NEWS FROM THE ROYAL SCHOOL OF MILITARY ENGINEERING GROUP

rsme matters

ISSUE 17 : JANUARY 2017

Inside:

Colonel-in-Chief
Remembrance Art Trail
Project ANEMOI

Training for Operations and Contingency

HOLDFAST

Special

COMBAT SAPPER
What makes the Sappers stand out within the military is their multi-role capability. The Military Engineer (Combat) Class 3 course takes young recruits from soldier to Military Engineer...

We're always looking for new parts of the RSME to explore and share within RSME Matters. If you'd like us to tell your story then just let us know.

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Cover: HRH The Queen, accompanied by the Chief Royal, Lt Gen Sir Mark Mans KCB CBE DL and Lt Col Sean Cunniff, CO 1 RSME Regt, during Her visit to Chatham.

Inside cover: A close-up from one of the Remembrance Art Trail installations.

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RSME Matters 17

Welcome to issue 17 of the RSME Matters magazine. 2016 has seen the RSME and Holdfast involved in a number of high profile projects and activities. Some, such as the visit of HRH Queen Elizabeth II, as the final event in the 300th year of the Royal Corps of Engineers, will be remembered for a long time to come and was in the national spotlight. The strength and effectiveness of the partnership between Holdfast and the RSME was, again, key to the success of this visit. As always, there was much going on behind the scenes, that we will learn about in this issue.

In the Special Section of this issue the new approach to training Combat Engineers, taking them from soldier to Sapper, is explored in the voices of, not only the team that planned and implemented the new course, but also from the perspective of the instructors and trainees. The first trainees are now beginning their trade training at Chatham and the early feedback is extremely positive.

In earlier issues of RSME Matters we have learned about the support that the RSME provides to Engineers on operations and training overseas. Both military and Holdfast personnel have been intimately involved in the largest design and construction tasks the Corps has taken on for many years, Project ANEMOI. This involves a major construction task at several challenging locations in the Falkland Islands and we will learn more in this issue.

Training continues across the RSME Group and we take a look at the rapidly expanding demand for chainsaw training being carried out at Minley.

We also meet the team that is responsible for developing and implementing the long-term infrastructure plan. Now that the initial construction phase is complete, the focus is moving to the consolidation of the footprint of the sites and to maximise energy efficiencies and operating costs. We learn from the infrastructure team how they are supporting the RSME Group Vision to become the Centre of Excellence for the many and varied training activities the RSME can support.

Finally, I would like to thank Brig David Southall OBE for his leadership of the RSME Group through exciting times and to welcome Brig Matt Bazeley as he embarks on what I'm sure will be a demanding but fruitful period at the helm. Collaboration and partnering are at the heart of how we operate and I look forward to continuing our strong and effective relationship over the coming year.

Nik Chapman, Managing Director, Holdfast Training Services Ltd

COMMANDO

Congratulations to Reservist Tim Bourne, Holdfast driver based at Minley. Earlier this year Tim became a fully-fledged Commando Engineer with 24 Commando Engr Regt. Receiving the iconic Commando dagger just short of his 38th birthday was a tremendous achievement and Tim is justifiably proud.

'The highlight for me was the presentation of my green beret immediately after we had completed a 30 mile march in full kit. I was confident in my driving and plant operating skills, but always knew that the physical challenges would be the greatest.' Tim commented.

Tim is a member of 131 Commando Reserve Sqn RE and has already completed several demanding exercises, including working alongside the US Marines. ■

Colonel-in-Chief

HRH Queen Elizabeth II first visited the RSME in 1956. This slightly damp event can still be seen on-line in the black and white archive films of Pathé News and is well worth a look. This latest visit is, not only 50 years on from that very first visit, but is the final event marking 300 years of the Corps of Royal Engineers, of which Her Majesty is the Colonel-in-Chief. Unlike her 1956 visit, the weather was kinder and equally an occasion that will be remembered for many years to come.

The RSME Group is used to hosting many VIP visits every year, but none have been as important as this event and a tremendous amount of planning, preparation and rehearsal ensured that the day went smoothly. Working efficiently behind the scenes, Holdfast Training Services Ltd were the unseen partner alongside HQ RE, 1 RSME Regt and HQ RSME Group, providing support throughout all stages, from early planning to the final clear up.

Holdfast MD Nik Chapman commented, 'We're excited to have been involved in this historic visit. With such a focus of attention on the Brompton site, Holdfast worked tirelessly alongside HQ RE, 1 RSME Regt and HQ RSME to ensure that every detail was spot-on. The challenges of providing accommodation to the many visitors was one of the biggest we had to face, but we also provided transport, logistics, temporary shelters, signage, craneage and many other on-site needs. In addition, the site catering team not only had to cater for the large number of visitors, but also had to cook and serve the centrepiece lunch to HRH and guests.'

Over the course of a week the parade ground at Brompton was transformed into a major display arena and a wide range of exhibits were driven or hoisted into position, with vehicles and bridges being provided from around the UK, demonstrating the full capability of the Royal Engineers. The Holdfast Site Support team, led by Harry Moore, were busy as ever erecting the many temporary shelters needed for the day. The fork lifts and cranes were equally busy assisting with the construction of the main display stands and lifting in key exhibits, such as the dive tank.

Accompanied by the Chief Royal, Lt Gen Sir Mark Mans KCB CBE DL and Lt Col Sean Cunniff, CO 1 RSME Regt, as captured on the cover of this issue, HRH toured the length of the parade ground taking in the Honour Guard and the Royal Engineer vehicles on display, clearly delighted with what she was seeing. The weather was excellent and the open-topped Range Rover enabled all of the spectators to witness HRH's enthusiasm during the tour. Formal speeches were followed by a more detailed briefing in the North Block Auditorium, where HRH was introduced to members of the different parts of the Corps and was also presented with a sun-dial made by trainees from Brompton.

A formal group photograph was followed by a short walk to the HQ RE Mess, where HRH was introduced to key personnel, before lunch in the impressive dining hall. Leaving the site, HRH travelled the length of the parade ground flanked by the Honour Guard and the banners of the Royal Engineer Association watched by crowds of both military and civilian spectators, before being driven to a temporary helicopter-landing site located at the Corps Rugby ground. →

One of the many photographs that made the national press was of HRH smiling at two divers, who were saluting from the portable dive tank. Holdfast was involved in the installation of the dive tank and also provided transport for the Combat Support Boat and two Medium Girder Bridges used in the static display.

Working with an external contractor, the logistics team also assisted in the construction of the two grandstands and the temporary fencing. The team at Brompton is managed by Julian Long. Julian spoke to RSME Matters about the involvement of his team in the big day.

'My team of 31 manage all stores requests, from accommodation bookings to event support, so we were involved in the Sapper 300 event from the very beginning. The team regularly supports major events, such as Corps Memorial Weekend and Armed Forces Day, but it's not every day that the Corps gets a visit from their Colonel-in-Chief, so this visit was very special.'

Julian is ex-Army, with over 25 year's service and joined the Holdfast team in 2012, taking on his present role in June 2016.

'We were involved from the initial planning meeting. The challenges came thick and fast, but the team had the skills and experience to sort each and every one. Tasks ranged from the obvious: additional toilet facilities, crowd barriers and grandstands through to the less obvious, such as sourcing uniform and weapon sights for the Honour Guard.

The presentation dais came in pieces and had to be assembled and there was the usual challenge of squeezing all of the

“I would wish all Sappers, wherever they may be, every success and good fortune in the future”

Her Majesty The Queen

visitors into the limited accommodation. However, everything was in place in time for the extensive rehearsals the week of the visit and during these rehearsals we were able to fine-tune and resolve any remaining issues.

In many ways it was just routine business for the team but that didn’t mean that there wasn’t a certain amount of tension on the day concerning the weather. The team was on standby to put a wet weather plan into operation, however the weather was superb and we could relax and enjoy the event. Of course, once the visit was over our work wasn’t complete until we had packed everything away and accounted for all of the items we had issued to support the event.’ ➔

"We cater for many high profile visits, but there is always an extra level of excitement and anticipation when The Queen is dining in the Mess"

Cpl Jonathan Lee van Zyl/MoD/Crown copyright 2016

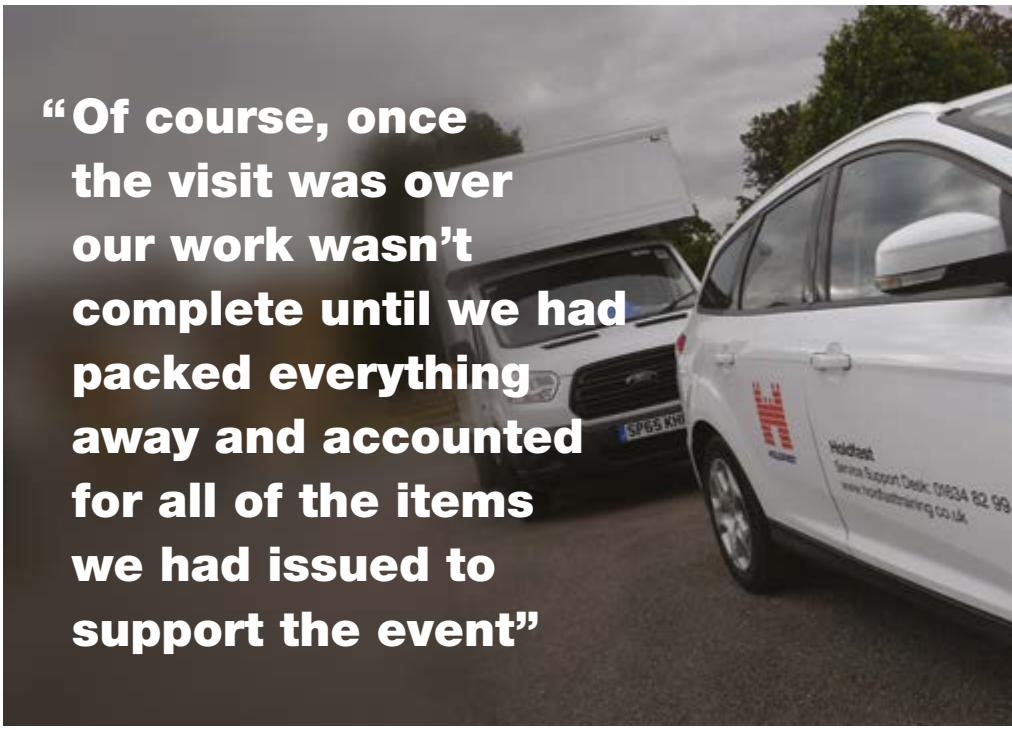
One of the most excited teams on the day was the small catering team led by Debbie Tyler, who provide the catering within the Officers' Mess at Brompton. Debbie had provided the food for an earlier visit by The Queen in 2007 and was confident that her team would also deliver an excellent lunch this time around. This proved to be the case and Debbie was honoured to meet HRH after the lunch was completed.

Debbie commented, 'We cater for many high-profile visits, but there is always an extra level of excitement and anticipation when The Queen is dining in the Mess. It was a pleasure to be able to cook for HRH and I was very excited after the lunch to be presented to her alongside Tim Mullis, ESS Operations Manager.'

Mess Manager Joanne Stafford worked together with Mess Secretary Lt Col (Retd) Ian Scrivens to ensure that everything was in place for the lunch. She can be seen in the main photograph briefing her team before the lunch commenced and was on-hand throughout the day to make sure that everything went as planned. No attention to detail was spared, from the layout of the tables to the selection of flowers for the table and room displays.

Background music during the lunch was provided by a small group from the Band of the Corps of Royal Engineers. The full band provided musical accompaniment throughout the day on the parade square. →

“The team was on standby to put a wet weather plan into operation, however the weather was superb and we could relax and enjoy the event”



"Of course, once the visit was over our work wasn't complete until we had packed everything away and accounted for all of the items we had issued to support the event"

Sapper 300

On 26th May 1716, by Warrant of King George I, the previously combined Engineers and the Artillery were relocated to separate establishments and so the Corps of Engineers was born. Sapper 300 commemorated this tercentenary anniversary through a series of countrywide events, celebrating a remarkable and rich history of distinguished service throughout the world.

THE ROYAL ENGINEERS

The origins of British military engineering can be traced back to the Anglo-Saxons and King Offa of Mercia in the late 8th Century. Later, in 1066, William the Conqueror's King's Engineer, Humphrey de Tilleul, erected a pre-fabricated fort at Hastings after the battle with King Harold. He was succeeded as King's Engineer by a monk named Gundulph, who became Bishop of Rochester and famously oversaw the construction of the White Tower in the Tower of London.

In 1415 Nicholas Merbury, who had been King Henry V's King's Engineer at the Battle of Agincourt, was made the first Master of the King's Works and Ordnance, under whom was established an Office of Ordnance, which in 1518 was renamed the Board of Ordnance. In 1714 the organisation of the Board of Ordnance was reassessed and the then Chief Engineer, the Right Honourable Brigadier Michael Richards, proposed that artillery and engineers should be placed on separate establishments. This was subsequently enacted by Royal Warrant on 26th May 1716 and it is from this point that the Royal Artillery and the then Corps of Engineers pursued their separate paths, the latter consisting solely of officers.

The growth of overseas garrisons and expeditions, and the need for engineer officers to support them, saw the Corps of Engineers increase and in 1757 they were given military officer rank. Thirty years later a Royal Warrant, dated 25th April 1787, granted 'Royal' status, leading to the current Corps of Royal Engineers title. In parallel with these developments, events in Gibraltar had inspired the Chief Engineer there to gain authority on 6th March 1772 to form the first 'Soldier-Artificer Company' – the fore-runners of today's non-commissioned ranks. Later, on 10th October 1787, the Corps of Military Artificers was formed and, on 6th March 1813, it became the Corps of Royal Sappers and Miners, both of which were officered by the Corps of Royal Engineers.

But it was not until the abolition of the Board of Ordnance in 1855 that, on 17th October 1856, the Corps of Royal Sappers and Miners was amalgamated with the Corps of Royal Engineers to form the Corps we know today. Later, in 1877, the Royal Monmouthshire Royal Engineers (Militia) was incorporated into the Corps of Royal Engineers. Although not initially part of the Royal Engineers, it can nevertheless trace its origins as far back as the Muster Roll of 1539 and is now the senior Reserve Regiment in the Army.

From the middle of the 19th Century, Royal Engineers were involved in virtually every scientific development and technical function of the Army. From mapping to construction, transport to communications, and diving to flying, Royal Engineers were at the forefront of nurturing new ideas and capabilities, which included a variety of famous civil endeavors. Lieutenant Colonel John By played a major role in the early development of Canada, including the building of the Rideau Canal in the 1820s, which is now a World Heritage Site. The Royal Albert Hall was designed by two Royal Engineers, Major General Henry Scott and Captain Francis Fowke. Whereas Major General Edmund Du Cane and Colonel Sir Joshua Jebb directed many of the prison reforms during the Victorian era. Others continued the work of their forebears in the Ordnance Survey, by conducting mapping operations across the British Empire, and many made names for themselves as colonial governors in the West Indies and Australia.

At the start of the 20th Century, the Royal Engineers handed over responsibility for submarine mining to the Admiralty in 1904, and in 1912 the Royal Engineers Air Battalion merged into the new Royal Flying Corps, which in turn led to the formation of the Royal Air Force in 1918. By 1914 responsibility for mechanical transport had been transferred to the newly formed Royal Army Service Corps, and in the same year one of the Royal Engineers most famous forebears, Field Marshal Lord Kitchener, became Secretary of State for War. After the First World War, the Royal Corps of Signals was formed in 1920 out of the Royal Engineers Signals Service. Later, in 1965, the Royal Engineers handed over responsibility for railway and inland waterway transport, port operations and movement control to the Royal Corps of Transport, and in 1994 the Postal and Courier role was transferred to the Royal Logistic Corps.

The Corps of Royal Engineers has a very proud history that has seen Sappers take part in every major campaign and action fought by the British Army over the last 300 years. This continues to this day and sees the Corps at the forefront of operational deployments, enabling and supporting all elements of the UK's Armed Forces. ■

Remembrance Art Trail

Visitors to the RSME at the end of October were both puzzled and impressed by the sight that met them on the parade square at Brompton Barracks. Holdfast Programme Area Leader (Fabricator) Andy Bull and his team were working with trainees from 1 RSME Regt to assemble three of the amazing artworks that were installed around Canary Wharf during the early part of November as part of the Remembrance Art Trail. Conceived by international award-winning artist Mark Humphrey, this is the UK's first such art trail and was completed in association with the Royal British Legion. It consisted of seven art installations, each with a clear focus on the wider themes of military experience. The aim was to encourage personal reflection and contemplation. It was a powerful visual story of the sacrifice and service of our Armed Forces. ➔

Mark worked closely with the Fabricator Team, based at Brompton Barracks. Working together, from Mark's early conceptual drawings and ideas, they created the final installations. These were not small artworks and some, such as the one pictured called 'Boots on the Ground', represented a major engineering challenge for the team. However this made the project an excellent training experience for the many trainees who worked alongside the Holdfast instructors on the project.

The variety of different materials used, from Perspex to steel in combination with rope and used Army boots and equipment, resulted in many late nights and complex calculations for the Holdfast team. Andy Bull takes up the story.

'Working with Mark has been an amazing experience. His ideas and concepts fly off the page, but then we have to turn them into reality. There were many workshop-based discussions about the best way to tackle each installation and finding workable solutions stretched us to the limit. Trainees have been involved throughout and it has really added to their learning experience. The largest of the installations is 'Boots on the Ground' and that represented the biggest challenge. As you can see in the main image, simply assembling the installation for the test build at Chatham was a major event.'

Working alongside Andy was Maj Andy Cooney, OC 36 Trg Sqn, 1 RSME Regt, who added.

'I was impressed with Andy Bull and his team, not only with their ability to identify solutions, deliver superb workmanship and resolve the numerous

“I was impressed with Andy Bull and his team, not only with their ability to identify solutions, deliver superb workmanship and resolve the numerous issues that arose, but in particular with the way that they involved the trainees in the project”

issues that arose, but in particular with the way that they involved the trainees in the Project. From the outset, they briefed them on what to do and then empowered them to get on and do it. All of the soldiers involved have developed and benefited from the opportunities presented to them. It is an excellent example of positive partnering, all of us who were involved in the Project have enjoyed every moment of it. It was the right thing to become involved with and supported a very good cause.’

Artist Mark Humphrey commented, ‘Working with everyone at camp, building the Remembrance Artworks for Canary Wharf, was a truly amazing experience. From the combats of the Sappers, to the craftsmen in orange and suited gentleman at Holdfast/ Mid Kent college – your dedication, passion and commitment, not to mention your warm, welcoming support is something that will stay with me forever. Without your energy, creativity and knowledge, we would not have been able to deliver such a successful, impressive and wonderful body of work. It was down to your total belief in the Project, your organised teamwork and meticulous work ethic, that Canary Wharf, the military charities, the media, and all public audiences benefitted, enjoyed and engaged with your craftwork. Last week, I was informed by the Canary Wharf Group that, due to the tremendous success, awareness and fund raising, the Remembrance Art Trail will be exhibited this year, with the addition of new sculptures, expanding the collection. This is fantastic, positive news, which makes all the hard work really worth it. I sincerely hope we can work together, once again in the near future, creating even more ambitious artworks.‘ ➔

"I approach work by opening the mind, unlocking creativity, finding special moments of inspiration"

MARK HUMPHREY

Mark Humphrey was born in 1970 in Wiltshire and grew up in Berkshire. In 1988 he studied fine art at Maidenhead Art College and in 1989 he moved to London, studying a BA in interior architecture at Middlesex University from 1989 to 1993. Humphrey is an international award-winning Philanthropic Artist, known as an 'inventor of unusual things', working in the creative industry without any boundaries. He is the versatile talent behind the Mark Humphrey Philanthropy Portfolio; 'a new super-discipline of visual creativity.' Mark commented, *'I approach work by opening the mind, unlocking creativity, finding special moments of inspiration.'*

Examples of collectors of his work include the Canary Wharf Group, Grosvenor Estate, Jumeirah, Mittal Steel, Harrods, Fendi, Kenzo, Apple Records (Beatles label), Ringo Starr, George Harrison, Audi, Allianz, Louis Vuitton, and Ralph Lauren, including endorsed charitable artworks for The Royal British Legion, The British Armed Forces, Royal Wootton Bassett, and Prostate Cancer UK.

Since the mid 90's Humphrey has produced a wide and varied practice of high quality sculpture, installation, and painting artworks: for public art, architecture, interior, product, fashion, graphic, and transport subjects. He explores the idea of designing multi-disciplinary, custom-made works that are engaging and emotive; developing the relationships between ideas, materials, finishes, making processes, and audience interaction.

His portfolio spans the entire creative operation, from sketch drawings through to installing physical objects and spaces. His vibrant diagrammatic sketchbooks, maquettes and paintings define his artwork style. Humphrey has sketched over 10,000 ideas and made over 1,000 works. ■

COMBAT SAPPER special

What makes the Sappers stand out within the military is their multi-role capability. The Military Engineer (Combat) Class 3 course takes young recruits from soldier to Military Engineer and allows them to wear the coveted Royal Engineer stable belt, which is presented on successful completion of the course. The Sappers then continue their journey, moving on to trade training, before finally joining the Field Army.

2016 saw the introduction of a brand new way of training this critical Class 3 course, under the project name COMBAT SAPPER. The Project is actually much wider in scope than the Class 3 course, as it incorporates the complete Combat Engineer Role Performance Statement (RPS) from Class 3 to Troop Commander Course, including Reserve training.

The Project has been led by Holdfast in collaboration with 3 RSME Regt and supported by many other elements based at Minley, together with the Head of Capability Combat Support.

Over a two-year period the Project COMBAT SAPPER Working Group, chaired jointly by 3 RSME Regt 2IC, Maj Darran Rudd, and Holdfast Training Support Manager, Garry Applin, has brought together subject matter experts, who have provided input and advice to the Holdfast Training Design Team. A number of pilot ME Combat 0-3 courses have already been completed and the first pilot ME Combat 2-1 course completed in November. Initial feedback has been extremely positive and work is underway to transform the Field Section Commander Course.

The Field Sergeants, QMSI Troop Commander Course are also under early review.

The redesign embraces and reflects a newly reviewed RPS. The approach focuses the learning around task-orientated training set within an operational context, with a single scenario running for the length of the course. It is supported by blended learning, which includes access to all course materials via wifi-linked tablets.

In addition, the training is an excellent development opportunity for the trainers at 3 RSME Regt. The course structure sees the trainees working as a Section throughout the course, led by a dedicated Cpl instructor. The Section is responsible for the management of all of the equipment and tools needed on the course via dedicated G1098 (G10) stores, bringing a real awareness of section operation to the trainees and mirroring the processes and procedures they will use once they reach the Field Army.

In this special feature we will take a look at the overall course structure, meet some of the prime movers behind the course and learn first-hand from trainees and instructors how the pilot courses are going. The Project also involved significant development of the on-site infrastructure, such as the redevelopment of the wooded areas and Hawley Hard, the installation of power to the training grounds and an upgrade to the Enhanced Learning Environment (ELE). This upgrade will enable the downloading of content onto the tablets, for use on the training area. Finally, we will learn about the redesign process, the instructor development and the quality assurance process that underpinned the initial pilot courses. ■

Approach

Blended learning is a formal education program combining internet and digital media with traditional classroom and practical methods that require the physical presence of both a teacher and students, with some element of student control over time, place, path, or pace.

Training is:
- a function of command
- a continuous and progressive process

Training must:
- be relevant
- be challenging and interesting
- be realistic
- have an aim and objectives
- reflect operational doctrine
- be permissive of error
- be appropriately safe
- be exploited

Training and training methods must be continuously reviewed for their operational effectiveness.

Garry Applin, explains some of the challenges behind the transformation of COMBAT SAPPER.

'The Training Design Team, led by Kevin Hall, is a very visible element in the transformation, but the process has involved almost every element of the RSME and beyond. We have employed blended learning, making the most effective use of technology and IT, allowing trainees and trainers to pull information in advance of each practical element of the course, combined with traditional training methods and practical application. Equally important is the adoption of a coaching and mentoring approach by the trainers. The shaping of the overall course ensures that, not only the RPS is satisfied, but also that we have developed the new course in line with the Defence Systems Approach to Training (DSAT).'

DSAT, is the direction and guidance for individual and collective training and recognises that people lie at the heart of operational capability and that training is a key activity within Defence.

Garry continues, 'As well as supplying a useful framework of training principles, DSAT also provides a structure for the development of new training courses, which we are keen to respect (box on left).'

Previously, training has been achieved through a series of discrete training sessions utilising a traditional approach to learning, moving through the theory to hands-on practical sessions, often using a round-robin approach across several days. COMBAT SAPPER has adopted the Decisive Action Training Environment (DATE) Operating Environment (OE) that is applied throughout the course. Maj Darran Rudd takes up the story,

‘The DATE OE creates an environment that is as close to an operational scenario that we can get. Based around a fictitious continent located within the UK, it enables us to build realistic challenges, threats and activities that Engineers will encounter once in the Field Army. The trainees are organised into sections led by the training Cpls and a trainee will stay in the same sections for the duration of the course. Course elements can be carried out as sections or as a troop, made up of a number of sections.

It is within this environment that the series of developing scenarios have been created to introduce and train the many elements required to produce effective and knowledgeable Sappers by the end of the course.

The Working Group meets every six weeks, bringing together all of the teams involved in the Project, which can result in meetings of over 30 people. Every aspect of the process is considered and this can mean everything from infrastructure, IT, training delivery and assurance, to design, logistics and support. COMBAT SAPPER has been a success because of the superb collaboration between Authority and Holdfast every step of the way.
The new approach has also strengthened the maintenance of military ethos during training. Utilising realistic and challenging scenarios and adding the troop-based structure and responsibility for G10 stores management means that the trainees are effectively living and working as they will once they join the Field Army.’ ■

Delivery

If you want to know anything about COMBAT SAPPER then you need to speak to Holdfast's Kevin Hall. Kevin is the driving force behind the training design and has been instrumental in many of the associated site development initiatives. Kevin is supported by Steve Scott and Rob Allen, key members of the Training Design Team.

'Training transformation is not just about the use of IT and tablet computers. We have created a realistic environment for trainees to operate in on their journey from Soldier to Sapper. Major infrastructure development has been required, from new electrical and wifi installations to the cutting of new training lanes through the woodland around Minley, as well as supporting major redevelopment of the bridging area at Hawley. Working with the Holdfast team at Minley we have been able to support the new approach to stores management during training. We also recognised that the trainers would need additional support to be able to deliver the new course in a new style. This required specific training courses for all trainers before they could participate in COMBAT SAPPER.'

Kevin is proud of the result and is already working on the other courses within the COMBAT SAPPER continuum.

'We've worked hand-in-hand with the training assurance team at Minley, who have provided rapid feedback during and on completion of the first pilot courses that have been run. This has allowed us to correct any errors in training materials, training delivery, or the many practical elements of the course. In this way we have been able to make adjustments and modifications swiftly and in time for the following course.' ■

"We've worked hand-in-hand with the training assurance team at Minley, who have provided rapid feedback during and on completion of the first pilot courses"

8 DAYS	5 DAYS	7 DAYS	5 DA
Functional skills	G1098	Section level Counter mobility tasks	Sectio Mobilit

DATE Operating Environment

AYS	10 DAYS	5 DAYS	5 DAYS
n level y tasks	Troop level Mobility tasks	Survivability tasks	Ex
		Survivability tasks	

Infrastructure

To support COMBAT SAPPER it was essential to redevelop the site infrastructure, in order to allow the courses to experience the many realistic elements within the common scenario. This involved the redesign of many of the training areas. Operating to a new site master plan the Holdfast team has created new training lanes across large areas of the site, crossing open ground, woodland and water. This enables the training scenarios to be exercised in the most realistic way and allows the development of tasks in line with the overarching common scenario.

The training grounds: WO2 Daren Snell (Top Training Grounds) and WO2 Kenny McDonald (Hawley).

QMSI WO2 DAREN SNELL

'I've been the lead 'Q' for COMBAT SAPPER, responsible for the development of the top training grounds at Minley. The interaction between the Authority and Holdfast has been at every level and the Project has required major investment and modification of the training areas. The main change has been the introduction of the mobility lanes through the training area, which enables us to add challenges and realism to the training.'

Daren is a Welder by trade and has had a busy career focused around 36 Engr Regt that has taken him from Section Commander to SSgt before being posted to 3 RSME Regt. Daren also spent time as a Cpl instructor at Minley and so has first hand experience of delivering ME Combat Sapper training.

QMSI WO2 KENNY MCDONALD

'Effectively my role is that of Facilities Manager for the Hawley Training Area. This involves contact with many agencies outwith 3 RSME Regt, as we have a number of external users of the area. I'm also the point of contact for advice on watermanship and bridging and the link with Holdfast. Hawley is a very busy resources yard and the regeneration of the training area to accommodate COMBAT SAPPER has been exacting and rewarding challenge and it's been great to work on hands-on projects that will make such a difference to training effectiveness.'

With over 21 years in the Royal Engineers, Kenny has extensive experience of overseas operational tours including N Ireland, Iraq and Afghanistan. A Bricklayer and Concreter by trade, he completed three Op HERRICK tours specialising in Talisman route clearance. ■

Pilot courses

> **"The development of the training grounds has really made the training more realistic"**

When the time came to run the first pilot courses, Sgt Carl Oldfield stepped up to the mark and rapidly established himself as a key player in the COMBAT SAPPER story. A Bricklayer and Carpenter by trade he has had a varied career since joining the Army in 2002. This included several Op HERRICK deployments, the latter of which saw Carl working in an Engineer detachment to the Queen's Dragoon Guards as they supported the stripping and withdrawal from Camp Bastion, for which he gained a GOC commendation. A construction tour in Kenya with 35 Engr Regt was followed by promotion to Sgt and his training role at 3 RSME Regt.

'One of the biggest challenges was getting up-to-speed with the Project and getting all of the instructors on board,' Carl explained. 'Kevin Hall has an encyclopaedic knowledge of the Project and was a great help. The stand-out feature for me was the importance of the training Cpls and their new Section Commander role. This not only requires a new approach to training, coaching and mentoring, but also brings new challenges for the Cpls. The bonus is that it is a tremendous development role for them, meaning that they are ideally placed to take on Section Commander roles when they rejoin the Field Army. In addition the Cpls really get to know the trainees well and this has real benefits.'

Before the first pilot courses Han Alpha Troop developed a two-week package of training to ensure that all the trainers understood the new course and also understood their part in its delivery. This has now become a standard instructor development course for all new trainers moving to Minley.

'The development of the training grounds has really made the training more realistic. For example we can now set the trainees the task of breaching a minefield by issuing Engineer Orders for each section to tackle the task, which includes enemy contact during the exercise. The ELE and blended learning support means that trainees are well prepared before each task and can also use the tablet computers during the training if they need to refresh their knowledge of any particular aspect of the session.'

Cpl John McClean was with 26 Engr Regt working as an Armoured Engr.

'I was part of a Recce Troop assisting the Recce Sgt. After being recommended for a move to 3 RSME Regt, I completed the Junior Commanders' Course and Instructor Assessment. I then completed several other courses, including the Defence Train the Trainer course before taking up my current post in 2015. It's been a steep learning curve but I've really enjoyed it. There has been a big change in how the course is delivered from when I gained my stable belt. I enjoy the need to act as a role model and mentor to the trainees and also appreciate the opportunity to demonstrate that I can successfully lead a troop. It's also important to be on top of the Combat Engineer material to support a move to Sgt and this is a great role to achieve that.

The ELE is really working. For today's trainees using tablet computers is just a normal way of working and they come to sessions well prepared, having reviewed the material the night before. It's also a great way for instructors to have information at their fingertips. Equally important have been the daily debriefs that have enabled us to spot errors or potential for improvement, which has been immediately fed back to the training development team and incorporated into the following course.'

It's the first time Cpl Rob Needham has experienced one of the transformed COMBAT SAPPER pilot courses.

'It's very different from the previous style of delivery. Previously we would have been out on the training ground early to take receipt of the various G10 stores required for the day. We'd then check through the stores to ensure that all items were there and in good condition. Now the equipment is checked out by the students at the very start of the course and they are responsible, as a Section, for the equipment until it is handed back. Each day a storeman is nominated so that they all get experience of managing and maintaining G10 stores – under the supervision of the training Cpl Section Leader. The Section is also responsible for identifying the equipment required for the day's tasks, and preparing it for the day ahead.

The trainees have responded well to the new style of teaching and it also creates a great opportunity for us to get a really good view of their potential and ability to work as part of a team.' ➔

Spr Jamie Gaynor, 26 from Wakefield, had previously been an Engineer Reserve for five years before joining fulltime with 299 Para Sqn, 23 Engr Regt. Jamie had already completed the Reserve B3 course but found the new style course really exciting.

'The ELE is a great learning package and means that you can go through the course material the evening before and can then have a quick review in the morning before hitting the training ground. I will be moving to Ripon with 21 Engr Regt.'

Spr Chris Scadden, 31 from Middlesborough, had a varied career before joining the Army.

'Both my Dad and step-Dad were in the Army. However I tried a variety of civilian roles before deciding that the Royal Engineers was for me. I'm looking forward to moving on to complete my Building and Structural Finisher course at Chatham, once I've completed COMBAT SAPPER. The course has been a real challenge but one I've enjoyed. Being part of a Section for the duration of the course means you really get to experience what it will be like in the Field Army.'

Spr Euan Smith-Reynolds is 18 and from Guildsborough. One of the younger trainees he is in no doubt about where he sees his future. He completed Carpenter and Joinery level 1 at college before a Royal Engineer recruiting team visit sparked the idea of becoming triple-trained within the Royal Engineers.

'To become a Soldier, Combat Engineer and Carpenter and Joiner was too good an opportunity to pass on,' he commented, 'coupled with the fantastic range of other activities on offer. So far it's been a great experience. Where else do you get superb civilian qualifications and blow things up!

The ELE system is really good. We can add our own apps and material to support the course. The ELE allows you to learn and review the course material at your own pace and this means that you arrive at a task with a good knowledge of what it's about. The Cpl instructors are also there to help you with anything you don't understand. The issue of G10 stores for the duration also adds realism and gives us first-hand experience of the way it will work in the Field Army.' ■

Assurance

A regular visitor to the COMBAT SAPPER training ground and classrooms has been Gary Stevens from the Training Quality Team. Gary is a career Civil Servant who has been based at Minley for nearly six years. His role is to assess the progress of the new course and to provide feedback to the Development Team and the COMBAT SAPPER Working Group about all aspects of the course.

Gary conducts formal tests of trainees at the end of each of the five phases. The tests are carried out using the tablets under supervised test conditions.

'There are formal standards to be met and any failures are investigated and remedial action taken to identify the problem a trainee may be having and resolve it.' Gary commented. 'For each test, trainees get an individual set of questions and can resit the test in the event of a fail. The test, combined with feedback from the Training Team, can also help to identify any particular issues, such as dyslexia and specific learning difficulties.'

Gary's other role is to observe all stages of the pilot courses to ensure that the outcomes set for each specific learning objective have been met and that the instructional approach is effective.

'I've really enjoyed working with the COMBAT SAPPER team and helping this new course come to life. Seeing the students really engaged and enjoying this new approach has been fantastic and to also see how involved and committed the trainers are is a real bonus. The concluding evaluation interviews with the trainees are a real eye opener. They are very direct with their feedback and very enthusiastic to be taking part in the initiative.' Gary added.

Aiding the evaluation of both trainees and the course has been the introduction of electronic task cards, a first within military field training. Training Designer Steve Scott led the roll out of the tablets and effective use of the electronic media.

Next steps

ME Cbt 0-3 Full operational capability (FOC) Jan 17

ME Cbt 2-1 first pilot completed

COMBAT SAPPER media made available to Fd Army via ELE Feb 17

Fd Sect Comd pilot May 17Fd Sgts redesign will commence mid 17

Fd Sgt pilot Sep 17

Capt Rob Willis is the Tp Comd of Han Tp that has been leading much of the pilot work. A Mechanical Engineering graduate, Rob gained experience with the University Officer Training Corps (UOTC) and in a Reserve role with 225 Fd Sqn RMon RE(M), before being commissioned in 2013. Completing the RE Tp Comds' Course in 2014 he spent time with 32 Engr Regt in Germany and Catterick, during which time he was Tp Comd during Ex WESSEX STORM and Ex CAMBRIAN PATROL. Rob took up his current role as Han Tp Comd in Dec 2015.

'It's been an exciting time being so involved in the rollout of the new ME Cbt 0-3, COMBAT SAPPER, course. I believe it's been a great success and look forward to the extension of the transformation across the rest of the Combat Engineer courses. The trainees seem to enjoy the hands-on experience and the ability for them to use the ELE via the issued tablets has brought real benefits, preparing them for the practical application of what they have learned, the following day.'

'This also means that more of the time on the training ground can be used to practice and develop their practical skills meaning that they are able to carry out all combat engineering tasks effectively, confidently and safely by the end of the course.'

Holdfast MD, Nik Chapman, sums up. 'Project COMBAT SAPPER is a major milestone for both the Authority and Holdfast. Bringing all we have learned about training transformation to bear on these mission critical courses has been a tremendous example of how collaboration can work. The utilisation of technology and support from other specialists within Babcock International Group, has enabled us to rapidly and seamlessly move to blended learning and created an exciting, engaging, realistic and effective training environment for the Royal Engineers. As always, we are looking to learn lessons from the Project and to explore how the approach can be best utilised across other areas of the RSME Group and beyond.' ■

Project ANEMOI

The ancient Greeks named the wind gods the Anemoi and there is no doubt that it is a very appropriate name for a major project set on the mountain tops in the Falkland Islands, where one of the biggest challenges is the weather.

Project ANEMOI is the first 'Design and Build' contract of its kind since the drawdown in Afghanistan to be awarded to the Royal Engineers. Commander (Comd) 8 Engr Bde is responsible for delivering the Project to budget and time and for ensuring the Project's success. The 'client' is the Defence Infrastructure Organisation (DIO).

Col Jim Crawford is currently the Comd 170 Engr Gp, but was actually working within DIO during the project's early stages of development.

'The main question was 'do we use a civilian contractor'? It was also important that we fully understood the challenges and risks before we undertook such a major project. There was clearly an appetite from the DIO to consider an alternative approach and one that was of real value to Defence, enabling the development of capability, the testing of logistics support, and the conduct of operations in such a remote location. In addition it would also be a real benefit in training and developing the Royal Engineers.

However, we recognised that it wouldn't simply be a training exercise and that the Royal Engineers would be judged on the performance and output of the Project.'

So what is Project ANEMOI? Put simply, the Project will deliver new domestic accommodation at three remote mountain sites located more than 8,000 miles away, situated on both East and West Falkland Islands. The existing accommodation blocks were built, also by the Royal Engineers, alongside the radar stations, in 1983 and are well beyond their design life. The objective of Project ANEMOI was to provide replacement modern welfare, catering and sleeping accommodation, without disrupting the capability of each site. The implementation is over four phases, with completion of construction anticipated in 2018 and the remediation of the old accommodation by April 2019. →

P0

PHASE 0
Ground works to prepare for the sub-structure.

P1

PHASE 1
Construction of the sub-structure of the buildings; comprising ground works, a concrete reinforced raft and beam foundation, internal and external drainage, walkways and stairs, lighting kits and gabion baskets.

P2

PHASE 2
Erection of the main steel framework and completion of the roof structure and cladding.

P3

PHASE 3
Internal fit and commissioning.

P4

PHASE 4
Strip out of the existing accommodation.

Photo courtesy of 170 Engr Gp

The Professional Engineering Wing (PEW), part of the RSME Group based at Chatham, was involved in the Project from the outset, initially providing advice on governance, structure and the project management approach that would best underpin and support such a complex project. The Project, Programme and Portfolio Management and Maturity Model (P3M3) was adopted and every member of the project team underwent training to ensure that there was a common language, philosophy and methodology used throughout the project. Key members of the team also undertook Management of Successful Programmes (MSP) and Management of Risk (MoR) training at PEW.

Steve Payne is the Holdfast Senior Lecturer, specialising in Project and Programme Management.

'There is no doubt that this is a complex and challenging project. The combination of distance and remoteness, together with the hostile weather conditions and difficult local transport routes makes everything so much more difficult. Local stakeholder management is also very important, as the local community is inevitably impacted by such a major project.

We support Comd 8 Engr Bde and provide an assurance role covering all of Project ANEMOI. The P3M3 approach is about the whole organisation, not simply project planning and we worked with 8 Engr Bde to determine the appropriate

“Both the MST and CT proved invaluable and provided the depth and familiarity needed to cope with the additional complexities of operating in the Falkland Islands”

level of management that should be employed. The CO, OC and Ops Officers were given bespoke P3M3 training, at RSME Chatham, all based upon the Association of Project Management (APM) methodology and terminology.’

The RSME was also very much involved in the extensive Mission Specific Training (MST) that was required before teams could be deployed to the Falklands. This included refresher training for artisan trades, plant operator mechanics and driver trades. Officers and SNCOs completed the RE Construction Site Safety Advisor course and some attended Waste Management and Practical Pollution Prevention training. Following a Collective Training (CT) approach, Sqn level training was also accommodated at the RSME, with the completion of a scaled-down replica build at Wainscott. This enabled teams to experience first-hand the various elements of the building construction, from the massive underlying foundations to the specialist wall and roof cladding. The teams were also able to experience working at height and undergo training on Mobile Elevated Working Platforms, all of which required additional MST courses. The Military Construction Force (MCF) Field Troops rotated through the task in two-week blocks.

Both the MST and CT proved invaluable and provided the depth and familiarity needed to cope with the additional complexities of operating in the Falkland Islands. →

The RSME is also providing an assurance role throughout the project, reporting directly to Comd 8 Engr Bde. Again Steve Payne has been very involved in this function that has also included site visits to conduct an external assurance review after visits to the Falkland Islands, of the management maturity level, as defined within the P3M3 framework.

Col Jim Crawford was also keen to identify lessons already learned, even though the Project is only partially complete.

'The Project is a good window for the Corps to review its capabilities and identify additional capability requirements going forwards. With a full design and build project, we have already identified that the Corps would benefit from a Quantity Surveyor function, for example, together with stronger skillsets regarding the testing and commissioning of electrical installations and specific certification qualifications.

Looking wider, we have seen the importance of effective risk management and will ensure that additional risk management training is included in the courses delivered by the RSME. With the Project underway, we can now also see the positive impact the adoption of the APM approach and training has had upon the Tp Comds as they manage their teams in the Falklands.' Phase 1 of the Project was probably the most intensive from a logistics perspective. The obvious challenge was the planning and transporting of materials from the UK, ensuring that the right materials arrived at the right site on time. Not only was there limited shipping capacity, especially between the Islands, but also narrow roads unused to heavy vehicle traffic, meaning much care was needed to minimise road damage and potential loss of key materials due to accidental damage.

For parts of the year heavy vehicles are prohibited from using many of the key routes, as they are simple unbound compacted hardcore on basic foundations, which degrade badly in the challenging weather. Limited storage capacity for storage iso-containers was another constraint. High wind speeds could also impact on the use of the cranes required to both offload equipment and carry out construction tasks. Solutions were adopted to minimise the need for a crane through a combination of best-practice construction procedures and the use of alternative vehicles.

In total a fleet of 55 B (wheeled) vehicles and 144 C (plant) vehicles, together with items of Engineer Construction Plant (ECP), such as volumetric mixers are being utilised and this requires a well-training maintenance team with all the required spares and equipment.

However the equipment is only part of the success of such a challenging project as Capt Tony Davies, Echellon Comd, 1st Fd Sqn – deployed on Phase 1 of the Project, explains.

'We identified that people are the vital foundation. Expeditionary skills were tested across every rank and skillset and never found to be lacking. The opportunities for professional development were immense and those involved have returned far more capable Royal Engineers. Specialist Tp SNCOs have had their ability and

adaptability tested as never before; a large professional cadre of JNCOs have honed their leadership and decision making skills and drivers have gained an unprecedented amount of experience in operating and maintaining their vehicles in austere conditions. Project ANEMOI is ensuring that the Corps is, once again, developing the corporate knowledge to support the delivery of large-scale expeditionary construction tasks.'

Lt Col Adam Foley was the Commanding Officer of 63 Works Group RE. Adam has been involved in Project ANEMOI from the outset. In his previous role as the Chief Instructor of Professional Engineer Wing (PEW) he was called upon to advise during the planning phase on both Project Governance and Assurance. Since taking up post as CO 63 Wks Gp in Sep 14, Adam's Unit has provided both the Military Design Authority (MDA) and the Project

Management Office (PMO) for Project ANEMOI. 518 STRE (Wks) were the initial design team, producing the detailed design for the project from Sep 14 to mid 2015. This design allowed the DIO to confirm the overall project cost and obtain funding for the Project and also for the MCFs to deploy forward to conduct Phases 0 – 2 of the construction. At the same time 517 STRE (Wks) were re-rolled to become the PMO, providing the coordination and continuity for the whole of the Project, including all MST. Since Sep 15 the PMO has also taken on the role of designers for Phases 3 and 4 of the works. Adam is also the Principal Designer for the Project, under the Construction Design and Management Regulations 2015 (CDM 15). Adam added,

'Project ANEMOI has so far been a challenging, yet rewarding, Project for all involved. It has stretched the Clerk of Works and Professionally Qualified Engineers (PQEs) within my Unit, seeing them have to tackle a complex design that is buildable, compliant to all regulations and cost-effective to Defence. All involved in the Project have benefitted greatly from the training opportunities provided through the RSME and specifically PEW.' →

Jim Crawford is keen to stress the value of Project ANEMOI to the Corps.

'Obviously the Project is a long way from completion, but I have already seen enough to confirm that it was the right thing to do. It has had a really positive impact on everyone involved, over 1,000 people. It will also have an impact on retention and has already seen enhanced capabilities, skills and operational development within the Corps that will have an equally long-term impact. It is the right project at the right time and one the Corps is rightly proud to be involved with.

There is much more work to be done and many challenges to be overcome before Project ANEMOI is complete. The RSME Group will continue to provide support, with both hands-on training and the critical assurance role over the coming years.'

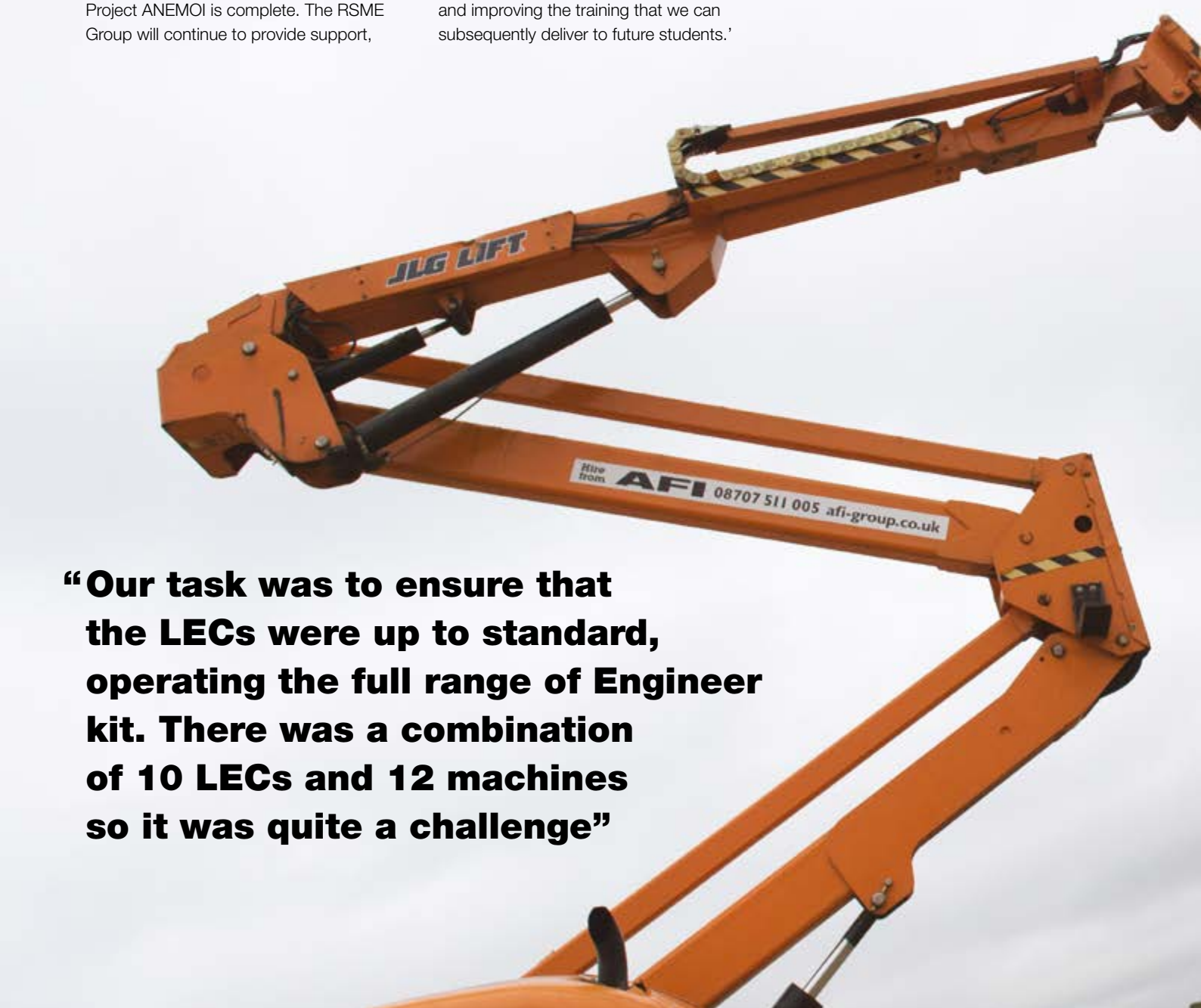
Nik Chapman, Holdfast MD, is keen to recognise the importance of the roles that his team members have taken on.

'I'm proud of the wide engagement of the Holdfast team within Project ANEMOI. However, it's more than the simple provision of technical and training support. Involvement in such a landmark and challenging project also maintains our links with the Field Army, ensuring that the Holdfast team understand and appreciate the current operational environment and challenges. This experience is invaluable in enhancing and improving the training that we can subsequently deliver to future students.'

THE HIGH LIFE

If you want to go up in the world, Holdfast Instructor Brett Walters is the man to see. Brett was one of the Holdfast Plant Training team that provided much of the MST to 32 Engr Regt, as they prepared for their Project ANEMOI deployment.

An important phase of the construction was the erection of the steel structure and the installation of a multi-layered roof and external building cladding. This required the teams from 32 Engr Regt to be able to operate at height and Brett was able to provide training on the Mobile Elevated Working Platform (MEWP) that would be used in the Falklands.



"Our task was to ensure that the LECs were up to standard, operating the full range of Engineer kit. There was a combination of 10 LECs and 12 machines so it was quite a challenge"

The training includes, not only the operation of the unit, but the identification of the many potential hazards that are present, including the need to be aware of and prevent harm to other site workers and pedestrians. The training took place at the 'Pondorosa', the bespoke training area at Wainscott not far from Chatham.

The Plant Training team is well travelled, providing support to deployed Engineer teams. Brett has visited the Falklands to deliver Specialist Qualification Trg for the RE Maintenance team. The training covered the wheeled excavator and the medium dump truck. Joe Atkinson, another member of the Holdfast Plant Training team, also provided training on the operation of the King trailer.

More recently, Brett was part of a team of four that travelled to Kenya to deliver training to Locally Employed Civilians (LECs), supporting the British Army Training Unit Kenya (BATUK).

'Our task was to ensure that the LECs were up to standard, operating the full range of Engineer kit. There was a combination of 10 LECs and 12 machines so it was quite a challenge. Although of varying ability, the LECs were a good bunch and took on board everything that we taught them. By the end of the training they were operating to an excellent standard.' Brett commented.

Working alongside Brett were Andrew Paton and Ian Beech from Wainscott and Allan Stake from Minley, who delivered training in the Truck Mounted Loader (TML).

'I had been to Kenya before', added Brett, 'I love the country and it was a superb opportunity to revisit.' ■

Infrastructure

Dave Cooper is the Holdfast Estates Director, based at Chatham. Dave was part of the team that developed the PPP contract and has been involved from the very beginning. He works closely with Lt Col Liz Seymour SO1 Infra and Contract Management Team Leader (CMTL), who has been in-post for nearly 12 months within the RSME team and is responsible for all new-builds, refurbishment, maintenance, infrastructure, land and property matters, relating to the RSME PPP estate.

'We have now achieved the construction milestones set in the contract. The £300m build has been delivered to time and budget and has been expanded to include some significant additional works, such as the Wright Block accommodation block at Minley and an additional accommodation block and training facilities at DEMS Trg Regt based at Bicester.

Our main theme going forward is rationalisation and modernisation, driven by improved efficiencies and reduced whole life costs, all of which will enhance the learning experience and bring positive benefits to the RSME Group.'

Liz has a clear view of priorities and the processes and procedures needed to manage the change process within the PPP.

'As we move forward with the next phase of the site development for smaller projects, we can work within the contract, which has a clearly defined process for the management of contract changes. However for more major projects there is always the additional challenge of getting external buy-in at Cabinet level. Our aim is to future-proof the sites, creating efficient modern facilities, but always with an eye to the future, be that exploiting new technology, supporting new courses or even absorbing additional compatible training units within the Group.'

As well as the significant building works during the early years of the PPP, there has been a focus on improving the IT infrastructure that underpins and enables many of the transformational initiatives that are being rolled out across the RSME Group.

The site rationalisation continues. Plans are being developed to demolish many separate and ageing buildings on the Wainscott site and amend the whole layout of the site. This will include new modern infrastructure and construction of a new building containing classrooms, offices and a canteen, complete with modern training spaces and energy efficient heating and lighting. While there are obviously gains from the demolition of old outdated buildings and the feeling they convey, the real gains are made by the reduction of the building footprints and the introduction of energy saving construction methods and careful energy management throughout the life cycle of the building. The new building will be

advanced and have the latest technology to showcase and facilitate the advances in training that are being brought forward.

'We are moving to localised boilers. Increased boiler efficiencies, combined with improvements in building insulation and a new 'high tech' energy management system, mean that we will see dramatic savings in energy costs over the coming years.

One additional challenge we face is the need to work with outside agencies when making improvements to the many listed buildings we have on site. In particular we have a very good relationship with English Heritage and, together with them, we realise the importance of retaining and maintaining buildings of such historical significance.' Dave added.

Liz continued, 'Our focus is always to work to best support training. Most recently we have carried out major developments of the training estate at Gibraltar Barracks to support the COMBAT SAPPER training transformation project. This has included extensions to the infrastructure: power, water and building upgrades. But the main works involved the clearance of training routes through the surrounding woodlands and open spaces to allow the increased contextual exercise-based training. Again, we have had to work with a large number of agencies to ensure that all environment and local planning constraints are met during this work.'

Dave summed up, 'Each of the RSME PPP sites has a formal estate development plan. We work closely with the CO of the Regt at each site to ensure that the plans are not only robust and cost effective, but also meet the present and future training needs, with a focus on site and building rationalisation and improved efficiencies and capabilities. We aim to create a training environment and infrastructure that is flexible, supports the current transformation initiatives and is future-proofed for expansion and the integration of new training initiatives over the coming years.' ■

Taking to the Air

Always keen to utilise the latest technology, Holdfast has taken to the air, deploying a drone to tackle many of the jobs that currently need scaffolding or the use of high access mobile operating platforms. Drones are a common sight these days, with amateur footage being a regular feature on popular networking sites. However the commercial use of drones is highly regulated and all the members of the Holdfast team, who will operate the drone, have been through a comprehensive Civil Aviation Authority (CAA) approved training programme and also completed a series of complex risk assessments and approvals, so that they can safely and securely operate across the RSME PPP sites.

Holdfast Technical Officer Oliver Stone joined Holdfast in early 2015 and has worked on the drone project since the very beginning.

'The approval process is complex. The operator course was the Basic National Unmanned Aircraft Small (BN UAS) course, approved by the CAA. This included a three day ground theory course, with an 85% pass mark, together with a practical flight assessment. The assessment doesn't just look at how you can fly the drone, it also includes a review of your risk assessments, operating manuals, pre-flight assessment and how you control the area that you are operating in.'

Once all this is achieved, an application can then be made to the CAA, together with proof of recent flight hours for permission to carry out aerial works. Although the drone is classed as small, it can weigh up to 7kg and so is a significant safety risk if handled incorrectly.

'Our operating manual was proofed by the accrediting organisation and is now being used as best practice across the MoD. We also had to meet certain security targets to ensure that data is not stored within the drone and is streamed to the base station in a suitably encrypted format.' Ollie added.

There is already a long list of tasks ready for the team, once all the approvals are in place, so you can expect to see the drone in operation, especially around the Medway sites, over the coming months.

Working with Ollie is Scott Gambell, Holdfast Heating and Ventilation Apprentice. Scott is three years into his apprenticeship and received the Babcock Apprentice of the Year award in 2016. He joined Holdfast in 2012, straight from school and is looking forward to continuing his training at HNC level on completion of his apprenticeship.

It's not only Scott that is busy working on additional qualifications. Ollie is working hard studying for a Masters Degree in Building Services Engineering and Management with Brunel University, via distance learning.

Holdfast MD, Nik Chapman commented, 'It's fantastic to see the work the team has done in preparing to deploy the drone. It's very important that we meet all the current legislation and any additional security requirements to operate across the RSME PPP sites. There is no doubt that the drone will be a major asset that will enable us to complete tasks, such as roof and gutter inspections much more swiftly and cost-effectively. It's also great to see the operating team taking advantage of Holdfast's support and encouragement to continue their own personal development. We have many such examples within the team and I personally encourage anyone to discuss their continuing personal development plans with their line manager at the earliest opportunity.'

"It's fantastic to see the work the team have done in preparing to deploy the drone"

YUNEEC TORNADO H920	
AIR TIME	24 min
DIAGONAL LENGTH WITHOUT ROTOR BLADES	36.2 in(920mm)
PROPELLER / MAIN ROTOR DIAMETER	17.3 in (440mm)
TAKE-OFF WEIGHT WITH GB603, GH4 CAMERA AND BATTERY	176.0 oz (4990g)
BATTERY	LiPo 6s 4000mAh 8C
CHARGER	100W 2 x output AC-DC Balancing Charger
TRANSMITTER	24-channel 2.4GHz with 5.8GHz video downlink (included)
FLIGHT MODES	Smart, Angle and Home Modes
MAXIMUM FLYING HEIGHT (ABSOLUTE ALTITUDE)	4000m (13123 ft)
MAXIMUM FLYING HEIGHT (RELATIVE ALTITUDE)	122m (400 ft)
MAXIMUM ROTATION RATE	100°/s
MAXIMUM ROLL ANGLE	35°
MAXIMUM HORIZONTAL SPEED	40km/h
RADIO CONTROL FREQUENCY BAND	2.4GHz
OPERATING TEMPERATURE RANGE	-10°C to 50°C

Grounds Maintenance

Autumn is a busy time for the grounds maintenance team. The RSME PPP operates from several mature locations, which includes areas of woodland, as well as open ground. It's important that these are proactively maintained and developed to ensure, not only that trees are safe and healthy, but also to enable the development of the training estates to best support training. In addition, the team maintain the large number of sports pitches at Chatham and Minley and the burial grounds at Fort Pitt.

Ben Gravett was responsible for updating the Holdfast Tree Management Strategy and is enthusiastic about the positive impact the correct development of the many areas of woodland can have.

'Our aim is to proactively manage the woodland areas to create a deliberately natural environment. Periodic assessments are carried out on trees to evaluate any potential problems to adjacent infrastructure and to identify any health issues that may weaken a tree and make it dangerous. In most areas the undergrowth is left to develop naturally to promote a natural habitat for wildlife.'

"Our aim is to proactively manage the woodland areas to create a deliberately natural environment"

There are notable exceptions to this approach. The first is a small area of amenity woodland near to HQ RSME. This has been landscaped to allow RSME personnel to benefit from the natural surroundings. The second is at Gibraltar Barracks, where the woodland and open spaces that make up the bulk of the external training grounds are being actively managed to support training. Ben continues,

'When developing the training estate to support new initiatives, such as COMBAT SAPPER, we still need to consider the flora and fauna within the affected areas. This can involve liaison with up to 12 different agencies before a single leaf can be touched. It's not simply about safeguarding the existing wildlife, but finding ways of encouraging increased biodiversity and the ecological integrity of the area. It is also important that we maintain a good age structure and tree types throughout the woodland, so that the habitat can be successfully maintained long into the future.' ■

ACTIONS TO PROMOTE BIODIVERSITY:

stack logs of different ages, sizes and species in a number of woodland areas where practical and aesthetics allow

sever ivy at the base of trees to prevent invasion of the tree canopy

spread chipped bark in selected areas to suppress invasive growth and give different heights to the undergrowth to create different habitats

ensure diseased trees are not chipped to prevent the spread of any diseases

clear boundary areas to clearly delineate the change from natural to managed grassed areas

Chainsaw Training

The distinctive noise of chainsaws in action has become a regular sound track in recent years across the Minley site. Developing professional chainsaw training courses at Minley has been a real success story and in 2016 a second instructor, Paul Thompson, was added to the team to help meet the growing demand for courses. Lead Trainer Colin Hamilton-Freeman takes up the story.

'In 2016 we managed just under 300 trainees over 28 courses. This included both Assault Pioneer and All Arms courses. We've worked hard developing a strong relationship with DIO who are responsible for the management of the woodland around the Minley site and now have the capability to deliver route denial and clearance training to each course.

The basic one-week course begins with two days, during which they learn the basics of safe chainsaw operation and maintenance. The trainees also learn about the basics of tree biology, the woodland working environment and the potential impact they may have upon the environment. Once trainees have completed the basic training sessions, they can get first-hand experience of operating the equipment under conditions that they might encounter on operations during the following three days, when they carry out real cutting and felling activities. The location allows realistic scenarios to be developed, during which trainees can fell trees to create obstacles to effectively block potential transit routes. This also involves the trainees working in teams, which brings its own challenges, again adding realism and value to the training.'

Once the route denial task is complete, this provides an ideal opportunity for trainees to experience the route clearance exercise, again a superb opportunity to experience a potentially critical task once on operations.

'Even with the additional instructor, courses for 2017 are already filling rapidly and there is even more interest being expressed by other areas of the military to see how their own training requirements might be met by the team at Minley.' ■

Colin Hamilton-Freeman

Colin served in the Royal Engineers for over 22 years. On leaving the Engineers he worked as a tree surgeon before joining Holdfast at the start of the PPP contract. Once the requirement to develop chainsaw training courses was identified, he was the ideal candidate for the role and has been the driving force behind the development of the capability.

Paul Thompson

With 24 years of service with the Royal Engineers, Paul took advantage of the Army resettlement programme, where he retrained as a tree surgeon. He took up his present role of Chainsaw Trainer and Arborist in June 2016.

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