3 Cdo Bde deploying forward, the arrival of 5th Infantry Brigade provided a considerable reinforcement to British forces on the islands, with the 2nd Battalion Scots Guards, the men of which had been on duty in red tunics outside Buckingham Palace just a few weeks before, 1st Battalion Welsh Guards and 1st Battalion 7th Gurkha Rifles arriving at San Carlos on 1 June (Middlebrook 2001, 179).

With Goose Green secured, 2 Para, actually part of 5th Infantry Brigade rather than 3 Cdo Bde (van der Bijl and Aldea 2014), flew forward to the south of the main concentrations of Argentine forces to the west of Stanley on 1–2 June in the one remaining Chinook helicopter. They were replaced in Goose Green by the Gurkhas tasked with guarding Argentine POWs housed in a makeshift camp centred on the sheep shearing sheds (Ely 2022, 316). The initial plan was for the Scots and Welsh Guards to advance east on foot but it very quickly became clear that fitness was a limiting factor here (Middlebrook 2001, 296). It was then that the fateful decision was made to move these troops by sea, sailing around the south of East Falkland and disembarking at Fitzroy to the south-west of Stanley and to the south of the main Argentine positions. This was achieved by 6 June, but the Welsh Guards suffered heavy casualties when the RFA *Sir Galahad*, the vessel carrying them, was hit by bombs during a raid by Argentine Skyhawks before the troops had been disembarked. Shocking as this incident was, it did not inflict the number of casualties the Argentines wanted to believe, and, if anything, served to stiffen British resolve to complete the task of liberating the islands (Privratsky 2014, 188).

Mountain defences

The mountains to the west of Stanley formed an arc of high ground and served as locations for Argentine-defended positions covering the western approach to the town, which also made them vital objectives for British forces. Although referred to as mountains, these dramatic features are steep-sided ridges formed from quartzite rock most of which are oriented east to west. These features are also characterised by boulder fields and stone runs on the lower slopes and castellated outcrops, with sheer walls and rock lined gullies, running along the summits (Stone, 2016). The geology forms zones where movement along the feature is channelled, with nooks and crannies providing places of shelter for defenders and plentiful amounts of loose stone serving as raw material for the building of defensive structures, particularly sangar walls. In short, these features provided an ideal platform for defence, particularly against attacks along the length of the ridge, where field fortifications were arrayed in depth.

There is little doubt that the presence of these readily fortified natural features close to the western fringes of Stanley, the island's capital, had a powerful influence on Argentine strategy, which was dominated by static defence, though the ability to counterattack was foreseen (Seear 2012, 245). This turned out to be a fatal mistake in the face of the aggressive and coordinated nature of British tactics, geared as they were to the taking of ground through staggered attacks, which effectively isolated and neutralised Argentine units deployed across these features. Notably, there was no attempt by the occupying forces to build hard defences such as concrete pillboxes, a failing which again partly resulted from over-confidence in these 'natural fortresses'. There were, of course, other factors at play here, including Argentina underestimating British determination to regain the islands through force if necessary and the difficulties of transporting raw materials to the islands by sea (Pollard 2022).

The mountains to the west of Stanley served as an outer defence zone, including Mount Kent, Mount Harriet, Two Sisters, and Mount Longdon (Cooksey 2017), which curved around an inner defence zone, comprising Mount Tumbledown, Mount William, Wireless Ridge and Sapper Hill. Although the Argentines had prepared positions to counter an enemy advance from various directions, with landings to the north and south of Stanley regarded as real possibilities, it was from the west that the core British effort came, with the main advance by 3 Cdo Bde coming from the beachhead at San Carlos Water lying around 40 miles (46 km) away in that direction. Even troops approaching from the south, including the Scots Guards, put in assaults from the west end of these features – in the case of the Scots Guards against Tumbledown. A notable exception to this orientation of force was the assault on Mount Harriet led by 42 Cdo which put in attacks from the south-east as well as the west (the Ghurkhas advanced on Mount William from the west after coming around the eastern end of Tumbledown, but encountered little resistance).

The battle of tumbledown

The objective for the Scots Guards was Mount Tumbledown (Figure 3), which is around 220 m above sea level at its highest point, and is known as Tumbledown Mountain to islanders, whereas most other mountains are referred to as 'Mount'. At over a mile long (c. 1.6 km), it was one of the key ridge-like, rock outcrops located to the west of Stanley, which were the main focus of the Argentine occupation (Privratsky 2014, 210). The feature was for the most part defended by the Argentine 5th Marine Infantry Battalion (BIM5), made up from regulars and conscript troops, along with some elements of the 4th and 12th Infantry Regiments (Seear 2012).

In preparation for the British attack, which was first going to be a daylight assault from the south on 12 June but was then moved to an attack from the west on the night of 13 June, the men were moved from Fitzroy by helicopter on the morning of 13 June. They dug in on the south side of Goat Ridge, located around a mile (c. 1.6 km) to the west of Tumbledown (van der Bijl 1999, 196). Like Mount Longdon to the north, Mount Harriet to the south-west and Mount William to the south, Tumbledown extended from west to east. On the southern slopes, scree-like stone runs provided loose rock into which sangars were built, while also making movement on foot very difficult, especially at night. Where the

presence of peaty soil permitted, trenches were also dug into the ground along the ridge and on the low ground to the south, the north being covered by minefields.

The main assault, which was to follow a plan devised by Lieutenant-Colonel Mike Scott, Commanding Officer of 2nd Battalion Scots Guards,⁸ was preceded by artillery bombardment during the day, along with several laser guided bombs delivered by RAF GR3 Harriers, and at night by a diversionary attack along the track to the south (Figure 4). This involved four light tanks (2× Scorpion, 2× Scimitar) from 4 Troop, B Squadron Blues and Royals, under Lieutenant Mark Coreth, supported by a composite platoon from the Scots Guards, under Major Richard Bethell, advancing towards Stanley. At around 2200 h, this resulted in a close-quarter fire-fight against Argentines from O Company 5th Marine Infantry Battalion in dug-in positions on the southern flank of Mount William (Seear 2012, 246). The action left the Scots Guards with two dead and several wounded, and a Scorpion tank was disabled by a mine as it manoeuvred off the track. Despite the cost, the diversion kept the Argentines positioned on and around Mount William focussed on the southern approach, while the main British attack on Tumbledown went in from the west.

At 2100 h, as the diversionary force was making its way along the track, the main advance by the Scots Guards began from a start line to the east of Goat Ridge. The first objective, almost a mile away, was a rocky outcrop located at the western end of Tumbledown, to which it was connected by a low saddle of open ground. This initial assault was made by G Company, under Major Iain Dalzell-Job,

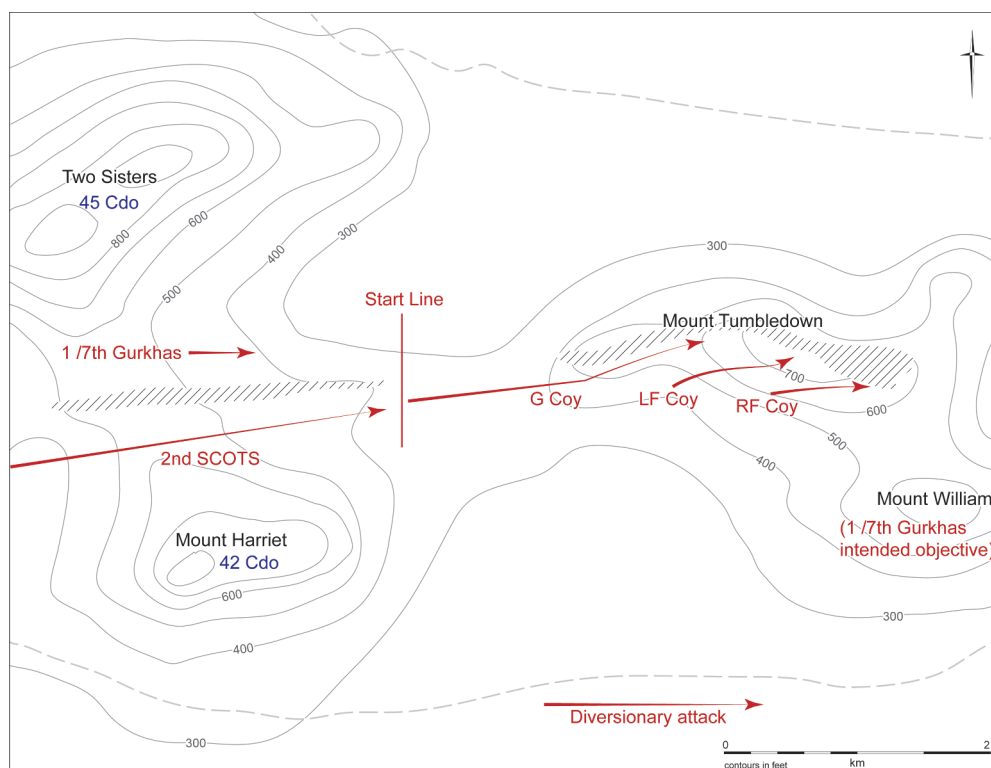


Figure 4. Battle of tumbledown, British routes of advance (after Smith 2006).

which after delivering heavy fire and advancing uphill found the Argentine positions abandoned. Several men from G Company were later wounded by artillery fire (van der Bijl 1999, 200). With the first objective secured without loss, the advance onto the main part of the mountain was taken up by Left Flank Company under the command of Major John Kiszely. Fifteen Platoon moved over and around the stone run on the southern slopes, while 13 Platoon took a more direct westerly route on the higher ground above. With support from artillery fire, which had to be lifted due to one of the guns firing short, progress was initially good but then the Argentine defenders, many of them men from 4 platoon, 5th Marine Infantry Battalion, some of whom were equipped with night vision goggles (Seear 2012, 412), laid down a very effective fire, immediately causing casualties among the Guards.

By then it was around 2330 h, and from here on the battle raged among the rocks, with grenades, bullets and bayonets used during the close quarter fighting. Anti-tank weapons were deployed against the Argentine positions – including a number of disposable M72 LAW 66 mm rocket launchers and a single, cumbersome Carl Gustav 84 mm recoilless rifle, which was operated by Guardsman John Litterick (who fired one round from it in the battle at this early stage). Jim Peters, who like John was in 15 Platoon, was a gunner on the belt-fed GPMG, and his loader was killed beside him in this same encounter. Despite these efforts, however, the Left Flankers were stalled well in front of their final objective, which was around half way along the ridge (Figure 4). Only when they had reached that point would they give way to Right Flank Company, under Major Simon Price, which had been assigned the rest of the ridgeline, up to the eastern end of the mountain.

The Argentines, using their cover to limit casualties, and even shouting abuse at their attackers, kept Left Flank Company pinned down among the rocks in freezing conditions for over three hours. As snow fell, and the British artillery at last returned to action, momentum was regained. After a pre-arranged three salvos, Major Kiszely, finding his men slow to leap into action, yelled, 'Are you with me, Left Flank?' which after a brief pause received the reply, 'Aye sir, I'm f*****g with you!' (Seear 2012, 97).

With Kiszely's encouragement, Left Flank Company, including 15 Platoon, stepped back into the attack, and in the ensuing advance Kiszely himself killed at least one Argentine with his bayonet (van der Bijl 1999, 201). The Argentines continued to put up a stiff fight, with the commander of 4 Platoon, Sub-Lieutenant Vasquez, ordering mortars to drop rounds on his own position, so desperate was the situation (Ramsey 2009, 517; Seear 2012, 247). By around 0400 h, after about seven hours of fighting, only seven men from Left Flank, including their Commanding Officer and Guardsman Jim Peters, were standing on the summit of the mountain. Three of these men were immediately wounded by Argentine machine gun fire, with Kiszely and Peters being among the four to come out of this final Left Flank action unscathed. Their objective achieved, the assault was continued by Right Flank, which passed through the Left Flank positions and continued to advance westwards. Again, the fighting was brutal and now, with dawn approaching, daylight provided additional danger, this time from Argentine artillery. The Argentines put in a last minute counter-attack from the north-east, but this was too small and came too late to turn the tide of the battle (Seear 2012, 249).

In all, eight Scots Guards were killed (seven of these were from Left Flank Company), along with one Royal Engineer (in the diversionary attack along with one of the guardsmen). In addition, 43 were wounded, including 10 from G Company as a result of shelling (Jim was among the 21 of those wounded from Left Flank having been injured while carrying a stretcher). The Argentines lost 20 killed, with seven of these coming from 4 Platoon, while around 50 were wounded (van der Bijl 1999, 203).

While the battle for Tumbledown raged, 2 Para began their night-time assault on Wireless Ridge to the north-east. This was to be the last battle of the war and would see the combined arms of infantry, artillery and armour working effectively together. At dawn, after nearly ten hours of fighting, with Tumbledown at last in possession of the Guards, the 1/7 Gurkhas, having advanced along the northern flank of the mountain, crossed its eastern end and moved south towards their objective, Mount William. They suffered nine wounded from shell fire before reaching their objective, but William had already been abandoned (van der Bijl 1999, 203). The Argentines dug in there had retreated back to towards Stanley, briefly taking up position on Sapper Hill before falling back on the town. With all objectives taken and the entire Argentine force streaming into the capital, the worry for the British commanders was a last stand that would involve street fighting, which would inevitably take a toll on the civilian population. Fortunately, common sense, encouraged through the efforts of a British negotiating team, won out and the Argentines surrendered.

The project veterans

From the outset, a core aspiration of the Falklands War Mapping Project was to engage veterans from the Falklands War in the archaeological survey of their own battlefields. This sort of re-engagement of veterans with their sites of conflict, and indeed their trauma, had never been tried before but experience elsewhere suggested that this exercise would benefit both the veterans and the quality of the archaeological interpretation. Organisations which involve military veterans, many of them suffering physical or psychological trauma, in archaeological projects have multiplied over recent years. Perhaps the two best known are *Operation Nightingale*, which grew out of the Ministry of Defence's own archaeological service, responsible for the heritage management of the substantial defence estate (Osgood 2023), and *Waterloo Uncovered* (Evans et al. 2019; Ulke et al. 2021). It was the latter that played a key role in the development of the FWMP and the success of its first season of fieldwork in 2022.

Waterloo Uncovered was founded in 2014 by Mark Evans and Charlie Foinette, who were respectively a former Captain in the Coldstream Guards and a still serving Major in the same regiment (Foinette is now a Lieutenant Colonel). Evans retired from the army after combat service in Afghanistan resulted in him having to deal with the severe challenge of PTSD. Both of these friends had studied archaeology at University College London before joining the army and together came up with the idea of engaging military veterans and those still serving in the forces but facing the difficult transition into civilian life in the archaeological investigation of the battlefield at Waterloo. The choice of Waterloo was not a difficult one as it represents one of the Coldstream Guard's proudest battle honours and the then approaching 200th anniversary provided further impetus. It was at this point, in late summer 2014, that they approached Pollard, who was known for

his long involvement in conflict archaeology, and invited him to lead the archaeological component of the project. *Waterloo Uncovered* entered the field for the first time in 2015 and since then has engaged with hundreds of veterans, in fieldwork and online study programmes, and made major contributions to our understanding of the battle fought in 1815 (Eve and Pollard, 2020). A notable development over that period was the incorporation of a dedicated well-being team which has helped to make *Waterloo Uncovered* into a world leader in what has become known as veteran archaeology.

The aftermath of the Falklands War was the first time that PTSD (Post-Traumatic Stress Disorder) was accepted as a real condition in the UK, having first been recognised by the American Psychiatric Association in 1980 as a result of the Vietnam War (Robinson 2011; Shay 1994). Projects like *Waterloo Uncovered* had demonstrated that archaeological practice – which involved working in a team in a disciplined fashion – had a beneficial impact on military personnel and veterans diagnosed with PTSD (Archaeology is not a therapy or a cure but can have an ameliorating impact). One of the ideas underpinning the FWMP is that this positive impact can also be experienced and perhaps even enhanced when veterans are engaged in the archaeological survey of their own battlefields.

It is one thing to have veterans engaged in the investigation of a battlefield over 200 years old, and *Waterloo Uncovered* has involved at least one Falklands veteran in that work, but it is quite another thing to have them engaged in fieldwork focussed on where they suffered their trauma. To this end there was an experimental aspect to the pilot project – would the outcome be positive for the veterans? The alternative outcome is obviously a negative one, and it was here that the day-to-day involvement of the team's well-being officer played a vital role. Without this expertise engaging veterans, the project had the potential to be damaging.

Recruiting suitable candidates from the veteran community was obviously going to be a challenge, but again *Waterloo Uncovered* had accrued valuable experience here with the well-being officer fully engaged in the process as the team for each year's fieldwork is put together. In the first instance, names were provided by Major-General (Retired) John Kiszley, who had commanded Left Flank Company during the battle. Following online interviews with Rod Eldridge and Pollard, two Scots Guards veterans were taken on as full members of the team – it was important to stress at the outset that they were to play an active role in the project.

The first of these two recruits was Jim Peters (Figure 3), who had previously returned to the islands four times since 1982 but had never found the solace he wanted a visit to bring. He was hopeful that the structure provided by the project would help to enhance his experience, and he was also keen to assist with the work, believing that it would make a contribution to the understanding of his regiment's actions in the battle and serve as a further memorial to those of his comrades who perished in it. Joining him was John Litterick, who had never revisited the islands since 1982. However, this was not for want of trying and on one occasion he had got as close as the gates of the airport at Brize Norton before he decided he could not go through with it and returned home to Scotland. There were other differences in the post-war experience of these two men, who had been friends while in the regiment. Jim was undergoing therapy for PTSD but John had not sought out any such assistance. As it happened, they proved to be a perfect pairing, supportive of one another and each making a profound contribution to the project.

Some mention of the actions of these two veterans during the battle has been provided above, but it was in the closing stages that they underwent their most dramatic shared experience. As the fighting ended, both guardsmen were ordered to assist with carrying stretchers bearing casualties back to the regimental aid post which had been set up in the lee of a huge boulder at the western end of the mountain. As they made their way back along the southern slope, they were hit by Argentine mortar fire and Jim was badly wounded in the leg, while the man hefting the corner of the stretcher next to him was killed. By the time he reached the aid post there was a concern he would lose his foot, but thanks to the skill of surgeons on the hospital ship, the SS Uganda to which he was flown, his leg was saved, though his injuries still cause him pain.

Fieldwork (March–April 2022)

Methodology

Thanks to previous visits by Clack and Pollard, it was possible to put together a project design based on the realities of working in the islands, relating to topography, the nature of surviving remains, and the challenges presented by the weather. In brief, the main objectives of the project were to record a meaningful sample of features surviving from the Battle of Tumbledown, while testing a suite of techniques, including laser scanning and photogrammetry (some of it from drones). The aim was to record the location, character (which might allow for identification of function), extent, and nature of related material culture (artefacts), as well as, if relevant, their place within veteran memories of the battle. Evaluating the impact of veterans on the project and their own well-being was another intention.

As intended from the outset, the methodology was adapted in the field, with areas of interest informed by information provided by the veterans on the team and local informants, but also taking in contrasting environments. The areas subject to survey can be seen in [Figure 5](#). A paper dedicated to the detailed results of the survey is currently in preparation, but prior to a review of initial results here, the following technical notes will set the context.

- Time in the field was limited, with only 8 days available for survey on Tumbledown. This limited the size of the sample areas which could be incorporated into what was at core a feasibility study rather than an attempt to survey large tracts of the battlefield.
- Several factors were considered when selecting which areas to survey: presence of built or dug fieldworks; nature of terrain – taking in different types; veteran recollection – places which the Scots Guards veterans recalled from their time in combat; management issues – an area under obvious threat from damage was incorporated.
- The survey was initially pedestrian in character, with the survey team walking the ground with the veterans to identify areas to be incorporated into the sample. Once selected, the three areas detailed below were subject to various types of survey.
- Each area was first subject to a basic analogue survey using pre-prepared record sheets which included a section for measured field sketches. This process allowed for close examination of structures and provided a basic method of recording that could

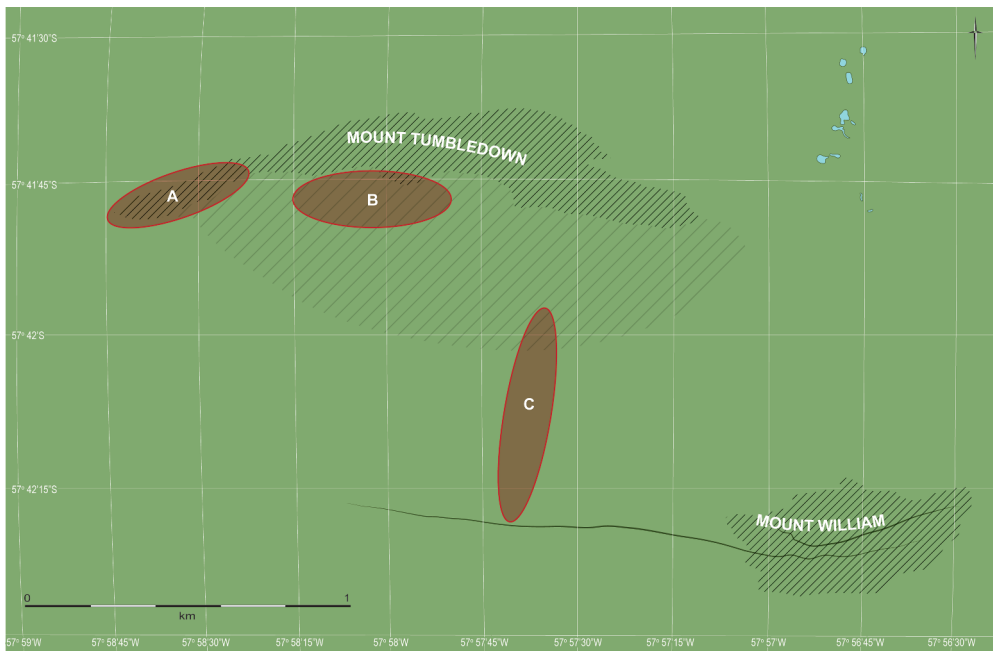


Figure 5. Tumbledown survey areas A, B & C.

be rolled out to local participants with no archaeological expertise (knowledge exchange with islanders was an important objective). Sketch plans were produced and any artefacts within or close to structures recorded. Photographs were also taken at this stage.

- Ground photogrammetry using a digital camera was used to record individual features. This is a technique that had previously been used with good results during the *Waterloo Uncovered* project to record excavation trenches.
- Aerial photogrammetry was tested using a DJI Mavic Air 2 drone. A concern here was wind speed, but the device flew very effectively and despite its small size even pre-programmed transects were possible. Resolution with individual features was at 1 cm and results were geolocated using GPS on phones and the drone, which gave an accuracy of ± 5 m for group locations.
- Laser scanning using a tripod mounted Leica BLK360. Application of the device was limited, and good results were produced. An example target was the huge boulder which provided shelter for the Scots Guards regimental aid post on Tumbledown.
- Photogrammetry and laser scanning are techniques which produce highly detailed renderings of individual and grouped features, and these have the potential to shed new light on our understanding of the conflict, especially when integrated with historical archives and veteran testimony. Additionally, this data can be used to determine the nature and extent of any future denudation of conflict remains and in doing so play a role in heritage management (again, a full paper on these issues is in preparation).

Although each of the team would spend 15–16 days on the Falkland Islands, five of these were eaten up by quarantine. Making the most of the time available during this pilot phase therefore required a strategy based on sampling, whereby the wider landscape would be reconnoitred and smaller locales selected for detailed survey. One benefit of quarantine however was the decompression time it allowed the veterans after their long journey. With a serving officer, in the form of Charlie Foinette, and mental health specialist, and military veteran, Rod Eldridge, also sharing the house, it was possible to identify and talk through any anxieties that arose during this period.

Prior to setting out for the mountain, the team was provided with an induction into basic health and safety procedures related to unexploded munitions by an army UXO specialist from the garrison. This had been arranged by Clack in light of his engagement with the Explosive Ordnance Disposal (EOD) detachment at Mount Pleasant Airfield after finding unexploded 105 mm artillery rounds in his excavations in 2020 (Clack 2020, 3–4). Fortunately, in the field, in 2022, the only munitions encountered were unfired bullets. In reaching Tumbledown, the project benefitted hugely from the off-roading skills and great company provided by the drivers of our two Land Rovers, with the transit to the western end of Tumbledown covering a distance of more than four miles (6.5 km) and the negotiation of rugged terrain which included areas of boggy ground.

Despite some understandable last-minute nerves, it did not take long for John and Jim to acclimatise to the return to Tumbledown, and prove the value of their presence on the team. As they walked together through the crags towards the eastern end of the mountain they talked about their memories of the battle. Almost unconsciously they were now leading a battlefield tour that no one on the team would ever forget. The recollections came naturally with Jim recalling the point at which he had advanced forward of the platoon but paused firing when his number two gunner had been shot through the head beside him. At that very moment, Major Kiszley had come up behind him and asked if he was ok, which was enough for Jim to get the gun back into action. Then there was John finding one Argentine position after another, and recalling that at one point he had dropped a stone down on an enemy soldier in one of these positions. By the end of the first day, the change in John especially, who had previously tried but failed to make a return trip to the islands, and even almost turned back from the mountain earlier in the day, was obvious to everyone. John admitted that he could not believe what a great day it had been, and aware, along with Jim, that we had much more ground to cover was looking forward to further exploration.

The initial reconnaissance was a learning experience for all and both Jim and John were coping well with their return to the mountain. However, harder times would come as the fieldwork progressed, and John was already worried about the next day as we would be revisiting the places where he actually fought. Rod was always there to assist when required. There were also times when Jim and John would find one another's company the best therapy, and they would regularly take themselves off to chat. The most extreme moments of personal stress manifested as full-blown flash backs, which to the surprise of other members of the team, with only limited experience of how PTSD manifests itself, could pass entirely unnoticed (Jim described one of these as literally being back in the moment).⁹ There was little doubt that the battle had been brutal, bloody and confusing, with close quarter-fighting across the most difficult terrain imaginable in the dark, and at times in the snow. As noted, 15 Platoon of Left Flank Company, of which John and Jim

were members, had forty years previously fought its way along the southern slope of the mountain, moving through gaps in the stone fields and then climbing up through them, engaging one Argentine position after another.

It was not all blood and guts though, and there were lighter moments, at least during the project. In one, Pollard encountered Jim on his hands and knees rooting around in the lee of an overhanging rock higher up the mountain. When asked what he was doing he said he was looking for the container for the chicken curry he had eaten there during a lull in the fighting. Pollard laughed and told him he was now a fully fledged archaeologist, but alas he did not find the ration pack.

That first ramble over the mountain was extremely valuable, as it served to bond the team in the field, allowed the veterans to ease themselves into their return and provided everyone else with a valuable introduction to a complex landscape. From then on, there were numerous occasions where the knowledge and experience of the veterans benefited the project.

Survey

There is a long tradition of paraphrasing General Helmuth von Moltke's axiom that 'no plan survives first contact with the enemy', and it seemed entirely appropriate when it came to our survey strategy on the mountain.¹⁰ However, the project design was always meant to be flexible, with survey to be focussed on areas pointed out as of personal interest by the veterans during the reconnaissance. It was envisaged that this would entail the use of drones and photogrammetry to capture Argentine positions on the flanks of the mountain, and this did happen. However, it was information from battlefield guide Tony Smith which motivated an additional recording exercise. Smith pointed out to the team a series of Argentine dugouts not on the mountain itself but on the relatively level ground at the foot of the southern flank of the mountain. This virtually stone free moorland stretches for around 330 m from the base of the stone run covering the southern slope to a long outcrop of rock which runs off the western end of Mount William, which sits to the south-east of Tumbledown.

This location could be described as a saddle, or even valley floor, this latter being a term especially suited to the expanse of ground further to the east, between Tumbledown and William. As pointed out by Tony Smith, the entire width of this open ground, between the mountain to the north and the long outcrop to the south, was punctuated at regular intervals by a line of Argentine dugouts and small firing trenches cut into the peaty soil. What had particularly caught the battlefield guide's attention at the time of our visit was that a number of them had recently been looted. As this location fitted with the project aims on two counts; being an example of remains under threat, and the use of contrasting terrain – dug features as opposed to structures built from rock, it was incorporated into the survey and designated Area C. The following sections will provide a summary of the work carried out at these locations (see also Clack and Pollard 2022).

Area A – the spur to the west of tumbledown

On the second field day, the vehicles deposited the team on the saddle of ground separating the higher massif of the main ridge to the east and the long knoll topped by a spine of craggy rock which, like the tip of a stone spearhead, projects to form the western end of the overall

feature (Area A on [Figure 5](#)). This spur was the first part of the mountain to be encountered by the Scots Guards as they advanced in the dark from the west, and was the objective of G Company (G Coy). Once the feature was secured, as noted above, the move forward was taken up by Left Flank Company which passed through G Coy and assaulted along the southern slopes of the main feature (includes Area B). By the time G Coy reached the knoll, the Argentines had left (or 'bugged out' as John and Jim put it), leaving behind them various abandoned positions, most of which took the form of sangars – barricades or enclosures built from stone along the northern side of the rocky outcrop.

As with other areas on the mountain further to the east, there were numerous remains of rock-built Argentine structures on the spur. No less than a dozen small sangars were found in two main clusters running along the northern face of the ridge over a distance in excess of 200 m and approximating a line from east to west. The four structures in the western-most cluster descended in series of steps as they mirrored the contour of the ridge-like outcrop. Most of these sangars were rectangular or semi-circular arrangements of stones and small boulders, some looking more like low walls than others, the ends of which terminated against the rock wall to the south (the rectangular features being three-sided), which in places provided further shelter thanks to an overhang.

The fact that these structures nestle into the lee of the ridge so comfortably would suggest that they were intended as shelters rather than fighting positions, and from eyelets and canvas fragments observed in similar structures elsewhere on the mountains the main function might have been to serve as windbreaks for tents. Certainly, their location would have allowed firing from cover to the north, where minefields were located on the exposed moorland below, but they provide no view whatsoever to the south, and this along with their linear arrangement, would have provided little tactical advantage in the face of an attack from the west, which is the direction from which G Company advanced.

At the eastern end of this line, the rocks and earth over an area around 2 m² had been discoloured by heat. It was here that a short length of twisted white wire was observed lying close to a .50 calibre bullet (the projectile not the case), with a closer search picking out a small black rubber tube nearby. Aside from the bullet, these unassuming objects held little meaning for the archaeologists, but fortunately veteran expertise was once again to prove its worth here. John immediately recognised the fragment of guide-wire from a Milan missile, and in association identified the rubber tube as part of the insulated connection between the wire and warhead. The heat damage had therefore been caused by a rocket strike, with the bullet providing evidence of incoming fire from a heavy machine gun. A short line of rocks wedged between two boulders marking the limits of this locale, one of which provides part of the wall to a sangar immediately to the south, where it rests against the outcrop wall, indicates that this had been the site of a sangar set forward from the crag.

John's recognition of the Milan strike had benefited the survey, but it had also helped him on a personal level, as this part of the battle had been playing on his mind, not just in the here and now but for a long time after the battle itself. Why had G Coy found empty positions, and on the face of it had an easier time than his own Left Flank Coy which had engaged in fierce hand-to-hand fighting further the east? This question had found new focus with the discovery of a considerable amount of unfired link from a GPMG (a belt of British 7.62cal bullets) under a large overhanging rock to the south of the crag, where the spur sloped up from the west. John and Jim assumed this to have been abandoned by G Coy after not being required in the taking of the position, something which they found

frustrating as they could have done with it in their own fight. Now, however, there was evidence for these Argentine positions being hit by heavy weapons, an event which might have encouraged the defenders to retire before the arrival of G Company. There can be little doubt, however, in the light of post-fieldwork analysis, that the discovery of the Milan strike raises more questions than it answers.

The first of these questions is who fired the Milan missile? G Coy was not equipped with a Milan anti-tank weapon, nor was anyone else in 2 Scots Guards. The Gurkhas did have the Milan, and they traversed to the east end of the mountain along the low ground at the foot of the north face of the mountain (keeping close to the rocks so as to avoid a suspected minefield). They are unlikely to be responsible, however, as their advance did not begin until the Scots Guards attack had moved well along the mountain to the east. On the basis of present understanding the origins and timing of the Milan strike remains unclear. However, the .50 calibre bullet could have arrived via the Scots Guards guns on the eastern slopes of Mount Harriet which provided long distance support fire. Some in G Coy believed that the Argentine troops previously stationed on the knoll moved south in reaction to the diversionary attack, and if this was the case there can be no doubting the success of that operation. Seear (2012, 423), on the other hand, has suggested that the position was not occupied at all at the time of the battle as Vazquez made no mention of putting men there during his conversations with him.

Area B – rocky slopes to south of tumbledown ridge

Although G Coy met with little resistance while advancing onto the spur at the western end of Tumbledown, they did suffer casualties once their position was secured from incoming artillery fire. Left Flank Company, including 15 Platoon, which assaulted the next section of the mountain, met heavy resistance from Argentine troops as they advanced along the southern slopes of the main massif – with 14 Platoon coming up behind 15 Platoon. The Argentines were positioned in prepared positions in the scree-like boulder fields covering this part of the mountain (Area B on [Figure 5](#)). These fortified structures and living shelters were built into the dense accumulations of loose rocks which even without the presence of enemy troops made movement very difficult for attacking troops, especially in the dark. It was also snowing for at least part of the time, and, when pinned down or otherwise stationary in exposed positions, men became hypothermic. Because of this some fell asleep, even when under fire and Jim recalled kicking the man closest to him awake once he had eaten his curry.

These areas were explored as part of the pilot, again with John and Jim acting as guides. It was here that the veterans found their experience on the survey most challenging, as this was where they did their fighting, where their friends were killed and wounded, and where Jim was seriously wounded towards the end of the battle. Despite this, John in particular found satisfaction in locating positions that he would have chosen to defend if he was an Argentine soldier, and invariably those he selected were found to have been fortified or were associated with evidence for action, including bullet strikes against rocks and cartridge cases.

Area C – low, level ground to South of Tumbledown

Stu Eve first tested the 3D scanner on the huge overhanging rock which became the forward regimental aid post, and the place to which Jim was taken after being wounded

(Figure 6). An important focus for the geomatic survey, however, was the low ground to the south of the stone run which ran along the bottom of the slope leading up to the ridge (Area C on Figure 5). Here the densely packed run of stones, akin to scree, gave way to peaty moorland which was bounded to the south by an east-west running crag, which to the west rose up to form Mount William. As previously described, the ground between this feature and Mount Tumbledown to the north is effectively a wide valley floor, or more accurately at this point a saddle between the southern base of Tumbledown and the crag or rocky ridge which runs off the western tip of Mount William.

There is a marked contrast here between structures built into the stone runs and those dug into the ground. On the low-lying ground, where there is a reasonable depth of peaty soil, small field fortifications, which adhere broadly to standard operating procedure as laid down in military manuals, could be constructed, for the most part by digging. In the rocky areas, stones were used to construct rudimentary walls and removed to produce pits and hollows, while huge boulders provided megalithic elements. The stone structures are more of an adaptation to the local environment, and because of this they display a degree of architectural variation. A group of these were located among the rocks in the southern fringe of the stone field which covers the southern slope of Tumbledown where it levels out onto the open moorland.

One of these had been built into the very edge of the rock covered ground, where iron girders had been used to roof a hollow space defined by in-situ boulders and low walls of smaller rocks (Figure 8). Elements of this dry-stone walling rested on a flat topped boulder,



Figure 6. Stu Eve laser scanning regimental aid post.

giving the structure a little extra height. The roughly rectangular interior, with a small antechamber related to the crawl space entrance to the rear, was in places floored by slabs of stone which might be bedrock. The enclosed space was roofed with light-weight, L-shaped in profile iron girders (angle irons) which created a criss-crossed framework bound together by lengths of fencing wire strung between the beams. As some of these girders came to a point at one end, they were presumably fencing posts, and one of them was set into the ground vertically against a rock to provide roofing support. Room for movement inside this make-shift bunker would have been limited, with the height of the roof being not much more than a metre. Given a long gone covering of plastic sheeting or canvas, spread over the girder and wire framework, this would have provided a reasonable wind and rain proof sleeping shelter.

More stone structures were scattered through the stone field as it climbed up the slope to the north of the sleeping shelter. Some of these were deep enough to allow standing and so may have served a function beyond providing a shelter for sleeping, and the presence of telephone wire running across the rocks is indicative of command and control. Various elements of material culture were present inside the structures and among the rocks. There was no attempt to carry out a detailed survey of these during the pilot, but notable items were photographed.

Dugouts across saddle

The shelters and other features built into the stone field did not exist in isolation but were a continuation of a line of fire trenches and dugouts sunk into the peaty soil of the saddle to the south. A couple of weeks previously, the battlefield guide, Tony Smith had noticed that around half a dozen of the dugouts had been recently looted. Given that this activity could only have had a detrimental impact on these features the decision was made, in conjunction with project partners the FIMNT, to prioritise the survey of this group by including them in the pilot survey. Each feature was numbered, sketched and then recorded using photogrammetry before the entire area was mapped using a drone, which provided aerial photogrammetry (Figure 7).

Survey revealed the defensive line across the low ground to be over 300 m long and made up from 62 dugouts (Figure 9), most of which appeared as rectangular depressions measuring between one and two metres wide and three to four metres long – most probably accommodating at least two men (Figure 10). This linear defensive system, which had a little depth as some features were set back from the main line, had been positioned to block an attack from the west. A similar line of features, not included in the survey, extended from the eastern end of Mount William and ran east towards Sapper Hill, from where it covered the approach from the south (where amphibious landings might have been expected – from the north via Berkeley Sound was also a possibility).

Thirteen features stretched out from close to the most southerly of the stone-built features, described above, to the edge of east to west running track some 60 m to the south. Some of these sit three deep from east to west (features 006, 007 and 008). The majority were rectangular, and around 1 m wide and 2 m long, with the long axis oriented east to west. On the other side of the track the ground rises by around a metre and it is on the top of this terrace, close to the verge, that the first of the looted features appear, and from there the line stretches out to the south and the crag.

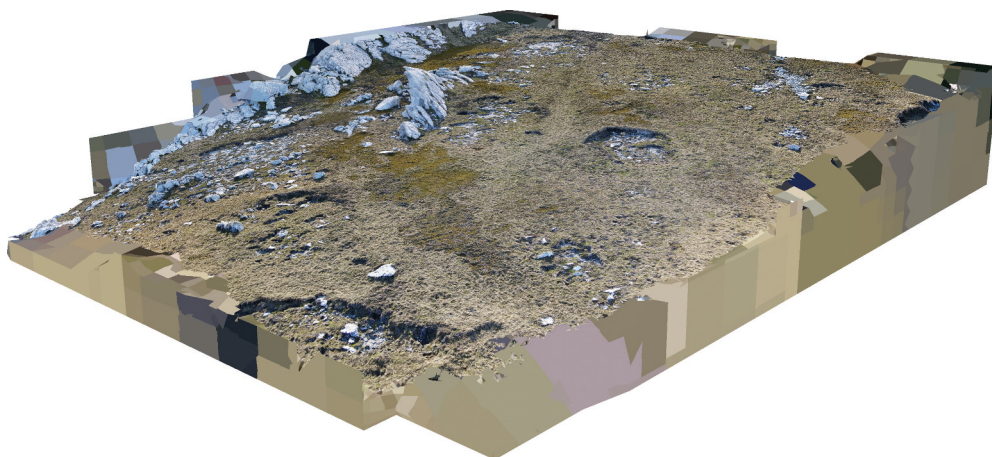


Figure 7. Drone survey of Regimental Aid Post (large rock south of main ridge). Perspective from south-west.



Figure 8. Roofed structure in southern fringe of stone field. Mount William behind to south-east. Note open and exposed nature of ground to south of Tumbledown.

There had been an attempt to re-instate the disturbance, probably to conceal this illegal act. In some of the dugouts, metal girders and stones gave a suggestion of structure but without excavation it was not possible to provide much in the way of further interpretation. It was here that the disturbed examples proved useful, as it was possible to see into structures which in some cases had been broken into through a roof. Health and safety considerations prevented any attempt to enter these structures but side chambers were apparent in a few cases. Full assessment was further inhibited by water logging, which in itself served to remind

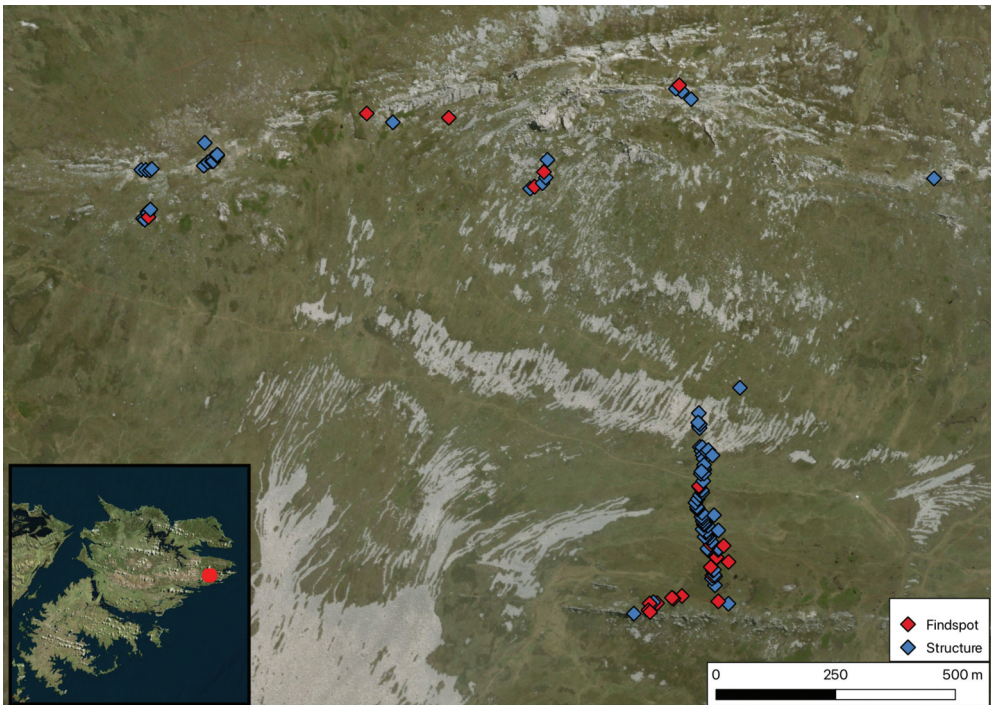


Figure 9. Digitally recorded location of structures and artefacts.



Figure 10. Jim and John inspect a dugout (note upright angle irons). Tumbledown behind to north (stone field behind their heads).

of the difficult conditions which faced Argentine troops stationed on the mountains for much of the 74 days of the occupation. Construction techniques included girders laid across the top of vertically sided trenches with slab-like stones laid over them, which gave an almost prehistoric appearance to these subterranean structures.

The Argentine military followed US military doctrine (Hastings and Jenkins 1983, 313), so much so that the 2nd Marine Infantry Battalion (BIM2) were on manoeuvres in Patagonia with US marines just five months before the invasion (Middlebrook 1989, 18). It therefore comes as no surprise that these features bear similarity to the field fortifications set out in FM 5-15, the US Department of the Army manual on field fortifications. This doctrine appeared in 1972 and was not superseded until 1985, but had changed little since the previous iteration in 1968 (the first version appeared in 1940). As noted above, however, further investigation is required before the details of construction and layout can be fully ascertained, but there does appear to be some variation across the cluster on the basis of what was observed during the survey.

This idealised 3D cutaway of a two-man foxhole appears in the 1972 US manual and like some of those recorded in the surveyed cluster has top cover, which here consists of logs, earth and even cardboard (Figure 11). As the diagram makes clear, the materials shown are expedient, meaning that anything at hand can be used as long as it serves the desired purpose, and in the Falklands scavenged or repurposed materials ranging from tent poles, tent canvas, plastic sheeting, corrugated iron, fence posts, iron bars (L-beams), rocks and turfs were used.

Intermingled with the muddy spoil dumped alongside the looted structures were removed artefacts which the looters had not regarded as desirable enough to take away. With the permission of the museum, these mounds of spoil were dug through (not sieved) and any objects within them collected. Each item was individually recorded and photographed and then removed to the museum. These included empty drinks cans, plastic and foil orange marmalade portions (Fanacoa brand), a shoe polish container (Rex brand), a tube of toothpaste, and even a pair of darned woollen socks. A couple of NAAFI-branded orange juice cans were also present presumably having been liberated from the Royal Marines barracks at Moody Brook (NAAFI: Navy, Army and Air Force Institutes – the organisation that provides canteens, shops, cinemas and other domestic facilities for the military). More obviously military objects lying beside the disturbed features included the plastic tubes in which 40 mm anti-tank rounds were stored, an entrenching tool, including blade and handle, though possibly from different examples. A civilian sleeping bag and sleeping mat, along with two woollen army blankets were also recovered. The blankets, which are almost emblematic of the presence of Argentine troops in the landscape were collected and later washed for curation in the museum. Also among the discarded objects were a small number of 7.62 calibre cartridge cases and some unfired rounds.

The illustrated headstamp (Figure 12), which refers to the letters and numbers on the base of the cartridge, bears not just the calibre of the round, which is 7.62 × 51 mm, but also the year of manufacture; 79 referring to 1979, and also the place of manufacture. The latter is provided by the letter code FLB which refers to Fray Luís Beltran, military factory. This munitions plant, in the town of San Lorenzo, Santa Fe province, was founded in 1959 and still produces ammunition for the Argentine military. This is the same calibre of ammunition used by the British during the Falklands War, who also used a very similar weapon, the Self-Loading Rifle or SLR, the main difference between it and the Argentine FN-FAL rifle being that it could not fire in fully automatic mode.

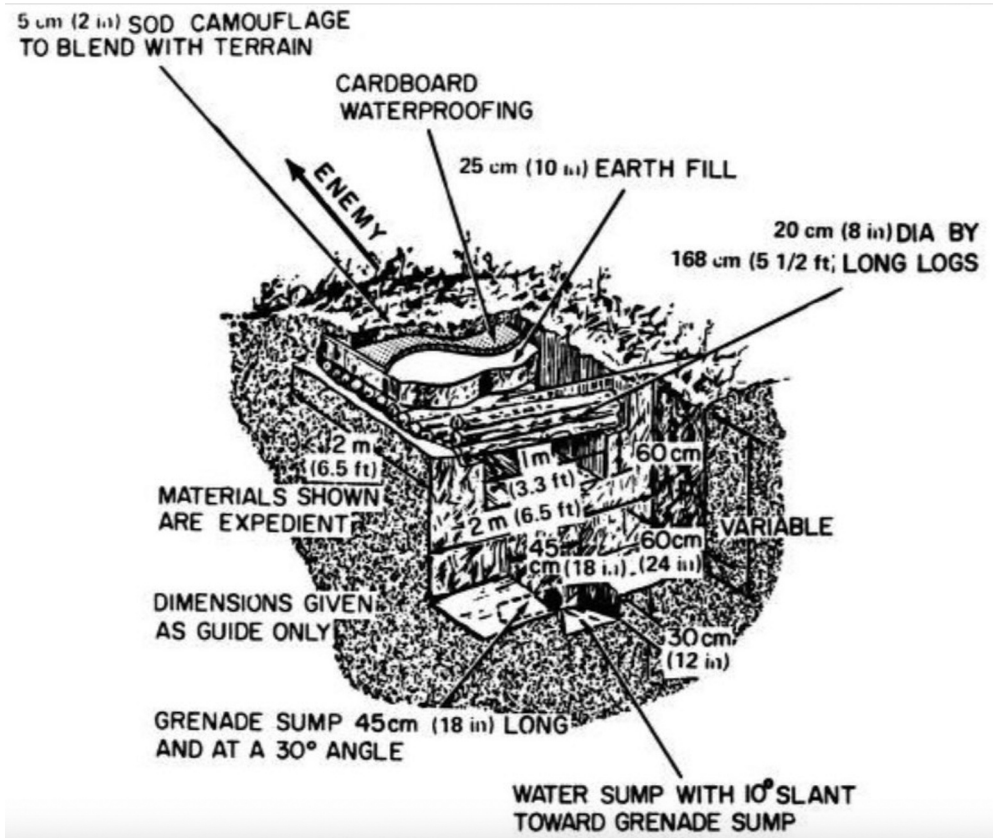


Figure 11. Suggested construction of two-man foxhole in US field fortification manual (1972): 3–6.

A role in the battle?

The fired rounds are puzzling as there is no verified record of combat in this location, which was occupied by 2 Platoon of 5th Marine Infantry Battalion under the command of Sub-Lieutenant Marcelo Oruezabal. However, it is possible that shots were fired in response to the British attack to the north. This area was also briefly occupied by O Company of BIM5, under Captain Ricardo Quiroga, after falling back from the area of the diversionary attack to the south, which then retired towards Sapper Hill (Seear 2012, 246).

In *Nine Battles to Stanley*, Nick van der Bijl reproduces a sketch map (Figure 13) taken from an Argentine POW on board ship after surrender – no further source is provided, though it looks like it has come from a notebook (see van der Bijl 1999, 198). He suggests it was drawn up by or for Commander Carlos Hugo Robacio as part of an internal enquiry into the conduct of BIM5, though it might be part of an after-action report. It shows a major attack, marked with a broad arrow symbol, by the Scots Guards passing from the west through the gap between Tumbledown and William. The line of dugouts surveyed as part of the project in Area C is shown as a pair of ovoid symbols, the uppermost of which sits at the point of the arrow. Another, more accurately placed arrow, shows an attack from the west on the mountain itself, but the annotation has this attack made by the Gurkhas (Nepalese), when in fact they skirted the mountain on its norther flank. When



Figure 12. Fired round from feature 41 (one of four).

viewed in tandem with the expended cases in area C, it is interesting to speculate whether there was some fire from here that was later interpreted as being aimed at a major attack on that location, when in fact that was occurring further to the north.

The crag

The line of dugouts running across the saddle of open ground terminated close to the ridge of outcropping rock which extended west from the foot of Mount William to terminate after around a kilometre, though there are gaps in it. Close to the end of the line of dugouts and trenches, though set slightly forward to the west, is a rather enigmatic structure built into the north facing side of the rock outcrop (Figure 14). A natural shelf in the rock face has been enhanced by piled rocks which support a heavy stone slab roof. This niche serves no obvious practical function, being too small to function as any form of shelter and entirely unsuitable as a fortification. This might be an altar, with the adjacent area to the north perhaps being where troops gathered for services and blessings. During services the niche might have been occupied by a mobile statue of the Virgin Mary along with the chalice and other liturgical accoutrements. Most Argentine troops were devoutly Catholic and accompanied by military priests (padres) on campaign, with Masses in the field providing an opportunity for men to gather together and engage in a social activity which brought spiritual succour and a brief sense of normality to the most extreme circumstances.¹¹

The ground on the other side of this crag, to the south, sits at a lower level than the saddle, in places by around 5 m or more. The ridge line here and the steeply sloping ground on its southern side, which is again rocky, gives sweeping views to the west, across to Mount Harriet, Goat Ridge and Two Sisters, and south to the sea, where landings were a possibility. (Landings did occur at Fitzroy to the south-west.) What might have been an observation post focussing on the view to the south was found in the rocks on the lower ground to the south of the crag, close in to the base of the low cliff.

A pair of large, vertically sided boulders arranged at right angles provided two of the interior walls for this structure, which required anyone inside to crouch rather than stand. The two other sides were formed by placing an upright iron girder to create a fourth corner, thus producing a square shaped shelter, with a second upright providing extra



Figure 14. Possible north facing alter built into the rock out-crop defining southern limit of saddle. Photo features Rod Eldridge and Katie Buckley.



Figure 15. Possible observation post shelter. Note rocks on roof and sheeting from recycled barrel forming wall to right behind heavy girder upright in corner.

part represent a poorly equipped army left to make the most of what was at hand, but construction would also have alleviated boredom in isolated locations such as this.



Figure 16. Probable seat base with sides from angle iron and sprung support provided by wire mesh. Shelter and wall of oil drum sheeting in background.

Two smaller items were made from fencing wire – which is one of the most widely used materials scavenged by Argentine troops. Two objects formed from twisted wire were found in association with the shelter. The most readily interpreted of these was a triangular frame with three legs (Figure 17). This tripod would have functioned as a trivet, supporting a pan or mess tin over a fire during cooking. Similar objects have been found on the mountains west of Stanley, including Tumbledown, and again are an indication of troops adapting to their environment and making do in the face of poor equipment supply. There are plentiful accounts of inadequate food supplies (e.g. Kon 1983, 133) and although there were communal feeding stations equipped with Rancho cookers, like the two still in position at the eastern end of Tumbledown, small groups of soldiers would rely on one another to procure and cook food using home-made utensils such as this (Pollard 2022).¹²

Although it has been suggested that this shelter related to an Observation Post, and it is tempting to see a look-out perched comfortably on his custom-built seat, there is an absence of comms or telephone wire, which one would expect at an isolated outpost like this. However, there can be no doubting the quality of the field of view this location offers (Figure 18), to the potential southern landing beaches and the ground to the south of William and Tumbledown along which an enemy advance from the west could be made (and indeed was during the diversionary attack).

Pebble Island

The project also sought to test the potential of the technologies and approach beyond the Tumbledown site and, as such, conducted additional pilot survey work on Pebble Island. Clack and Eve spent three days on Pebble Island surveying sites and interviewing local residents. This section will outline briefly the events on Pebble Island in 1982 and findings from the survey.



Figure 17. Cooking tripod or trivet formed from twisted fencing wire. Photographed on coat to enhance detail in field.

In 1982, Pebble Island was home to 25 islanders, predominantly engaged in sheep farming. Four airstrips were present: three of grass and one on the beach. On 24 April, the Argentine military arrived, occupied various buildings and established Naval Air Station Calderón. The position was supplied from Stanley and, at its largest size, approximately 150 Argentine personnel were stationed there. Given the threat posed by the Calderón aircraft, in particular Pucarás (twin turbo-prop attack aircraft), to British landing craft and ground forces, the British Special Air Service conducted a raid on Pebble Island (14–15 May) to neutralise them. Incorporating many of the classic characteristics of special forces operations, such as covert surveillance, surprise in execution and strategic impact, the raid has taken on legendary status (Mackay and Cooksey 2007).

The raid saw the use of demolition charges, rockets, mortars and small arms to destroy 11 aircraft (see Aston and Tootal 2022; Delves 2018 for first-hand accounts of SAS participants). Many of the plane wrecks and evidence of the Argentine occupation of Pebble Island had been removed in the years following the Argentine surrender but the project sought to assess if any material remained archaeologically visible on the surface. Linked to the raid, the survey identified assorted aircraft remains in various location. This included, on the airstrip, the wings of a Skyvan utility plane (These had been moved from their original position on the night of the raid). Other moved remains, including parts of propellers, fuselages, and wheels, were located near the cliffs to the south of the airstrip.

There were no reports from the SAS recce or raiding party of Argentine forces having built any defensive positions around Calderón, but some remains were reported by Pollard after his reconnaissance visit in 2012 (Pollard 2014). The present survey identified further features, including a potential Observation Post or sangar overlooking a potential landing site. This feature was built of wood, rock and sheet metal and, as it turned out, was



Figure 18. View of southern coast from possible observation post. Note rocky nature of slope which runs down from crag which is behind camera.



Figure 19. Location of airfield and Argentine dagger aircraft wreck sites on pebble Island.

pointed in the wrong direction to afford any protection during the raid. Remnants of olive-green canvas and eyelets indicate that the structure was likely covered to afford protection from the rain and wind.

The survey also recorded three back-filled pits with small pieces of protruding metal and encountered small pieces of metal, likely wreckage, at various locations on the periphery of the airfield. A number of craters were also identified which likely relate respectively to impact craters from shells from *HMS Glamorgan*, which provided fire support for the raid, and bombs



Figure 20. Wreck of downed Argentine dagger aircraft. The characteristic swept-back wings and fuselage are clearly visible.

dropped by British Sea Harriers in later attacks. Overlooking the west end of the sandy beach of Elephant Bay was located a large, circular-shaped depression linked to a stretch of zig-zagged trench. This was almost certainly an Argentine mortar pit as examples of exactly this type have been found at Fox Bay on West Falkland (Pollard 2014, 5). Additionally, two large sub-rectangular pits were encountered to the north-east of the airfield and are likely to have been gun pits dug by the Argentine garrison *after* the SAS raid. This interpretation is supported by Mark ‘Splash’ Aston, a SAS veteran who was a participant of the raid, when it was discussed during an interview with Clack in 2022.

The survey also included two other aircraft wrecks on Pebble Island from 1982 (Figure 19). These were Fuerza Aérea Argentina (FAA – Argentine Air Force) Daggers (Israeli-made, Dassault Mirage 5, multi-role fighter aircraft) shot down by British Sea Harriers on 23 May (Ward 1993). At both wreck sites an impact crater and a large debris field were evident. Identifiable wreckage included parts of the undercarriage, ejector seat, glass sections from the cockpit, control panel, and swept-back wings (Figure 20). Various markings are visible on pieces of wreckage, including ‘ARGENTINA’ and the Star of David (see Clack, Pollard, and Eve 2022, 78–80).

Interviews by Clack with a number of veterans of D-Squadron SAS subsequent to the fieldwork has not only assisted in the identification of survey findings but also highlighted the existence of an Argentine listening post in the gorse near the airstrip. Veteran testimony is also set to inform as to, for example, the SAS recce positions on Middle Mountain and elsewhere (Shaw 2022, 104–5), infiltration and exfiltration routes used in the raid (Delves 2018, 155–74), and Argentine defensive response in the aftermath of the raid.

Conclusion

The foregoing has hopefully provided an impression of what the pilot study achieved in its primary aim of subjecting the remains of the 1982 conflict to survey, here focussing on the Battle of Tumbledown and to a lesser extent conflict remains on Pebble Island. There is, of course, much more information to be processed and reported on, including the digital products of the photogrammetry surveys, and these will appear on the project's website: <https://www.falklandswarmappingproject.uk>.

The landscape of the Falklands Islands, in which the battles of 1982 were fought, is a complex one, with the exposed geology on the mountains influencing the nature of the fighting on them and forty years later providing serious challenges for archaeological survey. Indeed, it is unlikely that had it been undertaken a decade ago, when a project was first proposed, the technology available at the time would have been capable of meeting this challenge. The pilot study has demonstrated that laser scanning and photogrammetry, with image capture for the latter including the use of drones, are well suited to meet the objectives of the project. Given the wind that is always present in exposed locations on the islands, the ability of Stu Eve to fly small drones in the prevailing conditions came as something of surprise, and this bodes well for future endeavours. LiDar is another application which holds potential to create accurate models of the 1982 battlefields, but this was beyond the resourcing capabilities of the pilot survey.

An ambitious aspiration of the project, when it comes to these applications, is to recreate the battlefields using enhanced reality and in turn to provide environments which can be engaged with as an immersive experience which has the potential to contribute to the relatively new field of virtual exposure therapy for PTSD (Sutton 2020). On a more basic level, the pilot has confirmed that the recording of the remains from 1982 is a worthwhile exercise, with the looting of the Argentine dugouts providing a timely example of the threats facing this unique assemblage of cultural heritage. While the people living on the Falklands should never be defined by the events of 1982, the remains of the war should be regarded as having a value, both as archaeological remains and as an economic asset when it comes to battlefield tourism.

The FIMNT, a partner in the project, has an important role to play in the management and presentation of this cultural heritage, which also has high educational potential. In both management and education, the outputs of the current project can make a valuable contribution. The relatively recent appointment of a dedicated Heritage officer, in the form of Emma Goss, who is a member of the project team, is also positive move here. It is hopefully also clear that the project has demonstrated that archaeological recording and analysis can contribute to our understanding of the Falklands War, and makes a valid contribution to a growing body of work that has applied archaeological techniques to the study of modern conflicts.

This was also the first time that veterans of a war had participated in the archaeological survey of their own battlefield, and this connection between the present and the past gave the project a vibrancy and immediacy previously unknown to any of the archaeologists on the team. Memory is well known to degrade over time, and memories formed from the heat of the most traumatic of circumstances, such as battle, are likely to be confused and blurred from the outset. Should the Falklands War Mapping Project become a long-term endeavour, the relationship between trauma, memory and place will become

a topic for research, but for the purposes of this report it is enough to note that the incorporation of veterans into the project team worked incredibly well. Jim and John contributed to the archaeological project, through both their knowledge of the material culture encountered – John’s insight into the Milan missile being a good example of this – and their experience of the landscape, in this instance most obviously the Tumbledown battlefield – Jim’s curry eating locale being noteworthy here.

Now, more than a year and a half later, it is apparent that their engagement in the project, which facilitated a highly structured return to the scene of their joint-trauma, has had a positive impact on their mental health. Again, it is important to stress that this is by no means a cure for PTSD, and does not even qualify as formal therapy. The reality is that both have continued to suffer low points in their long-term conditions. Perhaps the best measure of this success, however modest, is that both of the veterans agree that the project has had a positive impact, and both want to return to engage in future project fieldwork. It is vital here to stress the essential nature of wellbeing support on the project, which without the expertise of Rod Eldridge would have been a potentially dangerous undertaking. Both veterans experienced flashbacks on the mountain and, in addition to supporting one another, it was important that Rod was there to assist when required. The team dynamic was also significant here, with the small group bonding incredibly well, with a close camaraderie still present between the participants.

Notes

1. There was some fighting prior to the main British landings on 21 May, notably during the Pebble Island raid on night of 14–15 May, during which men from D Squadron 22 SAS disabled 11 Argentine aircraft, six of which were ground attack Pucara that posed a direct threat to the British landings scheduled for 21 May.
2. The Centre for Battlefield Archaeology was amalgamated with the Scottish Centre for War Studies at the University of Glasgow in 2019 to create the Scottish Centre for War Studies and Conflict Archaeology.
3. This suspicion probably related to the Metropolitan Police investigation into claims made in the 1992 memoir written by 3 Para veteran Vincent Bramley that men from his regiment had executed Argentine PoWs after the Battle of Mount Longdon in the belief that they were American mercenaries. The investigation included the digging of potential grave sites on the battlefield. No evidence for this alleged war crime was recovered and the charges were dismissed, though not without casting something of a lingering shadow over the conflict. There is no direct link made in the press coverage of the early suggestion of an archaeological project, but the opening lines of the longest of these strongly indicates that there was one – ‘TV archaeologist wants to dig up the dark secrets of the Falklands War’.
4. War was never officially declared and so the Falklands Conflict or the Falklands-Malvinas Conflict are commonly used labels. Falklands War tends to be the term used by British veterans and so it is used here.
5. Important early work was done by Professor Bernard McGuirk, a scholar in Latin American studies at the University of Nottingham, who organised a meeting between veterans from both sides and academics during the 25th anniversary. This resulted in the 2007 landmark volume, *Hors De Combat: The Falklands-Malvinas Conflict Twenty-Five Years On*, edited by Diego F. Garcia Quiroga and Mike Seear (both veterans) (Quiroga and Seear 2007). McGuirk was also instrumental in founding the *International Consortium for the Study of Reconstruction and Reconciliation* in 2012, within which the conflict has been a key theme (Pollard has been a member since 2013).

Widening of interest was reflected during the 30th anniversary in 2012, with conferences hosted by the University of Kent and the National Museum of the Royal Navy, Southampton.

6. Freedman, (2005a, 106–107) provides figures from the 1981 census: total population 1813 islanders, 1050 in Stanley, 441 in rest of E. Falkland (Camp), and 332 in W. Falkland. During the Argentine occupation the population of Stanley was reduced to around 545, as many found sanctuary with friends and relatives in ‘camp’ – the area outside the town.
7. Yomp is a Royal Marine’s slang term for a long-distance march with full kit. TAB is an acronym for Tactical Advance to Battle and is specific to the British Army, in particular the infantry and in this case The Parachute Regiment.
8. 2nd Battalion Scots Guards summary order of battle for Tumbledown: Commanding Officer Lt Col. MIE Scott; G Coy (7,8 and 9 Platoons) commanded by Maj. IE Dalzeil-Job; Left Flank Coy (13,14 and 15 Platoons) commanded by Maj. JP Kiszley; Right Flank Coy (1, 2 and 3 Platoons) commanded by Maj. S Price.
9. Jim and John shared some of their experiences with PTSD with the authors and we are grateful to them for allowing us to make a note of some of them here. John explained that he spends much of his time driving a HGV over long distances as the concentration required keeps his mind occupied, this does not however prevent him from having nightmares about his experiences every night. Jim’s relationship with motor vehicles has not been so distracting, and for a long time he couldn’t close his own car door as the noise reminded him of gunshots. It should of course be noted that not everyone who experienced combat during the Battle of Tumbledown and other engagements, has been impacted by PTSD, and John Kiszley is of the mind that occurrences would have been far greater if the conflict had not been so short in duration.
10. As with all paraphrases, the actual quote does not trip off the tongue so readily. In a 1871 essay, Von Moltke wrote: ‘No plan of operations extends with any certainty beyond the first encounter with the main enemy forces’.
11. Jimmy Burns – reputed to be the only full-time British foreign correspondent based in Argentina throughout the war – has written on the importance of the Catholic church in the conflict, and notes Masses given close to the trenches (not specifically those discussed here) by priests such as Father Piccinalli. He also notes that pieces of Harrier wreckage, a plane much feared by Argentine ground troops, were dedicated to the Virgin of Lujan, and presumably deposited in field altars or shrines (see Burns 2022).
12. Although it was a punishable offence, Argentine troops at times shot and ate sheep, on occasion with the sanction of their NCOs, and trips into Port Stanley provided opportunities to beg food from islanders or to steal it from stores. Butchery marks on a number of sheep bones found in two shelters during the survey on Tumbledown are likely evidence of such illicit consumption.

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