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FRONT COVER

Reconstruction Task Force in Afghanistan. (Back row L to R) LTCOL Harry Jarvie, CO 2nd Reconstruction Task Force and LTCOL Mick Ryan, CO 1st Reconstruction Task Force. (Front row L to R) WO1 Terry Mckeown, RSM 3rd Reconstruction Task Force; LTCOL David Wainwright, CO 3rd Reconstruction Task Force; LTCOL Harrie Jarvie, CO 2nd Reconstruction Task Force and WO1 Neol Johansen, RSM 2nd Reconstruction Task Force.

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A Message From The HEAD OF CORPS ROYAL AUSTRALIAN ENGINEERS

My fellow Sappers, welcome to the 2007 edition of *Australian Sapper* magazine, the first since 2003. I trust you will enjoy the return of this style of publication. Of course such a magazine does not just magically appear and I want to thank all the Corps units and individuals who contributed to the content in the following pages. I also must thank the two people directly responsible for compiling all the information and designing the actual layout of this edition, Major Paul Hampton and Mr Warren Ennis. I am sure you will agree the efforts of these two gentlemen have produced an outstanding publication.

Like most years in the past, 2007 has shaped up to be a very busy year for the Corps. You will note that the central theme of this year's edition is the Reconstruction Task Force (RTF). This is both logical and fitting as this is the Corps' primary contribution to operations, the Chief's highest priority for the Army. Both the 1st and 2nd RTF successfully commenced restoring a sense of normalcy within Afghanistan and you can read first hand the full account of both these rotations. The death of Trooper Pearce and the serious injuries sustained by Sergeant Lyddiard so early into the rotation of the 3rd RTF serves to remind us all of the dangers all Australian service personnel face on a daily basis when conducting their duties in a hostile complex environment. I know that LTCOL Dave Wainwright and all the members from the 3rd RTF remain focused and committed to the mission and our prayers go out to them for a safe return and successful rotation. The RTF presents an opportunity to once again highlight the valuable contribution sappers provide to Army and the ADF. It is extremely fitting that this combined arms team is commanded by a Sapper officer. This is a long-term mission for the ADF and I look forward to the Corps continuing to lead and contribute in a significant way.

Throughout this magazine, you will note the activity within the Corps is a welcome sign of our Corps making a major contribution to the ADF. In addition to their RTF rotation, 3rd Combat Engineer Regiment has undertaken Exercise Puk Puk in Papua New Guinea and will continue to provide a troop element in East Timor as part of Battle Group SAMICHON. 6th Engineer Support Regiment led the highly successful Joint Rapid Airfield Construction (JRAC) project up near Timber Creek in the Northern Territory. Utilizing new technology they were able to build a C-17 capable air strip from a green fields site in a 30-days period. This represents a significant achievement for any organization. 17th Construction Squadron undertook this year's Army Aboriginal Community Assistance Program task up at Doomadgee (North Queensland), with supervisor and adult Trainee support from the School of Military

Engineering. 19th Chief Engineer Works provided project management teams in Papua New Guinea, the Solomon Islands, East Timor, Kuwait and Afghanistan. The Incident Response Regiment remains relevant to the wider Army with considerable development work going into reducing emerging threats through the counter proliferation of Weapons of Mass destruction. This is a very quick snap shot of only a small portion of what the Corps has been up to this year and I am sure you will enjoy the detail as you read this edition in full.



The demise of the Commander Land Command Engineers has seen a change in the command and control arrangements for our Army Reserve units. Both Construction Regiments now come under command of 4th and 5th Brigades respectively. I acknowledge that our Army Reserve units have a challenge ahead to adapt to the changes which are required to support the intended growth of the Army. These changes do not alter the importance of the contribution that the Reserve units make to the ADF and the need to maintain their readiness requirements remains. These units will need the support of the Corps to ensure they fulfil their mission requirements.

Looking to the future, Army is transforming and we as a Corps need to be part of that transformation. The School of Military Engineering has an enormous task ahead to train the numbers envisioned in this transformation. However, training the numbers is only part of the future. This year's Corps Capability Committee identified a requirement to revitalise the Corps as our current capability will prevent us from providing the appropriate support to the Army After Next. Corps planning is now producing a complete Mobility and Survivability Battlespace Operating System capability brick that can be inserted into the Defence Capability Plan. To his credit, LTCOL Craig Jolly from Force Structures in Army Headquarters, has taken on this task and developed an Army Capability Requirement (ACR) titled 'The Modular Engineer Force'. This is a concept paper comprising a new Corps vision capturing the requirements for our intended Corps capability in 2020. The ACR raises a number of key capability requirements needed for the future ranging from command and control arrangements through to a fully integrated Army Reserve component. The new Corps vision is:

Sappers adapt to, shape and fight as part of a Combined Arms Team to win in the contemporary operating environment.

The ACR formed the central theme for this year's very successful Corps Conference. We managed to capture a great deal of information in a relatively short time frame that will assist in developing

the ACR into models of how the Modular Engineer Force will be structured and perform. The bulk of this work will fall to LTCOL Craig Madden in the Force Development Group but he will require assistance from all facets of the Corps. With the ACR having been endorsed by the Army Capability Management Committee in June this year, I expect all members of the Corps to embrace our new vision and provide assistance as necessary in the development work needed to continue moving this project forward. The Chief of Army has personally acknowledged it is time to develop our Corps to support Army After Next. I ask that we all recognize the need to grasp this opportunity to firmly cement the Royal Australian Engineers as a valuable and viable component of Army for the future.

Overall, it is a very exciting time to be a sapper within the Australian Army, not since Vietnam have we seen such sustained growth in both manpower and equipment. Our operational tempo is at its highest point since Vietnam and there is no reason why we should not expect this to continue. We are all part of this growth, I trust you will all continue to serve and offer your valuable experience to the Corps. May you all have the opportunity to enjoy Christmas with family and friends, wishing you all the very best for the coming festive season.

BRIGADIER WAYNE BUDD, CSC

SCHOOL OF MILITARY ENGINEERING

Training for the Future

The School of Military Engineering (SME) continues to provide a centre of excellence for military engineering and this has been evident through our ongoing support to Army's operational requirements. In addition to our already significant scheduled course program, 2007 has seen us provide essential engineering training and support in the continued preparation of the 2nd and 3rd Reconstruction Task Force (RTF) rotations. SME has also provided specialist engineering training for select members of the Corps who deploy with the Special Operations Task Group. Despite the increased work load for other members of staff, SME also continues to deliberately carry vacancies in order to provide essential personnel for operational positions.

SME has also provided direct support to the Australian Defence Force Counter Improvised Explosive Device Task Force (CIEDTF) assisting in a Training Needs Analysis (TNA) for all Corps Explosive Hazards Awareness Training (EHAT). As a result of the TNA, from 2008 SME will conduct an all Corps EHAT 'train the trainers' course. SME continues to support the CIEDTF with the preparation of proposed joint doctrine for Explosive Ordnance Disposal (EOD) and Improvised Explosive Devices (IED).

Staff from SME, in direct support to the Defence Materiel Organisation (DMO), have directly contributed to the introduction of enhanced capability for the Corps. This includes subject matter advice on enhanced gap crossing, counter mine, water purification, Battlefield Command Support System (BCSS) and Battle Management System (BMS) and EOD equipment. SME has also hosted and briefed the graduates from the DMO Material Graduate Scheme.

SME continues the tradition of promoting the Corps through practical demonstrations of our capabilities in support of activities such as Exercise Chong Ju and Exercise Bardia. This year, SME hosted the complete 2nd class from the Australian Defence Force Academy, providing equipment demonstrations and some traditional Royal Australian Engineers (RAE) experiences in the RAE Officers' Mess.

The following extracts from the Wings provide an update on the training issues faced by the School over this calendar year.

COMBAT ENGINEERING WING

One of the biggest challenges for Combat Engineering Wing this year has been building the new combat engineer Initial Employment Training (IET) package. Providing assistance to the Combined Arms Training Centre and with some assistance from 2nd Combat Engineer Regiment, the new Training Management Package (TMP) has been piloted through the session 15 IET course which began in September 2007. By early 2008, the new training program should be consolidated within SME's training calendar.

The diversity of operational tasking for the modern sapper presents us with significant challenges. Continual review and upgrading of the core competencies is but one area in which the Wing has focused this year. Dramatic changes have been implemented in the IET courses which will align training with current battlefield tactics and techniques.

To denote the changes in focus, the 65-day course is still broken into four sections, now called phases instead of modules. The composition of each phase shows the main points of difference due to changing needs of the Corps.

Phase 1 contains Basic Combat Engineering and Chemical, Biological, Radiological and Nuclear Defence (CBRND) training for the IETs and runs for 16 days. Trainees will leave this phase as CBRND operators.

Phase 2 sees the trainees being taught Explosive Hazards Reduction concepts, Demolitions, Engineer Search and Water Supply for 19 days. Explosive Hazards Reduction is not a new concept for the RAE, but its reintroduction to IET training (which incorporates the identification and clearance of land ordnance and mine clearance drills) reflects this critical skillset demanded of engineers in current operations. It is intended that the skillset of Explosive Hazards Reduction will enhance the survivability support engineers can offer supported commanders. Given current operational conditions, this skillset will become an important contribution for engineers in both the conventional and counter-insurgency setting.

Water Supply training will incorporate the introduction-into-service of the Reverse Osmosis Water Purification Unit (ROWPU),



scheduled for delivery to SME in October 2007, with training starting in November 2007.

During the 14 days of Phase 3, the trainees will conduct watermanship and bridging training, including the Fixed Modular Bridge, Medium Girder Bridge and Floating Support Bridge.

Finally, during the 16 days of Phase 4, the IETs undertake Communications and Weapons training, as well as a Field Phase of 14 days. A new feature of the course, the weapons training will now qualify the trainees on the M72A6 66 mm rocket launcher, F1, F3, and M34 grenades, the MAG 58, 9 mm pistol, Grenade Launcher Attachment.

These changes have come at the expense of some previous course competencies. For example, skills such as tree felling and portable sawmilling will now become specialist courses. At the same time, every effort has been made to align most of the competencies taught to civilian competencies, so that our sappers will gain numerous nationally recognised qualifications from their training.

The revised IET course is seeking to balance traditional fundamentals and the need to reflect operational realities for engineers. To achieve this we have adapted our training by incorporating urban demolitions within the training program and have shaped the field phase to reflect a more realistic urban environment. Enemy scenarios will also reflect the increased likelihood of asymmetric threats to deployed engineers and we will continue to look at basing training on current operational experiences where appropriate. Ultimately, we are aiming to grow sappers who are prepared for likely deployments in the short term, with a solid grounding in military engineering between the warfighting and humanitarian ends of the spectrum.

ENGINEER OPERATIONS WING

Engineer Operations Wing (EOW) has been heavily engaged this year with a review of the Subject 2 courses for each rank. As a result, the decision has been made by the Corps and Army to reintroduce the tactical component associated with the current Subject 2 courses into the start of the Subject 4 courses. This will commence from January 2008 and many of you will recall that this is the way the Corps used to run our promotional courses.

EOW continues to develop the Regimental Officer Basic Course (ROBC) in order to keep up with the ever-changing requirements of junior leaders in the RAE. Any necessary changes are significant in ensuring that the junior officers of RAE have the knowledge and training experience required to prepare them for their initial appointments. There have been several developments in the RAE ROBC over recent years and it is appropriate to review these in detail. The most significant development being the need to cultivate military engineers (as opposed to construction engineers, geospatial engineers, or even combat engineers) was an important first step. Also of note are the introduction of a fourth specialist module into training and the development of urban operations training.

The requirement for junior officers to be exposed to, and conversant in, all areas of military engineering, instead of focusing only on their first appointment is essential to the Corps. In keeping with the construct of the Hardened and Networked Army, engineer officers need to provide advice on all aspects of military engineering and be employable in a broad range of junior postings. Essentially, we needed to ensure all RAE officers gain a basic understanding of the broadest range of RAE skills and knowledge possible. In line with this concept, the importance of closing the

gap between 'tech' and 'non-tech' engineer officers was recognised. Whilst acknowledging the need for civil engineer qualified officers in certain positions, the elimination of these labels is a logical progression of the 'military engineer' concept.

The introduction of the specialist module led to some unforeseen concerns. As noted above, there is a need for all RAE officers to have a grounding in all aspects of military engineering. A limitation that was recognised after some iterations of this training model was that some junior officers were missing out on key skills and invaluable experiences. Programming restrictions imposed by the inclusion of the specialist module led to many trainees completing only part of a competency, in such areas as demolitions and bridging.

The solution to these issues was three-fold: to reintroduce competencies necessary; to re-establish continuity in the course program; and to change the paradigm to 'military' engineering rather than 'combat', 'construction' and 'geospatial' engineering.

As such, the decision was made to reintroduce all of the training necessary for a military engineer into the common program of the course. The specialist module was moved to the end of course, allowing continuity. Finally, the emphasis was placed on cultivating military engineers, employable across a wide range of disciplines. Training days were created in the program by streamlining the introduction to RAE, introduction to technical engineering and march-out phases, thus allowing the additional training to occur within the period available.

The other significant change has been an increased focus on urban operations (UO). The transition to UO training, as important as it is, remains in its infancy. Throughout the ROBC many areas of training have been modified to include urban considerations. Within the operations phase of ROBC, trainees are instructed on engineer operations in urban terrain, and then have the opportunity to plan and exercise in the urban environment. The newly completed Special Forces Training Facility, purpose built for urban training, allowed training in a more realistic, simulated environment. Its proximity to Holsworthy Training Area also allowed the UO phase of Exercise Lae to blend seamlessly into the field phase of the exercise.

The RAE ROBC will continue to develop as the needs of Army change and as we become more comfortable with the contemporary operating environment. The future will see the continuation of focusing training at the lieutenant, troop commander level. The establishment of the Engineer Battle Captains Course (aimed at first and second year captains) has allowed the ROBC to focus on the immediate needs of the Corps' newest officers, rather than having to cover the training gap between ROBC and Combat Officer Advanced Course. We will also see the development of planning activities that are more clearly relevant to the junior officers who are now facing real operational challenges as they enter the ever-increasing tempo of the Army. The result is that we will see more confident, able junior officers. They will be conversant of, and employable in an ever wider range of activities. They will be the future of this Corps and will have the best start our training system can provide.

GEOMATIC ENGINEERING WING

Geomatic Engineering Wing (GEW) has exponentially matured its training and course development. GEW has conducted major reviews of its TMPs and assisted in the rewriting of three TMPs, thanks to the efforts of WO1 Ellis.

Work continues on producing the new TMP for the Survey Technicians Course incorporating two existing survey TMPs. The Engineer Survey (three months) and Operational Geodetic (three

months) will be combined to make the new course of approximately four months in duration. The pilot course is scheduled to commence in August 2008.

GEW conducted a rationalisation of the Multimedia Technician (MMT) staff and trained one as an assistant instructor for the Operational Support Photographer Course, which allows for greater flexibility with training and allows GEW to meet the NTL. This logic carried through to the MMT Basic Course by incorporating the full Operational Support Photographer Course, which will see a maximisation of capability and ensures that MMTs are fully qualified and their skills recognised.

The arduous task of attaining new equipment commenced in November 2006 by generating a business case for computers and plotters, which has now converted to an Equipment Entitlement Variation (EEV) and GEW is still waiting for some good news regarding this issue. The intent is to secure the necessary equipment to enhance training and improve productivity for the trainees who often wait for up to ten minutes for data to be processed by the old computers.

A MMT equipment upgrade through an amendment to the Equipment Unit Entitlement was identified by the MMT trade manager and is currently going through the process of coming to fruition. This equipment will enhance the capabilities of the trainees and ensure that the equipment will continue to keep some parody with modern technology.

The staff of GEW supported the numerous displays conducted by SME for the IET March Out parades, special visits and even trips to Puckapunyal. Being ever present at these displays not only promotes the trades but also educates personnel on the capabilities that Geo Techs and MMTs can deliver to the Army.

GEW attempted to get as many of its staff as possible to attend professional development seminars and conferences to enhance their technical knowledge and keep them aware of current civilian practice. The professional development training covered photography, surveying and geomatic information systems.

The Royal Australian Survey Corps historical collection, on display in the Museum of Military Engineering, is slowly taking shape. With the assistance of COL Don Swiney, retired Survey Corps member and former Survey Corps Director, and a team of dedicated ex Survey Corps personnel from Brisbane and Bendigo, the heritage items in the collection were identified, sorted and catalogued. There are some very interesting items now on display and with future direction from GEW and support from 'the old guys', the display will only improve with time. (See their website at www.rasurvey.org)

There continues to be a shortage of geomatic technicians being trained and GEW has been attempting to rectify this deficiency. However, the only sure way to correct this deficiency is for more people to want to become a geomatic technician. As the trade is growing with Hardened and Networked Army we ask you to seek out and actively encourage any personnel interested in becoming a geomatic technician to contact GEW for further information.

SPECIALIST ENGINEERING WING

There are Explosives Detection Dogs (EDDs) working overseas with both the RTF and Special Operations Task Group. Four EDD handlers successfully completed the Basic Course and the unit currently has two handlers completing the trainers' course. Commencing 2008, there will be a qualified EDD supervisor in all regiments and ten newly trained dogs in the EDD stream. One of the most important events this year is the development of the operational assessments conducted by the EDD instructional staff. This year, 1st Combat Engineer Regiment, 3rd Combat Engineer Regiment and

Incident Response Regiment (twice) have been assessed.

Specialist Engineering Wing (SEW) hosted the National Service Dog Association's seminars and biathlon over three days. This gave EDD handlers from many service dog agencies around Australia the chance to get together to discuss EDD issues and participate in the biathlon. This year was also marked by our first operational EDD fatalities, EDDs Razz, Merlin and Andy. A memorial to commemorate the EDDs that have died on active service has been built in the heritage precinct at SME.

There are a number of changes to the training continuum for CBRND to bring Army in line with the Chief of Army's directives. TMPs, promotion, and IET courses are evolving to include the appropriate level of CBRND training. Trainees on Subject 4 CPL will now gain the Mask Testing Facility (MTF) Safety Officer competency and students on Subject 4 SGT will become CBRND instructors able to OIC the MTF and oversee CBRND training in their units.

The CBRND Advisor Course is still four weeks duration but will be modularised into two by two-week sections (CBRND Instructor and CBRND Advisor). We have also conducted some basic equipment trials this year with some overall positive results. The trial respirators have features including low-profile canisters, dual canisters, improved field of view and enhanced speech transmission. The new gloves offer better feel and grip, improved dexterity and are ambidextrous, saving critical time when conducting the IA drill in the heat of the moment. The new material for the smock and trousers is lighter and thinner than the current MK4 ensemble, reducing heat stress and Individual Protective Ensemble degradation on the wearer. The Section now has a webpage on the SME Intranet site which has the Power Point lessons for the Basic CBRND Operator. Unit CBRND Advisors can contact the section on (02) 8782 4041 (SM CBRND), to gain access to the lessons.

EOD Section now runs the complete Australian Defence Force EOD suite of courses consisting of Phase One (Explosive Ordnance Reconnaissance (EOR)); Phase Two (EOD); and Phase Three (RAE Only, EOD). A considerable amount of work has also been put into the LWP (CA RAE) 2-7-1 Explosive Ordnance Disposal, this document is almost complete and will be a great reference for all EOR and EOD technicians. The EOD Section has been working hard to bring the realities of operations in the MEAO in line with training where trainees are tested on scenarios based on real events and pieces of ordnance. This operational refocusing allows the section to deliver realistic training situations for all trainees. Based on current events, the IED phase has also had a face lift and includes real-time intelligence feeds and operational time pressures.

EOD section continues to provide external support to many activities including, the Explosive Ordnance Disposal Mobile Training Team (EOD MTT) to the Solomon Islands Police Force (SIPF), and Australian Defence Force EOD support to the Royal Australian Air Force (RAAF) and the Royal Australian Navy. Close liaison with our Tri-Service counterparts throughout the year assisted our interoperability and will ensure good quality training for the Australian Defence Force.

The Army Dive Wing has moved under command for administration of SEW and has been renamed Army Dive Section (ADS) to reflect their position on the SME SED. The ADS has had a busy year adjusting to the administrative requirements of another organisation but is starting to come on line.

CONSTRUCTION WING

Construction Wing has had another busy and challenging period

enhanced by significant manning shortfalls caused by the operational tempo across Defence. Building Squadron and Civil Squadron have adapted well and overcome these shortfalls to ensure that training outputs have been maintained.

Building Squadron, as well as the training of tradesmen and construction managers, has been heavily involved in the development of the Construction Supervisors Handbook and the creation of the Camp Construction publication. The handbook now accurately reflects construction activities whilst on operations and the Camp Construction publication gives guidance on the planning and requirements for deployed camps. Both these publications are with Land Warfare Development Centre Doctrine Cell awaiting promulgation. Civilian Accreditation for the Subject 4 Construction Courses ranging from Certificate to Diploma in Building and Construction (Site Management) has, after extensive Competency Mapping, been achieved. Unfortunately, these qualifications can not be awarded retrospectively.

Trade Training Troop have continued to supervise and support the apprentices' On-the-Job Training with contractors prior to joining the Land Army. However, because of changes in the National Competencies scheme relating to plumbers, carpenters and electricians, members will be required to stay on for a further two- to 18-month period, dependant on the individual and trade. This will result in a slower output of apprentices to the Land Army over the next two years. The positive aspect is that Land Command units' competency training burden will be removed.

Civil Squadron manning levels remains at critical levels, especially within the Basic Plant section who are responsible for the Construction Civil Plant Course (CCPC). The eight-man section is currently deficient three regular staff and relies on the provision of a RAAF Plant Corporal to ensure that delivery of training continues unabated. This position also offers good inter-service and interoperability training and has broadened the outlooks of both Army and RAAF personnel. Construction Wing's aspiration is to get this position permanently manned by the RAAF.

Training on the recently procured John Deere 672D Grader, 850J Dozer and 328 Skid Steer have been fully integrated into the CCPC and the equipment is proving to be good assets for the RAE.

Plant Instructors were heavily involved in the DMO trials for the up-armoured plant equipment for the RTF rotations and also delivered bespoke pre-deployment user training to members deploying as part of the RTF.

Other activities involving Civil Squadron have included comprehensive TMP reviews of the CCPC and Soil Technician Courses and a review of the Soil Technician career structure, with the latter being presented to the Corps Capability Committee for further consideration.

CONCLUSION

Finally, as we quickly approach the end of 2007 and the normal round of posting changes, I would like to acknowledge the efforts of all of the staff at SME and to thank them for their contributions whilst at the School. Along with promoting our Corps heritage, SME is charged with the individual training requirements that will develop and grow our Corps. For the personnel posted into SME next year, I trust you are all looking forward to taking up the challenge.

LTCOL DAVE RYE

Commanding Officer and Chief Instructor, School of Military Engineering

THE OTHER SIDE OF THE COIN

1st Reconstruction Task Force Operations in Southern Afghanistan

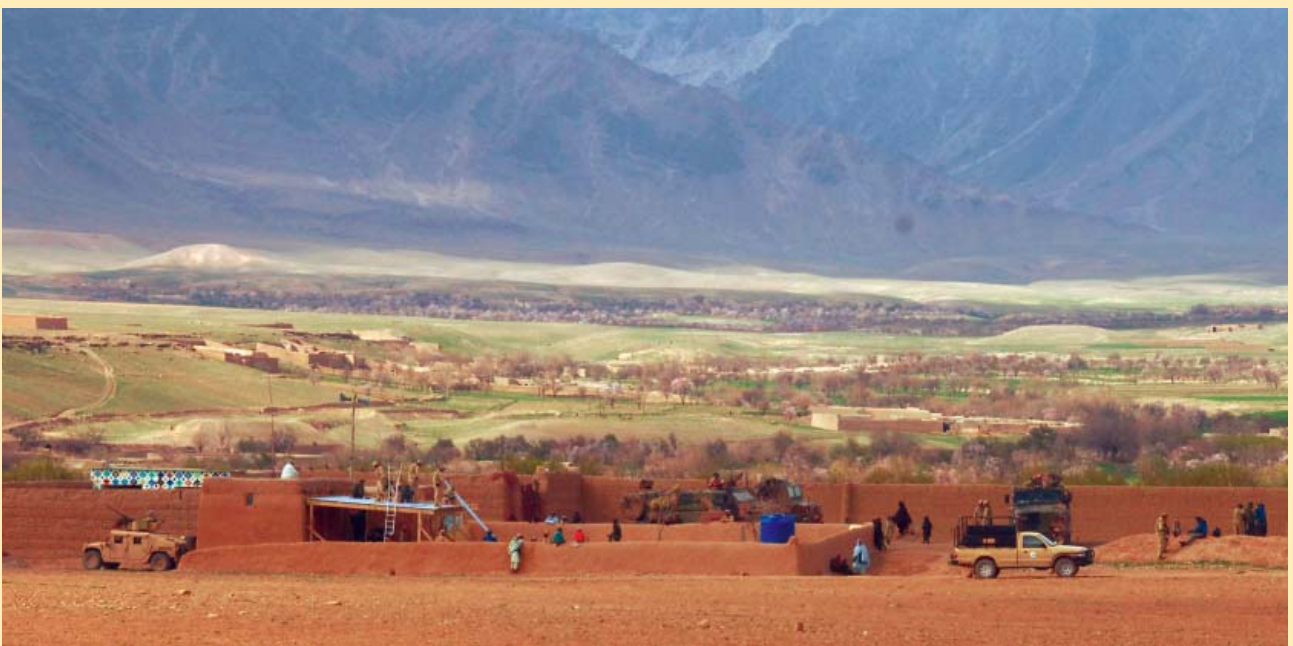
Military-led reconstruction is a critical capability in contemporary military operations. It enables early intervention to rebuild disrupted communities, and provide breathing space for the establishment of robust, civilian-led nation building programs. At its simplest, military-led reconstruction is not about destroying insurgents, but helping to make insurgents irrelevant to the population.

Faced with the challenges of counter-insurgency operations in southern Afghanistan, and the need for non-traditional solutions to counter the extreme ideas of the Taliban, the Australian Army recently developed the Reconstruction Task Force. This article examines the deployment of the 1st Reconstruction Task Force (RTF-1) to southern Afghanistan from August 2006 to April 2007. For eight months, the task force conducted operations to rebuild the physical infrastructure of Uruzgan province and to build the indigenous capacity for the conduct of engineer-related activities in their society.

The article also reviews the role, and value, of military-led reconstruction operations as part of the ongoing counterinsurgency campaign. The ultimate aim of this article is to highlight the important place of military engineers within a counterinsurgency campaign and the value of ensuring these activities are appropriately resourced.

The Role of Military-Led Reconstruction

Reconstruction operations have a vital role to play within the broader conduct of a counterinsurgency campaign. In many respects, the effects of reconstruction activities will have a more enduring influence than tactical, non-kinetic operations. This is not to minimise the importance of robust combat forces; there will always be a need to target certain insurgent elements for destruction. However, the ability of the counterinsurgent to achieve the right balance between precise, discriminate kinetic and non-kinetic actions will have a major influence on how successfully local popu-



lations can be influenced.

Given the number of civilian aid agencies, and the depth of their capabilities and experience, some may question the rationale for an expanded role for military organisations in reconstruction – or nation building – operations. The harsh reality is that in many areas such as southern Afghanistan and Iraq, tenuous security conditions prevent the majority of aid groups and other government agencies from establishing a presence. In many instances these aid organisations, and other contractors, are deliberately targeted by insurgent groups to prevent them from gaining a foothold and becoming effective in assisting the local populace.¹

Despite this, the need for reconstruction operations in addition to security operations remains. This capacity must be provided by highly capable organisations and have the integral mobility and protection to allow the conduct of reconstruction with minimal physical interference from the insurgent. Only military organisations, and in particular military engineers, possess this ability to undertake reconstruction activities while concurrently providing a robust level of self-protection.

A Complex Environment

In many respects, the RTF's operations could be dubbed 'engineering at the end of the world'. Civil infrastructure was negligible, with the coalition Forward Operating Base being serviced by a single unsealed airfield (closed 30 per cent of the deployment) and a single-lane road to Kandahar subject to insurgent interdiction. The area in which the RTF-1 conducted operations was notable for the striking disparity between the 'green zones' along rivers and the desert that dominated the remainder. The most significant obstacle is the green zones that line the major rivers. These were a complicated amalgam of irrigation channels, orchards, small villages and *wadis* that provided concealment to the adversary and contain the major concentrations of people. The basin in which the RTF-1 primarily worked was surrounded by high mountains, totally devoid of vegetation.



The local population was the most significant element of the environment in which the RTF-1 worked. While the physical environment is demanding, it is the people of the province that drove the complexity of the environment as a whole. Ethnically, the inhabitants of Uruzgan are overwhelmingly *Pashtun*. The principal distinction among local people, and their loyalty, lay with their tribal affiliation. Prior to the arrival of the RTF-1, the *Populzai* had been the dominant tribe in the region, with the Governor and senior security personnel belonging to that tribe. This was a constant factor when dealing with the local population.

The Taliban added another degree of complexity to the environment. While not as active in Uruzgan as in other parts of southern Afghanistan, the operations of the Taliban remained constant throughout much of the deployment. As such, the requirement for security on worksites, during convoys and on engineer reconnaissance was of primary concern. Enemy tactics principally were indirect in nature, and utilised Improvised Explosive Devices (IEDs) and rocket attacks to disrupt coalition operations.

Provincial Infrastructure Development and Rapid Reconstruction

Consultation with local officials and other interested parties was a critical aspect of prioritising the RTF's construction projects. A weekly engineer forum for all provincial and coalition engineer organisations was established early in the deployment to de-conflict engineer projects and provide a forum for professional discussion. This was supplemented by regular meetings with provincial officials to thrash out the details of individual projects and to ensure that what would be delivered was what they needed.

The RTF-1 deployed with a robust planning capability that integrated engineer and security planning in a single entity. Held within the task force headquarters, the plans section reached out to provincial officials to prioritise works that accorded with provincial developmental requirements. It then used these priorities to develop a monthly works plan, which then shaped the location of projects and RTF deployments, as well as informing budget planning.

Key to this was the capability provided by the Works Section. Embedded within the Headquarters Operations Section, this small yet highly capable element provided civil engineers, works supervisors, drafting and surveying capacity. Being part of the operations section enabled security planning to be incorporated into engineer planning from the inception of projects. It also provided for significant flexibility in execution of reconstruction tasks. The Works Section was able to design and project manage for either integral engineer elements, or contractors. Further, the Works Section was able to use its reach back capability to other Australian Army engineer units in Australia for additional advice on technical engineer issues.

This meant that the RTF-1 was able to concurrently undertake 'top down projects' and 'bottom up projects'. Top down projects meant that the plans section conducted recon, design and the project/contract management required to oversee civilian contractors on these large-scale, long duration tasks. Bottom up projects involved the plans section initially but the execution was through a task-organised combat team that contained an engineer organisation tailored to each task. These bottom up tasks (also described as 'backyard blitzes') were conducted in small villages in the vicinity of Tarin Kowt and consequently a blend of security and engineering was required for each. These were drawn from the integral engineer squadron and security company of the RTF-1.

Instead of conducting reconnaissance and then coming back at another time to complete the task, the RTF-1 developed tailored

'village packages'. These consisted of prefabricated mosque renovation kits and water storage tanks and tank stands. These would be taken on the mission and, after consultation with the village *malik*, work would commence immediately. This had a significant impact. Coalition forces were seen to be delivering on promises, improving credibility. It also provided an immediate improvement in the lives of the local people. In a tribal society such as Afghanistan, winning over the villages and the populace that resides in them is critical.

The RTF-1 also had significant flexibility in the conduct of its operations through the availability of sufficient funding at short notice. A large budget for reconstruction projects was approved prior to deployment, with key personnel given the appropriate delegations to approve the expenditure of those funds. Personnel in the Works Section were also qualified in complex procurement methodologies. The combination of this allocation of money with appropriate delegations and complex procurement skills ensured that the RTF-1 had the flexibility to expend large amounts of money on major projects without constant reference back to Australia.

Building Capacity

A consistent theme in the approach of various government and non-government organisations to 'nation building' operations is capacity building. While the organisation of the RTF-1 incorporated a trade training capacity right from the start of planning, it would be fair to state that this area was under-appreciated prior to deployment. The first trade training courses, of one month's duration each, were very successful. This was not just in a human sense, of increasing the basic skills of the local youth, but also in an IO sense. Knowledge of the RTF-1 trade training school spread by word of mouth and RTF-1 personnel on operations around Tarin Kowt were constantly asked by people in villages how they could get their young men on the courses.

To provide an incentive for a wider range of young men to apply for the school, a training wage was paid to all trainees. At the end of the course, graduates were presented with formal recognition of their training (in *Pashu*) as well as a tool kit. The RTF-1 then assisted them to find further employment. Some of the students were subsequently employed to become trainee instructors at the trade training school. By the second half of the deployment, courses had at least one Afghan instructor who was a graduate of the school.

Another area of capacity building that the RTF-1 led was the training of Afghan National Army engineers. The RTF-1 adopted a 'train and partner' approach. This involved a monthly cycle where the Afghan army engineers would receive a week of formal instruction in combat engineering, followed by two weeks of deployment on RTF-1 operations and a week's leave. The partnering of the Afghan engineers, with their embedded US Army trainers, allowed the RTF-1 to conduct tasks in small villages using Afghan soldiers. This gave the RTF-1 greater credibility in the eyes of the local people and permitted local Afghans to see their Army as a credible and constructive part of their society.

A final aspect of RTF-1 capacity building was mentoring provincial officials. The RTF-1 formed close linkages with key personnel within the Ministry of Reconstruction and Rural Development, as well as with the office of the local Mayor. Senior RTF-1 personnel formed close bonds with the leadership of these two provincial entities, which fostered a more informed process for prioritising RTF-1 projects and developing trade training capacity.

Working with the Local Population

Possessing a good knowledge of local culture took time before and during the deployment but was critical to interacting with local people. Gaining an understanding of the human or social elements



of our Area of Operation was a high priority throughout the RTF-1's tour in Uruzgan. To do this, the RTF-1 started slowly, gradually gaining a more detailed appreciation. The first projects did not start until the unit had been in the area for some time. This ensured that the projects undertaken were in line with local requirements.

In every facet, the relationship with local people was based on respect. Significant cultural training prior to deployment for all personnel, especially in the local Pashtunwali code of conduct, provide a good foundation for dealing with the people of the Tarin Kowt area. The first Standing Operating Procedure of the RTF-1 was the rules on Soldier Conduct. These were issued to every soldier prior to deployment and were constantly reinforced throughout. It included guidance on dealing with the various elements of Tarin Kowt (*Pashtun*) society, as well as local norms and practices.

This initial interaction, and not rushing into projects, also ensured the RTF-1 was not making promises it could not keep. Through detailed discussions with local people, the RTF-1 managed expectations carefully and only promised what it could deliver. A constant theme when talking to locals was their exasperation with government and coalition forces promising projects but not delivering. This initial interaction resulted in the development of the backyard blitz approach to village reconstruction missions described earlier in this article. An enduring theme of RTF-1's operations became, *promise only what can be delivered and deliver on everything that is promised.*

The RTF-1 also adopted a minimum level of local labour content for every contract signed with local construction companies. The aim of this was to keep local young men employed in constructive endeavours, foster transfer of work skills and inject money into the local economy. Local companies often tended to employ labourers from outside the province. To enhance employment opportunities for local people, the RTF-1 set a benchmark of 70 per cent local labour in each of its projects. This was reinforced by

making it a contractual obligation for contractors. When contractors failed to meet this benchmark, they were not allowed onto the worksite.

Where to from here?

While the RTF-1 was successful in taking the first tentative steps in the rebuilding of Uruzgan, there is still much to be done. Based on the lessons of the past eight months, subsequent RTFs need to build upon initial successes and broaden reconstruction operations.

There is more to be done in the development of indigenous capacity. Areas such as further technical training for engineers, works supervisors, surveyors and draftsmen for the Ministry of Reconstruction and Rural Development would greatly enhance the ability of the Afghans to undertake their own reconstruction. There may be call for offering educational scholarships in Australia, or in countries of the Afghan's choosing, to provide technical training and education to selected personnel.

Mentoring of local officials by *experts* could also be expanded. Selective recruiting, or contracting, of experienced town planners and others involved in town maintenance and city and town administration would significantly improve the capacity of the local people to plan and build their own civil infrastructure. Further, the involvement by Australian government and non-government aid agencies, as part of a synchronised 'whole of government approach' to reconstruction, would appreciably develop the capacity of the RTF and the conduct of non-kinetic operations in the province.

There is a critical need to increase support to 'capacity building' enablers. A logical next step is to combine physical construction with indigenous capacity building by the development of educational infrastructure. This educational infrastructure must include participation in initiatives such as the Education Quality Improvement Program which, among other objectives, seeks to develop teacher training schools and vocational training schools throughout Afghanistan. The construction of schools to train healthcare professionals and more police training centres must be undertaken as a priority.

Conclusion

The conduct of RTF-1 operations offers insights into the contribution of engineers to a holistic counterinsurgency campaign. The mix of construction and security is a powerful combination and directly supports the other elements of counterinsurgency operations. For the forces of the West to succeed in the conduct of counterinsurgency operations, we must have the ability to play a constructive role in those disrupted societies in which we will conduct operations. The Royal Australian Engineers has a significant capability to lead these forms of operations.

Reconstruction operations conducted by military engineers offers an affected population an alternative view of how they may live their lives, as opposed to what Michael O'Hanlon has called the *ruthless and nihilistic* character² of contemporary insurgencies. Possessing the ability to make the enemy irrelevant to the populace through reconstruction operations is likely to become a more important tool for contemporary western militaries.

Notes:

1. According to the Brookings Institutions Iraq Index, 485 non-Iraqi contractors were killed in Iraq over the period May 2003 to July 2007. Source: Iraq Index, Brookings Institution, July 12, 2007, www.brookings.edu/fp/saban/iraq/index.pdf, p. 22, accessed online on 17 July 2007.
2. Michael O'Hanlon, *A Ruthless Foe*, Washington Times, April 24, 2007.

LTCOL MICK RYAN

Commanding Officer, 1st Reconstruction Task Force



2nd Reconstruction Task Force

WORKS TEAM

*makes a dramatic contribution to the people of
Uruzgan Province in Afghanistan*

The Works Team of the 2nd Reconstruction Task Force (RTF-2) have had a busy time over the last six months. To say that there was never a dull moment is an understatement ~ there has always been something to do. For us, it has been a blessing. Time has literally flown by leaving some members with a sense that maybe they should have gotten more done. However, Rome wasn't built in a day, and given that the Roman engineers didn't need a protection party larger than that given to 'George Dubbya', expectations about how long it takes to get things done around here have been realigned. On reflection, it is evident from the list of projects described in this article that the Works Team has made a dramatic contribution to the Uruzgan people.

Eastern Causeway

The Garmab Mandah runs along the eastern boundary of Tarin Kowt, forming an impassable barrier to traffic during the winter rains and snow melt in spring. A crossing at this location was identified as a high priority prior to the RTF's arrival. Construction commenced during RTF-1 on the eastern causeway and was completed under the management of RTF-2. Aimed at connecting the Tarin Kowt township with the Mirabad, Dorafshan and Chora areas to the east and north, the causeway is a 68-metre reinforced concrete structure that provides all weather access across the river. While debate may rage forever on the best location for the causeway, significant road works are planned to commence at the completion of the causeway structure, in order to align the existing approach roads correctly. This phase will commence following the end of the snow melt.

Tarin Kowt Hospital Redevelopment

The Tarin Kowt Hospital works consisted of five separate projects, all in the one compound. This project was started by RTF-1 and was then taken over by the Dynamic Duo of CAPT Dan Keep and SGT Colin Leggett, who were ably assisted at various times by all members of the Works Team, but most noticeably by WO2 Brenden Johnson. The works at the hospital compound involves over US\$600,000 of renovation and new construction.

The existing main hospital building was given a facelift and some liposuction to its fleshy and untidy posterior through the installation of some new electrical and plumbing works, new windows, a bit of paint and some benches and shelving. The RTF-2 Engineer Task Group tradies did an excellent job fixing up some

of the previously, high-quality 'trade work', and also installed a filtration system that supplies high-quality water to the two surgical rooms.

The hospital's external services were improved with more plumbing works, including installation of a pressure pump and some pipe work that were installed by Engineer Task Group from RTF-1. RTF-2 has continued the works as part of the overall hospital upgrade and installed a new diesel generator and electrical reticulation throughout the compound. This was the last part of the project to be completed and will provide the hospital facility with adequate and continuous power.

The hospital also had a new, purpose-built kitchen constructed and fitted out. This will enable the hospital to provide staff and patients meals cooked in a more hygienic location. The new kitchen, started by RTF-1, consists of a preparation and dining area, washing area, and cooking area, and is fitted with a large gas cook top and oven combination. The fit-out also included the world's biggest stainless steel fridge and freezers (that required doors and door jambs to be removed to be able to fit them in), stainless steel shelving and prep benches.

The Out Patients Department (OPD) was the largest of the new buildings constructed. Comprising of 16 rooms and incorporating mirrored male and female wards, both share central consultation and storage rooms, plus X-ray facilities. The building was fitted with stairs and a ramp to allow easy access for all patients. The OPD will provide an additional Comprehensive Health Clinic facility for the Tarin Kowt Hospital and will free up some room in the main building for more in-patients.

As Cholera is a contagious bacterium, it requires a separate location for treatment so a purpose-built Cholera Ward was constructed. This ward consists of a small OPD, two large rooms or wards (male and female), and staff and patient ablutions.

Tarin Kowt Boys High School

The Tarin Kowt Boys High School project was ongoing before the arrival of the RTF-2 group. Although only minor works have been completed so far, we have now developed plans to make a significant upgrade of the facility over the next six months. New buildings for security and storage, a new ablution block and possibly a library will be constructed along with a new well and water storage capacity and perhaps most importantly, the placement of

a new generator in order to allow for the installation of electrical reticulation throughout the school. Once complete, these facilities will have a marked effect on conditions at the school but even more importantly it will help to further improve education in Oruzgan Province.

Tarin Kowt Boys Primary School

When first visited by the Works Team in May 2007, the Tarin Kowt Boys Primary School was amongst the worst of the public facilities we had seen in Tarin Kowt. Students and teachers were working in conditions that were, in many cases, more suited to animal stables than classrooms. Students were squeezed together, sometimes 30 or more seated on the floor in rooms no larger than 5 metres by 10 metres. All of the existing buildings were mud wall structures that, in some cases, were falling down around them and the mud and straw roofs barely kept the rain out. It was obvious that serious intervention was required in order to improve conditions at this school for around 2000 students, plus teachers. In order to make the changes needed, the works team produced plans to completely demolish all of the old school structures and construct a brand new school in its place. The new facilities will include up to 30 new classrooms complete with new classroom furniture and fittings, a purpose-built administration building, new toilets, a new guard hut and a new storeroom. We also intend to install an electrical reticulation system throughout all of the new buildings and connect them to a new generator. A new well and water storage system with water reticulation to various buildings and sites within the school compound will also be constructed. Along with the new infrastructure, we also intend to establish a sports ground and children's play area complete with a range of swings, climbing equipment and shaded rest areas. It's likely to take around US\$1m and 12 months for this work to be completed, but the wait will be worth it for the children of Tarin Kowt.

National Directorate of Security Headquarters

The National Directorate of Security Headquarters (NDS HQ) project is one of the tasks passed to us from the RTF-1 Works Team. It was completed in August 2007 after approximately six months of construction time and an investment of about US\$400,000. The building is a two-storey concrete and brick structure erected in an 'L' shape configuration and includes all of the basic electrical and water reticulation systems. A 'very high' water tower was also erected at the front of the block as well as two two-storey security towers, one at the front and one at the back of the compound giving panoramic views over most of Tarin Kowt and its surrounding areas. The RTF also constructed a new security wall and supplied a suite of new furniture and fittings throughout. The NDS HQ building has turned out to be one of the most significant structures in Tarin Kowt and has attracted much attention from the local population since its completion. All concerned with the project, most especially the builder, have developed a feeling of pride that such a public building could be raised in Tarin Kowt by local Afghans and in no small way demonstrates the determination of the people of Uruzgan to take control of their own security.

Yaklengah Comprehensive Health Centre

Found by chance by RTF-1, the Yaklengah Comprehensive Health Centre has been provided with an extension and renovation to the clinic building, along with the provision of staff accommodation, a compound wall extension and water supply upgrades. This has enhanced the level of health care capacity in an area relatively remote from Tarin Kowt. Like the hospital, completion was achieved in early September 2007 and will service the

Yaklengah and surrounds for many years to come.

Tarin Kowt Afghan Health and Development Services Training Facility

The Afghan Health and Development Services (AHDS) training facility is an example of the interrelated nature of reconstruction within Oruzgan. There are no benefits in building hospitals and health clinics unless there are adequately trained nurses and medics to staff them. There can be no training nurses and medics if there are no schools to train them in. One of the key projects within RTF-2's time has been the design and development of the AHDS Training Facility. This project will see an upgrade of the existing AHDS HQ building, as well as the provision of training facilities, storage for medicines and medical supplies for the province and accommodation for trainees from remote areas. Construction of the preliminary works have commenced during RTF-2, with the bulk of works to be completed by the conclusion of RTF-4. By 2009, Oruzgan Province will have a fully fledged, basic health care training facility which should see the overall levels of health and health care improve gradually across the province.

Talani School

The first phase of the Talani School project involved the erection of a compound wall and the installation of playground equipment for the Talani Boys' School. Since this time, the Works Team have completed designs for further redevelopment at the school, including a new ablution block, a new well and the replacement of the roof of the classroom building. This will be delivered during RTF-3.

McHameedi Meals and Man-Hugs

The Works Team has a great deal of contact with the local Afghan contractors and has made some good friends. Now, Afghans are renowned for their hospitality and, hence, we are always offered, wherever we are, chai (tea), cold drinks, mangoes or, what the locals like to call 'lunch', but it is actually enough food of varying types to feed RTF-2. One bloke in particular cannot help himself, and tells us that he is bringing in food on such and such a day as he doesn't want to listen to our repeated, polite refusals. The bloke's name is Mr Hameedi. Hameedi sahb, the honorific title meaning sir, is an impeccably dressed, grey bearded man of indistinguishable age (who claims to be younger than Patch because his back is straighter), and always has a smile on his creased, leathery brown face. He is a shrewd businessman and an important man about town (we suspect he is the unofficial mayor). He also acts as the Tarin Kowt's welfare agency to people in need. Hameedi sahb, who has a brotherly relationship with our teams elder statesman WO1 Mick Barnes (must be the moustache), is also the owner of the 'Hameedi Man-Hug' (patent pending), of which a majority of the team are greeted with every time we see him.

Now Hameedi sahb, when he brings lunch, aka a 'McHameedi Meal', asks us out of courtesy how many people will be eating. Hameedi sahb says, "20". The Works Team reply, "No, 10. Okay Mr Hameedi. 10." I don't think numbers really matter to Hameedi sahb, and hence the team members usually roll themselves out of any 'lunch' as we all try to make at least a small dint in the mountain of food he brings! Anyway, it makes Hameedi sahb very happy that we eat his food and I must say that although we couldn't eat it everyday, it's pretty bloody good tucker.

CAPT LIAM HANSEN

Principal Engineer, Works Team, 2nd Reconstruction Task Force

Hospital opening caps off deployment for RTF PROJECT ENGINEERS

The eight-man 2nd Reconstruction Task Force (RTF-2) Works Team is arguably the main effort for the high profile deployment to Oruzgan Province in Afghanistan. They are the ones who design and manage the Task Force's major construction projects – the reason for being in Afghanistan in the first place.

The team is led by Australian Defence Force Academy trained civil engineers CAPT Liam Hansen and CAPT Dan Keep and contains a senior builder, plumber, electrician and plant operator, as well as a draftsman and surveyor, totalling 112 years of engineering experience.

On 16 September, as their tour drew to a close, months of hard work for this tight-knit team was recognised when the Commanding Officer, LTCOL Harry Jarvie, officially handed over the Tarin Kowt Hospital and Yaklengah Comprehensive Health Centre to thankful local Government officials.

They are landmark projects for the province and two of the biggest the Works Team have managed.

Project Manager, CAPT Keep from the 19th Chief Engineer Works, said the US\$700,000 hospital redevelopment will make a huge difference to the community.

"Prior to commencing the works, the hospital was in a poor state of repair. It was ill-equipped and poorly staffed, struggling to perform the role of the major health facility in the Province.

In a little less than one year, the hospital has become one of the more developed medical centres in Southern Afghanistan", said CAPT Keep.

Construction has included safe, reliable water and electricity supplies, as well as a new kitchen, an Out-Patients Department (incorporating male and female wards, consultation rooms and X-ray facilities), and an infectious diseases ward to target diseases such as cholera.

The Yaklengah Comprehensive Health Clinic, located about ten kilometres south west of Tarin Kowt has had large-scale works completed, including the renovation of the main building, construction of an accommodation building and security wall and an upgrade to the water supply.

Governor Monib and LTCOL Harry Jarvie unveil a plaque to signify the opening of the Tarin Kowt Hospital.



With a budget of over US\$300,000, CAPT Keep says the project will significantly enhance the level of health care services available to the Yaklengah region.

Although the Works Team has overall responsibility for these projects, they enlist contractors who employ local workers to complete the majority of the labour. Works Manager, WO1 Mick Barnes, says this adds to the complexity of his task.

"The local engineers are good guys. They have the best intentions for the project and will do what they think is right but their training is just not the same as ours and we can sometimes come up with very different solutions to the one problem," WO1 Barnes said.

One of the contractors, Mr Hameedi, has stood out to the Works Team for his hospitality on the work site.

"Mr Hameedi is an impeccably dressed, grey bearded man who always has a smile on his face when he greets us with his version of the Afghan *man-hug*", said CAPT Hansen from 2nd Combat Engineer Regiment.

"No matter which job we are at, he will always show up and offer us *chai* (tea), cold drinks, mangoes or one of his famous lunches. He has made some very hot days on the site tolerable with his welcome visits", he added.

Working in remote, inhospitable locations is not new for the team though, all having cut their teeth on project with the Army Aboriginal Community Assistance Program (AACAP) over the years. The RTF-2 plumber, WO2 Brendan Johnson, says AACAP has provided essential experience for the Army tradesmen but he is wary of the toll these tough projects can play on the soldiers.

"Ten years of AACAP has seen the construction squadrons and 19th Chief Engineer Works develop a very strong level of experience at working in remote localities. There is no doubt they have prepared us well for the challenges we face over here.

But it can be a hard slog. I will be heading out on AACAP again next year, as will a number of the tradies from RTF-2, and that can be just as tough on the families as an operation", said WO2 Johnson.

Captain Hansen says the challenges ahead for Oruzgan are many but he is confident they are heading in the right direction through what can be described as an holistic approach to nation building.

"It is not a straightforward proposition. There are many elements of physical, intellectual and cultural infrastructure that are required to form a functioning community.

A government requires educated and healthy people with skills to administer the development of plans and manage the construction of additional infrastructure.

To achieve this we must adopt a long-term focus and make meaningful contributions that will stand the test of time.

You see this coming out through the interrelated aspects of our projects; how they compliment each other and collectively provide the foundation for the Province to put its hand up and pull itself out of the depths of the past", said CAPT Hansen.

CAPT HAYDN BARLOW
2nd Reconstruction Task Force

AUSTRALIAN AND AFGHAN ENGINEERS

deliver a magical effect to Talani School

A project completed by the 2nd Reconstruction Task Force (RTF-2) in Uruzgan Province saw Australian engineers working hand in hand with soldiers from the Afghan National Army (ANA).

The project was a result of ongoing liaison between the RTF and key members within the village of Talani, specifically the school principal and the village malik. One of the main concerns raised by the principal, was the poor state of the windows, most of which were broken and had shards protruding from the frames. It was also identified that the students, at times up to 400, had no chairs or desks at which to work in their classrooms.

The engineers' work, described as 'magical' by the principal, saw a rapid restoration of the school grounds, which had been neglected for many years.

The works, which were all completed in ten hours, included the removal of over 50 broken windows and the installation of Perspex inserts – which are stronger and provide protection from rain and extreme dust storms that frequent the summer.

The engineers also installed a 4,000 litre water tank with multiple taps, providing the students with an area to wash their hands throughout the day and a source for clean drinking water.

Responding to the school's need for furniture, a number of desks, chairs and bookshelves were installed. In a move highly symbolic of the overall effort in Afghanistan, the furniture was produced by local students of the Australian-run Trade Training School – emphasising self sufficiency within the community.

One of the simplest tasks conducted, but by far the most popular given the children's expressions when let loose on them, was the installation of play equipment in the school yards. A swing set, seesaw, monkey bars and outdoor table setting; all designed, built and installed by the Australian and Afghan engineers, now provide

the children with a safe area to play outside.

Engineer Troop Commander, LT Kieran Jackel, said it was extremely rewarding work and noted how the small things can make big differences in this part of the world.

"The project was an example of how some simple reconstruction work can provide a lasting impact on the community. Ideally it will encourage more students to attend school now there is a safe and enjoyable environment to learn in", LT Jackel said.

LT Jackel was also pleased with the support provided by the ANA engineers and said future missions will continue to develop their confidence amongst the community.

"We have been developing their skills back in Tarin Kowt for some time now – they have made great progress.

It was a valuable opportunity to get them out into the community and demonstrate how the ANA works with the International Security Assistance Force, not for them", LT Jackel said.

Given the success of this last mission, it is highly likely that future missions conducted by the RTF and the ANA Engineers will yield similarly positive results for the communities within Uruzgan Province.

LT KIERAN JACKEL
2nd Reconstruction Task Force

Right: Talani School children play on equipment built by Australian and ANA engineers.

Below Left: Australian and Afghan engineers adjust an auger during work at the Talani School.

Below Right: Children from the Talani School access clean water from a tank provided by the Australian engineers.



THE ROAD TO *Yaklengah*

Standing around the vehicles waiting to get the word, “mount up”. The familiar smell of coffee and cigarettes filters through the dusty morning air, everyone getting their last fix before the long ride across the barren, rocky moonscape that is the *Dasht*.

Looking around, soldiers are standing in groups, the low hum of voices indicating everyone is eager to get going. But some like me are thinking, how easy it would be to lay-in, back at home.

In the distance is the faint whine of Apaches coming to life, reassuring knowing they will be on station if needed. Let’s hope not.

“Mount up”, echoes through the ranks. Heavily equipped soldiers come to life. Everyone enters their designated vehicles that have been carefully structured to work independently if need be.

Cocooned in armour shells, drivers and crewies of the ‘Bushies’ complete their final checks before preparing to start up, “Wait... wait... start up”. The beast comes alive, air-conditioning relieving already perspiring faces.

The Bushies form a single line as we leave the front gate, slow and deliberate is the order of the day. It’s going to take a few hours: 15 kilometres to Yaklengah, the start point for our foot patrol.

Stepping out of the dark air-conditioned vehicle, the heat is initially quite pleasant. It doesn’t take long though for the heavy layers of camouflage, combat body armour and webbing to become drenched, sweat rolling from underneath my helmet and stinging my eyes.

Looking north from the defensive position, nothing can compare to the towering mountains that descend to the ‘green zone’, a lush strip of dense vegetation feeding off the *Tiri Rud* (river). Our patrol will take us down there, into the source of life in this area.

A section in front and a section behind, we wind our way to the rud. The humidity picks up a little as the terrain changes. The

smell of dry dust is replaced by the strong scent of full grown crops, soon to be harvested before winter.

As we cross the rud, the cool water brings relief to our overheating bodies that are tiring from carrying the heavy burden of our patrol kit. If we were anywhere else we would take a break from the heat and go for a swim, but not here... not now.

Feet wet and on the other side, the commander of 10 Platoon, LT Wil Langdon, calls a quick halt to talk to some nearby locals. A man offers us freshly picked watermelon. Fruits from his summer’s labour. It is warm and sweet.

Moving on we snake through narrow alleyways between *qala* walls and tiny paths cut through dense vegetation. It is as if we are back in East Timor, a bizarre feeling in the deserts of Afghanistan.

As we move along a small winding path we hear a faint clicking noise from behind us, slowly getting louder. We stop to confront what was coming up the path. A group of five cows, three sheep and a dog appear, all being herded by a boy of about 15, a man in these parts. The patrol pushes aside as far as we can to let the heard pass. It is a peculiar scene, heavily laden soldiers with the most modern of weapons and armour, making way for a heard of mixed animals and a boy with no shoes.

Coming to the end of the patrol we cross back over the rud to the edge of the dasht. We stop on a hill to wait for our pickup, nothing better than the sound of your ride after a patrol. The sun is sinking into the desert as we mount up, time to find a patrol harbour, have a feed and get some sleep, then start all over again tomorrow. It has been a long day filled with strange and exotic sites.

CPL JAMIE OSBORNE
2nd Reconstruction Task Force



Reconstruction Task Force HANDOVER CEREMONY

A ceremony was held at Tarin Kowt in Southern Afghanistan to mark the passing of the banner by soldiers from the 2nd Reconstruction Task Force (RTF-2) to their fellow diggers from the 3rd Reconstruction Task Force (RTF-3).

As the sun rose over the stark mountains of Tarin Kowt on October 12, LTCOL Harry Jarvie, CO RTF 2, praised the men and women under his command for their achievements during the past six months, namely several major construction projects. These projects included medical centres, schools and bridges; projects that the Taliban were unable to stop with threats and at times, determined acts of violence – all beaten off by the Australian diggers. “Our soldiers are magnificent”, LTCOL Jarvie said.

After the passing of the banner between the CO and RSM RTF-2 to the CO and RSM RTF-3, LTCOL David Wainright, CO RTF-3, said the unit faced great challenges in the days ahead in working for the benefit of the people of Southern Afghanistan and

continuing on with the great work that had already been achieved by RTF-1 and RTF-2. “Our troops are focussed on the mission, they are ready and determined to make a difference for the better”, he added.

RTF-3 is made up of members from more than 20 units. The Task Force consists of a combined arms battle group consisting of armour, infantry and combat engineers with logistic and other specialist support. The goal is to ensure that every care is taken to provide troop protection during the conduct of reconstruction tasks.

RTF-3 is part of the Netherlands-led Provincial Reconstruction Team.

Acknowledgement: Information provided in this article was sourced from Ed 1178 of Army newspaper.

MAJ PAUL HAMPTON
Assistant Managing Editor

Regimental Sergeant Major of the 2nd Reconstruction Task Force (RTF-2), Warrant Officer Class One Noel Johansen lowers the RTF-2 flag for the last time at the Australian Forward Operating Base in Tarin Kowt during a handover ceremony from RTF-2 to the men and women in RTF-3.



Regimental Sergeant Major of the 3rd Reconstruction Task Force (RTF-3) Warrant Officer Class One, Terry Mckeown raises the RTF-3 flag for the first time at the Australian Forward Operating Base in Tarin Kowt during a handover ceremony from the men and women of RTF-2.



3rd Reconstruction Task Force to Assign Afghan Soldiers

Afghan soldiers are about to join the 3rd Reconstruction Task Force (RTF-3) in Oruzgan Province, Southern Afghanistan. They will wear the RTF badge and operate alongside the diggers during reconstruction tasks. To this end, several Afghan soldiers are undergoing initial assessment by the RTF and by the end of November 2007 ten of the best will be chosen to be 'badged' for service with the Aussies.

This program demonstrates a deliberate inclusiveness that is a feature of RTF endeavour in Afghanistan. Other examples range from the conduct of regular consultative *Shuras* (meetings), to projects that create local employment.

RTF-3 consists of a combined arms team deployed as a part of Operation Slipper and contains about 370 Australian Defence Force personnel predominately from Queensland-based units. The RTF has a clearly defined role to work on reconstruction, improvement of provincial infrastructure and community based projects. RTF-3 will continue to provide trade training to the local population and military engineering training to the Afghan National Army. This type of assistance is designed to benefit the people of Uruzgan Province well into the future and form the building blocks of a stable and prosperous community.

Acknowledgement: Information provided in this article was sourced from the Australian Government Department of Defence Internet Site.

MAJ PAUL HAMPTON
Assistant Managing Editor



AUSSIE PRIDE IN THE RECONSTRUCTION TASK FORCE

Well another early start this morning in Tarin Kowt, Afghanistan. I get to our plant yard a bit earlier than the other lads to light the pot belly and put a brew on. I greet the lads as they rock-up to work and we sit around the fire and wait for the morning orders.



I've been in country for a month now and we have found it very easy to settle into our new work environment, especially when we had such a good handover from the plant operators on the 2nd Reconstruction Task Force (RTF-2) rotation. The amount of work they put in to make the yard run just like home was an awesome effort, thanks boys.

In the past month we have been of recon patrols looking at jobs recently completed by RTF-2. We looked at areas where we could improve security by building strong points and checkpoints around the Uruzgan Province and we also carried out works at a local school, providing a new pergola and a swing set.

Once we finished the job we watched the kids go to town on the swing set. It gives you quiet a sense of pride knowing that you have

made about 50 kids happy with such little effort, a bit of sweat and a bit of cursing every now and again when things didn't go to plan, but it was all worth it.

We go about our daily business as if we were home and the only time the tempo picks right up is when we receive a warning order and we start to organise our gear for that mission. The accommodation is a bit tight but you get used to it pretty quick and you become close mates, if you know what I mean. The mess is not too shabby with three good meals a day but I still can't watch the Dutch eat raw fish on Sundays.

The passing of TPR David 'Poppy' Pearce was a tragedy. The deepest sympathy of everyone here goes out to his family and friends.

Our tour here so far has made me respect what we take for granted and nailed it home to me that we live in the best country. I'm proud to be an Australian and to be here to help people less fortunate than us, even though a certain group of them make it hard for us at times.

In the next five moths our boys will face harsh conditions and hard times but we have got a good group of lads with some great Aussie larrikins and I'm sure we'll support each other and be able to come home, proud of our efforts, to our loved ones.

LCPL ANDREW WALLER
Plant Section 2IC, 3rd Reconstruction Task Force, Afghanistan

THE MODULAR ENGINEER FORCE

The Australian Defence Force (ADF) in the last twenty years has suffered from the dynamic tension between continually evolving warfighting concepts and the task of developing and managing capability. Unfortunately, the development of Engineer Capability has not progressed in line with the other Combat and Combat Support Arms under the Hardened and Networked Army (HNA) program. There are two main reasons for this: the acceptance of risk in the areas of Engineering and Logistics while the HNA and Enhanced Land Force (ELF) were developed and the complexity of Military Engineering.

On 1 June 2007, the Army Capability and Management Committee endorsed the development of a Modular Engineer Force using a systems engineering approach. The force developed is to provide the capability required to support the ELF and an expeditionary Navy and Air Force that are capable of complex warfighting. The capability must also support the ADF concepts of adaptive campaigning and network centric warfare and the two principal Army concepts of manoeuvre operations in the littoral environment and complex warfighting.

Vision

The Royal Australian Engineers (RAE) Corps vision, ratified at the 2007 RAE Corps Conference, is:

Sappers adapt to, shape and fight as part of a Combined Arms Team to win in the contemporary operating environment.

The intent of this vision is for Engineers to be capable of conducting short-notice, combined arms tasks with an appropriate level of endurance. They must be able to move effortlessly between operations throughout the spectrum of conflict – from conflict prevention, to combat operations, to nation building activities.

They must be capable of leading combined arms teams and being organised into flexible structures that are tailored for particular roles and missions. To achieve this they require equipment and systems to provide protection and mobility, commensurate with the supported organisation. The capability needs to be optimised from the team level up to maximise engineer capability in the disaggregated modern battle space. Technological and informational dominance, coupled with sound tactics, will allow smaller engineer forces to achieve a greater effect.

The role of a Modular Engineer Force will be, ‘...to provide geo-

spatial, mobility, counter-mobility, survivability and sustainability support.’¹ Engineers in this force will be required to conduct their primary role in support of a combined arms team in a complex battlespace. These roles will be carried out concurrently at all levels of the operation and through the full spectrum of conflict. Engineer support will be required for close combatants, combat support elements and to the logistic components of

the force.

This capability requires the Engineer Force to be the masters of geographic information to: assure the mobility of the force, to deny freedom of manoeuvre to the enemy, provide advice on protection and to protect and sustain the force. This capability must be provided throughout the battlespace every day. Engineers may

also be required to conduct nation building, reconstruction and be the providers of humanitarian assistance on the same day in the same area of operations.

Engineers must be accustomed to rapid task organising in a fluid combat environment. Capabilities will be modularised and allocated in the right place at the right time and in the right numbers to influence the battle at that point. To achieve this capability, engineer planning capabilities are required at all levels of the force; providing engineer capability bricks at the required preparedness level. Engineers must be developed to be as capable as the combat arms manoeuvre commanders as Engineers will be required to lead combined arms teams in certain situations.

Modular Engineer Structures

There is a dynamic tension between modularity and flexibility; a fully modular force would be raised, trained and sustained and employed by capability brick. The shortfall of this approach is that some capability bricks will have limited utility for indigenous capacity building or may be required for indigenous capacity building, but will have little relevance during joint land combat. Therefore, the optimal solution is a force that is modular and scalar in nature but contains enough of a capability/skills mix to make it flexible.

The tension between flexibility and modularity is only one part of the issue in relation to designing a Modular Engineer Force. The key enabler for modularity is centralised planning and as such the current Army, and Defence, structure does not support a modular engineer capability. As a result, Combat Engineer Regiments must be able to conduct manoeuvre support operations, horizontal and vertical construction and specialist engineering tasks because there

The engineer element of the force will be modular and scalar in construction and force packages developed to support the independent battle group operations.

are no planning capabilities able to move scarce engineer assets around the battlespace. This results in specialist engineering assets being either under or over utilised or used for tasks outside of their specialisation.

Suffice to say, at this point, to effectively and efficiently provide engineer support, centralised planning must occur, whether this occurs under a centralised command architecture is a mute point. Whatever the command and control arrangement, the Modular Engineer Force required by the ADF is the optimisation of the dynamic tension between flexibility and modularity, balanced by centralised planning.

The Modular Engineer Force will be based on a skill basis that addresses the engineer support required by the ADF. The structure will have three components:

- *Regular Army.* A regular army component based on a primary skill basis.
- *Reserve Component.* A reserve component of the force will be based on those capabilities not prioritised as primary skills but still required for engineer support, or skills to provide scalability in application by the ADF.
- *Contractor Support.* The contractor support component of the force should be based on those capabilities not provided by either the regular or reserve components but classified as still required for engineer support by the ADF. For example, long-term camp construction or line-of-communication bridging through a pre-existing contract.

Development

The development of an engineer force capable of supporting Defence as it transitions cannot be achieved unless significant investment occurs in the capability. The development of a Modular Engineer Force is predicated on the establishment of a centralised planning capability with appropriate command and control. This will provide an increase in engineer capability through releasing duplicated assets and ensuring the correct asset is assigned to each task. The structural change to support this capability could be achieved in a relatively short timeframe; however, the major capability increases can not be achieved unless manpower offsets can be gained through future equipment purchases. This will enable smaller engineer organisations to achieve the same or greater engineering effect than those in the current force.

Equipment capabilities that will be investigated during the de-

velopment of the Modular Engineer Force include, but are not limited to:

- armoured combat engineer system, including under armour obstacle and explosive hazard reduction vehicles;
- attachments to allow every engineer vehicle to have an engineering effect in the battlespace;
- protected mobility commensurate with the supported force; and
- a Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) capability to support operations.

The Modular Engineer Force development timeline is outlined at Table 1.

Conclusion

The engineer element of the force will be modular and scalar in construction and force packages developed to support independent battle group operations. In certain circumstances the Engineer Force will form the command element of a combined arms battle group where nation building activities are the pre-eminent task. These tasks will support a range of military operations including warfighting, support and stability operations.

These structures will allow rapid grouping and regrouping as missions change. The principle of centralised planning and decentralised execution is paramount to the successful development and employment of the Modular Engineer Force. Centralised planning at the highest appropriate levels must be achieved and underpinned by developing commanders at all levels that are comfortable with, and well practiced in, the art of mission command.

To achieve this, the Engineer capability will be developed as a system and major investment must occur to deliver this capability. No longer can the ADF allow its engineering capability to develop in isolated components - to do so risks the capability of the force as a whole.

Note.

1. *LWPG 3-6-1 Employment of Engineers.* P1-1.

LTCOL CRAIG JOLLY

Staff Officer Grade One Chemical, Biological, Radiological, Nuclear and Explosive, **Preparedness and Plans - Army**

Date	Event	Responsibility
Sep 07	Systems Engineering Commences	CDE/SO1 CBRNE
Dec 07	Experimentation models endorsed by RAE Corps Capability Committee	FDG
Mar 08	Experimentation	FDG
May 08	Adjusted models and initial Capability Development Statement (ICDS) endorsed by RAE Corps Committee	FDG
Jun 08	Interim workforce plan modelling	AHQ
Aug 08	Interim force structure and ICDS to ACMC	AHQ/FDG
Feb 09	Force Options Testing (final hurdle prior to Capability Development Plan Update)	FDG/CDE
Apr 09	Finalisation of posting planning cycle for Jun 10	AHQ
Aug 09	Defence Capability Plan Update - Development Endorsed by Defence for DCP 2010/2020	AHQ/CDE
Jan 10	Raising of new units - postings	RAE
2017 on	Equipment capabilities introduced into service	CDE/DMO

Table 1. The Modular Engineer Force Development Timeline

1st COMBAT ENGINEER REGIMENT



2007 began as 2006 had finished. Approximately one-third of 1st Combat Engineer Regiment (1 CER), including most of RHQ, a composite squadron based on 9th Field Squadron (9 Fd Sqn) and a large slice of Operations Support Squadron were breaking ground, in more ways than one, in southern Afghanistan as the 1st Reconstruction

Taskforce (RTF-1). The Regiment (-), back in Darwin, was gearing up for yet another busy training year.

MAJ Robert Cox, outgoing OC 1st Field Squadron (1 Fd Sqn) and 1 CER Administrative Commander since November 2006, had a delayed march-in to Combined Arms Training Centre, in order to provide continuity of command until MAJ Michael Say assumed command in March.

Despite 1 CER having significant personnel shortages, the tasking from, and the expectations of higher, did not let up. Accordingly, 1 Fd Sqn under CAPT Micka Dreu and what was left of 23rd Support Squadron (23 Spt Sqn) under MAJ Edward Plant, continued to provide comprehensive Engineer capability to 1st Brigade (1 Bde). While MAJ Say and a significantly depleted RHQ fought the good fight that thankfully only staff officers have to contend with. It is testament to their efforts that 1 CER was in such good shape when the RTF-1 personnel returned. While many contributed to this success and punched significantly above their weight, a few should be mentioned for their dedication and tireless efforts. CAPT Geoff Elford (acting S3); WO2 Kel Eaton (acting RSM); WO1 Wes Snowden (RQ); and SGT Graham Sergeant (FIN SGT) were pivotal in the successes achieved by 1 CER (-).

The first hit out for the year was Exercise Southern Reach 01/07. 1 Fd Sqn deployed south to Cultana Range in South Australia. This exercise continued in phases from February to May 2007 with 1 Fd Sqn conducting both mounted and dismounted operations. The Squadron also conducted a number of demolition tasks.

Exercise Goanna Shoot was next on the agenda with 1 Fd Sqn conducting small arms qualification shoots, including LF6 and 9mm SLP qualification. The ranges ran very smoothly with a number of impressive scores recorded.

Exercise Predators Gallop 07 once again saw 1 CER out in the field. Combined Arms Breaching was the main focus of the exercise, which also encompassed a number of live demolition breaches in a Combat Team/Combined Arms environment. However, the highlight of the exercise was undoubtedly, from an Engineers point of view, the counter-mobility trials for the M1A1 Abrams tank. The task was for the M1A1 tank to breach a standard anti-tank ditch constructed by 1 CER. With an anti-tank ditch complete and with plenty of interested onlookers present, an M1A1 tank from 1st Armoured Regiment (1 Armd Regt) attempted to breach the obstacle. Unfortunately, the tank failed to breach LT Murray's anti-tank ditch. However, it was an excellent test for the Hercules recovery vehicle to practice dragging an M1A1 tank out of trouble.

The serious side to this, however, is that Army has a significant capability deficiency, despite having the world's best tank. It doesn't matter how well you can fight if you can't get to the fight. This simple tank ditch highlighted yet again, Army's deficiencies in armoured mechanical reduction, armoured assault bridging and armoured breaching capabilities. As a picture speaks a thousand words, LT Murray and his Troop's AT Ditch have been shown to all

and sundry. Indeed, CO 1 CER presented a framed photo of this event to the Chief of Army (CA). CO 1 Armd Regt, COMD 1st Bde and Commander 1st Division are but three of the proponents supporting 1 CER having an armoured breaching capability, such as the USMC Armoured Breach Vehicle.

Exercise Goanna Bridge (May 2007) was the testing and evaluation of a dual-lane Fixed Modular Bridge (FMB) – the first time an FMB of this configuration had been built in Australia. After some initial training, the soldiers got into the swing of things. Once completed, the bridge was tested with the heaviest vehicles 1 Bde could provide – a 60 tonne M1A1 Abrams tank and then a Heavy Tank Transporter with an M88 Hercules recovery vehicle, a combined weight of 98.6 tonnes.

With the return of RTF-1 to Australia, the reintegration back into 1 CER was now the priority, with individual skill and promotion courses for returning personnel a key aspect. The business of readiness was focal with Army Individual Readiness Notice compliance, post deployment compliance and equipment remediation consuming significant effort. Equipment remediation included the re-issuing of 'moth-balled' equipment to 9 Fd Sqn and replacement of equipment transferred to RTF-1. With minor exception, the replacement of engineer equipment is complete, although the all corps side of the house, in particular communications, will take more time. Returning personnel also placed significant effort into ensuring their experience and lessons learnt were passed on. This includes continuing to think outside the box with respect to equipment development. The CO and others have been on the road, particularly in support of RTF-3, and all participated in the CA's Lessons Learnt Seminar.

Just as RTF-1 personnel were settling back in, 23 Spt Sqn was preparing to deploy on RCB 79 in late August. For command and control, administrative and training purposes, they were amalgamated to form 9/23 Sqn. The Squadrons will reform upon the return of RCB 79 to Australia on 12 November 2007.

With RCB 79 out the door, the regimental priority shifted to 1 Fd Sqn's deployment back to CUTA for September, as part of the Combat Training Centre Heavy Rotation (CTC Hy). 1 Fd Sqn provided both BlueFor and OpFor engineers with 1 Armd Regt and 7th Battalion, The Royal Australian Regiment respectively. The remaining tradies and planties constructed two urban villages, prior to the exercise commencement, which were pivotal to the exercise's success. The planties showed that a little bit of diesel can stop an Abrams tank.

With horizontal support to CTC Hy concluded, the remaining planties recommenced work on The Driver Training Area (DTA). In April this year, JRAC completed a section of road as part of their shake-out exercise. Before the wet season hits again, 1 CER will complete drainage for this section of road, stockpile maintenance materials and continue with construction of the ASLAV Obstacle Lane. The DTA is a significant project that has been ongoing for three years. With 1 CER's continued operational commitments, its completion is still a number of years away. Accordingly, any unit (ARA or GRes) looking for horizontal construction work for a plant section or greater should call our XO or S3 and they will provide the detail.

Throughout the year, 1 CER supported numerous collective support tasks that included two planties to Army Aboriginal Community Assistance program 2007, two divers to 3rd Combat Engineer Regiment's for an underwater recovery task in the Solomon



Islands and a total of eleven individuals to RTF-2, Special Operations Task Group, Overwatch Battle Group (3) and Operation Catalyst. Late in the year, the 1 CER deployed a small team to undertake a clearance task in the Solomon Islands. In 2007, 1 CER deployed 123 personnel to the Middle East Area of Operations, 79 to RCB and seven to other parts of the world, for a total of 209 deployed. Not bad for a Regiment of 402. Undoubtedly, a similar deployment commitment will be met next year.

Despite these significant deployments, 1 CER continues to plan for the future in order to meet the known challenges and continues to shape the development of mechanised engineers. Planning for the transition from M113 AS1 to M113 AS4 in 2009 and the move of 9 Fd Sqn to South Australia in 2011 is well underway. Development priority remains with putting a machine between the threat and the man, with particular focus on:

- an armoured breaching capability;
- a protected route clearance capability;
- sufficiently protected mechanised vehicles for Sappers and our equipment (unlike the A1, the M113AS4 has no internal storage bins for engineer equipment and tools); and
- an ability to conduct engineer recon by remote means, including robots and UAVs.

If Engineers are to keep up with and credibly contribute to the Enhanced Land Force, all of these issues must be addressed and implemented.



Top Left: 1st Field Squadron conducted mounted and dismounted operations at Cultana Range, South Australia during Exercise Southern Reach in January 2007.

Left: An M1A1 Abrams tank was no match for 1st Combat Engineer Regiment's anti-tank ditches during counter-mobility trials for the tanks.

Below: An M1A1 Abrams tank is guided across a dual-lane, Fixed Modular Bridge during load testing. The bridge was built by 1st Combat Engineer Regiment during Exercise Goanna Bridge in May 2007.



SAPPER SITREP

2nd COMBAT ENGINEER REGIMENT



In September 2006, 2nd Combat Engineer Regiment (2 CER) and the 2nd Reconstruction Task Force (RTF-2) separated to allow the Commanding Officer, LTCOL Harry Jarvie, to concentrate on raising and training elements of the RTF-2 for deployment to Afghanistan in early 2007. The remaining portion of the Regiment, under command of MAJ Mark Griffiths, continued to operate with 50 full-time, 130 Reserve members and our civilian registry clerk. During the 18 months that it has operated, 2 CER (-) has gone through a dramatic change of circumstances. The major change has been the reinvigoration of 2 CER under the Enhanced Land Force II (ELF II) review. The unit will see a growth in full-time members, retain its Reserve sapper components and increase equipment holdings over the next six years. The unit establishment review was conducted during May 2007 and required 2 CER to set upon a growth path that will culminate in 2016.

The 2 CER of the future will have two full-time Engineer Squadrons, Reserve Engineer Squadron, Support Squadron, Operational Support Squadron and Regiment Headquarters. The approximate total will exceed 500 full- and part-time personnel based in Brisbane.

To cope with the growth of 2 CER, preliminary planning for ELF II was undertaken in July of 2007. The initial facilities planning conference with the ELF II team envisaged a major revamp of facilities at 2 CER to cope with the increase in full-time members and equipment.

The proposed facilities will incorporate the latest technology, provide accommodation for sub-units and dedicated Engineer training facilities. 2 CER is also well advanced with planning for receiving Land 144 Countermine Capability equipment in the near future.

Reserve members of 2 CER have filled a large number of positions during the past 18 months to ensure that the unit could respond to operational requirements, meet governance directives and provide training as required to 7th Brigade (7 Bde) units. LT Geoff Small and his team conducted the IET training for modules 2 and 3 and produced 18 qualified sappers for the Regiment. The majority of the sappers filled positions in 2 CER's on-line capability for 7 Bde to an exceptionally high standard. Several of the Reserve sappers have applied to transfer to the full-time component, with one member accepted to RMC for the January intake.

During the year, 2 CER supported Mission Rehearsal Exercises and Reserve Response Force training for 2nd Division units 9 Battalion Royal Queensland Regiment and 25th/49th Battalion Royal Queensland Regiment. Support to the School of Military Engineering was also provided by WO2 Paul Niven and WO2 Brian McGrath to assist with the rewrite of new Initial Employment Training packages. Recognition of WO1 Col Ruddy, QM 2 CER and WO2 Jamie Elliot, RQMS is also required for the outstanding effort that they have provided in managing 2 CER's Q account during 2007. Three other unit members deserving of special mention for their support to the CO are CAPT Brad Willis, OPSO; WO2 Gary Findlay, acting RSM; and MAJ Craig

Bryan, XO and RTF-2 Welfare Officer.

In 2008, LTCOL Joel Dooley will take over as Commanding Officer of 2 CER. LTCOL Dooley will accept the challenge of growing 2 CER over the next few years. This will be a change of pace from his previous duties as the Director of Military Arts at the Royal Military College Duntroon.

11th COMBAT ENGINEER SQUADRON

11th Combat Engineer Squadron (11 CES) has had a large proportion of the ARA staff deployed on the RTF-2 to Afghanistan. MAJ Mark Griffiths has held the ship together in the absence of LTCOL Harry Jarvie. As the unit continues to rebuild and grow under the Hardened and Networked Army initiative, 11 CES has pushed on with their training as one of the few remaining 1st Division Reserve units. Recent training activities have included minor construction tasks, minefield breaching, infantry minor tactics and demolitions.

On the weekend of 12-14 October 2007, sappers from 11 CES deployed to Wide Bay Training Area for a demolitions practice. The focus was on improvised cutting, breaching and entry techniques. A number of serials were undertaken, culminating in specific pressure and resistance based testing of a newly developed Sealock Door. This task was conducted in conjunction with a number of defence security and civilian organisations and demonstrated the significant capacity of our Reservists in working with the civilian community.

The weekend gave rise to a number of issues that will be recalled for many years to come. One issue included the quick thinking fire fighting efforts led by the Safety Supervisor after the range was set alight during one of the serials. Another issue related to a call over the range radios from 25/49 RQR who were conducting an independent Sustained Fire Machine Gun and 84 mm Short Range Anti-Armour Weapon practice. They were seeking a pair of crimpers for a red-faced DMEO operator who missed this aspect of their planning. These were delivered in a happy and helpful manner and will be remembered for all the right reasons.

All nature of targets were destroyed on the weekend but not as much as the vehicles on the trip home. The green fleet convoy was given an opportunity to demonstrate their driver skills in rectifying faults, replacing tires and cross loading vehicles.

The weekend ended late with a few laughs at the Sporties and administrative headaches for the Transport Supervisor and 2IC with trailer loads of paperwork.

Future activities for the unit will include watermanship over the full length of the Brisbane River and the annual section competition.

SAPPER SITREP

4th COMBAT ENGINEER REGIMENT

4 CER

During 2007, 4th Combat Engineer Regiment (4 CER) widened its range of experiences which were gained through collective training activities and the individual deployment of our members in support of operations and other exercises.

The 2007 training year commenced with junior NCO training. This essential activity laid the foundation for good leadership at the section level that stood the unit in good stead with later activities. This activity was followed by a watermanship training weekend at Newborough which provided a highly enjoyable opportunity for members of the unit to renew their watermanship, navigational skills and team work. With these two activities concluded, it was time for the regiment to concentrate on the other capabilities that make us sappers.

Exercise Platypus Burrow was aimed at enhancing the Regiment's ability to provide force protection and conduct search tasks within an urban environment. This exercise spanned a two-month period which involved a pre-deployment training weekend followed by a tactical field exercise utilising some of the urban facilities at Puckapunyal. The exercise tested the chain of command in their ability to employ their call-signs, as well as the sappers on the ground engaging in construction and search tasks. The exercise highlighted the leadership ability of our junior leaders and the enthusiasm of the sappers.

After the Regiment was trained and efficient on search techniques, the training focus shifted to demolitions and skill at arms. Exercise Platypus Break was designed to practice our soldiers in these areas over a two-month period. The exercise culminated with a demolitions range practice, rifle range practices and the refurbishment of a number of culverts.

This proved to be a demanding exercise for the soldiers and provided them with valuable experience.

July was an exceptionally busy month for 4 CER with the unit running an Initial Employment Training (IET) Module 2 course in addition to a training weekend. The IET Module 2 course proved to be demanding on the training staff, many of whom had worked a series of weekends prior to and after the course. Never-the-less, the course manager and instructors ensured that the instruction delivered was of the highest quality. Members of 4 CER also provided battle noise simulation (BNS) support to Royal Military College Duntroon at this time. This proved to be a very demanding activity with significant time constraints that had the supporting members working very long hours. The support provided was of a very high standard and those involved should be justifiably proud of their efforts.

The July training weekend, Exercise Sapper Challenge, was the Regiment's annual section competition. This year, it was conducted at Toolangi State Forest with the sections visiting a series of stands designed to test their basic soldier skills. Toolangi State Forest provided a stunning setting for what eventuated as a physically and mentally demanding exercise. A number of 4 CER members also deployed to north Queensland in July to support the Operation Anode Mission Rehearsal Exercise (MRE). This proved to be an insightful opportunity for our soldiers to engage in role-playing and participate in the type of scenarios that are associated with an Area of Operation like the Solomon Islands.

The Regiment then commenced preparation for the upcoming annual field exercise. This kicked off with a battle-preparation training weekend in August which saw the deployment of the unit to Puckapunyal. Centralized control and de-centralized execution ensured the chain of command was busy controlling a unit that



was spread over a wide area and conducting a wide range of activities. It was at this time that CPL Oakley deployed in support of Operation Deluge and SPR Bonjui provided linguistic support for a number of MREs.

The next task for the unit was to provide BNS support to the School of Armour for Exercise Chong Ju in August. The BNS throughout the exercise greatly enhanced the overall effect of the firepower demonstration. The director of the practice was very happy with the conduct of the BNS and this support has been requested from 4 CER for the next Exercise Chong Ju.

With the August training weekend end-state achieved, the unit now looked ahead to the busiest and most challenging period for 4 CER: the conduct of the annual field exercise concurrent to the running of an IET Module 1 course. With the RSM as the course leader, the IET Module 1 course commenced in Newborough, with the latter part in Ringwood East. The successful conduct of this course ensures that our unit contributes to reducing the IET training liability for 2 Div RAE units. And with many of the students being from 4 CER, this also provided a good opportunity for our staff and soldiers to build on their relationships. It was also at this

time that SPR Dymock deployed to the Northern Territory on Operation Outreach and CPL Seccull deployed to Papua New Guinea with 3rd Combat Engineer Regiment on Exercise Puk Puk. The ability of our soldiers to support these operations, even for short periods of time, again highlights the relevance and importance of this Regiment in supporting the wider Australian Defence Force.

The annual field exercise commenced in Ringwood East with water supply training before moving to Newborough for watermanship training and field machine construction. The Regiment then deployed to Puckapunyal for the construction of a company defensive position prior to integrating with 8th/7th Battalion, The Royal Victorian Regiment for their annual live fire exercise (LFX). This saw our sappers working alongside the infantry in sneaker ranges, section attacks and platoon defensive shoots. 4 CER also provided BNS for the duration of the LFX.

Members of 4 CER have gained a considerable amount of experience across the span of training activities conducted this year. Congratulations to the members who were promoted and received medals and well done to those members who provided support to operations and exercises this year.

SAPPER SITREP

5th COMBAT ENGINEER REGIMENT

The challenges for 5th Combat Engineer Regiment (5 CER) in 2007 have been many and varied. From providing support to operations, conducting recruit, initial employment training (IET) and trade training and conducting the normal exercises and activities required to maintain our capability readiness. The brigading of support staff to meet the 2nd Division 'Project Focus' initiative has also affected the unit's ability to meet its endstate.

This year 5 CER members supporting the following operations: Operation Outreach, Operation Deluge, Exercise Puk Puk, Army Aboriginal Community Assistance Program 2007, Rifle Company Butterworth and Operation Resolute. All the members that deployed on these operations made important contributions and the various operations provided the members with significant valuable knowledge and experiences that collectively increased the unit's capabilities. All participants are to congratulate for their outstanding efforts.

The focal point of the unit was the conduct of the annual field exercise (AFX) during 24 August to 9 September 2007. The AFX utilised the Penrith Training Depot, facilities at the School of Military Engineering and the Holsworthy Training Area. Attendance at the AFX was down on previous years mainly because of the concurrent support the unit provided for Operation Deluge and Operation Outreach. Nonetheless, there were sufficient attendees to conduct a successful IET Module 4 course and provide chemical, biological, radiological and nuclear defence (NBCD) training for 200 members involved in Operation Deluge. Unit members received training in: infantry minor tactics, engineer search, CBRND, water supply, field machines and field defences, a demolitions and range practice. General comments from the unit members was that it was the best AFX in years because it had been a long time since they had practiced some of these basic engineer skill-sets.

In addition to the AFX, the unit conducted a number of training courses throughout the year. Some of the training included: RRF Operator/Commander course, IET Module 1 course, driver training, and CBRND Assistant Instructor and Operational User courses.

The unit achieved its Ready Reaction Force requirements for 2nd Division with 32 personnel qualified. We are continuing to develop our High Readiness Reserve component and we currently are able to provide a Troop HQ and a section plus of qualified personnel.

Sapper Albert Wang from 5th Combat Engineer Regiment and Private Matthew Chandler from 16th Royal Western Australian Regiment conduct low-risk search at Sydney Town Hall during Operation Deluge.



SAPPER SITREP

8th COMBAT ENGINEER REGIMENT



For 8th Combat Engineer Regiment (8 CER), 2007 can be summed up simply: meeting the challenges and accepting change. Towards the end of 2006, it was realised that to successfully meet the challenges facing the Army Reserve, 8 CER would need to step back and have a long, hard look at the way we did business. The Regiment has

dedicated personnel with the right attitudes. This *esprit de corps* remains at our core, but our processes and approach to training had to change.

The challenges facing the Army Reserve, that 8 CER continues adjusting towards, are:

- How do we grow and skill our NCOs?
- How do we improve our all corps soldier skills while maintaining sapper skills?
- How do we meet the requirements of the High Readiness Reserve (HRR) and the Reserve Response Force (RRF)?
- How do we transition our training force into capability more efficiently?
- How do 2nd Division collective RAE units train their IETs?
- Recruiting is fine, but what about retention?
- How do we manage the effects of Project FOCUS (centralisation of the Brigade's logistic and admin assets into a Brigade Operational Spt Coy)?

These questions are not unique to 8 CER but they do highlight the challenges faced by the Army Reserve in meeting specified missions and capability. Although there is more being asked of the Army Reserve, 8 CER personnel remain positive and proud of the fact that the Army Reserve is allocated real-time missions and tasks that offer deployment within and outside of Australia. When these opportunities are coupled with the recent and favourable changes to the combat engineer training model, the purpose of the Army Reserve is now about doing the job well in areas in which our expertise exists and our training time allows. No longer is it about what the Army Reserve cannot do, our approach is about what we can do and how well we intend to do it.

The Regiment has adapted to these changes and continues to develop the broad range of sapper skills through diverse weekend activities including demolitions; bridging; reconnaissance planning and conduct; engineer search; chemical, biological, radiological and nuclear defence training; combat engineer equipment as well as infantry minor tactics and urban operations. There has been an increased emphasis on live-fire shoots to further develop the battle shot and section level operational skills. With these ongoing, the Regiment has also provided support in 2007 to the following 8th Brigade, Logistics Command - Army, and Training Command - Army activities:

- Emergency support to the Victorian bushfires and Hunter Region floods.
- Provision of 17 personnel to Rifle Company Butterworth 80.

- Deployment of five personnel to Army Aboriginal Community Assistance Program 2007 (Doomadgee, Queensland) positioned in the training team and undertaking development/mentor roles.
- Provision of 25 personnel to Operation Deluge.
- Conduct of two 8th Brigade RRF courses, an RRF callout exercise, and administering the 8th Brigade RRF mission.
- Operation Resolute.
- Module One Combat Engineer Initial Employment Training (IET) course.
- Driver Training Officer, C2, and MR2 course.
- Single Code Plant course.
- Coach course.
- Instructional and specialist skills support to the School of Military Engineering and other Royal Australian Engineer (RAE) units.
- Qualified Assessor course.

Recruiting still remains a hallmark for 8 CER with enlistment figures exceeded once again and the success of the 'Try Before You Buy' program. Retention continues to improve along with a steady flow of good quality people transferring to the Australian Regular Army ~ seven to date. The reduction of the pre/post recruit training gap, dating back to September 2004, is ongoing but has been reduced significantly through a systematic approach. So far in 2007, 8 CER has conducted this training for 190 soldiers allowing them to progress onto IET courses.

With the lack of available positions on Training Command - Army conducted IET courses for Army Reserve soldiers, 2nd Division RAE units have united to address our own IET training shortfalls in a collective and cooperative approach. The success of this has already paid dividends with increased attendance on courses and an even workload across all units with instructional responsibilities.

The year will end with us farewelling some dedicated and long standing supporting Corps personnel from Royal Australian Electrical and Mechanical Corps, Royal Australian Army Ordnance Corps, and Australian Army Catering Corps along with the disbandment of 26th Support Squadron because of the Project FOCUS restructure. In 2008, 8 CER will be allocated RAE Corps specialisations in engineer search and water purification and further refinement of the Army Reserve sapper and HRR sapper roles. The Regiment looks forward to 2008 with the intent of building on the successes of 2007.

SAPPER SITREP

6th ENGINEER SUPPORT REGIMENT

6 ESR

2007 has proven to be a demanding yet highly successful year for the 6th Engineer Support Regiment (6 ESR). Commanded by LTCOL Stuart Yeaman, 6 ESR is a direct command unit of 1st Division. 6 ESR supports every element of the Division with the Regiment's role to deliver combat capabilities in a variety of trade specialisations

and fight as a combined arms team across the battlefield. Along with the trade specialisations, 6 ESR achieves its role with the use of integrated high technology equipment and methods as part of the Army's hardened and networked capability.

6 ESR has deployed personnel and formed bodies on all major operations overseas including a substantial deployment from 21st Construction Squadron for the 2nd Reconstruction Task Force and individual deployments on Operation Slipper, Operation Catalyst and Operation Astute. The Explosive Hazards Centre, which is at the cutting edge of defeating Army's greatest modern threat, the improved explosive device (IED), provided endless training to those deploying on operations. Closer to home, 6 ESR provided support to Operation Deluge, Operation Outreach and maintained the Domestic Incident Security Force (DISFOR) capability

on 24 hours notice to move for emergency response.

While the HQ conducted the usual command activities for the sub-units of 1st Topographical Survey Squadron, 17th Construction Squadron, 21st Construction Squadron and the Army Explosive Hazards Centre, the highlight for HQ was the Joint Rapid Airfield Construction (JRAC).

Joint Rapid Airfield Construction

"The best unsurfaced airfield I've ever landed on" are the kind of words you want to hear from the C-17 aircraft pilot on the opening day of the 'Nackaroo' airfield.

Joint Rapid Airfield Construction (JRAC) brought together Australian and United States of America Defence Force Personnel to construct a C-17 aircraft capable airstrip in the Bradshaw Field Training Area (BFTA). It all started on 2 June 2007 with the first clearing and grubbing of open land. Moving very quickly, on the evening of 16 June the last of the screened material was placed and compacted.

In 14 days, using cutting edge technology, the plant and heavy equipment operators carved and shaped a runway, complete with turnarounds, capable of sustaining C-17 operations. To achieve this feat, 215 sappers, soldiers, sea-bees, airmen and marines weaved their magic on Australia's newest range, BFTA.

Work begins on the Joint Rapid Airfield Construction project which brought together Australian and US Defence Force personnel to construct a C-17 aircraft capable airstrip in the Bradshaw Field Training Area.





A C-17 aircraft lands on the newly constructed airfield at the Bradshaw Field Training Area.

Unprecedented wet weather in the middle of the dry season affected the final stage of construction. The JRAC phase of the project was completed in a hectic 72-hour period. The taskforce conducted 24-hour operations and constructed two aircraft aprons and stabilised taxiways. In 16 days the taskforce had imported 40,000 cubic metres of screened material to construct the C-17 certified, 1,250 metres long, maximum on ground (MOG) 3 airfield. The finale was the landing of two C-17s on the newly constructed airfield. The JRAC successfully demonstrated that rapid airfield construction is a viable capability within the Australian and US Defence Forces.

Junior Commander Training

A highlight for the RSM, WO1 Michael Kerr, was the Junior Commander Training which aimed to develop the Senior Sapper and the Junior NCOs in the Regiment. The training was conducted at the Glasshouse Mountains and Canungra. The RSM gleefully put soldiers and junior commanders through both physical and mental challenges, which all participants successfully met.

ARMY EXPLOSIVE HAZARDS CENTRE

Having operated now for 18 months, the Army Explosive Hazards Centre (ExHC) has continued to operate at a high tempo during 2007. The ExHC's mission is to provide explosive hazards and electronic counter measures advice and training IOT to reduce the risk of casualties and enable forces to prepare for and operate effectively in a threat environment. An important step forward for the ExHC in 2007 has included the manning of a full-time Royal Australian Signals Corps Electronic Counter Measures (ECM) instructor into the ORBAT. WO1 Colin Spiers is one of only a handful of ECM instructors in the Army who is conversant with current ECM

equipment and tactics techniques and procedures (TTPs). WO1 Spiers has done a great job in developing and delivering the ECM training this year.

In fulfilling its mission, the ExHC provides explosive hazards awareness training (EHAT) and ECM training in three specific formats; at 39th Personnel Support Battalion, large contingent training and specialist training.

Support to 39th Personnel Support Battalion

The ExHC provides a series of EHAT theory presentations as part of the five-day, 39th Personnel Support Battalion (39 PSB) conducted, Force Preparation Course (FPC). These presentations are conducted by the ExHC's Sydney based detachment, led by WO1 Joe Cochbain. Each presentation is mission specific, reviewed weekly and incorporates the latest information and intelligence in order to ensure technical accuracy and relevance to those deploying. In 2007, the ExHC has delivered 55 EHAT presentations in support of 39 PSB FPC.

Support to Contingent Training

The ExHC has continued to support contingent deployments in 2007. These include the Security Detachment (SECDET) in Iraq, Over Watch Battle Group - West (OBG(W)) and the Reconstruction Task Force (RTF) in Afghanistan. The training format is different to that of the FPC because of the numbers of personnel involved and the missions being undertaken by these contingents.

Support to the contingents is usually conducted as part of the contingent's lead-up and individual training phase. The EHAT conducted by the ExHC for contingents is more practical than theoretical and conducted as a 'bullring', focussing on mine warfare training, counter IED (CIED) training, unexploded ordnance (UXO) and ECM. Like the training conducted at 39 PSB, each

aspect of this practical training is tailored specifically to suit the contingents ORBAT, mission, Area of Operations and enemy threats and TTPs. Training is conducted in the contingent location by four ExHC personnel, usually over a three- to four- day period. Logistically, support to contingents is large with the ExHC shipping its own training aids to assist the training. This year, the ExHC has conducted EHAT contingent training for SECDT 9 to SECDT 12, OBGW (2) to OBGW(4), RTF-2 and RTF-3.

Specialist Explosive Ordnance Disposal Training

Continuing from its initial success in 2006, the ExHC has further developed and delivered two more Explosive Ordnance Disposal (EOD) Technical Mission Rehearsal Exercises (MRE) for the EOD teams of RTF-2 and RTF-3. This training, specifically developed to provide an opportunity for the RTF EOD teams to refine their EOD skills and TTPs prior to deployment, is conducted at the Woomera Test Firing Range. This area provides an excellent training environment as it replicates the types of terrain features utilised by opposition military force (OMF) elements, is remote, rugged and harsh on both equipment and personnel. Along with the employment of a dedicated ExHC 'Red Force' and functioning (replica) IEDs and explosive hazards, these factors allow the ExHC to generate a realistic, stressful threat environment which proved ideal in preparing the EOD teams for their mission in Afghanistan.

Observer/Trainer Support to Combat Training Centre

The Combat Training Centre (CTC), as part of the Force Preparation continuum for contingents, conducts MRE as a final confirmation of the contingent's preparation and readiness for their mission. The ExHC has developed a close relationship with staff of the CTC and provides Explosive Hazards Observer Trainers to each MRE. The ExHC's mission during the CTC MRE is to generate realistic explosive hazards threats and effects and then evaluate the reaction and drills conducted to counter these threats. The ExHC does this by employing known insurgent and OMF TTPs and utilising a range of explosive hazards training aids, including IEDs and landmines, simulators and explosive charges. As with the contingent training, support to the CTC is time, equipment and manpower intensive with the three ExHC personnel usually required to support the CTC.

Unit Explosive Hazards Awareness Instructors Course

A new initiative, developed by the Army ExHC in 2007, has been the unit Explosive Hazards Awareness Instructors Course. The requirement for the course was identified by the ExHC staff as a key element to inculcating an explosive hazards awareness culture within Land Command and the wider Army. Essentially, soldiers should not have to wait to be deployed to receive this training. The ability to recognise and react to the threat of explosive hazards should be a skill set learned and practiced by all soldiers, the same as firing a weapon, field craft, navigation and first aid.

The aim of the course is to train selected personnel in the full spectrum of explosive hazards (explosive ordnance, UXO, IEDs, landmines, booby traps and indirect fire) and counter-measures to enable them to provide generic EHAT within their units. The course focuses on teaching the principles and fundamentals of explosive hazards but, importantly, draws on the operational experience of the students themselves, to ensure it is delivered appropriately to their respective units.

The first course was developed and conducted by the Army ExHC, as a directed HQ 1st Division task, during 28 May to 8 Jun 07. The course panel of 15 was filled by 7th Brigade units and was very well received. As a result of this initial success, the ExHC will be conducting another course in early November.



Army Explosive Hazards Centre conducting EOD training at Woomera

The hard work in developing and conducting the course was all worth it when the ExHC received a congratulatory letter from the Chief of Army, General Peter Leahy.

EHAT and ECM In-theatre Validation Trip

In February, the OC and OPSO of the ExHC conducted an in-theatre EHAT and ECM validation in Iraq and Afghanistan. The timing of the validation was important as this was the first opportunity where all Australian forces in theatre had received formal EHAT and ECM training, conducted by the ExHC prior to deployment on their mission. The key aims of the validation were:

- To view and gain an appreciation of the Area of Operation and the individual locations where Australian forces are operating, to inform both trainers and training.
- To view pre-deployment training conducted in Kuwait to assist in shaping pre-deployment training conducted in Australia and to reduce duplication.
- To obtain direct feedback and validation from Australian personnel at all levels, operating in the MEAO on the relevance, usefulness and accuracy of the EHAT they received prior to deployment, in order to inform and shape future training and doctrine.
- To gather pictorial and written data for use in presentations and publications.
- To give trainers a degree of theatre credibility when delivering the subject.

The validation was conducted in location with SECDT 9, OBG(W) 2 and the RTF-1 contingents. The validation sessions lasted 60 minutes and included sessions with soldiers in section groups, senior NCOs and warrant officers, the Contingent Command team and soldiers from the logistic elements supporting these missions, with each group providing unique and valuable feedback. Being in location provided opportunities to experience the contingent's daily operational tempo and the explosive hazard threats they face and view continuation training being provided either internally or by other coalition forces.

Importantly, the outcomes of the validation highlighted that whilst there was a requirement for improvement in specific areas, the EHAT and ECM pre-deployment training conducted by the Army ExHC was on the right track. From a validation team perspective, it proved to be a valuable and professionally and a very satisfying experience.

1st TOPOGRAPHICAL SURVEY SQUADRON

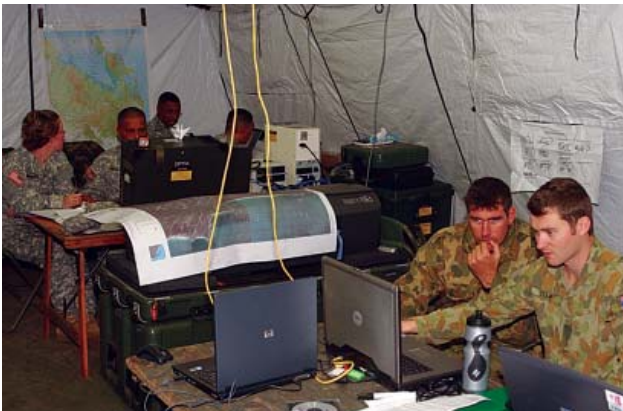
Another year for 1st Topographical Survey Squadron (1 Topo Svy Sqn) is almost over but not without a large ongoing effort in operational support and other support to the 1st Division. The role of the Squadron has changed subtly from 2006 from supporting Army to supporting the 1st Division as the main effort.

The Squadron has maintained between 10 and 20 soldiers deployed on operations in Afghanistan, Iraq, Timor Leste and domestic operations. Of these, significant deployments have included the first overseas deployment of the Squadron's air camera and the deployment of five members to Afghanistan with the 2nd Reconstruction Task Force, with more rotations preparing to relieve other teams in place on each operation. The fine work being done on operations is achieving a good effect for the supported forces, as well as a widening of the experience base within the Squadron. With deployments to Operations Slipper, Astute, Catalyst, Deluge, Outreach and the Army Aboriginal Community Program, our members have often been the only sappers on these operations.

The Squadron's commitment to exercises has mirrored the high rate of deployment. Exercises Poziers Vision and Poziers Int; Mulgogger (with the Royal Australian Navy (RAN)); Motionless Cartwheel; Vital Launch and Vital Prospect and Predators Strike and JRAC were supported throughout the year in Townsville, Darwin, Whyalla, and on Navy ships in the Pacific. The standout exercise commitment for the year was Exercise Talisman Sabre, where over 40 Squadron members gained experience working alongside US

Below: A US Terrain Team (left) train alongside SPRs Smith and Cleary on Exercise Talisman Sabre 2007.

Bottom: SPR Norlander and CPL Covington negotiate the Bear Pit on the way to winning the Area Obstacle Course Competition.



geomatic technicians and RAN hydrographers in a large joint, coalition effort. Members were spread from Royal Australian Air Force Base Williamtown, to Shoal Water Bay and Bradshaw Training Areas where they were embedded with all levels of command from the CTF HQ down to battle groups as part of amphibious manoeuvre forces. The Squadron also carried out a number of overseas visits to Canada, United States of America, Malaysia, and most recently the United Kingdom.

In addition to providing 'geo support' overseas and on military exercises, our sappers put in a good showing at sporting events and a military skills competition. 1 Topo Svy Sqn turned a few 6th Battalion, The Royal Australian Regiment (and 6 ESR) heads as the surprise winner of the 2007 Gallipoli Barracks Obstacle Course Competition 2007. A contingent of Squadron members competed as part of an Australian Defence Force team placed well in the international biathlon championships in Austria and Switzerland in January. The Squadron turned out in force to help 6 ESR win the 2007 Gallipoli Barracks King of the Hill race to the top of Mt Enoggera.

Like most Army units, the considerable tempo felt at 1 Topo Svy Sqn is a continuation of that felt in recent years and is unlikely to change in 2008. The future under Hardened and Networked Army holds expansion of the Squadron by a troop - a change that will be welcomed by those carrying the current load. The Squadron looks forward to continuing its professional and demanding roles supporting Army operations throughout the world.

Geospatial Analysis on the Front Line

Within Iraq, coalition forces have experienced a large density and frequency of Improvised Explosive Device (IED) attacks. IEDs are a strategic weapon and the largest casualty producing attack method utilised by insurgents.

Since 2005, 1 Topo Svy Sqn has been providing support to the Combined Explosive Exploitation Cell based in Baghdad, Iraq. This involves one geospatial analyst working within a multinational team. His job is to plot, collate, manage and analyse geospatial information and intelligence related incidents involving IEDs. This purpose is to extract technical intelligence on IED location and distribution to identify bomb-making trends in space and time. This analysis can then provide support to offensive and defensive counter-IED operations by coalition forces.

Recent deployments of Squadron members to this position have revealed the daily routine of a Military Geographic Information (MGI) technician in the work of the CEXC to be physically and mentally arduous and hazardous, yet professionally rewarding.

Aerial Digital Imagery Acquisition System Goes Operational

Army has successfully deployed and operated its airborne image acquisition capability on its inaugural overseas deployment. The Aerial Digital Imagery Acquisition System (ADIAS) deployed operationally to Timor Leste in support of Operation Astute. The system was operated by geomatic technicians aboard a platform flown by Army aviators. The system had just finalised operational testing and evaluation when ordered to deploy in Mar 2007. The ADIAS comprises of a Leica Geosystems ADS40 Digital Sensor operated by the 1 Topo Svy Sqn and is fitted to a gyroscopic mount aboard a B350 Beechcraft Kingair aircraft as its platform. The Kingair is operated and maintained by 173 Surveillance Squadron, 16th Brigade (Aviation).

During its deployment on Operation Astute, ADIAS value added to operations through capture of high-resolution colour aerial imagery with a resolution ranging from 15 to 50 centimetres. Imagery collected by the ADIAS was rapidly integrated into mapping products by the MGI cell in theatre to provide Image Maps



Top: A 15 centremetre resolution image of Dili Airport taken at 5,000 feet with enlargement of tarmac shown. The image was captured using the Aerial Digital Imagery Acquisition System.

Above Left: SPR Stone from 1st Topographical Survey Squadron operates Aerial Digital Imagery Acquisition System during the capture of imagery.

Above Right: Members of 1st Topographical Survey Squadron and 173rd Survey Squadron. Left Front Row: LT B. Sterling, CAPT B. Rooke, LCPL W. Slorach. Back Row: CAPT M. Watson, CPL A. Young, SPR G. Stone and WO2 A. Morrison-Evans.

of major and minor population centres throughout Timor Leste. This capability enabled force elements to conduct planning and gain situational awareness with the most recent imagery from a dedicated platform under control of the local commander.

ADIAS provides its high-resolution imagery through a new digital workflow which does not involve film or photographic processing laboratories. Up to 100 gigabytes of imagery is captured by the sensor and is later downloaded to a computer on the ground for processing. From there, geomatic technicians can produce numerous outputs for military applications, including 3D terrain models, land cover updates for built-up areas requiring a high level of detail, and customised image maps. One of the biggest advantages of the equipment is that it produces very high resolution imagery, compatible with Army geospatial software and does so at the unclassified level. Whilst these processes normally take up to two weeks of dedicated processing, during the deployment, the speed of processing became critical and the entire process was reduced to 'much shorter timeframes' thanks to teamwork by the geomatic technicians and aviators.

17th CONSTRUCTION SQUADRON

17th Construction Squadron's (17 Const Sqn) main effort this year has been to deliver Army Aboriginal Community Assistance Program (AACAP) 14 in north-west Queensland. Since 1997, Army engineers have been involved in the Commonwealth Government program to provide services, training and infrastructure to indigenous Australian communities. AACAP is a coordinated effort by Army units, civilian contractors and community service providers to improve education, health and infrastructure within these communities.

There have been 13 AACAP projects conducted around Australia since the Government implemented the program on 14 November 1996. This year, the construction scope of works for the Army contingent was four houses, a public toilet block and a ten-lot subdivision for the township of Doomadgee in north-west Queensland.

While construction involves the most manpower and equipment, health and training are also essential elements of the program. HQ 17 Const Sqn was responsible for commanding health and training teams, in addition to the integral Squadron elements, to deliver all the required effects. The deployed contingent was, on average, about 150 personnel and well over 250 Army soldiers representing 19 units were involved in the project at some point. The detachment was also bolstered by section-size contingents from Papua New Guinea and Tonga.

Before the project could commence a Forward Operating Base (FOB) was required to accommodate all deployed personnel and equipment. The FOB also provided a command platform to coordinate the construction effort and coordinate delivery of supplies for each of the projects.

Electricians established and maintained a high-voltage power grid supplied by three generators to provide power for the kitchens,

workshop, offices, accommodation areas and other areas of the camp. Plumbers established and maintained a waste management system that treated all liquid and solid waste through a deployable enviro-flow unit.

Once all members had been deployed and the FOB was fully operational, construction effort was focused on providing the community with four new houses, a public toilet block and the subdivision. Concurrently, the health team conducted clinics and trained community health workers. The training team commenced a 12-week welding training program.

The Houses

The four houses built for AACAP 14 were simple steel-framed, Colorbond clad three-bedroom houses raised on stumps. All fittings and fixtures were based on commercial components to ensure durability and guarantee performance. Flooring was densely compressed fibrous cement, internal walls were Gyprock, the ceiling was Bondor panelling, the decking was Modwood and all cupboards were steel.

The framework for the houses was prefabricated by the manufacturer and transported onto the site to be constructed by tradesmen from 17 Const Sqn and trainees from the School of Military Engineering (SME). This year, for the first time, the trainees from SME were allocated one of the houses to construct from start to finish and this approach proved to be very successful for their training.

Additional out-buildings were also constructed with the houses. Army Reserve members from 21st and 22nd Construction Regiments built cookhouses in the backyards of each of the houses.

Members from the Tongan Defence Services erected small garden sheds for each of the blocks and built fences around the blocks.

Painting and laying of vinyl was completed by civilian contractors because of the lack of training and experience within the Squadron in these areas. Glaziers were also required to complete the installation of external doors and screens because there were problems with window and screen components that needed to be rectified on site.

The contractors that were employed to provide materials and services were, in most cases, the only companies that submitted a tender. The remote location proved difficult in finding contractors who were willing to complete any sort of work in the community. At the end of the day though, the house design and construction was very successful and all four houses were handed over to the community on the planned date of practical completion.

Below Left: Sappers from 17th Construction Squadron begin work on four houses which were constructed as part of AACAP 14 at Doomadgee in north-west Queensland in 2007.

Below Right: One of the finished houses constructed under AACAP 14.

Bottom Left: Sappers pour concrete during the construction of a public ablution block for the aboriginal community at Doomadgee.

Bottom Right: Completed ablution block.



The Ablution Block

Field engineers from 17 Const Sqn and members from the Papua New Guinea Defence Force constructed a public toilet block for the community. This project was the first to be completed, even though it experienced some delays during construction.

The public toilet block was based on a simple design. The same building has been constructed by several engineer squadrons during deployments to Papua New Guinea and East Timor. The simple design and basic building materials make it a quick and practical building exercise for deployments.

There was minimal site preparation required for the toilet block; however, delivery of materials proved to be a major challenge for this project. All concrete used for construction was required to be batched on site by a mobile batching plant loaned from the Air Force. Cement, sand and aggregate were transported from Mount Isa, over 600 kilometres south along the Alternate Savannah Highway.

Another issue with transport for this project was the condition of materials when they arrived on site. Overall, over 20 per cent of the blocks transported from Mount Isa to Doomadgee were damaged by the poor condition of the roads.

Construction of the toilet block provided the deployed combat engineers from the Squadron and Defence personnel from two of our neighbouring countries with their own construction project. It strengthened the already strong working relationship that our Defence Force enjoys with our close neighbours and provided the community of Doomadgee with a practical community building to improve infrastructure.

The Subdivision

The time required to complete the subdivision was underestimated during the initial reconnaissance, resulting in a majority of the Squadron's resources being committed to the subdivision to finish it within the allocated time. Plumbers and combat engineers worked with members from Plant Troop to construct the subdivision which consisted of ten lots of around 1400 square metres each.

The subdivision site was an overgrown green field site that contained car bodies, concrete and other rubbish that had been dumped in the area over the years. Significant resources were required to clear away. Also, significantly more topsoil was needed to be removed than was initially planned.

A significant amount of fill material was required to bring the subdivision up to the design height. The original estimate for fill material ended up satisfying a little over 25 per cent of the actual amount required. Problems stemming from this included significant transport assets were required to cart material from the quarry to the site, additional applications to council to win extra material and the extra time required to fill the area.

A civilian haulage contractor with a three-trailer road train was hired to assist with the transportation of material. One load dumped by the road train was equivalent to approximately six Mack dumps. This enabled enough material to be transported within the allocated time. The same contractor was used to transport road base and sub base material, purchased from Mount Isa, to Doomadgee to construct the access road which circled the subdivision. Locally won material was not capable of achieving the design CBR for the road.

Plumbers and combat engineers worked up to ten hours per day, seven days a week for over two months to complete installation of the stormwater, sewer and mains water infrastructure. Civilian contractors were engaged to complete the concrete kerbing and guttering and final bitumen sealing of the road.

Community Involvement

The AACAP's primary objectives are to deliver construction, health and training effects to the community. As a result of these activities, there is inevitably a lot of interaction between military personnel and civilian members of the community.

The Squadron held an open day where members of the community were able to come and have a guided tour through the FOB and see all of the equipment up close. Children from the school, trainees participating in the AACAP training and members of the community made the trip out to the FOB to have a look around and meet some of the members.

The community were very hospitable and always willing to stop and have a chat when there was a break on site. Other community events including a community sporting events and a Troy Cassar-Daley concert were well attended by members from the contingent and community. Many of these activities involved interaction with the children from the school which was always great fun.

Conclusion

Overall, the construction effect for AACAP 14 was successful and the majority of tasks were completed on time. The subdivision ended up being only one week over the expected completion date, not four weeks over as previously calculated earlier in the project. A significant factor in this outcome was the hiring of the road train for hauling material.

All of the civilian contractors who worked on the AACAP project enjoyed the quality accommodation offered at the FOB and experienced first hand how Defence does business. Some contractors took longer than others to adjust to the lifestyle while others did not really want to leave. Their professionalism and flexibility were major contributing factors to the successful delivery construction, health and training effects.

After five months of solid work, Doomadgee has four new houses that will assist with reducing overcrowding within the community. They also have a new public toilet block and ten fully serviced lots to allow future community growth. Fifteen members of the community received practical training and many other members received training and medical attention from the health team.

Also, the fundamental Army requirements of AACAP were accomplished upon completion of this project. Members from 17 Const Sqn and other units have had beneficial training within their individual trades and as a unit. The deployment to Doomadgee, the delivery of construction, health and training effects and the deployment back to Holsworthy were all successfully completed.

21st CONSTRUCTION SQUADRON

Commitments to the Reconstruction Task Force in Afghanistan has resulted in 21st Construction Squadron (21 Const Sqn) operating at less than half manning. To top it off, the Squadron deployed to the Bradshaw Field Training Area (BFTA) in the Northern Territory in order to participate in the Joint Rapid Airfield Construction (JRAC) task as part of Exercise Talisman Sabre in the middle of the year.

The Squadron's personnel involved in JRAC worked hard with their United States Defence Force counterparts to achieve the mission and through many long hours of hard work, the C-17 aircraft capable airstrip in the BFTA was successfully achieved.

According to SGT Mark Chirita, "The best thing about JRAC was the gathering of a joint task force in one location, utilising sapper skills and ingenuity to cross-train allied friends in order to achieve a common goal. The most challenging part was trying to teach US personnel in the use of Australian equipment and then



using those limited skills to achieve a task. Special thanks must go to the Headquarters 6th Engineer Support Regiment for their outstanding work and also to the Royal Australian Air Force for their valued assistance”.

Whilst working with the Americans was a challenge at times, the mutual benefit of working together improved interoperability and built a lasting relationship which will endure for years to come.

The time the Squadron has spent back in Gallipoli Barracks has also been very busy. Earlier in the year, members of the Squadron participated in a watermanship activity led by LT Gregory Jones as well as the annual infantry minor tactics exercise, Exercise Rooster Warrior. This exercise emphasised that whilst the Squadron’s primary role is to provide a construction capability to the Army, each member is still required to maintain basic soldiering skills. With limited resources, the Squadron fortified the Q-Store which was utilised as a Forward Operating Base (FOB) for forays into the Gallipoli Barracks Training Area.

One of the biggest highlights of the year was contributing to 6th Engineer Support Regiment’s win in the 7th Brigade King of the Hill competition and taking out second place in the Brigade obstacle course competition behind 1st Topographical Survey Squadron. It is always nice to beat the infantry.

The final months of this year will be spent reconsolidating from JRAC and RTF-2 in order to prepare for AACAP in 2008 at Kalumburu, Western Australia.

Above Left: Joint Rapid Airfield Construction team with a C-17 aircraft.
Left: Fortified Q-Store was defended during 21st Construction Squadron’s annual infantry minor tactics exercise.

SAPPER SITREP

21st CONSTRUCTION REGIMENT



Having left the sanctuary of Land Command Engineers, the year started with 21st Construction Regiment (21 Const Regt) bedding into 5th Brigade, part of 2nd Division, and the newly arrived Littoral and Riverine Survey Squadron,

formally part of 19th Chief Engineer Work, joined the fold. There was also the news that the 21 Const Regt was to be the home of the Australian Defence Force tactical Civil-Military Cooperation (CIMIC) capability. Once formed, and in the short term, the capability would comprise of a squadron headquarters in Sydney with a Tactical Support Team (TST). In the medium to long term, TSTs would also be established in Melbourne and Brisbane. In addition, the Regiment, along with all the other Brigade units, were tasked with expanding its trained personnel by 15 per cent and achieving a 70 per cent Army Individual Readiness Notice compliance. All of this added significantly to the capability the Regiment can contribute to 1st and 2nd Division missions.

REGIMENTAL HEADQUARTERS

The RHQ has not only increased its workload with the arrival of the two new squadrons but it has seen its manpower reduced as a result of the 2nd Division initiative, Operation FOCUS. This was further compounded with the loss of the OPSO for large parts of the year. All this whilst learning to operate under a new command regime within 5th Brigade. In 2007, RHQ has worked hard to

achieve the satisfying result of deploying personnel, materials and equipment to: Joint Rapid Airfield Construction (Timber Creek, Northern Territory), Army Aboriginal Community Assistance Program (Doomadgee, Queensland), Cowley Beach (Annual Field Exercise, Far-North Queensland) Canungra (Annual Field Exercise, South-East Queensland), Japan, Hawaii, Geneva, New Caledonia, Iraq and Afghanistan. The Regiment is going through the process of renumbering the Squadrons.

OPERATIONAL SUPPORT SQUADRON

In 2006, the plan was to concentrate all of the regimental support functions (administration, EME, catering and medical) into one organisation called the Operational Support Squadron (OSS) that would provide support to all of the other subunits within the Regiment as required. However, no sooner was it established than Operation FOCUS was implemented; and as it is said about the best laid plans, this one did not survive first contact with the Operation FOCUS directive. With the loss of the manpower to the Brigade Operational Support Company (BOSC) the OSS was disbanded.

101st CONSTRUCTION SQUADRON

101st Construction Squadron (101 Const Sqn) has had a challenging and rewarding year, working in support of Regular Army tasks, as well as independently. In addition, the Squadron has also provided individual reinforcements to operations such as Operation Slipper.

101 Const Sqn participated in AACAP 07 in Doomadgee (six hours and some 230 kilometres north of Mount Isa) to construct two of four cookhouses (covered, outdoor BBQ areas with a fire pit and a servery bench). Whilst the construction of the cookhouses did not go exactly to plan, because of material shortages, other opportunities presented themselves. The construction team also became involved in the construction of one of the houses that had fallen behind schedule. Whilst many soldiers from 17th Construction Squadron left Doomadgee for their one-week, mid-deployment leave, the 101 Const Sqn contingent remained working on the house quickly bringing it back on schedule with the other three houses.

While the main focus for Squadron at AACAP was construction tasks, some members of Plant Troop found themselves not only assisting in the quarry but actually running it, notably, CPL Lester Meers who was appointed to manage the quarry. This aspect of the project afforded other members of plant troop the opportunity to log many hours on plant equipment and gain additional qualifications.

The Joint Rapid Airfield Construction (JRAC) Project was a US Army Corps of Engineers Technology Demonstrator that utilised a suite of technologies that will improve the ability of US and Australian forces to rapidly site, design, construct and certify airfields, roads and landing zones. The main purpose of the exercise was to demonstrate that the US and Australia can seize an existing airfield and rapidly make it into a forward operating base through constructing additional turning aprons for two extra aircraft at any particular time – each nation can then fly in heavy follow-on forces up to and including the M1 Tank. The exercise was manned by a task force comprising US and Australian personnel to construct a C17 aircraft capable airfield with turning aprons, in less than 25 days. The finished product left behind a capable airstrip for future use by other units exercising in the Bradshaw Training Area. 101 Const Sqn had six personnel on the exercise who gave invaluable training and experience to the wider Australian Army and visiting forces. This was formally recognised by the Commanding Officer of 6th Engineer Support Regiment and highlights the abilities of the Army Reserves and knowledge contained therein.

101 Const Sqn conducted Exercise Jungle Scorpion over the period 7 to 23rd September as a composite troop construction task consisting of force elements from Plant, Resources and Construction Troops. An advance party, consisting of 12 vehicles and 19 personnel, deployed before the main body to transport the majority of plant and equipment to Canungra, with elements of plant being transported by 85th Transport Squadron.

The selected tasks were the reconstruction of the enemy camp at Stand 8 and the refurbishment of a 400-metre length of Rusty Road leading to a signal retransmission point used for exercises conducted in the Canungra Military Area.

The enemy camp reconstruction team won local timber and used the Lucas Mill Saw (LMS) to mill useable lumber. A number of huts were completely rebuilt with others being refurbished. All tools and equip had to be carried in by hand to reduce ground sign and preserve the track discipline of the village camp. In addition to the huts, a well, chicken and pig pen were also refurbished to create realistic scenarios for training.

The road refurbishment task along Rusty Road consisted of conducting fault analysis, road design and implementation of the works required. Material was won from a local quarry and hauled to the task site. This task presented a number of challenges as the road was very steep in places and suffered from poor drainage. New drains were cut as well as water bars placed across the road to transfer water from one side to the other. This was achieved with



Members from 101st Construction Squadron at the enemy camp where they rebuilt and refurbished a number of structures at the Canungra Military training area during Exercise Jungle Scorpion. Other tasks undertaken included the refurbishment of a 400-metre length of road.

minimal environmental damage. All tasks were completed successfully with a very satisfied client.

102nd CONSTRUCTION SQUADRON

102nd Construction Squadron (102 Const Sqn) is the recruiting and training squadron within the 21 Const Regt and dedicates its time largely to recruiting events. This year, the Squadron conducted four 'Try Before You Decide' activities. To date, over 250 civilians have been invited to visit 21 Const Regt to partake in military skills such as repelling and shooting at the Weapons Simulation range, to name but two. The aim of these events is to give potential recruits a flavour of the benefits of military life.

The annual recruiting exercise was conducted in the Hunter Valley region of New South Wales and the Campbelltown area of Sydney. A high degree of interest was garnered over the 12 days. On 15th September, the recruiting teams attended the Tahmoor Care Flight Festival. The display was highly visible and very well attended.

On 16 September, the recruiters were invited to attend the Hurstville Lions Club Spring Festival held at Peakhurst. 102 Const Sqn provided comic relief in the 'Henley on Todd' styled boat race; however, because of skills learnt as combat engineers, SPR Little Holden, SPR Milovanovic and CPL McIntyre (Pay Corp), were unfairly disqualified. Once again, the Festival and our display were very well attended and the profile of 21 Const Regt was lifted in the St George area of Sydney.

So far this year, 102 Const Sqn have enlisted 15 new recruits into the Regiment, which has resulted in the average age of members in the Regiment being reduced dramatically. Also, 12 personnel have 'seen the light' and have transferred into 21 Const Regt from other Army Reserve units, as well as the Australian Regular Army.

During the last year, 102 Const Sqn trained, on an ongoing basis, about 45 recruits from our own Regiment, 2nd Military Police Company and the Army Financial Services Unit, with their Pre and Post Kapooka training.

It is hoped that 102 Const Sqn continues to grow and reduces the average age of the Regiment further. To do this, a dedicated team of recruiters have been assembled with a mission to go forth, and hopefully, multiply.

LITTORAL & RIVERINE SURVEY SQUADRON

In the last eighteen months, the Littoral and Riverine Survey Squadron (LRSS) changed names and units; moved from Randwick to Holsworthy; undertook important active tasks in Sydney Harbour, Townsville and Cowley Beach; and now comes under the watchful eye of the 5th Brigade.

The LRSS contribution to the Defence geospatial community includes a range of hydrographical, riverine reconnaissance and land survey tasks in support of Australian Defence Force operations, both in Australia and abroad. The LRSS consists of combat engineers and technical specialists who have extensive experience in surveying (land and hydrographical), cartography and the use of geospatial information systems, and data collection in riverine and marine environments, as well as clerks, drivers and log personnel. Squadron members have, in recent years, supported operations in East Timor, and other engineer tasks in the Pacific.

Training activities this year have seen LRSS using the waterways of Sydney Harbour, the Georges River, Port Hacking, and the surrounding foreshore as well as Townsville and Cowley Beach, as previously mentioned. Survey tasks utilise the latest GPS technology with training being provided on echo sounder equipment not seen elsewhere in the Army. Whilst LRSS uses the 7.5 metre aluminium inshore survey vessel (ISV) as its main workhorse, the Squadron is actively developing an enhanced deployable capability which will allow the use of inflatable, assault boats and other vessels as the need arises.

CIVIL MILITARY COOPERATION SQUADRON

The Civil-Military Cooperation (CIMIC) is the coordination and cooperation between the Commander and civil actors, including the national population and local authorities, as well as international, national and non governmental organisations (NGOs) and agencies in support of the mission.

While the CIMIC Squadron's home is at Holsworthy, as part of 21 Const Regt, 5th Brigade, it is an All Corps subunit. Members of the Squadron come from all Corps and have a wide variety of experience in both the military and civilian fields.

Since January 2007, the CIMIC Squadron has concentrated predominantly on establishing manpower, operating procedures, training, and Army Individual Readiness Notice compliance, which the Squadron can boast is, at the time of writing, 100 per cent. In addition, there have been a number of tasks undertaken during the year, the main being Exercise Talisman Sabre 2007 in Rockhampton Queensland. In conjunction with personnel from 17th Combat Services Support Brigade and 1st Division, CIMIC personnel manned and operated the CIMIC Centre, and carried out a number of civil liaison tasks including a visit by local medical professionals to the deployed Field Hospital, a blood drive and a visit by local businessmen and women to see exactly how the Australian Army operate.

In all, 21 Const Regt has had a very full and rewarding year and we look forward to continued capability delivery in 2008.

SAPPER SITREP

22nd CONSTRUCTION REGIMENT



Just as the 22nd Construction Regiment (22 Const Regt) was preparing to stand-down for 2006, the early start to the Victorian bushfire season saw to it that the year was far from over. In December 2006, 22 Const Regt was given the lead in planning, coordinating and executing the Australian Defence Force's response to the Victorian Government's request for assistance in fighting the bushfires in the North Gippsland area.

The 4th Brigade Engineer Support Group was formed to provide support to the State authorities in rugged, mountainous, terrain in the vicinity of Erica, approximately 40 kilometres north of Moe, in the State's south-east. The Group eventually consisted of personnel from 22 Const Regt, 4th Combat Engineer Regiment, 8th Combat Engineer Regiment and 13th Field Squadron, as well as elements from 9th Force Support Battalion. During the deployment, 47 kilometres of containment lines were constructed, including clearing hundreds of trees with dozers. The Group protected the main water catchment area supplying Melbourne as well as community asset protection of five townships in and around Aberfeldy. An unexpected snowfall on Christmas Day created a surreal scene, with snow capped hills on one ridge and clearing fire breaks on another.

Early in the year, drafting, electrical, plumbing and carpentry works were completed to refurbish a scout hall for a disabled scout group.

During most of the year, the Regiment has focused much of its efforts on two major projects: the construction of the Urban Operations Training Facility (UOTF) at Puckapunyal and the Deployed Force Infrastructure (DFI) project at the Newborough Depot in Gippsland.

The UOTF has already been utilised for Mission Rehearsal Exercises (MRE) by Rotation 13 prior to deployment on Operation Anode. The site itself consists of approximately 40 shipping containers situated around a road network and enhanced so that each container has doors, windows and internal walls, with stairs and balustrades on containers that have been stacked. It has similarities to the UOTF at the School of Infantry; however, this facility can also accommodate A and B vehicles. The Regiment continued both vertical and horizontal construction works at the UOTF throughout October, ahead of a formal handover of the facility to the Combined Arms Training Centre and Defence Support Group in early November. The construction of the UOTF allowed 22 Const Regt to utilize its full suite of construction capabilities such as quarry operations, horizontal and vertical construction skills as well as its drafting, design and project management capabilities.

The DFI project allowed members of 22 Const Regt to further enhance their vertical and horizontal construction trade skills. A key capability of 22 Const Regt is to be able to construct permanent and semi-permanent base camps utilizing permanent and portable structures and facilities. The DFI project is largely based around the refurbishment of relocatable buildings and other structures and will provide accommodation during the conduct of continu-



Dozers clearing scrub during the construction of a containment line in preparation for the Victorian bushfire season.



Work proceeds on shipping containers that form part of the Urban Operation Training Facility at Puckapunyal, Victoria.

ous training courses held in and around the Newborough depot, in particular, Initial Employment Training courses.

On the personnel front, the Regiment has again been called upon to supply personnel for operations, MREs and other external support tasks. Recently, the Regiment welcomed back WO2 Andy Stokey from Operation Slipper II.

The Regiment remains heavily involved with AACAP 07 and deployed seven members, both Regular Army and Army Reserve, to provide trade support and assistance to 17th Construction Squadron in Doomadgee in Far-North Queensland. The Regiment also deployed personnel on 3rd Combat Engineer Regiment's Exercise Puk Puk in Papua New Guinea. The Regiment also supported an Operation Anode MRE in Queensland, as well as Operation Outreach in Northern Territory.

In March 2007 the Commanding Officer, LTCOL John Raike, was appointed as the Deputy Head of Corps – Royal Australian Engineers (Army Reserve).

In October, 22 Const Regt participated in 4th Brigade's Exercise Hamel 07. The Regiment deployed a troop to Buckland Military Training Area, Tasmania for the conduct of a Portable Saw Mill Operators course and chainsaw training where deployed members learnt the necessary skills to identify, fell and mill timber.

During the year, 91st Forestry Troop was raised and the skills that have been gained are critical for the unit to develop this capability. The Regiment also conducted a miscellaneous plant course at the Newborough depot where trainees completed single code training on the Skid-Steer Loader.

The Regiment has transferred most of its CSS functions to the 4th Brigade Operations Support Company (4 BOSC) as a result of Project Focus. The net result is that the Regiment currently maintains RHQ, 203rd Works Section, and 105th Construction Squadron at Oakleigh Barracks in the South Eastern suburbs of Melbourne and 39th Construction Squadron at Newborough.

In September 2007, members 22 Const Regt were selected to represent the Army in the ADF Skiing and Biathlon Championships at Mt Buller. The Army Team, led by CAPT Chris Reeves from 22 Const Regt, beat the Royal Australian Air Force and Royal Australian Navy to become the overall ADF Biathlon Champions.

It has been another successful year for 22 Const Regt with experience gained through deployments and training, undertaking construction tasks and developing niche capabilities for the Corps. The net effect is delivering a relevant and ready capability to the Royal Australian Engineers.

SAPPER SITREP

3rd FIELD SQUADRON



3rd Field Squadron (3 Fd Sqn) has had a dynamic and rewarding year and will finish 2007 with a great deal of momentum. This year the unit welcomed MAJ Dave Patten as the new OC. The Squadron is only a few soldiers shy of full manning comprised of a Headquarters, Training Cell, two Combat Engineer Troops and a Support Troop.

Given the strong number of junior soldiers and trainees coming through the unit, the future of the South Australian Engineers is bright.

For the field engineers, the year began by moving into new and improved facilities. These changes have provided space for class-

rooms, offices and Troop stores, not to mention fridges and freezers to store all the essentials!

The Troops exercised a broad range of skills this year including watermanship, water supply, construction tasks and bridging. During June, 1 Troop constructed wing walls and aprons to improve existing culverts at Murray Bridge Range whilst 2 Troop deployed to Woodside Barracks to refurbish a battered and broken Run-Dodge-Jump (RDJ) course. Despite the freezing temperatures, both Troops worked long hours from dawn to well past last light to complete the work. Much to the disappointment of the ARA residents, the Woodside RDJ was ready for Monday morning physical training.

Members from 2 Troop attended the Reserve Response Force (RRF) course in July where they learnt valuable skills in emergency response. In addition, 2 Troop NCOs provided the bulk of the

instructors for the course, proudly flying the flag for the Corps.

Over the August training weekend, 1 Troop sharpened their bridging skills with the Medium Girder Bridge (MGB) whilst 2 Troop built a multipurpose outdoor training area. 2 Troop produced a magnificent facility and assisted 1 Troop in building a number of MGBs in what may be the last time the bridge is constructed in SA.

The focus in September was milling using the portable sawmill system. 3 Fd Sqn members added this capability to their growing repertoire of skills, demonstrating them all on the Warradale Barracks Open Day in October. The day was very successful with the Squadron making its presence felt. Sappers provided three separate displays, all professionally presented and packed full of exciting opportunities for prospective recruits.

Support Troop has had a busy year, completing work on several projects. Roads were upgraded and in some instances created at Murray Bridge Range and Royal Australian Air Force Base Edinburgh. Support Troop has also been honing their driving skills by completing a MC3 heavy vehicle driver course under the tutelage of SGT Sean McGuire. Support Troop remains very capable and their achievements this year are testament to their professionalism and commitment.

The Squadron contributed to JTF 634, the Army Reserve's contribution to Asia-Pacific Economic Cooperation Summit, with two officers and six sappers. Individuals filled roles within Headquarters elements whilst the bulk contributed to the Security Task Group. This group totalled just over 230 Army Reservists and their primary tasking was low risk search. This included searching areas

such as the Sydney Opera House, the Convention and Exhibition centres, Town Hall and Government House to name but a few.

The High Readiness Reserve (HRR) scheme was introduced in 2007 and was well supported by the Squadron who have satisfied the initial requirements. Notwithstanding the challenges posed by this new initiative, many soldiers have been enticed to sign and offer an increased contribution beyond the considerable commitment they already make.

The Squadron is now poised to finish the year off with a bang, quite literally. The upcoming training weekends will cover Chemical, Biological, Radiological and Nuclear Defence exercises and Demolitions, everyone's favourite! Looking forward to next year, the Squadron will continue its growth and aims to further increase the level of training and activities provided to the sappers. The Squadron will maintain its commitment to the RRF and HRR whilst supporting the Brigade Combined Arms Training Activity and providing support for the upcoming rotations to Rifle Company Butterworth and Operation Anode.

At the end of the year, the Squadron will bid farewell to one of its most loyal and selfless soldiers. After 30 years of continuous service to 3 Fd Sqn, SSGT Jeff Barratt has announced that 2007 will be his swan song. The future of CPL Sue Thompson is also in doubt after a career spanning over 30 years. A stalwart within the unit, CPL Thompson has come to define what it represents to be a soldier within 3 Fd Sqn. Both will be sorely missed.

As the year draws to a close, preparations are well under way for the end-of-year celebrations to cap off a very successful year. The Squadron is now planning for an even bigger year in 2008.

CPL Gardiner front, then L to R, SPR Weimar, SPR Muhlhahn, SPR Elliott, SPR O'Bree, LCPL Mitchell, SPR Tonkin and SPR Galenza.



SAPPER SITREP

13th FIELD SQUADRON



In 2007, 13th Field Squadron underwent a major organisational restructure as the 2nd Division 'Project FOCUS' impacted. This has significantly reduced our Regular Army manning, logistical and equipment capabilities.

The year has been filled with Brigade and unit level training. Members have been given the opportunity to gain specialist skills including working at heights, portable saw mill, specialist chainsaw training and advanced tree felling. Support Troop ranks have swelled as they qualified more members on a locally conducted Basic Plant Operator course.

The Squadron has performed a number of major horizontal construction tasks including the creation of an all-terrain vehicle circuit for the Special Air Service Regiment. The annual field exercise throughout July was conducted at Royal Australian Air Force Learmonth in Exmouth where the priority task was to repair and upgrade the 20 kilometres of access road leading into the Air Weapons Range. This provided the planties with experience in coordinating and conducting a major construction task over a long

distance and provided the opportunity for the combat engineers to undertake basic field construction tasks such as culverts and fording.

The combat engineers focussed on maintaining core skills. A mid-year highlight was demolitions training at the Bindoon Military Training Area when sappers were able to practice specialist demolition techniques on a variety of targets that they had constructed on earlier activities. The skills required to mill and construct a three span Non Equipment Bridge (NEB) were also tested.

The training year will culminate with a tactical exercise where members of the High Readiness Reserve will be required to explosively breach an anti-vehicle obstacle belt before moving on to a reserve demolition on the previously mentioned NEB.

During the year, the Squadron also provided round-out support to the Corps on operations. We had members attending Rifle Company Butterworth, Operation Deluge, Army Aboriginal Community Assistance Program, providing relevant RAE training for 2nd Division personnel soon to deploy to Operation Anode and currently have several members deployed to the Middle East Area of Operation.

SAPPER SITREP

35th FIELD SQUADRON

**35 FD
SQN**

2007 has been a great year for 35th Field Squadron (35 Fd Sqn) with increases in recruitment and attendance resulting in more realistic and challenging training activities being successfully completed. During the year, 35 Fd Sqn has been involved with many exciting exercises ranging from demolitions to assault beach landings. We have had

the opportunity to provide external support to the Army Aboriginal Community Assistance Program, a Brigade Training Camp and the Regional 2007 Cadet Camp.

Throughout the year, 35 Fd Sqn worked closely with other 11th Brigade units to foster working relationships by developing combined training in order to increase their understanding of what Engineers bring to the battlespace. During the year, unit personnel were deployed on various operations including Rifle Company Butterworth, Operation Slipper and Operation Resolute. Future deployments for 11th Brigade look promising with deployment to Operation Anode and other regional activities becoming available to allow our members to gain valuable operational experience.

Recently, 35 Fd Sqn, as part of 11th Brigade, became under command of 2nd Division and a formal parade was held at Jez-

zine Barracks to mark the occasion. The parade was attended by many high-ranking officials from Defence, local and State Governments. The move from 1st Division to 2nd Division was seamless and we look forward to working with the 2nd Division command group.

In 2008, 35 Fd Sqn will be moving to Lavarack Barracks as part of the 11th Brigade relocation project. Hopefully, we will move into new and upgraded facilities in April 2008 and should gain new storage and maintenance facilities for our equipment. As a part of the move, 35 Fd Sqn's SED will be amended to reflect the brigading of logistics and administration elements under 'Plan FOCUS' in order to provide better efficiencies across the 11th Brigade units.

We look forward to a busy year in 2008, with a continuation of the increase in recruiting we have enjoyed this year, our move to Lavarack Barracks, increased training opportunities and our continued support to in-country and overseas deployments.

19th CHIEF ENGINEER WORKS



During 2007, 19th Chief Engineer Works (19 CE Works), as the Army's Design and Project Management Agency, has provided support to operations, the Army Aboriginal Community Assistance Program (AACAP), Defence Cooperation Program (DCP) projects and combined-joint exercises. For the vast majority of the year, the bulk of this forty five-person unit have been deployed to some of the most remote and inaccessible areas of the world, delivering projects to improve health standards and living conditions to indigenous populations and improving the facilities and capabilities of our neighbouring defence forces. 19 CE Works has continued to show that it contributes significantly to Adaptive Campaigning -- the approach being taken by the Land Components of the Australian Defence Force as part of the military contribution to a Whole of Government approach to resolving conflicts, including complex irregular warfare, as seen in Afghanistan and Iraq.

Operations

On operations, 19 CE Works provided a seven-man Works Team to the 1st Reconstruction Task Force (RTF-1) as well as a Civil Engineer to supplement RTF-2. The contributions were instrumental to the success of these organisations by providing a design and project management capability that was able to plan

Afghan locals look on with interest as WO2 Stephen Smith inspects the condition of the Tarin Girls School.



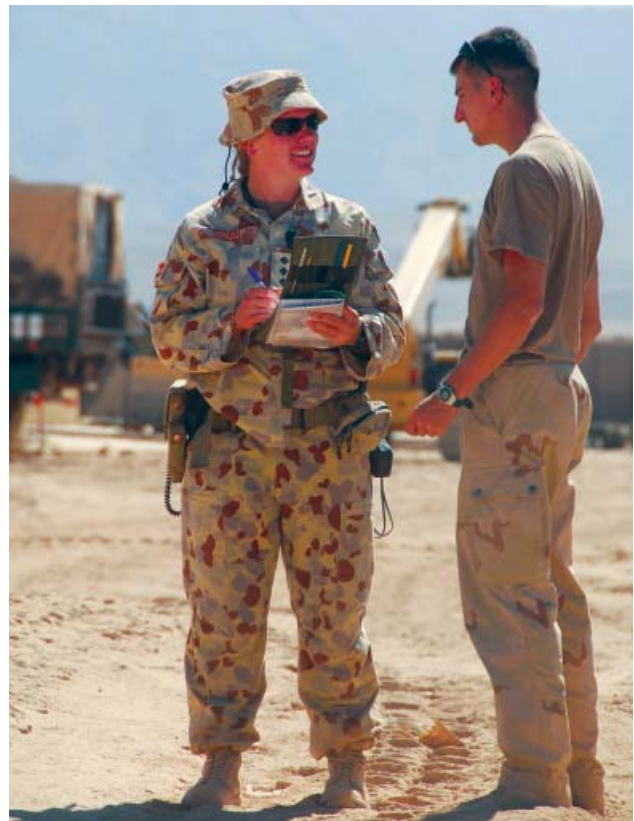
and deliver Population Support and Indigenous Capacity Building outcomes, such as refurbishments and additions to the Tarin Kowt Hospital, repairs and improvements to schools, the construction of Uruzgan Provincial Government buildings and the construction of bridges -- key tasks in winning the 'hearts and minds' of the local population, defeating the insurgents and stabilising Southern Afghanistan. As this article is written, 19 CE Works is force preparing another Works Team to deploy with RTF-3.

Additionally, 19 CE Works has provided two three-man Project Management Teams (PMTs) and a Senior Project Engineer to design and deliver Deployed Forces Infrastructure for our deployed troops in Iraq, Afghanistan and Kuwait. These small teams provide substantial 'bang for their buck', ascertaining the requirements of the deployed units, whether they be the FLLA-K, OBG(W), RTF or SOTG, and delivering the essential infrastructure utilising a combination of military engineers, international contractors and local contractors. The unit has also deployed a Building Supervisor to East Timor on Operation Astute in order to support the provision of Force Engineering to JTF 631.

Army Aboriginal Community Assistance Program

In 2007, 19 CE Works completed two AACAP projects and planned a third, which will be undertaken in 2008. AACAP, a partnership between Army and the Commonwealth Department

Camp construction supervisor, CAPT Jennifer Egan (left) talks to a Dutch engineer about future works at the Australian camp in Tarin Kowt.



of Families, Communities Service and Indigenous Affairs (FaCSIA) aimed at improving primary and environmental health and living conditions in Indigenous communities, is in its eleventh year. 19 CE Works deployed a Project Engineer to Borroloola in the Northern Territory to complete the Connecting Neighbours component of AACAP 06. Connecting Neighbours is a pilot partnership program, separate to AACAP, between FaCSIA and the Northern Territory Government whose objective is to upgrade the existing essential services (water supply, sewerage and electricity services) in Aboriginal urban living areas (AULAs), in order to provide a level of essential services amenity to AULA residents, equivalent to that of adjacent 'mainstream' subdivisions. 19 CE Works' role was to manage the design and construction of this essential infrastructure.

AACAP 07 took place in Doomadgee, a town located in Far North-West Queensland, where twelve three-bedroom houses were constructed by Army and civilian construction agencies in order to alleviate overcrowding in the community and subsequent health problems associated with the overcrowding. 17th Construction



Top Right: Works Manager WO1 Tony Dilger conducts inspections of new infrastructure in Baraloola with Northern Territory Power and Water Corporation personnel.

Above Centre: Houses being constructed by 17th Construction Squadron in Borroloola.

Right: Solomon Islands Wharf renovation work.



Squadron also constructed a new toilet block and a ten-lot subdivision, providing facilities for subsequent residential housing service installations. In addition to the construction works, the project achieved its objectives through the mentored training component, which built community capacity through the delivery of trade and construction training, in addition to developing literacy, numeracy, leadership and multimedia skills, and the health component which augmented existing health services, such as dentistry, health checks and health education.

Operation Outreach

Whilst completely separate to the AACAP projects, Operation Outreach, the Australian Defence Force's support to the Northern Territory Emergency Response Task Force, has been supported by four engineers from the unit. Their role has been to provide technical engineering input into the assessments of essential infrastructure (water, sewer and power), transport infrastructure (roads and airfields) and existing housing in the remote communities where the Northern Territory Emergency Response Task Force are operating.

Defence Cooperation Program

In 2007, 19 CE Works' focus for the International Policy Divisions DCP has been the delivery of projects in Papua New Guinea, the Solomon Islands and East Timor. Projects have included much needed repairs to barracks infrastructure and ammunition

stores in Papua New Guinea, the upgrading of a Pacific Patrol Boat Wharf in the Solomon Islands and repairs and new construction to Australian Staff Housing in East Timor and the Solomon Islands. Planning also took place for further infrastructure upgrades, new armouries and magazines and other defence facilities in these neighbouring countries.

Joint Rapid Airfield Construction

The last major activity that 19 CE Works was heavily involved in for 2007 was the rapid construction of the C17 aircraft capable airfield in Bradshaw Field Training Area, as part of Exercise Talisman Sabre. The Joint Rapid Airfield Construction (JRAC) task involved the construction of the airfield by Australian and US engineers, inside a four-week window, using newly developed technology and construction techniques. 19 CE Works provided significant input into the inception and design phases of the project as well as the final sign-off that allowed the project to be handed over to the Defence Support Group for ongoing management.

It is safe to say that in 2007, 19 CE Works, while only a small unit, has been able to provide significant ongoing support to Australian Army and Australian Defence Force operations and activities that have allowed these support organisations to successfully achieve their objectives. Already, 2008 looks to be just as busy for planning, designing and delivering quality projects.

SAPPER SITREP

INCIDENT RESPONSE REGIMENT



The role of the Incident Response Regiment (IRR) is to find, exploit, eliminate and protect against weapons of mass destruction and other threats in support of Australia and its national interests.

In 2007, IRR has continued to provide support to the Special Operations Command (SOCOM) in various exercises and operational deployments across Australia

and offshore. This support included operational commitments during Operation Deluge - support to the Asia Pacific Economic Conference to support to Operations Slipper, Operation Catalyst, Operation Astute and several International exercises.

Support to Special Operations Task Group (SOTG). The Regiment has maintained an ongoing commitment to the SOCOM and has provided a unique and highly relevant capability to support operations in Afghanistan. Our sappers conduct challenging, dynamic and hazardous work. The tragic loss of Explosives Detection Dog Razz, one of our beloved four legged sappers, demonstrates this and the complexity of the war against terrorism and its devastating effects. His loss has been deeply felt throughout the Regiment and a memorial will be erected in the new IRR lines within the Holsworthy Special Operations Precinct. It will display the high regard that these military working dogs have within the Regiment and the Corps. After all, they are soldiers too.

Support to Asia Pacific Economic Conference (APEC). The Regiment's commitment to the Asia Pacific Economic Conference was significant with the Regiment deploying to each conference venue. The Regiment conducted an extensive series of lead-up ex-

ercises and was subsequently placed on stand by for the duration of the conference series.

Annual International Exercises. In 2007, the Regiment conducted a series of international exercises, starting with its annual exercise, Exercise Chimera Beaver (Live Agent Training) in Canada. The IRR has the pleasure of hosting the Singaporean Engineers in Australia during Exercise Lion Bridge 2007.

Regiment Restructure. The Regiment went through some significant changes in late 2006 with the formation of a new unit structure which brought with it new challenges. The IRR is now developing and training a more dynamic and versatile Special Operations Engineer to meet the requirements of the changing operational environment. This will take the IRR further into the Special Operations spectrum and the Regiment has now developed a selection process to ensure its people are suitable for service within SOCOM.

Anzac Day Commitments. The Regiment attended the dawn service at 4th Battalion, The Royal Australian Regiment (Commando) Holsworthy with an IRR member provided to the Catalque party for the ceremony. A significant portion of the IRR also attended the Anzac Day service at the School of Military Engineering.

Future Activities for 2007. The priority for the Regiment is its continuing support to the SOCOM and unit training activities for the remainder of 2007. The IRR has ensured that the quality of training for its soldiers is at a standard that will ensure that they can continue to provide the highly relevant support to SOCOM and Defence.

Operation DELUGE



On the 23rd July 2007, 16 members of 17 Troop (17 Tp), 3rd Combat Engineer Regiment (3 CER), deployed on Operation Deluge 07 (OP Deluge) in order to provide the engineer element of the NSW Domestic Incident Security Force (DISFOR). The Troop's manning consisted of the TP Commander, the TP Transport NCO as the Section Commander, a 2IC and 13 members drawn from both 7 and 8 Sections. 17 Tp was tasked to provide Chemical, Biological, Radiological and Nuclear Defence (CBRND) and High Risk Engineer Search (HRES) support to A Company (A Coy), 3rd Battalion, The Royal Australian Regiment (3 RAR), who provided the infantry element of the DISFOR.

OP Deluge was the Australian Defence Force's contribution to assisting the NSW Police and Emergency Services in providing overall security for the Asian-Pacific Economic Cooperation World Leaders Summit (APEC), which was held in Sydney during 4-11 September 2007.

On arrival at 3 RAR, the first task given to 17 Tp was to train A Coy in basic CBRND operations. This was a relatively straight forward task; however, this led to every company in the Battalion then wanting the same training. This resulted in the Tp, for the rest of July, issuing, re-issuing and re-re-issuing equipment to every member of the DISFOR element.

Now that all the personal equipment had been issued a few

times over, individual and collective training took place during August. For the newer members in the detachment, this provided them with the opportunity to gain new skills and qualifications and also to work with the infantry company on assigned taskings. The DISFOR element was trained in personal protective clothing, close-quarter battle, improvised explosive devices, CBRND, HRES and advanced training in CBRND, method of entry, urban navigation and company-sized vehicle convoy movement during Sydney peak-hour traffic. In addition to this training, 17 Tp also deployed on numerous 72-hour Mission Rehearsal Exercises, in support of A Coy, during the lead up to the APEC Summit phase.

In September, the OP Astute DISFOR element was locked-down. When we thought living in transit lines during the working week was bad, now all weekends, after-hour leave and public holiday leave was cancelled. In addition to that, physical training and the consumption of alcohol were cancelled in order to meet with the very short Notice to Move requirements. All phone calls were censored to ensure that no operational security information was accidentally released prior to the APEC meeting and to top it off, all of the live-out Infantry members from A Coy were now also bunked in with us in the transit lines. In at least some of our minds - September was going to be a long month!

However, September turned out to be a good month. The APEC Summit had started and we were closely monitoring it just waiting for our chance to be involved. All of the other 3 RAR companies requested CBRND training and we were provided large amounts of resources and areas to conduct troop training on the slower APEC Summit days. The date that we were to return to our unit was brought forward considerably and this put a smile on the men's faces.

During the deployment, the OP Astute DISFOR element was never called forward to conduct any 'Live Taskings' over the APEC Summit period. Overall, the deployment went well. The members of 17 TP that deployed gained good individual and collective training from the deployment and the newer members of the unit in the detachment learnt what it is like to work closely with, and interact with, the Infantry on a combined operation.

LT S.K. PADMAN
3rd Combat Engineer Regiment



6th Engineer Support Regiment

JUNIOR NCO

TRAINING WEEK

Day 1 – 04 Mar 07

All the 'Volunteers' paraded at 6th Engineer Support Regiment (6 ESR) Headquarters for an initial induction brief and concept of operations. To start off the days activities we were given an aptitude test to put us in our ideal sections. Some of us found this quite difficult to achieve. We then had all our climbing equipment issued in preparation for the next day's climbing activity; this made a few knees start to shake and wobble. That night, 17th Construction Squadron was tasked to piquet the floor of the HQ conference room, while the rest of the 'team' were resting at their dwellings.

Day 2 – 05 Mar 07

It was a 0600 hour start, overcast and with slight showers. We grabbed our gear and headed off to the Glasshouse Mountains at Beerwah for an adventurous day of rock climbing. It was lead by the RSM, WO1 Kerr, and the almighty conqueror of Everest, Padre Morgan Batt. On arrival at the base of Mount Beerwah, the volunteers were terrified to find the sign, 'Experienced Climbers Only'. As we headed off on our expedition to the summit it started to rain and this was followed by a few shaking heads with many expletives. As the heavens finally opened up the Padre tried to part the Red Sea but Mr Everest was conquered by Mount Beerwah Falls as he tried a new way of descending at a rapid rate. On the way down he used some of the junior NCOs as a cushion to break his fall (too bad there were no cameras around). We took this as a sign from above and decided to attempt a lesser climb at Kangaroo point.

Day 3 – 06 Mar 07

It was a 0500 hours start to the day as we headed back out to Mount Beerwah to give it another attempt. 50 metres (1 pitch) up, the heavens opened up once again and we were left stranded up a cliff face waiting for the rain to clear. With vertigo setting in, the RSM decided it was too tough and took us all back to the warmth of the nearest bakery for some pies. We then headed back to 6 ESR to pack up our gear and head off to 'sunny Lismore', or as we found out 'rainy Lismore'.

Day 4 – 07 Mar 07

All the volunteers woke up for a lovely session with our favourite Physical Training Instructor, SGT Robinson. We had a fun, moderate session doing a circuit involving a Run Dodge Jump course, Toyota's and bodyweight. After physical training and breakfast we were broken into three sections of six. Thanks to SGT Core for the wonderful breakfast. This man cooked and cleaned for the course and DS everyday without any assistance and did a great job. We remained in these sections for the remainder of our time in Lismore. Our first activity was leadership discussions with unit SSMs. Topics were varied and proved beneficial for the junior NCOs. The discussions provided different views and ideas for solving varying problems which may arise in the future. The night was refreshing with volley ball, dinner and beers.

Day 5 – 08 Mar 07

The challenge. The sections had to undergo a rigorous, intense and challenging day. The first activity began at 0600 hours with the sound of the beep test on a wet inclined parade ground with the aroma of SGT Core cooking a special lunch stew in the background. Other activities were based on initiative, leadership, teamwork and physical endurance. These activities tested and pushed our limits. Individually, these tasks would be impossible but through working as a team we were able to achieve the final goals. We would love to tell you the details of exactly what we did; however, we wouldn't like to ruin the fun for next year. Some participants have said that this was the most physical and mentally hard day they have ever had. After the activities we were treated to a trip to Ballina Beach for a cool-down session. That night the Corps RSM joined us for a three-course meal cooked by the amazing SGT Core and presented on plastic plates with our favourite plastic cutlery. Of course the night was finished off with beers; however, most participants were falling asleep after their first one.

Day 6 – 09 Mar 07

The day started with volley ball followed by presentations and an open forum discussion with the Corps RSM. This gave all RAE junior NCOs a good heads-up on the future of all trades within the Corp. The Commanding Officer of 6 ESR also came along and joined in the discussion which lasted two hours. Problems and concerns were addressed and either justified or noted for further action. Having open discussions with the Corps RSM, and Commanding Officer was a great opportunity for future leaders to discuss their trades, the Regiment and the future of the Corps in general. At the end of the day the results were announced for the winning section and we all had a good laugh at the photos that we took. All in all, it was a fantastic week that should be held every year.



EXERCISE PUK PUK 2007

During 2007, 16th Combat Engineer Squadron, 3rd Combat Engineer Regiment, conducted Exercise Puk Puk at Igam Barracks, Lae (Morobe province), Papua New Guinea (PNG). Although Exercise Puk Puk is not a new concept, it is only the second time that 3rd Combat Engineer Regiment has been the lead unit for the deployment and the first time that a combat engineer squadron undertook what had been regarded as a construction squadron task. Of note, the inaugural Puk Puk exercise, conducted by 17th Construction Squadron, also occurred at Igam Barracks, so this was a pleasing return to what is the home of the Papua New Guinea Defence Force (PNGDF) Engineer Battalion.

The aim of Exercise Puk Puk is to increase interoperability

between the Australian Defence Force (ADF) and PNGDF, and focuses on the refurbishment of PNGDF facilities. 16th Combat Engineer Squadron Group's task was to repair facilities at Igam Barracks that had fallen into a state of disrepair.

The Barracks has not had continuous running water for ten years and the repair of this utility was the main focus of the four-week deployment. Additional works undertaken were repairs to the area theatre and an overhaul of the area gymnasium, including fitting out the gym with new equipment and teaching the PNGDF physical training instructors (PTIs) current physical training techniques. The intent of the repairs to the water utility and area theatre were to ensure that all the soldiers and their families living on Igam Barracks benefited from the repairs. The refurbishment of the gym was to directly assist the soldiers with maintaining physical fitness. In addition to the core tasks, the Squadron Group's RAEME Forward Repair Team provided valuable repairs to PNGDF Engineer

Below: Papua New Guinea Defence Force carpenter

Right: The 2IC and SSM

Bottom Right: 2LT Rama and LT Coburn



Battalion vehicles, returning six vehicles to a fully functional state.

A total of 56 ADF members deployed and were augmented by 31 sappers from the PNGDF Engineer Battalion. With 3rd Combat Engineer Regiment involved in on-going deployments such as Operation Astute, Operation Slipper and Operation Deluge, a call went out to the Corps and the rest of the Army to fill a number of trade positions and specialist support positions including a nursing officer, an environmental health officer, a PTI, an amenities NCO and a ledger storeman. The deployed Squadron Group consisted of a mix of full-time and part-time personnel from six different units – 3rd Combat Engineer Regiment, 3rd Combat Services Support Battalion, 4th Combat Engineer Regiment, 5th Combat Engineer Regiment, 22nd Construction Regiment and 39th Personnel Support Battalion.

The exercise commenced with a formal welcoming ceremony and parade that consisted of a band, Sing Sing group, a warrior challenge and a whipping ceremony. Guests at the parade were CAPT (Navy) Aliali (DCOMD PNGDF), LTCOL Mark Fox (DHADS), LTCOL Carl Wrakonei (CO PNGDF Engineer Battalion) and WO1 Kamane (RSM Engineer Battalion) along with local families from the barracks with lots of piccaninnies. This ceremony was a colourful and rich cultural experience for the Squadron Group and really set the scene for working in this part of the South Pacific.

Work on the three sites progressed with the usual problems that are expected when completing a construction or refurbishment task in an offshore location. The Squadron was fortunate to be conducting the exercise in Lae (PNG's second largest city); however, that did not prevent frustrations arising from delays in the delivery of stores, non availability of common repair parts and construction materials, and a lack of functioning equipment available for hire. It was extremely pleasing to see two very junior foremen for the gym and theatre (non availability of key personnel because of other operational commitments meant that two sappers were appointed foremen for the jobsites) immerse themselves in their tasks, and work hard to achieve some excellent results.

The timing was fortunate in that the CO of the PNGDF Engineer Battalion was on site when the most significant leak in the mains pipe connecting the water tank for the barracks to the diversion valve was repaired (a damaged asbestos-concrete pipe was replaced by steel pipe using Gibault joints). The CO was able to personally recommence the continuous water supply for the barracks, an achievement that every member of the community was extremely grateful for.

On handover, the area theatre and gymnasium were received with similar gratitude. The theatre will be widely used by church, family and community groups and the initial plans are to have movie nights in order to raise money for various activities. The theatre also operates as the local scout hall and an office was refurbished for the scout leader to use. The gym and equipment that is now available for the soldiers will play an important role in their physical fitness regime. The CO of the Engineer Battalion and the Chief Instructor of the Defence Academy (PNGDF Officer training unit collocated in Igam Barracks) were amazed and delighted at the results achieved during the four week exercise.

Unfortunately, the restricted timeline for the exercise meant that not all tasks were finalised. The external walls of the gym and the theatre still require painting. There are still some water leaks to be repaired and the community educated to ensure that the water tank for the barracks is not being continuously drained. Fortunately, by conducting the exercise at Igam Barracks, the Squadron was able to handover stores and materials to allow the Engineer Battalion to finish these tasks later in the year.

Other than the arduous working conditions and the lack of hot

water in the accommodation block, the Squadron Group was able to make the most of opportunities available in PNG to fill their weekends. Some activities of note were diving on a World War Two B25 aircraft wreck at Madang, travelling to some of the outer islands for fishing and diving and a trek to Shaggy Ridge. Most members of the Squadron Group had little idea of the huge influence Australia had in the local area during the Second World War and a visit to the War Cemetery in Lae and the Bomana War Cemetery in Port Moresby was a solemn reminder of this.

One of the slightly more adventurous trips was a drive to Wau where a small group left for what was planned to be a six- to eight-hour trip to see a B17 bomber aircraft wreck. In the end, they were able to make it back the following day (some 30 hours later) after being trapped by landslides and washed-out bridges. PNG is described as the land of the unexpected and this ended up being firmly understood by all that embarked on the 'day trip'.

There were two closing ceremonies for Exercise Puk Puk, the first being a Mumu (PNG version of a hungi where food is cooked in the ground) and all personnel involved in the exercise received a Billum (handmade bag) given out individually and handed from digger to digger. The PNGDF intent was to then have a couple of beers to close the exercise in an informal environment, unfortunately though, the ADF personnel had to gracefully decline.

The second closing ceremony was a slightly more formal affair, not dissimilar to the opening parade. Again, numerous key personnel were in attendance with all the local families. The final parade lasted approximately an hour and a half (for one person it was about 55 minutes too long). The Ceremony concluded with the exchanging of gifts (size does matter), closely followed by a number of Sing Sing groups with each group dressed in the traditional attire of their respective Provinces.

Overall, the Exercise had ample activities to keep everyone interested and morale high and the completed work will provide an enormous impact for the community and soldiers at Igam Barracks. A lot was learnt by the 16th Combat Engineer Squadron Group during the conduct of this minor construction task and, although not something that is typically undertaken by combat engineers, the opportunity to develop new skills in another country made the deployment extremely valuable and worthwhile.

**WO2 JASON
TRASS
Squadron
Sergeant Major,
16th Combat
Engineer Squadron,
3rd Combat
Engineer Regiment**

Right: A participant of the Whipping Ceremony, which was conducted during a formal welcoming ceremony to mark the commencement of Exercise Puk Puk.



18th COMBAT ENGINEER SQUADRON

deployment to

RIFLE COMPANY BUTTERWORTH



The start of 2007 looked very similar to 2006 for 18th Combat Engineer Squadron (18 CE Sqn). After a well deserved break from a turbulent and busy 2006, 18 CE Sqn was back at work on 8 January 2007, training for the upcoming deployment to Malaysia for a rotation as the Rifle Company Butterworth.

Prior to departing for Malaysia, 18 CE Sqn needed to achieve individual, section and troop level training objectives. The Squadron deployed to High Range Training Area on Exercise Thunderstorm 07. This exercise was the first and only opportunity the Squadron had to shake out and welcome all the new sappers to the Squadron prior to our departure. The exercise was centred on Close Combatant Tactics, both in the field and in urban environments. The team from 22 Troop were responsible for the field training component, whilst 21 Troop delivered the Urban Operations package. This exercise gave the Squadron a good understanding of where we were at and identified areas for improvement.

On the completion of Exercise Thunderstorm 07, it was back to barracks to finalise all the administrative requirements for the deployment. We also received a platoon from Alpha Company, 3rd Battalion, The Royal Australian Regiment. They were to join us in the final stages of preparation and be attached to us for the three-month deployment. The advance party, under command MAJ Rob Sanders, departed on 22 January 2007 for Malaysia in preparation for receiving the main body on 5 February 2007. During this period, the advance party conducted detailed handovers, stock takes, familiarisation tours and the odd night club tour—all for the benefit of the main body they said! Whilst the advance party were partaking in the high life, the main body finalised section-level training, administrative paperwork, and after the Division and Brigade finally agreed on numbers, we finalised our manning.

In the early hours of Monday, 5 February 2007, the main body left their families for what would be a demanding three-month de-

ployment. The first week was induction training and acclimatisation.

A team from Jungle Training Wing took the Company for the next ten days, training us in all things jungle. There was a three-day training cycle in barracks before heading out to Kulim for the jungle training phase. LCPL Bourke decided he had had enough when he tripped in the jungle and the Doc, CPL Brook, called it a Priority One, so it was a quick trip to hospital. The exercise had many casualties, with heat, sprains, heat, strains and more heat being the main injuries. On completion of the challenging jungle phase, the Company took a well earned break, ready for future Company tasks.

The Company was fortunate to be part of the first Army Birthday celebrations to be held in Malaysia, culminating in the Beat Retreat parade. The Company made up the guard and provided a 'crack precision drill team'. The Army Birthday Week consisted of two parades. The first parade was for the VIPs with the Governor of Penang Tun Dato' Seri Utama (DR) Hj, Adbul Raham Bin Hj, Abbas being the reviewing officer. The second was for the general public. Both nights ended with the Australian Army Band - Brisbane playing Tchaikovsky's 1812 Overture and a colourful display of fireworks.

On completion of the Army Birthday Week, the Company participated in the Gurun Range Week, during which the Company qualified in weapons ranging from the 9 mm Pistol to the Mag 58 and the 66 mm. One of the real benefits of a Malaysian tour is the live ammunition allocation. These qualifications would assist the Squadron on return to 3rd Combat Engineer Regiment (3 CER) by providing additional capability. On completion of the Gurun Range Week, the Company had a nine-day block leave period. The Company were free to travel within the South-East Asian area in order to get away from the hectic and challenging training program.

There are many good stories to tell; however, most not suitable for this forum. It must be said that all personnel thoroughly enjoyed their break and came back refreshed and ready.

The Company then deployed down to Pulada (South Malaysia) to conduct further jungle and survival training, engineer works and more weapon ranges. Points to note on this trip was the capturing, cooking and eating of wild animals on the three-day survival course and SGT Crooks efforts with the waiting bay construction on the Anti Armoured range. On completion of this training, the Company moved further south and into Singapore to conduct five days of Urban Operations training in state-of-the-art facilities and conduct a military history tour around the Kranji Commonwealth Cemetery and Changi Prison. The boys trained in what is known as FOFO and FIBUA which are acronyms for Fighting On Fortified Objectives and Fighting In Built Up Areas, the culmination being a platoon-level attack on the Niew Tiew Village.

On completion of the Urban Operations phase of training, it was a quick turn around for the next exercise, Exercise Haringaroo 56/2007. This was a combined exercise between the Australian Army and the Malaysian Army. The exercise was centred on a 160 kilometre Advance to Contact where Rifle Company Butterworth would be embedded in the 5th Royal Ranger Battalion. The exercise culminated with a battalion dawn attack on a company position; however, what really happened was we as Bravo Company led the assault and captured all three battalion objectives. The final assault was witnessed by the Commander and Regimental Sergeant Major of 3 Bde. The Commander also officially closed the exercise with a parade in the field.

At the completion of Exercise Haringaroo the Company quickly turned its attention to redeployment back to Australia. The final

week saw the Company complete detailed equipment cleaning, dangerous goods checks, stock takes and detailed handovers to the advance party for the next rotation for the Company. We finally returned to Australia on 2 May 2007. With only a minor 'refit to fight' requirement once back in 3 CER, the Squadron went on a well deserved break.

On return from post deployment leave, it was all systems go. Whilst in Malaysia, we had caught word of possible deployments. Both 21 Troop and 22 Troop would prepare for likely deployments. With this in mind the Regiment would be Battle Grouped on 8 June 2007. 21 Troop was attached to 16th Combat Engineer Squadron and training began for a deployment to East Timor as a part of Timor Lest Battle Group 3. This training commenced with 21 Troop being deployed on Exercise Talisman Sabre 07 to the Shoal Water Bay Training Area. 22 Troop was attached to the Engineer Task Group for the 3rd Reconstruction Task Force. 18 CE Sqn HQ assumed the responsibility of HQ 3 CER rear.

The first five months have been extremely busy for the Squadron, with what looks to be a further busy and turbulent seven months to go. The efforts of the men serving in 18 CE Sqn must be commended and are much appreciated, additionally to this, is the fantastic support provided by the wives, girlfriends and families of the men within 18 CE Sqn. The support you provide is vital in maintaining morale and stability within the Squadron and is much appreciated and recognised by all.

Quotable Quotes after spending five days in the jungle:

PTE Clifford Smith (Catering): "As we are willingly led by the unknowing, doing the impossible for the ungrateful, we have been producing so much for so little for so long, we are now qualified to do anything with nothing. Please put us back in the Kitchen!!!"

CPL Stewart Scale (Clerk): "I think we miss the paperwork..."

CPL Porter (Forward Repair Team): "Watching the guys was impressive but we were deeply missing the 'GMV', jaffle iron and the sounds of the rattle gun at work."

CAPTAIN KEN GOLDER

Second-In-Command and Reconnaissance Officer, 18th Combat Engineer Squadron, 3rd Combat Engineer Regiment

Left: The Company was fortunate to be part of the first Army Birthday celebrations to be held in Malasia.

Below: A member of the Company undergoes training.



Explosive Ordnance Disposal Section

MOBILE TRAINING TEAM

Specialist Engineering Wing from the School of Military Engineering deployed four personnel in September this year as a part of Stage 2 of a SBD\$1 m Australian Defence Cooperation Program assistance package being delivered by Australian Army Engineers to the Solomon Island Police Force (SIPF) Explosive Ordnance Disposal Unit (EODU).

Prior to the commencement of Stage 2, the ten Honiara based members of the EODU endured an intense week of Instructor Development Training in preparation for their instructional roles. The SIPF EODU worked closely with the Australian Army Engineer Explosive Ordnance Disposal Mobile Training Team (EOD TT) in preparing both theory and practical lessons.

First aid training was also conducted for both the EODU instructors and the provincial students during the first week by the EOD MTT medic, CPL Rebecca Christou. This training involved basic life saving skills, including Cardio Pulmonary Resuscitation (CPR) and the treatment for injuries that could be sustained as a result of blast, including the treatment of burns with the treatment of other minor injuries also covered.

After the lead-in training week was complete, the SIPF EODU instructors had the weekend to rehearse their lessons before the inaugural SIPF EOD course commenced.

The course was held during 10 to 21 September and was designed to train five SIPF members from Isabel and Western provinces in the identification and management of unexploded World War Two ordnance. World War Two ordnance is a major problem for the local population and is found throughout most of the Solomon Islands.

CAPT Andrew Coe, Officer-In-Charge EOD Section, who led the Stage 1 Team in 2006, returned this year to ensure the continuity of Stage 2. CAPT Coe said, "This training is very important for the long term operational and training self-sustainability of the SIPF EODU. There has been a long history of Royal Australian

Engineers assistance to the SIPF EODU dating back to the mid-1980s and we are striving to uphold the excellent reputation created by those who were here before us. I hope to come back to observe Stage 3 of the training which will be an EOD course for new SIPF members conducted entirely by the EODU. Our goal is to ensure the EODU is capable of continuing basic and refresher EOD Training in the future".

WO2 Paul Wheeler, SM EOD Section, team Warrant Officer stated, "This training is very important for both EODU and provincial members. The provincial guys must become familiar with the practices used for the safe handling and disposal of unexploded ordnance (UXOs) and the instructors need to become comfortable with instructing and the imparting of knowledge based on experience. This updated training will make them not only safer and more competent EOD Technicians but will allow them to work with minimal risk to themselves and the communities in which they operate. The training will also allow the provincial members to go out into the communities and educate people about the dangers that UXOs pose. This will result in a reduction in injuries and if this means that just one child grows up knowing not to touch or play with UXOs then they've done their job".

While the training was conducted by the SIPF EODU, members of the EOD MTT conducted instructor assessments and updated information in the SIPF EOD UXO guide as well as accompanying EODU members on regular daily UXO call outs. These call outs

Right: Day One of the live range practice. First serial, stacked 75mm HE projectiles.

Below: Provincial EOD Unit members at Hells Point.

Below Right: Day One of the live range practice. First serial, high ordering.





Day One of the live range practice. Second serial, burn pit igniting



Day two of the live range practice. Setting the 1000lb Semi Armour Piecing (SAP) and 500lb General Purpose (GP) Bombs for the first serial

allowed EOD MTT members the further opportunity to assess the skills of the current EODU members.

During the second week of the course, the SIPF EOD unit conducted UXO disposal range practices over two days. This gave the students valuable hands on experience in charge placement, stacking of UXOs and pit burns as well as disposal of a large amount of UXOs and weapons located at Hells Point.

On completion of the course, a small ceremony was conducted where certificates of attainment were issued by the Solomon Islands acting commissioner of police and plaques were swapped

between the EOD MTT and the SIPF EOD unit.

It is now the goal of the SIPF EODU to identify potential EOD technicians from police recruits and conduct their own EOD Course in an effort to bolster the total number of EOD operators at the RSIP's disposal. This will aid with the extensive UXO problem in the Solomon Islands.

SGT CHRIS ROHWEDER

Specialist Engineering Wing, School of Military Engineering

EXERCISE BADEN STEELE 2007

The Trade Trainees from Building Squadron, School of Military Engineering (SME) undertook exercise Baden Steele 2007 to revise and practice construction within a complex urban environment. The exercise comprised of two main components, Close Quarter Battle (CQB) training at the Special Forces Training Facility (SFTF) and tactical urban construction operations in the vicinity of the Glenfield Scout camp as a Defence Aid to the Civil Community (DACC) task.

Operating from Forward Operating Base (FOB) Jacquinot allowed the trainees to experience the FOB lifestyle to a limited degree, although it was difficult to properly simulate the required defensive postures as part of the scenario. Living in close proximity provided further development to those personnel who have had limited exposure to it. The more mature soldiers provided worthwhile advice and strong leadership to those who required it.

The trainees were divided into two troops and were revised and practised in CQB tactics by the SME Pioneer Section and conducted a troop-level clearance operation within the SFTF. The outcome of the exercise saw both Troops work together as teams and achieve a successful break in to the urban training area. A further request to the SFTF range manager allowed the troops to attempt to negotiate and clear the complex 'Embassy' building as the culmination point of the exercise.

The Glenfield Scout Camp provided the setting for the majority of the DACC task to be undertaken by the Troop. Apart from the construction tasks being undertaken by all of the trade streams, the sections had to provide their own Vehicle Check Points (VCPs),

security section and Quick Reaction Force (QRF)/roving patrols. The stand-in Troop Commanders were at liberty to exercise their respective troops on how they interpreted the threat situation. Certain 'enemy' elements did their best to test the actions and reactions of the trainees but were duly dealt with as required.

One noticeable incident included the unexpected visit to the scout camp by a car containing two civilians to the car park area. Upon reaching the VCP and being questioned by the sentry, the visitors decided to depart. The VCP was unable to warn the security elements of the departure in time and thinking that this was part of the exercise the security elements at the VCP opened fire. As the car moved down the road towards the entrance the early warning group also proceeded to fire at them. In view of the front gate the visitor's thoughts of 'survival' were again rudely interrupted as the QRF force of about seven or eight personnel appeared and also proceeded to fire upon them. About 1500 rounds of blank ammunition were fired in the 'contact' without a scratch to the visitor's car. A penny for the visitor's thoughts as they sped out of the gates and onto Cambridge Ave, never to be seen again.

Whilst the exercise was short in time, a great deal was achieved, both in artisan skills and military training, which is particularly relevant in these days of complex urban operations. The trainees will be able to build on the knowledge of the exercise in the future which should see them develop into even better trained soldiers and tradesmen. Future exercises will be hybrids of this model and will continue to develop soldier trades and all soldier skills to prepare them for future operational deployments.

Royal Australian Engineers

TRADES AND TRAINING

RAE Trades and Training Overview

RAE Trades and Training have two main functions. The first function is the employment category managers, or trade managers, of RAE trades. The second function is the design and development of Training Management Packages (TMP) that enables the conduct of RAE courses and supports the trade structures. Each of these functions is performed on behalf of the Employment Category Sponsor and the Training Advisor, who is the Commandant Combined Arms Training Centre (CATC). Logically, much of the work we do directly relates to RAE and our main stakeholders are SME, RAE units and Career Advisors and Career Managers.

One of the main tasks that result from these functions is the development of trade employment structures (trade structure/models). These structures are created to achieve the desired capability requirements, to create a sustainable and achievable structure and to enable appropriate remuneration and career progression. Another significant follow on effect of the cells two main functions is the development of the Manual of Army Employment (MAE) and Employment Category Standing Orders (ECSO). Probably the most time consuming task is the provision of policy advice and analysis of the impacts of Defence policy on RAE.

This article provides an update for RAE trades management from the Staff Officer Grade Two (SO2), the Corps RSM and each of the five trade group managers and the Training Development (TD) cell for 2007.

SO2 RAE Trades and Training – CAPT S. Jamie Twidale

The RAE TT cell has achieved some significant outcomes in 2007. We have sought to change how we do business to enable us to focus all of our energy towards the end user and capability requirements. This has meant rethinking how we deliver training and develop TMPs. We have redeveloped some of the trade models that are not achieving an efficient and effective use of a soldier's time and Defence resources. Rather than 'pave the cow path' we have attempted to look at the training need from first principles. Some of our achievements include a new Combat Engineer trade and training structure supported by revised Initial Employment Training (IET) and Subject 4 courses. We have successfully argued against the need to conduct subject 2 Corporal and Sergeant courses and they will be phased out by the end of 2008. We have made significant changes to the Army Reserve structures and have begun the process of combining the MAE and ECSO into a single user friendly publication. The aim of this process is to create flexibility and responsiveness to unit and individual needs, while ensuring that the soldier is given adequate advice, training and guidance for their career development.

Finally, I would like to take this opportunity to thank the RAE TT Cell and the Corps as a whole and all the individuals that have supported my team during 2007, without that support we would not have been able to achieve all that we have.

Corps RSM - WO1 Alan Harwood

During 2007, RAE Trades and Training has continued with the plans that were endorsed by the 2006 Corps Conference and we are poised to appear before the first available Defence Force Remu-

neration Tribunal (DFRT) hearing in 2008 for the Construction and Combat Engineer trades.

Throughout the year, I have travelled to the units and have spoken to the members and it appears that most of the Corps have received the main message in relation to what we are trying to achieve with the trades; however, it appears that they have not received the minor detail. This has been one issue that has created some discontent ~ from both sides. For immediate advice, please visit the RAE Trades and Training website which has our contact details and the most current advice on developments. Additionally, we are more than happy to visit units to deliver presentations to all unit personnel on trades management and training development issues.

Quite simply, trades management is a daunting task and it needs the support of all members of the Corps to provide successful outcomes. For those members of the Corps who have assisted us over the past 12 months, I thank you.

One of the main tasks for RAE Trades and Training is the development of trade employment structures, which result in appropriate remuneration and career progression for all of our soldiers.



Trade Manager (TM) Combat Engineers - WO2 Michael Bates

The Combat Engineer career employment group is currently going through a trade review aimed at providing greater capability to the corps and creating a more simple and responsive structure for the career management and development of the Sapper Combat Engineer.

There are two main elements to this review. The first element is a revised training continuum that introduces new skills and incorporates Subject 2 knowledge and previous specialist courses into the IET and Subject 4 suite of courses. We have split the Subject 2 WO2 into a Subject 2 and new Subject 4 WO2 Combat Engineer. All elements of the continuum can be delivered as stand-alone courses creating significant flexibility for delivery by Army Reserve units and responsiveness for change. New training, amongst others, includes increased explosives hazards reduction skills; increased Chemical, Biological, Radiological and Nuclear Defence training; increased search training and inclusion of the Fixed Modular Bridge and weapons courses into the continuum. This and the next stage are both supported by a trade-wide occupational analysis conducted in mid-2007.

The second element of the trade review is a revised trade structure. The new structure will be implemented in two stages. The first stage establishes the new training continuum while maintaining the current ECN 096, 097, 132, 122, 123 and 124 structures and remuneration (Pay Grade) levels. This stage has been approved and is detailed in the Implementation Plan (Capability) available for viewing on our website. The second stage is to present a trade restructure to the DFRT in 2008. The outcome of this will be a single ECN 096 based on three skill grades. Grade One and Two for the Army Reserves and Grade Three for the Regular Army sapper. The Engineer Driver, Crewman Engineers and Explosives Detection Dog Handler ECNs will be amalgamated into the common Combat Engineer ECN and cease to be separate streams. We are also seeking increased pay for sapper and corporal ranks.

We have enlisted the services of WO1 Peter Ferguson to conduct a review of the EOD trade. Details should be available from mid-2008.

TM Construction Trades - WO2 Matt Daldry

Changes to the construction trades were endorsed by Army and the ADF in 2005 and in May 2006. Changes to the trade structure and likely increases in remuneration require presentation to Defence Force Remuneration Tribunal (DFRT), which has not occurred as quickly as we expected. This is due to many factors, not the least of which includes ADF wide pay reforms that have taken up much of the DFRT time in the past 18 months.

As a result of the long length of time waiting for DFRT and the recent High Readiness Reserve initiative, there have been some changes. An amendment was presented to Army Headquarters in August 2007 that sought to create an Army Reserve construction engineer trade structure that is not as lengthy as the Regular Army equivalent. The main element of this is the ability for the Army Reserve construction engineer to remain as a tradesman and not progress to the supervisor or manager ECN but still attain higher ranks. To be eligible for High Readiness Reserve service the sapper is to have completed the full Regular training requirements. The outcomes of these changes are more tradesmen and an achievable career path for the Reservists. The trade is expected to be presented to DFRT in mid-2008.

TM Multimedia Technician (MMT) - WO2 Geoffrey Tyson

The ECN 180 MMT Trade Manager has been working towards a new block scale initiative, which is currently at Training

Command - Army for approval. The new block scale involves a trade wide standardisation of the equipment and software used by MMTs, and the incorporation of a two to three year ongoing maintenance contract. This initiative will have a tiered effect on the trade, its training and skill requirements, resulting in all MMT having access to a standard fleet of equipment and software.

The Subject 4 Corporal and Sergeant MMT courses are delivered by a civilian contractor. This contract will soon expire and we have called for tenders for the first course scheduled to commence in February 2008.

In July 2007, the first MMT Experienced Panel was conducted at CATC. The meeting resulted in recommendations for amendments to the promotion courses competencies that have been incorporated into the new tender requirements.

TM Geomatic Trades - WO2 Michael Carroll

The Geomatic Technicians trade review has begun with the establishment of an Experienced Panel to identify those areas that are critical to trade development and progression. During 2009, an occupational analysis will be conducted that involves a detailed questionnaire designed to identify tasks and the performance level required by the individual. The results of this information will inform options for any required changes for the training and trade structure. A formal Geomatic Technician trade review has not occurred since 1996 when the Royal Australian Survey Corps reintegrated with RAE.

We are also reviewing existing and new specialist courses. It is proposed that these courses will be restructured to reduce duplication of training and resources and aligned to civil accreditation. The review process is complex and requires input from everyone within the geomatic trade. Therefore, it is paramount that all members participate fully to ensure a successful outcome, for both the technician and the trade.

TM Emergency Responder - WO2 Marc Duffy

An occupational analysis was conducted on the Emergency Responder trade in 2007. Recommendations and outcomes of this analysis are being reviewed and processed. Future development of the trade structure is suspended at the moment, pending Army decisions on where the trade should be employed and what capabilities it is to provide. Notwithstanding this, the current structure meets the current directed needs and is working well. To support the fire fighting element of the trade, the Defence Materiel Organisation has progressed with the interim replacement Truck Fire Fighting Rural, with the first vehicle expected to be delivered by June 2009.

Training Development (TD) - SGT Anthony Purton, SGT Gerald Woods, WO1 Stephen Ellis (GRes) and WO1 Dunk (GRes)

During 2007, The TD Cell has delivered new and revised TMPs. SGT Tony Purton has been involved in the rewrite of the Combat Engineer IET Subject 4 Courses. SGT Gerald Woods has been working on the construction trades and has developed the Carpenter, Plumber and Electrician TMPs, as well as numerous Material Handling TMPs. WO1 Ellis is reviewing and developing the geomatic suite of courses and WO1 Dunk has recently begun a review of the Building and Engineering Services TMP.

CAPT S. JAMIE TWIDALE
Staff Officer Grade Two, RAE Trade Policy,
Combined Arms Training Centre

EQUIPMENT NEWS

CORE 24 – Rationalisation of C Vehicles

Army's current fleet of C vehicles contains approximately 800 vehicles representing 95 different NSNs with most equipment types having less than five vehicles. Around 40 per cent of the fleet is beyond life-of-type with an average equipment age of ten years. A plan for the strategic long-term management of the fleet, 'Core 24' was developed by HQ Land Command Engineers (LC Engrs) in consultation with Defence Materiel Organisation (DMO) in 2006 just prior to HQ LC Engrs being disbanded. Fortunately, the plan was submitted to the Army Capability Management Committee and endorsed before the demise of LC Engrs. The strategy seeks to reduce the 95 different plant variants down to 24 (for example, less vehicles with more applications) that will allow Defence to provide, and subsequently sustain, a young C vehicle fleet.

It has not been possible to apply one or two blanket policies to the formulation of this strategy or indeed the Core 24 range of plant. Potentially contentious inclusions and exclusions are advised below. The reasons for the inclusion and exclusions will be discussed in more detail during the next RAE Corps Capability Committee meeting. It is the intent of DMO that some of the excluded vehicles will be available through a hiring program that is explained later in this article.

Exclusion of:

- Heavy Dozer in lieu of as required hiring;
- Jacques Crusher in lieu of the deployable crusher capability and ability to purchase crushed rock in Australia (for example, the Joint Rapid Airfield Construction and 1st Brigade Driver Training Area);
- Airtrack Rock Drill in lieu of HX9 attachment;
- Kubota Agricultural Tractor in lieu of as required hiring; and
- Light Roller.

Inclusion of:

- Light Engineer Tractor;
- Scraper;
- 1160 millimetre Earth Auger rather than exclusion in lieu of a HX9 attachment; and
- Heavy Rough Terrain CSL 32T Lift and Heavy Rough Terrain Mobile Crane 90 tonne Lift (to be delivered through JP126) plus the Heavy Rough Terrain Cont Stacker 20 tonne Lift.

Engineer Vehicles Program, DMO has been steadily implementing the Core 24 plan with the following being achieved to date:

- establishment of a Standing Offer for the short-term hire of C vehicles;
- establishment of a C vehicle Minor Project Office; and
- short-term hire of Equipment Standing Offer (SO).

A contract was signed on 11 September 2007 with Cat Rental for a SO for the hire of the following range of plant equipment:

- Mini SSL (Dingo/Kanga);
- Rollers;
- Dozers Light, Medium and Heavy;
- FEL;
- Spreaders;
- Trenchers;
- Compactors; and
- Cranes.

The agreement is for Australia-wide hire of plant for a standard rate with standard terms and conditions. The SO also includes detailed insurance provisions and covers issues such as transportation, refuelling costs, tire damage and wear, inspection requirements, operator training, maintenance obligations.

The SO has a three-year term with options to extend. Army Headquarters (AHQ) has agreed to fund this initiative up to \$1 million per annum for the first three years. It is anticipated that this amount will be reviewed once the SO has been tested over the first year or so. The SO is designed to provide Army Reserve units with the ability to use short-term hire to satisfy their plant needs rather than invest large amounts of capital funding in low utilisation equipment. The SO is also designed to provide an easy avenue for all engineer units to hire specialist equipment such as Dingo diggers, augers, etc. AHQ and DMO are still working through policy details; however, the DMO vision is that unit COs and OCs will have an annual budget allocated to be used against the SO. A detailed implementation instruction has been prepared by the DMO Project Manager and will be distributed in the near future. In short, units will be responsible for managing their hire budget and regular reports will be provided back to DMO and AHQ on budget expenditure. It is anticipated that cross levelling of funding would occur as required and that units would have the ability to request additional funding in exceptional circumstances. Detailed policy will follow in the near future.

Establishment of a C Vehicle Minor Projects Office

The Core 24 Strategic Plan for Management of C Vehicles called for the establishment of a project office capable of delivering eight new projects or fleets every three years. The proposal called for an additional 14 staff to be added to the existing C vehicle program to achieve this volume. To date, the C Vehicle Project Office has delivered the Manitou 7140 Telehandler and the John Deere Medium Dozers and Graders. These three projects totalled \$43 million. Five new projects with an overall value of \$45 million have received project approval and the existing four staff will be increased to ten. The first of these is a new light excavator to replace the Cat 933. This project has selected the Komatsu PC50 excavator and deliveries are expected to commence in April 2008. This project received project approval in September 2006. The remaining four projects were approved in August and September 2007 and seek to replace the Case 580E Front End Loader/Backhoe, Scraper, Cat D3 and Roller fleet.

Requests for tenders are planned to be issued during February to July to procure these new equipments. Core 24 has identified the Merlo Telehandler, the LX 120 FEL and Tadano Crane as the next three projects. Unfortunately, the Engineer Vehicle Program no longer has the capacity to draft and staff Minor Capability Submissions and with the demise of HQ Land Command Engineers, there is a real risk that these projects will not be initiated.

Project Paladin

In May 2006, DMO were tasked with developing hardened engineer plant for deployment to Afghanistan with the 1st Reconstruction Task Force (RTF). On 14 December 2006, Engineer Vehicle Program delivered four JD 270 skid-steer loaders with Ballistic Protected Cabins (BPC); two Cat D5 dozers with BPC; two Cat

563E rollers with BPC; two Komatsu PC130 excavators with BPC; and two Hitachi LX100 FEL with BPC.

With the exception of one skid-steer loader that was retained for training and ongoing experimental work, all vehicles were delivered to RTF-1 in Afghanistan. Engineer Vehicle Program are currently finalising two Cat 130G graders with BPC for delivery to RTF-3. A training fleet, consisting of one of each Paladin variant, is being produced for pre-deployment training of plant operators and maintainers. It is intended that this training fleet be located at School of Military Engineering. To date, Engineer Vehicle Project Paladin staff have organised and provided training for RTF-1, RTF-2 and RTF-3. RTF-4 will receive training on these vehicles in late November. It has been a privilege to be involved with the Paladin Project Team, who was awarded the DMO Land System Division Team Excellence Award for 2006. The team members were:

- Program Manager - LTCOL Peter Cleasby-Jones, RAEME
- Project Manager - MAJ Simon Grace, RAA
- Project Engineering Officer - Ms (CPL) Fiona Ince, RAE
- Plant adviser - WO1 Bill Oates, RAE
- Project Technical Officer - WO1 Tony Mackay, RAEME
- Climate Control Engineer - Ms Kara Tong, APS

Project Paladin plant incorporates Bushmaster armour technology that has been adapted to the various items of plant mentioned in this article. Wherever possible, Bushmaster part numbers were used in the fabrication of the plant, including windows, doors, escape hatches and latches. Over 2,500 part numbers were required to be catalogued to enable these vehicles to be supported. This included 'fly away kits' CES and general service items. This project was allocated a high priority by LSD Senior Management and without their support we would not have been able to do what we did. I would like to take this opportunity to thank Dr Steve Gumley, CEO DMO for his guidance; Mr Colin Sharp, Head Land Systems Division, for his tolerance; MAJGEN Grant Cavenagh, for his commitment; and COL Stuart Dodds, for his unwavering support to this unique endeavour. Someone, somewhere, owes me a beer. Mad Dog, you'll do.

LTCOL PETER CLEASBY-JONES

Program Manager Engineer Vehicles, Land Systems Division,
Defence Materiel Organisation

FROM THE *Hilton* TO *Holsworthy*

The hallowed grounds of the School of Military Engineering (SME); the Home of the Sapper, have been a little bluer since January this year when Construction Wing (CW) saw a CPL Royal Australian Air Force (RAAF) Plant Operator-Instructor posted to the School.

At the end of last year, I was informed that I had been chosen for a two year tour at SME CW as an instructor on the Civil Construction Plant Course, or Basic Plant Operators Course in RAAF language. I will admit that after attending many courses at SME, I was a little nervous about how I would assimilate into army life.

The first weeks here were fairly typical of a new posting; induction training, individual readiness and lots of physical training. Of course with a new posting comes the challenges of a new hierarchy and work mates; however, I was fairly lucky as I had previously been on courses and exercises with a few of the other instructors. Probably the biggest difference for me was that the RAAF airfield engineering family is very small and any posting within the RAAF has me catching up with past colleagues and familiar faces. I guess here there were no preconceived expectations either way; I was simply 'The RAFFY'!

My main aim was to see how Army engineers 'do business' and hopefully pick up a few pointers. It did not take me long to realise that the six Army corporal instructors here had a combined knowledge and experience of almost 100 years, and added to the rest of the staff, that amount doubled again. It was at this point I questioned my ability to hold up my end of the agreement and wondered if my 18 year's of service added up to much.

From the beginning, I was literally thrown into the deep end, given similar tasks to my peers and pointed in the right direction. To my surprise, the knowledge gap was not so big and it did not take long for me to realise that I did have something to bring to the table.

I have to make some comment with envious eyes in regard to customs and traditions. The Air Force has many traditions, but being the new kids on the block in Defence, ours are not so deeply

ingrained in comparison to what I have seen at SME. I have been lucky enough to see a Banner Parade, a Corps Birthday and an International Rugby game between the Royal Engineers and Royal Australian Engineers. SME is also host to the Museum of Military Engineering, in my mind, second only to the War Memorial in Canberra.

It is no secret that the Army prides itself on discipline and there is also the expectation that RAAFies' have it a bit easier. I am not going to comment either way, its just different. In my experience outside SME, I have found that Army soldiers look to their NCOs closely for guidance and RAAF airmen tend to be a little more independent. When a trainee attends SME CW to do plant training, there is very little difference between Army and RAAF trainees, both Services have to complete the same course, do the same exams, and pass all aspects of the course before competencies are gained and licences issued.

Now about the similarities; we all do duties, march, salute officers, complain about the mess food and accommodation, call the boss "Sarge" when he's in a good mood, straighten up our uniform when we see the RSM/WOD, run 2.4 kilometres when we are told to, call Physical Training Instructors lobsters and Military Police screws, look forward to Anzac Day and pretend not to look up when a FA-18 flies past.

I would have to say that since coming to the dark side, the majority of my experiences have been positive. I look at my uniform and realise that it's not so different from the Army's and I now have a different view of my role within the 'big picture'. I can see that one lone airman at an Army base can make at least a small ripple. On a personal note, if you have the chance to work in a tri-service environment, give it a go, it is worth the effort.

CPL TERRY RAYNER, Royal Australian Air Force
Plant Instructor, Construction Wing, School of Military
Engineering

PERSONNEL MATTERS

AWARDS

Member of the Order of Australia
LTCOL Glen Stockton, AM

Medal of the Order of Australia
WO1 Barry Wade, OAM

PROMOTIONS

Officer Appointments to the Corps

MAJ S. Pemberton, CAPT D. Graham, LT S. Barns,
LT D. Beattie, LT M. Butler, LT D. Carew-Reid, LT S. Chapman,
LT M. Collaros, LT A. Darnley-Stuart, LT T. Day, LT M. Donker,
LT B. Durrant, LT A. Edgar, LT C. Hawkins, LT C. Johns,
LT S. Lam, LT J. Leathley, LT A. Meany, LT J. Myers,
LT T. Napper, LT A. Oxlade, LT J. Porter, LT D. Rosier,
LT C. Thompson, LT L. Townley-Jones, LT A. Wiggins,
LT S. Young.

To Lieutenant Colonel
R. Grose, S. Corrigan.

To Major
J. Daunt, D. Evans, T. Francis, M. Ludwig, M. McCormack,
P. McKay, M. Medina, S. Pemberton, D. Philpots, E. Plant,
M. Prior, M. Richardson, M. Say, G. Scrimgeour, T. Steel,
J. Taylor, E. Tufte-Johnsen, K. Vann, D. White.

To Captain
T. Buckley, C. Bury, M. Conquest, J. Cuypers, A. Gaudry,
K. Golder, J. Haling, A. Johnston, D. Macey, P. Mostafa,
T. O'Brien, B. Patrick, D. Spriggs, H. Stimson, J. Thurgood,
L. Waite, M. Winder, S. Winner, M. Woods, S. Wright.

To Warrant Officer Class One
D. Colligan, S. Di Tullio, R. Hopper, J. Kirkham, W. Snowden,
R. Thies, G. White.

To Warrant Officer Class Two
C. Atwell, R. Beattie, D. Costelloe, M. Daldry, J. Dash,
G. Donaldson, J. Elliott, J. Garden, M. Grigg, B. Hunt, A. Jones,
G. Molnar, G. Pearce, D. Sola, P. Stanek, A. Westover.

To Sergeant
A. Carpenter, G. Carthew, D. Coady, C. Connell, J. Farley,
A. French, B. Hartigan, J. Harvey, C. Jones, S. Kay, R. Logue,
D. O'Brien, S. Parmiter, D. Payne, W. Rogers, D. Royle,
T. Savage, L. Single, C. Smith, R. Smith, S. Smith, P. Spiranac,
D. Stafford, G. Symes, M. Taylor, R. Van Dyle, C. Walker,
M. White.

To Corporal
N. Barrand, A. Barter, T. Caine, M. Cole, M. Colebrook,
L. Connolly, W. Cook, G. Costello, J. Falla, A. Foreman,
I. Gibson, A. Gill, L. Hockings, C. Hunt, A. Isbister, L. Jennings,
G. Joyce, B. Kennedy, M. Kennedy, R. Lindsay, K. McCall,
B. McInnes, M. Montgomery, R. Mulqueen, A. Nelson, J. Olave,

P. Oraya, C. Rowe, A. Schipanski, D. Shearman, W. Sunderland,
A. Teague, J. West, A. Westwood, T. Whelan, M. Wilson,
A. Young.

To Lance Corporal

N. Berry, A. Bourke, C. Brennan, L. Burden, D. Butcher,
J. Cannon, B. Carr, C. Charlton, J. Chislett, J. Cosstick,
S. Crossingham, P. Dahlitz, D. Eaton, A. Exelby, D. Galinec,
D. George, P. Grazier, S. Gurr, D. Guthridge, John Harris,
J. Harris, B. Hawes, P. Jeffrey, P. Kember, S. Kendrick-Ward,
G. Lacy, C. Lewis, D. McMurray, T. Methorst, B. Michalk,
D. Miller, P. Miller, J. Nest, S. Newton, B. Pascoe, M. Pike,
A. Pitshock, C. Read, D. Redshaw, L. Rosier, A. Sheldon,
W. Slorach, S. Smelt, C. Speirs, W. Stevens, P. Sweeney,
D. Tasker, A. Tebbit, M. Tritton, J. Uren, A. Waller, H. Waller,
S. Walster, J. Whittaker, G. Williams, J. Wood, C. Worger.

LEAVING THE REGULAR ARMY

20 or more years of service:

LTCOL D. Barnes, LTCOL M. Bradford, LTCOL C. Hersant,
LTCOL D. Mitchell, LTCOL D. Smith, LTCOL W. Thomson,
MAJ F. Brown, MAJ C. Burton, MAJ P. Christie,
MAJ M. Fanning, MAJ D. Morgan, MAJ B. Reeves,
CAPT D. Cole, CAPT J. Van Dommele, WO1 R. Vinen,
WO2 N. Brown, WO2 G. Coleman, WO2 B. Johnson,
WO2 G. Parlett, WO2 A. Shaw, WO2 P. Sherwood,
WO2 P. Skinner, SSGT A. Bond, SGT M. Bourne,
SGT B. Paul, SGT P. Tallon, CPL M. Schavoni, LCPL G. Young.

Less than 20 years of service:

MAJ B. Connell, MAJ M. Lavers, MAJ J. Selman,
MAJ A. Thomson, CAPT C. Evans, CAPT T. Garafillis,
CAPT B. Kelly, CAPT Z. Levenshus, CAPT L. McLean,
CAPT B. Seesink, CAPT J. Shay, WO2 S. Bradley, WO2 R. Kent,
WO2 T. Martin, WO2 A. Moss, SGT S. Byers, SGT J. Campbell,
SGT J. Gorton, SGT R. Hepburn, SGT C. Hill, SGT G. Jacobs,
SGT D. Martin, SGT R. Meyers, SGT S. Sanford, SGT T. Sisley,
SGT T. Williams, CPL P. Adami, CPL B. Allan,
CPL R. Binnington, CPL A. Birthisel, CPL P. Burraston,
CPL T. Caine, CPL M. Chisholm, CPL D. Cooper,
CPL S. Credlin, CPL T. Currie, CPL A. Curtis, CPL D. Czerkies,
CPL A. Duncan, CPL T. Egan, CPL D. Evans, CPL N. Ferguson,
CPL R. Garland, CPL C. Gray, CPL B. Greenslade,
CPL M. Grice, CPL T. Hogan, CPL R. Lambert-Barker,
CPL D. Leadbitter, CPL M. Lees, CPL S. Leeson, CPL C. Love,
CPL S. McGregor, CPL S. McMillan, CPL J. Murrell,
CPL D. O'Sullivan, CPL A. Paterson, CPL C. Perry,
CPL D. Pollock, CPL B. Saunders, CPL S. Schilling,
CPL S. Snow, CPL K. Varidel, CPL J. Wall, CPL I. Webb,
LCPL K. Davidson, LCPL S. Fischer, LCPL J. Francis,
LCPL G. Huxley, LCPL T. Lyne, LCPL S. Macintyre,
LCPL D. Mansell, LCPL M. McLaughlin, LCPL L. Rosewarne,
LCPL T. Stoll, LCPL M. Worthington, SPR T. Adams,
SPR B. Allan, SPR P. Armstrong, SPR A. Arososki,
SPR N. Barcello, SPR R. Bayley, SPR M. Bellman, SPR G. Berry,
SPR T. Berry, SPR T. Birthisel, SPR A. Blackall, SPR J. Boyd,
SPR G. Broadley, SPR K. Brown, SPR L. Butler, SPR T. Cassell,

SPR D. Chester, SPR S. Childs, SPR K. Cook, SPR M. Crumpler, SPR R. Cummins, SPR R. Cumner, SPR D. Cunningham, SPR C. Cunningham, SPR P. Daniels, SPR J. Dick, SPR I. Douglas, SPR A. Dunbar, SPR B. Dunstan, SPR R. Filla, SPR C. Gooch, SPR K. Gould, SPR J. Greenhalgh, SPR M. Griffiths, SPR C. Hand, SPR S. Hicks, SPR S. Illingworth, SPR J. Horton, SPR M. Hourigan, SPR D. Howell, SPR M. Hutchinson, SPR T. Jaja, SPR B. Johnston, SPR B. Jolly, SPR R. Jones, SPR M. Kanonczuk, SPR L. Killman, SPR G. Knobbs, SPR M. Koenig, SPR J. Langtree, SPR D. Linehan, SPR R. Lopez, SPR S. Lubach, SPR R. MacKenzie, SPR M. Mann, SPR G. Marsh, SPR A. Mattinson, SPR C. McMurray,

SPR D. McSpadden, SPR C. Meldrum, SPR S. Moore, SPR P. Moya-Cummings, SPR J. Newcombe, SPR B. Newman, SPR B. Nixon, SPR A. Norris, SPR L. Nugent, SPR M. Pepper, SPR G. Pfeiffer, SPR S. Pike, SPR M. Pomey, SPR R. Powell, SPR T. Prince, SPR G. Provost, SPR B. Pullin, SPR A. Ray, SPR J. Richardson, SPR J. Roberts, SPR B. Robinson, SPR N. Rolls, SPR J. Royce, SPR M. Siddall, SPR L. Simmich, SPR M. Sinclair, SPR T. Skoda, SPR S. Slorach, SPR C. Smith, SPR J. Smith, SPR J. Stokes, SPR D. Swan, SPR R. Swan, SPR C. Taylor, SPR D. Thirlwell, SPR S. Thomas, SPR I. Thompson, SPR B. Tonkin, SPR B. Tugwell, SPR S. Tully, SPR J. Wadsworth, SPR D. Watt, SPR S. Watts, SPR R. Wilson, SPR L. Wright.

Myths of a Dark Art

Ubique, a word that sappers can tout with reverence and rightly so. Though to be everywhere sappers must undertake numerous and varied tasks. That is where the Geomatic Technicians ensure that sappers are also represented in the headquarters of formations, task forces and special operation groups. Though, having just read 'Geomatic Technicians' I am expecting your eyes to possibly glaze over, your mind waver and you contemplate seeking an alternate article to read. So I appeal to you to fight through. The intent is not to bore you but rather enlighten and arm you with knowledge that I as a Combat Engineer, have come to realise. This realisation was aided by being immersed within the geomatic and multimedia trades, the two lesser known trades of the corps. I was not converted nor brainwashed only educated.

Generally, anything geospatial is viewed by most sappers as a dark art and, therefore, too hard to understand. What many people do not realise is that geospatial information and geographical information systems (GIS) impact upon their everyday lives. Geospatial information is used to provide basic utilities, weather services, traffic and aircraft management and control. It is used by the police, fire brigade, ambulance, government agencies, etc. Like it or hate it, with geospatial technology forming a central component of modern life, it is only logical that the Australian Defence Force utilise it in systems such as BCSS, FalconView for the pilots and FBCB2 for the M1A1 Abrams tank. Therefore, it is prudent for all sappers, the terrain experts, to understand basic geospatial requirements, capabilities and most importantly, where to find support.

Geospatial products allow commanders at all levels to visualise the terrain, identify critical points and plan contingencies. There are many different Decision Support Products that can be created to suit any situation. Products include, but are not limited to, image maps, 3D terrain analysis and modelling. With the right information, suitable areas for artillery, helicopter landing zones for example can be identified and overlaid on a standard map. Geospatial products are most effectively employed during the planning phases of an operation or task but are also extremely useful during the conduct aiding command and control.

The critical principle is Early Warning. It is essential that a supporting geospatial element be advised of likely tasks and locations as soon as they become identified. This allows time to interrogate the databases to identify data holdings and gaps, fill those gaps if possible and then create the product. The gaps are filled by request-

ing further information from other geospatial organisations which can take a couple of days depending upon the national importance of your task. Once all of the necessary data has been sourced and imported into the GIS, the products that can be produced, within the confines of time and data, are limited only by the needs of the commander and the imagination of the Geospatial Support Element.

The concepts of what geospatial support can provide does not require technical know how, only a willingness to think outside the box and ask questions. Rather than having an existing map enlarging challenge your geomatic technician with ideas and concepts which could lead to better provision of support. Recent software and hardware developments, combined with the greater availability of geospatial data, have seen geomatic engineers able to pack more of a punch than ever before. The issue is making all sappers aware of the benefits gained by providing timely and effective geospatial support to the right places. That way, they can inform their commander of the requirement to request the support early.

The 1st Division HQ, 1st and 3rd Brigades all have their own integral geospatial support elements. These cells are able to provide basic support, and when a greater level of support is needed, they request it from 1st Topographical Survey Squadron. Not all commanders are aware of the benefits a geomatic technician can provide and it is often necessary to inform new commanders and their staff of the capabilities that geospatial engineering can provide to their organisation. The issues caused by this would be reduced if a greater understanding of geospatial support was exhibited by the wider Royal Australian Engineers.

Every sapper is capable of providing basic geospatial support or at least directing the requesting person to the right place. Remember to think of geospatial support early and seek their input to your situation. Timely requests for support allow for timely provision of support. Don't shy away from geospatial support because you don't understand it. Once you have a concept of what it can provide, you will not forget its capability. I am sure that those who have worked closely with or used geospatial products on recent operations can attest to this and it is up to them to ensure that the geomatic technician is not forgotten and, more importantly, the benefits they provide.

MAJ CAMERON THORLEY and CAPT KEIRAN VIDAL
Geomatic Engineering Wing, School of Military Engineering

Royal Australian Engineers

IMAGERY ARCHIVE

Our History into the Future

The Royal Australian Engineers (RAE) has a rich and varied history. It has been involved in all major conflicts and has provided support in many locations in Australia and around the world. Since the creation of the camera, many soldiers have felt the need to take a picture of what they are doing, where they are doing it, and whom they did it with. Every unit, and I dare say every sapper, has their own collections of photos and videos taken whilst deployed or during training. The sad fact is that many of these photos and the stories they tell are unknown outside the unit or a select group of mates.

Recently, a long-standing plan to create an archive for all of these photos has come to fruition. Two computers, a scanner and software were purchased to commence the daunting task of collating all of the negatives, slides, glass etchings, and photos that have been produced in the last 100 years of the sapper. It is estimated that within the School of Military Engineering there are over 50,000 images to scan, annotate and

archive. This does not include the RAE Museum archives or personal collections; however, it does include the historical photos from Royal Australian Survey Corps and the School of Military Survey. When all Corps-wide sources of photos are considered, the number of photos could exceed 500,000.

It is intended that the archive will hold all historical photos of the RAE and Royal Australian Survey Corps in an easy to interrogate database that is available across the Defence Restricted Network and perhaps the Internet. This would ensure widest availability and access for all current serving and ex-sappers. This would not be achievable before 2009 because of the sheer size of the archive and the technical issues involved.

In the meantime, work has begun on populating the archive. Mr Matt Kaarma, who has been involved with photographic training in Defence for over 20 years, has led this process. He currently manages the Operational Support Photographer Course, and has pushed the creation of this archive for several years. He wants to ensure that the quality of the archive and the contents are of the highest standard. With this in mind, the initial focus is to get the procedure and quality requirements ironed out. This is nearing completion and the archive now contains approximately 10,000 photos. The majority of these images were from digital sources with the addition of some World War One negatives. This procedure was assisted by an Initial Employment Training trainee, SPR Lynn, who has been diligently scanning and annotating negatives

for the last four months.

The next phase will be to implement procedures to capture images from current operations, exercises and activities. Following this, the scanning of archival images will shift to the museum and, eventually, personal historical records through the various RAE associations and the Military Engineering Heritage Company, a volunteer organisation that provided support to the Museum.

In the meantime, units and individuals can start collating their own specific photos for eventual inclusion into the archive.

It is requested that images are not sent to SME or the museum until a formal request is promulgated through the chain of command.

So what photos are suitable?

In short, all photos, negatives and digital images that capture RAE activities, people, equipment and events. The archive should not just be a sterile collection of set poses and events. It seeks to capture the essence of military engineering and its history. This includes current and historical operations, field exercises, training activities,

sporting events, parades and award presentations. The only photos that will not be included are those of a poor standard or obscene nature.

Prior to sending the photos and negatives to SME, please record all details about the photo so this information can be included into the archive. This can either be done on paper or if you are providing digital images, include it in the metadata of the photo, which is possible using various software programs, some of which are free. By completing this metadata on each photo, it will help reduce the workload of adding the item to the archive. Photos with no information attached will not be included in the archive. Once your images are scanned into the archive they will be returned to you.

Where can you get the software needed to add metadata to your digital images? There are many software programs that can read and write metadata to digital images. Microsoft offers a free program (4.2 MB file) called 'Photo Info' and this can be downloaded from their website at: <http://www.microsoft.com/windowsxp/using/digitalphotography/prophoto/photoinfo.msp>

Once you install the software, you can right mouse click on a digital image file and the program will open and metadata can then be added to one or more images. Once metadata has been added, it remains embedded in the image file and can be viewed by third parties as required or used for structuring complex databases.

What information do you need to provide with each photo? As detailed in Defence Information Management Policy Instruc-



tion No 2/2003, each photo in the archive must have metadata attached. This is information about the picture so that enable someone to search the archive by keywords. The more information you can provide with each photo the better. The information required includes:

- Author/By line. The name of the photographer (if known).
 - Date. This is normally captured by the camera and added automatically by the IPTC program.
 - Place. Where the image was captured.
 - Description/Caption. A brief description of what the image is about. The more information the better but don't go overboard.
 - Keywords. These are important as they will determine the way the image can be retrieved. Keywords should include the names of any identifiable people, the place, the event, the concept (for example, team work or planning, etc.). Consider an image of a cat. The keywords might be cat, feline, tabby, pet, etc.
- Supplemental Categories. Security classification. Please don't send any imagery classified SECRET or TOP SECRET.
 - Source. Film or digital or scanned print.
 - Capturing unit. For example, 1st Combat Engineer regiment, 21st Construction Regiment, etc.
 - Credit. The Department of Defence if the image was taken as part of normal duty, otherwise the photographers name.
 - Copyright. Commonwealth of Australia if the image was captured as part of your normal duty, or other copyright owner. If you took the photograph as a personal activity using your own camera then the copyright belongs to you.

CAPT KEIRAN VIDAL
Second-In-Command, Geomatic Engineering Wing
School of Military Engineering

Royal Australian Engineers

CORPS COMMITTEE

REPORT

The Royal Australian Engineers (RAE) Corps Committee has undergone a renaissance of kinds in the past 12 months. With the demise of the Commander Land Command Engineers organisation and the embedded Head of Corps (HOC) appointment, it became necessary to rebuild the committee to ensure it could remain functional, sustainable and relevant. In order to achieve this outcome, decisions needed to be made on the organisation of the Committee, the aims of the Committee and how Corps funds would operate into the future. These necessary decisions were made by the Corps Committee with input from unit COs, OCs, RSMs and SSMs during the Corps Conference conducted at the School of Military Engineering in May 2007. The decisions resulted in a complete rewrite of the RAE Corps Committee Constitution and this document is currently being considered by HOC for approval.

People often ask what the Corps Committee does and what Corps funds are used for, so I will attempt to give you a short history of the committee and how the committee and funds operate. The inaugural RAE Corps Committee meeting was held in Sydney on 27 March 1954. MAJGEN Sir Clive Steele, KBE, DSO, MC, ED was the presiding Chairman. The original Corps Committee Charter was adopted at this time. The role of the Corps Committee was to concern itself with the well being and advancement of the Corps of RAE as a whole and to take whatever actions it considered appropriate to achieve this end. Some items dealt with by the Committee at that time included assistance to the RAE Band to purchase uniforms, presentations on behalf of the Corps and design of a Corps Blazer. Initially the Committee and its members were to be drawn only from the RAE officer ranks. Voluntary subscriptions were sought from all RAE officers and placed into a Corps fund to ensure the Committee had the necessary funds to

finance their decisions.

In more recent years, voluntary membership to the Corps Funds was offered to warrant officers and sergeants and any interested other rank soldiers. This remains the current policy. The role of Corps Funds was expanded to fund research and publication of Corps History books; grants and/or loans to organisations for the writing of RAE unit histories; portrait paintings of significant RAE personnel; comfort packages for RAE personnel serving overseas; grants to Corps sporting teams; purchase of wreaths for remembrance and funeral services; certificates for 20 and 30 years service to the Corps; prizes for outstanding IET and RAE RMC graduates and many other Corps related activities worthy of Corps fund assistance.

The often asked question by individuals, particularly other ranks is, "If I join the fund what is in it for me?" The answer is very little for you individually. However, your contributions support the Corps as a whole in so many ways including those mentioned above. For example, Volume Five of the Corps History will cover our recent history post Vietnam. There are many serving and ex serving sappers that have contributed significantly to the Corps in this period and it is only right that their service is identified and recorded for future prosperity. Any contribution made to the Corps Fund will be used for the betterment of the Corps as a whole. Early next year the Corps Committee will release a PR package on what the committee and Corps Funds is all about and hopefully this will encourage you to join the fund and contribute to the Corps' well being.

MAJ PAUL HAMPTON
Staff Officer Grade Two, Head of Corps – Royal Australian Engineers

Sapper

OBITUARIES

GENERAL JOHN BAKER, AC, DSM
Chief of Defence Force 1995 to 1998



General Baker was born in Melbourne in 1936. He joined the Australian Army in 1954 and following graduation from the Royal Military College, Duntroon he was commissioned into the Royal Australian Engineers (RAE). He then completed his degree in Civil Engineering at Melbourne University.

He gained his early regimental experience in a number of RAE units, including one year in Papua New Guinea, an exchange appointment with the US 25th Infantry Division and the School of Military Engineering.

In 1967, he attended Army Staff College, Queenscliff. He then undertook a number of staff appointments in Army Headquarters. In 1970, he served in Vietnam as a member of the Battle Analysis Team and in 1970/71 he again served in Vietnam as project officer in 1st Australian Civil Affairs Unit. For his service with 1st Australian Civil Affairs Unit, Major Baker was Mentioned in Dispatches for his devotion to duty, professional skill and leadership qualities of the highest order.

Promoted Lieutenant Colonel in 1971, he attended the Joint Services Staff College in 1973 and after further staff appointments returned to the Joint Services Staff College as a member of the Directing Staff from 1977 to 1979.

Promoted Colonel in 1979, he was appointed Director of Combat Development - Army, until posted to the office of the Chief of the Defence Force Staff in 1980. In 1982, he was promoted Brigadier and assumed the duties of Director General Joint Service Policy. This was followed by an appointment as Commander 2nd Military District, and a short term as Deputy Chief of Operations (Army). In 1987, he was promoted to Major General and took up the duties of Chief of Logistics - Army. In 1989, he was appointed Director, Joint Intelligence Organisation. During his time as Director he was instrumental in changing the direction of the Organisation and retitling it to the Defence Intelligence Organisation.

He was promoted Lieutenant General in 1992 and assumed the

appointment of Vice Chief of the Defence Force.

He was promoted to Companion in the Military Division of the Order of Australia in the 1995 Australia Day Honours List.

In 1995, he assumed the appointment of Chief of the Defence Force. During his tenure as Chief of the Defence Force, General Baker led significant structural change with the implementation of new and more effective higher command and control arrangements. He was also responsible for implementing the Defence Reform Program and integrating civilian and military staff into a cohesive Defence team. General Baker retired from the Australian Defence Force in 1998.

In retirement, General Baker continued to be very much involved in defence matters. He was a member of the 2004 Australia Day Committee, Vice President of the Australia Day in the National Capitol Committee, a member of the Strategic Defence Studies Centre at ANU, the Chairman of the Australian Defence College and a member of the Board of Directors for Australian Submarine Corporation and the Minister's Defence Council. He also held the appointments of Colonel Commandant Eastern Region, RAE Corps Committee and Representative Colonel Commandant RAE Corps Committee. He held these appointments from February 2004 until his passing from an illness on 9 July 2007.

General John Baker was greatly admired throughout the entire Australian Defence Force. He garnered great respect for his compassion, determination and professional mastery.

BRIGADIER OWEN MAGEE



Denis Owen Anthony Magee was born on 26 March 1925 at Wickiepin, Western Australian. He was educated at Aquinas College and, after completing his leaving certificate in 1942, he enrolled at the Royal Military College, Duntroon. In 1944, he graduated as a lieutenant into the Royal Australian Engineers (RAE) and served

with 2/2nd Field Company, RAE in New Guinea during World War Two.

After the war, Owen studied civil engineering at the University of Western Australia. He was promoted substantive Captain in 1948. Upon graduation in 1950, he was posted to 1st Field Squadron, RAE and, in 1951, to 7th Field Squadron, RAE. In July 1951, he was posted to the British Commonwealth Occupation Force in Japan. In December 1951, he was posted to Korea where he served for two years as a garrison engineer officer with the British Commonwealth Engineer Regiment.

Following his service in the Korean War, he returned to Perth where he served from 1953 to 1956 as Commander Royal Engineers (CRE) with CRE Western Command. He was promoted substantive Major in 1954.

In 1956, he was posted to the Army Guided Weapons Trails Unit as the engineer in charge of the development of rocket testing facilities at Woomera, South Australia. He was then posted on Operation Buffalo at Maralinga, South Australia where the British Government, in cooperation with the Australian Government, carried out testing of four nuclear fission bombs. Major Magee was appointed engineer in charge of the Australian Military Engineer Force. In addition to being responsible for the installation and construction of the field and testing facilities, he was also in charge of the construction of over three hundred kilometres of road, the laying of over six hundred kilometres of special control cable and the construction of several large towers.

In 1957, he was seconded to the Snowy Mountains Hydro-Electric Authority where he applied his extensive engineering knowledge in the construction of the hydro-electric power scheme. The scheme is considered one of the most complex integrated water and hydro-electric power schemes in the world. It includes sixteen major dams, seven power stations (two underground), a pumping station, 145 kilometres of inter-connected trans-mountain tunnels and 80 kilometres of aqueducts.

From January to December 1959, he served as Staff Officer Royal Engineers (SORE) (Administration and Training) at the Chief Engineers Branch, Southern Command. He then attended Staff College at Quetta, Pakistan from December 1959 to January 1961.

Promoted Lieutenant Colonel, he was posted to the School of Military Engineering where he held the appointment of Commanding Officer and Chief Instructor from 1961 to 1963.

From 1963 to 1965 he was appointed Assistant Adjutant General, HQ Eastern Command and in March 1965, he was appointed Assistant Quartermaster General and CRE HQ Northern Command.

In 1967, he was posted to the Directorate of Fortifications and Works and in February 1969 he was promoted substantive Colonel. He held the appointment of Director of Fortifications and Works until 1970. Whilst posted to the Directorate of Fortifications and Works his duties included service in South Vietnam during the Vietnam War.

He resigned from the Australian Regular Army in 1970 and took up the position of Executive Director and Deputy Chairman of the Sydney Cove Redevelopment Authority. As head of the Authority, he was responsible for the redevelopment of The Rocks, which involved both new construction and renovation of what was at that time a 25 hectare slum and wasteland. It is to Owen Magee's credit that The Rocks is now Sydney's prime tourist attraction and remains Australia's greatest urban renewal project. Details of his involvement in this project may be found in his book, *How The Rocks Was Won*, published in 2005 by the Institution of Engineers.

Whilst active in his civilian capacity, he continued a part-time

role with the Army by serving in the Citizens Military Force. Promoted Brigadier, he was appointed Assistant Commander, HQ Training Command - Army, a position he held until 1978.

He resigned from the Sydney Cove Redevelopment Authority in 1985 and became a civil engineer and town planning consultant. However, most of his time was dedicated to charitable organisations, including holding a position of Trustee of the War Widows Guild (NSW); service to the RSL Veterans Homes, Legacy and Sisters of Charity. He also served on the committee of the Sydney Building Information Centre.

He continued his association with the Corps after leaving the Army by serving as Honorary Colonel Commandant, RAE Eastern Region from 1980 to 1982. He was President of the Institution of Royal Australia Engineers in 1977. He held the positions of Patron of the Sappers Association of NSW and President of the 6th Division Engineers Association. He made a significant contribution to the writing of the RAE Corps History Volume Four and served on the publication's Steering Committee.

Brigadier Owen Magee died in Sydney on 14 May 2007.

WARRANT OFFICER CLASS TWO ALLEN HILLEARY

Allen Lawrence Hilleary enlisted into the Australian Regular Army as a qualified electrician on 13 November 1973. On completion of Corps training he was posted as an electrician to 3rd Field Engineer Regiment on 20 January 1974.

After three years service, Allen discharged from the Army on 27 August 1976 but reenlisted on 7 February 1977.

He was posted to 1st Field Engineer Regiment on 7 February 1977 and then posted to 17th Construction Squadron on 1 November 1977. He was promoted Lance Corporal on 20 January 1978 and then to Corporal on 26 June 1978.

On 24 April 1981, he was posted to HQ Logistics Command and on 30 June 1982 he was promoted Sergeant. This was followed with a posting to 2nd Signals Regiment on 31 March 1983 and then a five year posting to 30 Terminal Squadron from 19 December 1984.

On 1 February 1989 he was promoted to Staff Sergeant and posted to HQ 7th Military District. He then served a year at the School of Military Engineering from 16 January 1991 until 22 January 1992 when he was posted to Defence Support Unit Singleton.

He continued his career as a Supervisor Engineer Services when he was posted to Chief Engineers Branch Australian Capital Territory on 18 January 1995 and a posting to Base Administrative Support Centre Liverpool on 13 January 1997. He was promoted Warrant Officer Class Two on 9 March 1995.

He returned to the School of Military Engineering on 15 January 2001 and served with the Army History Unit for four years as the curator of the Australian Army Museum of Military Engineering (RAE Corps museum).

On 14 December 2004, he discharged from the Australian Regular Army and transferred to the Army Reserve.

Allen, who was known as 'Mouse' by his mates, was a passionate and highly competent electrician and works supervisor who was respected by his subordinates, peers and seniors. He inspired many sappers through his professionalism and genuine interest he displayed for every task he undertook during his career. He will be remembered with fondness by serving and retired members of the Royal Australian Engineers.

Allen Hilleary died from an illness on 22 February 2007.

SAPPER RUGBY

In 2007, the Royal Australian Engineers (RAE) demonstrated its commitment to reviving the Corps' proud rugby union heritage by organising the first ever Tri Nations Sapper Rugby Competition. The competition was the brain child of MAJ Don Philpots, RAE; MAJ Chris Fowke, Royal Engineers (RE); and LTCOL Phil Morrison, Royal New Zealand Engineer (RNZE). The plan was to concentrate sappers from the United Kingdom, New Zealand and Australia in Sydney and compete for the Hesko Tri Nations Sapper Rugby Cup.

Planning for the event started in earnest at the end of 2005, following an RAE rugby tour to NZ. Regrettably, the RNZE team had to pull out of the competition at short notice because of other commitments. This situation resulted in the RE and RAE teams advancing directly into the final for the coveted trophy.

In the absence of the RNZE team, the organisers arranged games for RE team between the Sydney Sappers and the Australian Army Development team prior to the main RAE v RE game.

The first game, Sydney Sappers v RE was played on 10 May 2007. The Sydney team were fresh from winning the Kapooka 10s competition and comprised of players from the School of Military Engineering, mostly from the Regimental Officer Basic Course; 17th Construction Squadron; Incident Response Regiment and Land Headquarters. The game was always going to be a big challenge for the Sydney Sappers team, given that the RE team had just won the UK Inter Corps Championship, taking the Sapper-Gunner trophy in the process. The Sydney Sappers played a spirited game, competing at the line-out and in every other aspect of the game bar one - the scrum. The RE front row were outstanding and proceeded to give the Sydney team a lesson in scrummaging. The final score: RE 20 Sydney Sappers 8.

The RE team then played the Army Development team and again showed their dominance up front. This time the RE team won 18 to 8. The Australian Army player of the match was a sapper officer, Brad Heskett but unfortunately Brad received an injury

during the game precluding him from taking any further part in the tournament.

The final game was played at the School of Military Engineering on the 17 May 2007. Army Band - Sydney played the National anthems and the stage was set for a major contest with national pride at stake. The tension and occasion were getting to both sides. Neither side wanted to give a score resulting in big hits in defence. Both teams came close to crossing the line but it was the RAE team that had the slight advantage as the half progressed. From the first few exchanges it was evident that both teams wanted to run the ball in the ideal conditions. However, with the RAE team being a man down from an incident that resulted in a yellow card, it was the visitors who crossed the white line first.

Both teams displayed great courage and determination throughout the game and provided some very entertaining rugby. However, it was the RE team who eventually came out on top with a victory of 32 to 17.

Following the game, both teams gathered together to share a well earned beer and, for sappers from different sides of the world who normally would only meet as close allies on a foreign battlefield, were united in reinforcing their sapper camaraderie and their love of rugby.

MAJ Chris Fowke, RE has now started planning the return competition which will be held in the UK in April 2009. This should give us some time to work on the scrum. For details about the 2009 competition, contact your Unit Rugby Officer.

For match reports and player profiles go to the RAE Rugby website at sapperrugby.org.au and also visit the RE Rugby website at sapperrugby.com

Support RAE rugby and "Follow the Sapperroos"

MAJ DON PHILPOTS
RAE Rugby Coach

