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Letters to the Editor

An Alternative Approach

Dear Sir,

I set out to highlight some of the problems an open ended commitment to air support creates for the Navy and the Army. Norman Ashworth confirms the doctrinal blind spot but is surprisingly indifferent to the difficulties caused the other Services.

The theory on which the current doctrine is based is fine for a large air force which guarantees all forms of air support but is impractical for the limited ADF. Our doctrine must recognise this blind spot.

If the ADF is to have any chance in battle there must be a commitment to air support. It is not impossible; with our force limitations does not a self contained, well trained, joint tactical force, capable of limited strategic reaction, offer a more sensible balance than the illusion of considerable strategic capability with skimpy tactical backing?

D.M. Butler
Major General (Ret)

Disaster Response

Dear Sir,

Col. Barry Blake, in his illuminating article on the existence of AODRO, invited interested readers to write for further information on AODRO. Could you either put me in contact with Col. Blake or provide an address and contact name? Thank you.

This is a subject which has interested me since my involvement with a mobile communications unit which serves as part of the RAAF. I believe that much of the expertise which exists in the ADF is not being put to its best possible use. Our American brethren have learnt over the years to maximise their use of military resources, a fairly sizeable chunk of their economy is dependent on military business and many of their units are recognised leaders in their fields — for example the US Army Corp of Engineers. Based, I believe, in North Carolina, this unit was responsible for much of the restoration work after the San Francisco earthquake in 1989. This same organisation is employed building roads and undertaking other engineering works all over CONUS and its territories. While realising that our beloved unions would be appalled by such an idea, it has certainly done no harm in the USA, and could, I believe, be emulated here at home, given the political will.

Thank you for your assistance and congratulations on your journal, which at least provides a ‘forum of ideas’ for ADF members.

Richard Byrne
Sergeant, RAAF

Dive Bombers

Dear Sir,

I wish to challenge Commander Grazebrook’s assertion that the Royal Air Force did not employ dive bombers in the Second World War (Letters, Issue 93, March/April ’92).

He has overlooked the Vultee Vengeance, an American dive bomber which entered service with the RAF in 1941, and equipped Nos 45, 82, 84 and 110 Squadrons in the Burma campaign. They were ideal as an ‘airborne artillery’ operating in support of the Wingate Long Range Penetration (Chindit) Operations, due to the pinpoint accuracy required for targets in thick vegetation.

Confidence by ground troops in the Vengeance pilots was illustrated by a request for an attack on a specific room in a house. Vultee Vengeances were also used by the Royal Australian Air Force in New Guinea.

An excellent source for Commander Grazebrook and other interested in this subject is Peter C. Smith’s Jungle Dive Bombers at War, John Murray, London, 1987.

D.G. Waye
Warrant Officer Class One
School of Signals
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What if: Our Desert Storm?

By Lieutenant Colonel M. Hyde, RAE

Many aspects of the short, but intense, ground war of Operation Desert Storm have relevance to the Australian Army in general, and the combat arms in particular. The harsh desert environment has many similarities to our arid outback with its paucity of infrastructure. The Iraqi climate, with potentially intense temperatures culminating in a sudden ‘wet’ during the 100-hour ground war, was a challenge. The topography, sand and dust were also problems familiar to Australian soldiers who have exercised in parts of our inland.

Of additional relevance to us were the sudden manner in which the entire Gulf War ‘appeared’, and the nature of the multi-national (or combined operations) response. In July 1990, many military minds were grappling with a problem we share. The East/West tensions were exponentially decreasing; scenarios involving large-scale military forces were difficult, if not impossible, to conceive; and any likely or plausible contingencies would only require ‘light forces’. Enter the patron saint of armoured formations — Saddam Hussein. I recall quite clearly the surprise, if not astonishment, of the average North American at that time. It seemed a classical development of the conflict situation where the ‘means’ existed in abundance, with a little ‘intent’. A squabble over natural resources, in this case, oil, rapidly changed the situation to provide the ‘intent’. How relevant is this to our situation in five, ten or fifty years? Will we get ten years to read a change in intent?

Personal Background

I had arrived at the US Army Engineer School in December 1988 as the Australian Exchange Instructor, a posting that allowed me to specialise in combined arms tactics. I was, therefore, in the right place at the right time when the mobilisation to free Kuwait began. My initial involvement in Operation Desert Shield was in leading a team of trainers that toureded US Army engineer units (from battalion to brigade) in the US and Germany during a three-month period. In early December 1990 I was deployed to the Kuwait Theatre of Operations for two reasons:

a. initially, to provide additional expertise to the Commander VII Corps, LTGEN F. M. Franks, on breaching complex obstacles while also providing advice/assistance on general combat engineering operations; and

b. to assume the appointment of Divisional Engineer (or CDE in our parlance) for three engineer battalions in the 1st Armoured Division [1 (US) AD].

This involvement gave me first-hand experience of the deployment, pre-battle and post-battle phases of the Gulf War from a national, corps and divisional perspective. Additionally, I assisted the Egyptian II Corps and its divisional staff for a short time.

Outline

The following topics will be discussed:

a. doctrine and procedures,

b. force structure,

c. training,

d. intelligence, and

e. equipment.

Discussion

Doctrine and Procedures.

‘Behind the soldiers and weaponry there is a long history of combat doctrine, and this often the determining factor in battle!

‘Historical analysis proves how dangerous doctrinal stagnation can be. Doctrinal rigidity can exact a heavy price on the battlefield, especially when military leaders fail to recognise the potential of technological advancements.

Colonel Uri Dromi
Editor-in-Chief of Ma’arachot
The Israel Defence Forces’ Publishing House.

The entire operation demonstrated clearly that the attitude of the military leadership towards doctrine needed to be dynamic. The successful amalgamation of new and old was evident at all levels of leadership. VII Corps, for example, was trained and prepared for
an intense war in the fields, forests and towns of Germany. Yet this unit of some 135,000 soldiers was able to fight and execute blitzkrieg tactics, in a quite alien environment, very successfully.

Execution of breaching doctrine demonstrated the benefits of robust organisations and good working relationships or affiliations. The ABCA, NATO and other Coalition forums proved their worth many times over. New doctrine had to be assimilated quickly by, for example, the Egyptian and Saudi/Kuwaiti forces. Doctrine had to be adapted to a new environment with a different enemy and, often, using new equipment.

It was fortunate that the pre-battle phase allowed plenty of time for thorough battle procedure. Detailed appreciations were conducted. At brigade, division and corps levels, detailed wargaming was used to analyse different ‘what-if’ situations. ‘Backbriefing’ proved successful. This is a technique whereby a subordinate briefs back what he believes he was told to do. Backbriefs were thoroughly conducted from battalion to corps and higher levels, and, particularly at division and corps, proved essential in ensuring that orders were properly understood. 1 (US) AD consisted of some 20,500 men and women (counting an additional brigade of allocated artillery) which allowed plenty of room for different interpretations of orders across the division. Liaison officers were also invaluable in trying to keep the divisional forward tactical command post (DTAC), the divisional main command post (DMAIN) and the divisional rear command post all working together. Communication proved extremely difficult, particularly between DMAIN and DTAC, when planning and conducting operations.

Wargaming involved an analysis of each phase of the proposed operation against each of the battlefield operating systems (BOSs). The seven BOSs used were intelligence, manoeuvre, fire support, air defence, mobility/counter-mobility, command and control, and logistics. The technique was extremely successful in detecting and solving potential problems, and gave all of the different staff cells the opportunity to interact for each phase of the proposed operation. This ensured that the plans at corps and division had agility with depth, yet allowed for initiative. The most important feature of the BOS analysis and wargaming was that it ensured synchronisation across, front-to-rear and above the battlefield. For example, a considerable portion of the 1 (US) AD combat power rested with our 36 Apache attack helicopters organic to division; but they needed careful application for best use and to avoid killing our own troops.

Wargaming was an ideal means of identifying and predicting the key problems that could arise when breaching the Iraqi complex obstacle belts that were 15 km deep in places. It was a main ingredient in the success of the lightning advance which later proved possible after the obstacles in a thinly held and poorly developed sector had been penetrated. The detailed and well-synchronised plans for command and control, and for logistics, paid high dividends in the short, but intense, ground war.

Success in joint operations relied heavily on wargaming to achieve synchronisation, agility and depth. There were some notable failures, exemplified by recurring strikes on our own troops. A less well-known problem related to the use of GATOR mines (laid by the US Air Force). These high technology, modern, scatterable mines were perceived from our analysis during the earlier wargaming process to be a potential difficulty. If we were to exploit successes and be able to use the ‘indirect approach’, then tight control of these obstacles was essential. Many visits were made to the Battlefield Co-ordination Element cell at Central Command Air Force (CENTAF) to try to ensure adequate co-ordination and liaison; and to avoid the use of GATOR mines without ground forces’ knowledge. In the event, the mines were laid in the Iraqi rear as an attempted means of battlefield air interdiction. Consequently, 1 (US) AD and 3 (US) AD both found themselves deep in Iraqi territory astride the Iraqi main supply routes – but, on several occasions, also among GATOR minefields. Obstacle command and control in offensive (and defensive) operations is likely to present real problems in modern warfare. This will also apply in the lower levels of conflict, if mines are going to be used.

One of the primary lessons of the Gulf War must be the residual strength that accrues to nations who ensure they develop and practice flexible doctrine. This war reinforced the need to have a thinking, logical leadership at all levels. Open minds were and will continue to be necessary to tackle situations that may develop in ways not originally foreseen. This could happen in ten years or fifty years from now; perhaps when our current junior leaders, having grown into senior leaders, have themselves retired and left a legacy of doctrinal attitudes without having been tested by actual battle. The need to achieve agility, opportunity for initiative, depth and synchronisation will continue to be of paramount importance to minimise casualties. In low-level (LL) and escalated LL conflict, the political cost to national will of small failures or casualties may well far outweigh the actual loss in lives or injuries.

International forums such as ABCA and ANZUS need our input, and we should promote them in our doctrine wherever possible. The ground war once again proved the interdependence of doctrine, organisa-
The value of exchange postings cannot be overstated, demanding and low-cost training. This training can build on and test developed doctrine for joint and combined operations which otherwise may not be affordable or achievable, particularly with our Asian neighbours. The value of exchange postings cannot be overstated, no matter the duration or rank level. In the world of combined operations, there is a need for cross-fertilisation of doctrine, training and procedures.

Force Structure

The Gulf War provided exceptional experiences relating to force structure issues and the transition from peace to war. It reinforced the need for realistic assumptions and planning. Given the time frames in which a contingency deployment always seems to occur, there must be a smooth, effective and efficient transition from peace to war. Command, control and communication procedures proved to be crucial. Ad hoc arrangements did work eventually, but were usually inefficient. This applied from echelons above corps down to brigade.

The role of arms and supporting arms advisers at all levels, from brigade to corps, proved invaluable. The effective use of such staff advisers to the commanders ensured speedy and comprehensive planning systems, leading to a quick understanding of situations and of the full implications of changes. As a result, we were able to exploit the enemy's weaknesses rapidly with the fewest casualties.

Force structure issues impinged rather severely on the Sappers. During the decade prior to the Gulf War, the US Army had been attempting to restructure the divisional engineer organisation to provide a Sapper battalion to support each manoeuvre brigade, plus a divisional engineer headquarters at 2 (AS) Inf Div. Preparation for this war quickly and irrevocably demonstrated the real need for a minimum of three sapper battalions in each division. The 1st (US) Infantry Division (Mechanised) [1 (US) ID (M)] had five engineer battalions because it was the corps main effort for the breaching. The Divisional Engineer headquarters element used in each division was an ad hoc structure of only several persons, and the various different arrangements across the divisions within VII Corps experienced varying degrees of success. It was a unanimous opinion, however, that the immediate lead-up period to fighting a war was not the time to be attempting to introduce new procedures and players into the command post, if it could be avoided. The Gulf War proved, from both a US and UK perspective, that maximum benefit is gained when the Sapper battalions have an effective command, control, communications, intelligence (C1) and logistic sustainment headquarters to reach across the brigades in a division.

Our new combat engineer regiments (CERs) go part way to redressing this problem in our doctrine. The C1 and logistics functional co-ordination represented by the CER headquarters is absolutely essential within the brigade to ensure Sapper support when and where needed against an enemy we must assume now will be a little more proficient than the Iraqi military. In our LL conflict scenario, it is likely that we have an extremely weak link in having only one engineer and an assistant at the divisional level, despite the independent brigade concept. If we are to achieve maximum effectiveness and efficiency across the divisional area of operations, then a divisional engineer cell is essential. Synergism will only be achieved by divisional co-ordination of C1 and logistics (especially for engineer class IV, V and IX stores). Our engineer requirements for sustainment, mobility and hardening (survivability) in the LL scenario of our outback will probably have many similarities to Operations Desert Shield and Desert Storm with their desert environment and lack of infrastructure.

The quantity of engineer plant needed for life support for modern forces in the field meant graders, water trucks, loaders, dump trucks and so on were always in short supply. A two-week or four-week exercise hardly does justice to the real route maintenance problems that occurred with constant trafficking by overloaded vehicles in this operation. Remember that one pass over a road by a 25% overloaded vehicle is equivalent to 2.45 passes of a vehicle correctly loaded. On this basis, a brigade of slightly overloaded vehicles represents the traffic of nearly a division with correctly loaded vehicles.

In this operation, engineer units had more than sufficient time to get all of their heavy and medium equipment deployed, demonstrating clearly that units must have more than quickly deployable light equipment. Their equipment tables (ETs) must also include organic medium, and even heavy, equipment, to allow a small chance of providing the horizontal construction and maintenance output consistent with the logistic replenishment requirements of our relatively modern Army. In any particular circumstance, medium plant can be left behind to follow as soon as possible, if it is held on the ET. Repair parts, repair
technicians and plant operators will all then be available as soon as the heavier, but exponentially more efficient, equipment follows.

**Training**

Most leaders who had any involvement with the Gulf War have stated categorically that the war reinforced the need for hard and realistic training. US units that had a background of good training were obvious by their self confidence. My experience with the Arab Coalition Partners (except the Egyptians) also reinforced the need for solid training. The Saudi forces, for example, required a lot of intense training and coaching on how to actually train. This meant we had to build simple expedition training facilities and ranges to conduct realistic breaching training, knowing we were going to face the real thing. Academic discussions and TEWTS were no longer appropriate.

The performance of non-commissioned officers and junior officers was vital. Most units deployed with 100% or 105% of their authorised manpower. This meant that, at any level, there were a lot of new faces to be assimilated into the respective organisations. Additionally, each unit always had some types of new equipment that required complete familiarisation. For example, use of the Global Positioning System (GPS) called for fitting, simple maintenance, and then training. Effective training in the GPS ensured that sections through to brigades and division were able to exploit this powerful new tool to its maximum. This allowed the far greater fire-power and manouevrability of our forces to be focused, thus ensuring minimum casualties. Another good example lies in the familiarisation training conducted on the M9 armoured combat earthmover (ACE). This highly mobile, lightly armoured, 'light' output dozer machine was actually introduced to most engineer battalions in theatre. Familiarisation training and combined arms breaching rehearsals on a full-sized enemy brigade position (in northern Saudi Arabia) were conducted with the ACE. It was here that the successful tactic of merely pushing the ACE through the line of entrenchments and burying the defenders from behind was adopted. Virtually no friendly casualties occurred and the tactic was highly successful, compared with trench-to-trench fighting.

The junior leadership was also vital during the preparation phases for a variety of other reasons. Welfare and morale had to be closely monitored and built on. This must come essentially from the junior leaders. It is easy now, with hindsight, to say that there really was not a significant threat. It must be recalled, however, that during the deployment and pre-battle phases, the Iraqi Army had large armoured formations and had a huge potential for destruction. The Nuclear, Biological and Chemical (NBC) warfare threat was also potentially large. Saddam's willingness to use biological and chemical warfare had already been demonstrated against the Iranians and Kurds. At the start of the air war in 16 January 1991, the tension from the Iraqi SCUD and NBC threat was quite pronounced. In fact, it was interesting to note that our suicides during this time tended to involve soldiers such as maintenance personnel who, although under considerable tension, were away from their small-unit support group (sections and platoons).

At higher levels, leaders were focused on additional problems. Asset allocations across the divisions and brigades were of real concern. Breaching assets were coming straight from the factories to the ships to us. Tank ploughs, rollers, magnetic fuse activating devices, Mine Clearing Line Charges (MICLIC) and mine rakes were all in extremely short supply. Careful task analysis at corps and again at division was essential as the basis for allocation. Combined arms training and rehearsals were necessary at company through to division level. The 1 (UK) AD crossed our division sized training obstacle in an overnight forward passage-of-lines rehearsal through 1 (US) ID (M) involving some 15,000 soldiers. Three men died in that rehearsal, but during the actual event in 24 February 1991 not one person died. Achieving synchronisation in execution as was planned was a major concern. Given the incredible lack of spare parts for almost all of the equipment, this training was a real challenge. Again, the junior leaders rose to the occasion to keep their equipment and machines running at 90% and 95% serviceability rates without repair parts.

**Intelligence**

It has been generally acknowledged that, to a certain extent, US forces were surprised by the developments in early August 1990. My experience in training was that some of the US tactics and doctrine were thus a little inappropriate. In the US case, the process they use to determine their threat will be modified to ensure it is a little more dynamic in the
future. With our totally fictional enemy in our exercises, it would take us a period of time to come to grips with the real threat and adapt our doctrine, tactics and procedures. Initially, it was extremely difficult to forecast the Iraqi actions and reactions because he had an unusual mixture of Soviet and Western doctrines and equipment. In the event, we did severely overestimate his competence and capabilities.

My experience with the intelligence system did not instill absolute confidence. My involvement with national intelligence agencies, at VII Corps and 1 (US) AD gave me the impression that the intelligence system did not necessarily produce results unless it was driven by repeated focused questions. This caused problems for engineer support. Many of the commanders were almost completely absorbed in getting their units deployed and were unable to conduct thorough appreciations initially. Engineer commanders at first did not adequately consider their intelligence preparation for battle. Because engineer units were not driving the intelligence system to produce, there was little, if any, engineer intelligence available. There were also initial problems of compartmentalisation and access, which meant that the intelligence system did not reach its full potential quickly at the tactical level.

With respect to combined operations, this war should give us many lessons for intelligence issues. We must ensure that we have good access to information and intelligence, particularly with an ally like the US. My time spent with the Egyptian corps and division staffs demonstrated how difficult their planning was when they did not have access to even a small percentage of intelligence products. Their flow of intelligence was supposed to be via the Arab Coalition Headquarters but that system did not work. The situation occurred despite the fact that Egyptian mission success was vital to our mission success, because they were to draw three armoured divisions of the Iraqi tactical reserve away from our left flanking thrust.

If we are to be able to produce intelligence, we must continue to push for information processing and analysis. Information systems and other technological solutions need emphasis. For engineers, the intelligence officer in the CER will provide a previously unavailable resource to the brigade. The addition of the Engineer Command and Control Information System (ECCIS) in the future will provide a robust engineer intelligence capability. The lack of a divisional engineer capability, again remains an extremely weak link for us on any future battlefield. We must also address the shortage of engineer intelligence doctrine and training.

Faced with the prospect of a real war against a real enemy, we had to absorb much new equipment quickly, as previously discussed. Before the ground war began, mobility was perceived as being vital, and many of the lessons learned now highlight shortfalls in mobility. If we undertake combined operations, it is likely we will need and be able to ask for new types of equipment. The Egyptians were lent many items of engineer equipment to ensure that they improved their mobility and achieved their missions. Similarly, we need to be able to assimilate new equipment, because it can quickly and vastly increase our capability. We need to keep a doctrinal and training attitude alive in our junior and senior leaders that will make possible such successful use of equipment.

This also means that we need an acquisition system that can introduce equipment quickly. Sharp, military-oriented committee decisions when necessary. Our doctrine must be visionary at all levels, including the civilian areas of interaction. Our higher level doctrine needs to look at aspects like arrangements with the ABCA nations and our Southwest Pacific neighbours. Technology and equipment sharing offer tremendous potential as a combat multiplier, provided it can be used in our doctrine and training.

Future studies of the Gulf War will yield many lessons of relevance to us. Similarities exist between our environments; our climates, topography and terrain have many things in common. These lessons apply to deployment, the defensive phase and the offensive phase of the war.

We must look to develop our doctrine aggressively and not assume that things will just happen. If we are to move smoothly from peace to war and then fight effectively, we must have good assumptions as a basis for planning. Combined arms doctrine requires a continued emphasis so that each member of the combined arms team completely understands his part in the whole, and how he must interact with the others. A modern commander must be a combined arms commander, and not merely as infantry, armour, artillery, et cetera commander. We need to develop good combined arms doctrine that looks to the future, incorporates our circumstances, and recognises the impact and importance of technology and equipment.
Force structure issues will always be a contentious part of our doctrinal debates, especially given the pressures on resources resulting from Defence budget cuts. For example, Army Engineers have taken the second largest cut in numbers (behind the Royal Australian Corps of Transport) from the Force Structure Review. Other corps will feel equally strongly about their percentage of the pie, so objective balance in judgements will continue to be necessary. An awareness of the full implications of structural changes is vital. We need rigorous training, including intelligence training, for the entire combined arms team. Doctrine, training and equipment must all be linked synergistically on the next battlefield for Australian troops.

'We must remember that one man is much the same as another, and that he is best who is trained in the severest school.'

Thucydides: History of the Peloponnesian Wars, i.e. 404 BC.

Lieutenant Colonel Mick Hyde is a Civil Engineer and also holds an Economics Degree. He has served as a United Nations Military Observer where he worked as a Liaison Officer with the Palestine Liberation Organisation in Southern Lebanon in 1981. He attended the Army Command and Staff College, Ft Queenscliff in 1986 and then commanded 18th Field Squadron in Townsville. He was the Australian Exchange officer to the United States Army Engineer School during 1989 and 1990, being promoted during the posting.

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The Bougainville Crisis — Causes and Implications

By Lieutenant Colonel D.H. Pembshaw, RAEFC

Introduction

The crisis in Bougainville is the most serious conflict to occur in the Pacific Islands since World War II. It is a situation which has been simmering since the discovery of copper in the south of Bougainville Island in the 1960s (Map 1). Secessionist proposals arose around the time of Papua New Guinea's independence in September 1975, however, these died down until the late 1980s. Actions to gain further compensation and a greater share of the mine's profits led to increased violence and, finally, the closure of the mine in mid 1989 and the demand for secession from Papua New Guinea.

Background

The people of Bougainville initially had contact with Europeans in the eighteenth century when whalers, traders, labour recruiters and missionaries visited the island. The labour recruiters forced men to go to the sugar plantations in Queensland, Samoa and Fiji. Much blood was shed on these voyages and on the plantations such that relations were soured for many generations.1

These recruiting forays ceased when Germany annexed the islands into the colony of German New Guinea in 1899. Therein lies what is part of the root problem to the Bougainville crisis as between the years 1885 and 1914, 'the map of New Guinea was tidied up in London and Berlin'.2 Bougainville, Choiseul and Isabel (islands in the northern Solomons) were taken by Germany in 1886 whilst the islands to the south and east were placed in the British Solomons Protectorate in 1893. In 1899, the British gave Western Samoa to the Germans in exchange for the islands of Choiseul and Isabel which became part of the British Solomons. Thus the Solomons were divided; the northern Solomons (Buka and Bougainville) were German, whilst the southern Solomons were British until granted independence as the Solomon Islands in 1978.3

In 1906, the southern part of the island of New Guinea (a British protectorate) and the Trobriand Islands became Australia Papua. In 1914, Germany was forced out of its New Guinea colony (including Bougainville) at the commencement of World War I when an Australia Expeditionary Force captured Rabaul, the centre of the the German administration. In 1921, the Australian military relinquished control in New Guinea to a civilian administration established under a mandate given by the League of Nations.4 Finally, in 1975, Papua New Guinea, 'an amalgamation of the bits and pieces joined together by the colonial powers, gained its independence.5

The Bougainville people are quite obviously racially and ethnically distinct from the people of the mainland and other islands and have been thrown together as part of the one country by the tidying up carried out by the Germans and the British almost a century ago. The Bougainvilleans are more closely related to the people of the Solomon Islands by race and inter-marriages as the islands are very close and contacts are many (Map 2).

The difference between the Bougainvilleans and other Papua New Guineans has been entrenched since early contacts as the island of Bougainville was much neglected by the German, British and subsequently the Australian administrations. The first mission (Catholic) was established in Kieta in 1901 although missionaries had visited the islands on numerous occasions in the eighteenth century. There was no government station on the island until the Germans established a post in Kieta in 1905. The church became the de facto administration of the islands as the missions, especially the Catholic, 'were comparatively well resourced and the administration used its funds for more needy and 'unpacified' areas'.6 However, the missions all derived from the Solomons and brought personnel with them rather than from the mainland of Papua New Guinea. There are three main missions; the Catholics (who arrived in 1901 and proselytised about 80 per cent of the people, the Methodists (1915, 15 per cent) and the Seventh Day Adventists (1924, 5 per cent). The Catholics, especially the Marist order, did not have other missions in Papua New Guinea and had a closer fraternity with other Oceania missions.7

The missions provided education for the people with the first administration school only being set up

Bougainville Island: *Sourced from R.J. May and Matthew Spriggs (eds), The Bougainville Crisis, (Bathurst, 1990).*
in 1961. Even in 1971 there was not a single welfare office in Bougainville. Thus, until the mine was established in the late 1960s, the central administration based on Port Moresby had little influence on the Bougainville people, having left their welfare and education almost exclusively to the missionaries.8

Furthermore, after World War II, the Bougainville people generally refused to work off the island and withdrew their labour from the expatriate-owned plantations as well. This resulted from false expectations being raised about reconstruction and the people's role in it following the World War II devastation. (In the Bougainville campaign, 516 Australians were killed and 1572 wounded; about 8500 Japanese were killed, 9800 more died of illness and 23571 surrendered.) Consequently, plantation owners recruited labour from the mainland which created inter racial hostility between lighter skinned Papua New Guineans (known by the local people, derisively, as 'redskins') and the darker skinned Bougainville 'blacks'. As a result of these contacts with the 'redskins' Bougainvilleans have developed a sharpened sense of common racial and ethnic identity among themselves.9 It is little wonder that the Bougainville people have minimal loyalty to the central Government and the nation of Papua New Guinea given the lack of interest of the administration and the hostility between the Bougainvilleans and the Papua New Guineans. This feeling has inspired 'much of the emotional sentiment for secession'.10

The Bougainville people saw little permanence in a government from outside the island. When copper was first discovered in 1960, there were elders amongst the people who had been subjects of the Germans, the British, the Australians, the Japanese, the Americans and the Australians once again.11 Virtually from the return of the Australian administration in 1946, it was preparing the Territory of Papua New Guinea for independence, although many thought the task was 'so great that it would take almost until the end of the century'.12 However, there was increasing international pressure from the mid 1950s onwards for an end to decolonisation in the region as a result of the Dutch-Indonesian dispute over the western portion of New Guinea which was still in Dutch hands. The Australian and Netherlands governments proclaimed a new policy in New Guinea in November, 1957 which 'provided for intensified social advancement of the New Guinea population and self determination for the island'.13 From that point on, 'the pace of political development began to accelerate — and with it, the realisation that political development needed an economic base'.14

The development of the Bougainville mine by Conzinc Riotinto Australia (CRA) was matched by the rapid political development leading to Papua New Guinea's independence in 1975. Prior to the mine's development, virtually all Papua New Guinea's export income was from agricultural products and cash crops such as copra and cocoa. In 1969-70, about 15 per cent of the country's copra and 25 per cent of the cocoa was produced in the North Solomons province (Bougainville and Buka Islands). These two products earned 75 per cent of Papua New Guinea's export income.15

This narrow agricultural sector, a negligible manufacturing sector and a small gold mining area showed how short of attributes the Territory of Papua New Guinea was when Australia was initially under pressure to give the territory its independence. There was a lack of infrastructure outside the urban centres and any development depended on direct budgetary support from the Australian taxpayer.16 Australia was under increasing international pressure to rapidly 'prepare' Papua New Guinea for independence after decades of 'benign neglect' which had left the country with a poor physical and social infrastructure and an economy dependant on a few volatile agricultural exports.17 The prospect of a major mine development on an island near a potential deep water port must have seemed a godsend to those Australians in an administration which was having to prepare a nation of 700 different languages and less than a dozen tertiary graduates for independence within a generation.18

Land Acquisition and Compensation

The situation was not, however, welcomed by the local populace who were totally opposed to a mine development at Panguna and were not interested in bargaining over the terms on which the copper and gold might be extracted from Panguna but ... simply wanted (CRA) [to go home].20 This was a crucial point when one considers subsequent events in relation to compensation and profit sharing as the Administration was determined that the villagers of southern Bougainville 'would not prevent the establishment of a project which it saw as crucial to the economic viability of an independent Papua New Guinea'.21 Against this background and despite warnings from expatriates that caution and patience were essential for the success of negotiations, the Administration pushed for the necessary land purchases during the late 1960s and early 1970s.

CRA was willing to pay substantial compensation for the land as it was keen to quickly develop the
mine to take advantage of a predicted upturn in world copper prices. The Australian Administration at the time rejected landowners' demands for financial benefits if the mine went ahead, "again against strong advice from its own local officials and from politicians on Bougainville". Villagers were not to be compensated for loss of land (even though the land would be totally destroyed), but only paid a standard occupancy fee for unimproved land ($100 per acre per annum). Initially, the Administration rejected claims for a share of the royalties to be paid to the landowners, however, after sustained pressure in the House of Assembly, they were granted a 5 per cent share.

The Administration defended its decision by stating that a precedent would be set if substantial payment was to be made to landowners and, in the future, other developments might not be viable if profit margins were too low. However, what occurred in Bougainville only deepened the resentment and bitterness they (the Bougainvilleans) felt at having a huge mine forced on them. Although tempers flared and there was resentment during the negotiations, serious violence was avoided at this stage.

The problems relating to the initial acquisition of land reflected the importance placed on land by the Bougainville people, in particular the Nasioi society which inhabited the projected mine area (See Map 3 for distribution of language groups). These residents of central Bougainville are members of a number of dispersed matrilineal clans which reside in a particular place and have a shared right in exploiting that particular area of land. The possession of cultivation rights (as opposed to ownership rights) "revolves in a tight circle with control changing hands in the male line in each succeeding generation so that tracts of land are strongly identified with a particular clan or sub-clan groups". Thus any clan which lost or disposed of its land (as occurred in this case) would find it difficult to get access to other tracts in the same area, much less in other areas of the island, because of the tight control held. The Bougainville people place far more importance on their land than do westernised people and under their ownership, the resources above and below the land are included. "Land provides the most reliable security for one clan; so clans want to keep their land intact". Land therefore provides cohesion within clans and, sometimes, deep conflict between clans. It is thus a strength and a weakness in the Melanesian social structure. The Australian Administration, however, considered that what was beneath the ground belonged to the government.

When CRA first sent its exploration teams to the area, the Nasioi people did not want any interference from the company. In a 1966 patrol report, the officer wrote, "They told me they owned the land and thus the copper and didn't want the company to take it away and leave their children with nothing. They said they wanted to wait until their children had received an education to handle the company". Thus during the 1960s opposition to CRA was widespread in the grounds that if the mine was developed, there would be land shortages for future generations and an absolute loss of land. Eventually, the mining laws were amended in 1966 to provide more adequate compensation to landowners, however, there was still opposition to CRA's presence.

Over the following two decades, there has been increasing pressure on the land as a result of population growth (3 per cent per year), mining and an increase in cash crop production instead of subsistence agriculture and this has led to more common fragmentation of land use and more frequent ownership disputes. A statement by three students from Bougainville perhaps most adequately expresses their relationship with the land: 'Land is our life. Land is our physical life — food and sustenance. Land is our social life; it is marriage; it is status; it is security; it is politics; in fact, it is our only world. When you (the Administration) take our land, you cut away the very heart of our existence... For us to be completely landless is a nightmare which no dollar in the pocket or dollar in the bank will allay: we are a threatened people". The compensation payments and subsequent royalties have done little to reduce the considerable opposition to the mine. As the mine developed, so the concern increased and "the absolute loss of land and the physical and chemical impacts of mining on the environment have become the most important issues".

In 1969, an organisation called Napidakoe Navitu was formed to oppose the acquisition of land in the Arawa and Rorovana district and the exploration which was still being conducted. This group, led by Paul Lapun (later to become PNG's Minister of Mines), petitioned the Australian Prime Minister, John Gorton, to allow the Bougainville people to hold a referendum to determine the future of Bougainville, but this was not permitted. One village, Pakia, sought a court decision which argued that the Australian Administration had acted illegally in the land acquisition by Bougainville Copper Limited (BCL), the company incorporated to operate the mine. This claim was disallowed by the Australian High Court for technical reasons, however, it does show that over two decades ago, the Bougainvilleans were "using every legal means at their disposal to stop the resumption of land for mining".

14 AUSTRALIAN DEFENCE FORCE JOURNAL NO. 97 NOVEMBER/DECEMBER 1992
Distribution of Bougainville Languages.
Sourced from R.J. May and Matthew Spriggs (eds).

BCL Mining Leases.
Sourced from R.J. May and Matthew Spriggs (eds).
Three leases were obtained for the access road to the mine from the port, the special mining lease and the tailings area around the Kawerong-Jaba River system (Map 4). By the end of 1969, a schedule of compensation payments to cover destruction of food plants, animals, fences, and trees was established and, later, to cover land occupation, resettlement, pollution and loss of bushland. As years passed, claims for compensation increased and these added to BCL’s frustration. Each claim led to protracted negotiations which often were politically motivated rather than reflecting a true economic assessment of the appropriate compensation. Many claims were one-off payments rather than a regular income and this led to frustration amongst younger members of the clans who realised there would be no benefit to them.

Two problems are evident; first, it was virtually impossible to accurately identify all landholder clans and individuals entitled to payments and secondly, as many payments were one-off, the first generation of landowners to be paid tended to ‘squander the proceeds and succeeding generations find themselves with little to show for the loss of their land and income’. Thus the younger generation, now adults, has received nothing by way of compensation and sees no hope of a share in the wealth generated by the mine which still plays a major part in the life of the Bougainvilleans. Many of this younger generation have benefited from a better education as a result of the development of the copper mine, however, they believe that their people have been exploited, first of all by the Australian Administration and then by the Papua New Guinea Government for the economic interests of the fledgling nation. Their belief that the agreements reached on mining gave little to the Bougainvilleans themselves by way of long term entitlements has caused much resentment amongst all generations.

The 1967 and 1974 Agreements

The agreement first signed in 1967 between BCL and the Administration allowed for leases to the company, fixed a rate of royalty, and defined the applicable tax-regime. The agreement allowed for some compensation (minimal) but no share of the royalties. The negotiations were made in the knowledge that later the agreement would be satisfactory to an independent PNG Government, however, in both Port Moresby and Canberra, ‘the Government’s best forecast was that such independence was unlikely before 1990’. In essence there was to be a tax holiday in the early stages of mine development in exchange for escalated tax rates in later years. The concept was, as independence was considered to still be a long way off, to ensure the project was viable as world copper prices were low at the time and considerable infrastructure development expenditure was required early in the mine life. Returns would be higher to BCL at this stage and then, as the country approached and achieved independence, the mine would become a significant contributor to the country’s economy. However these forecasts changed quickly, as, under Gough Whitlam’s Labor Government, the push to independence was rapidly accelerated with self government being achieved in 1973 and independence in 1975.

What was seen to have been a marginal mineral deposit had the potential of being a high profit earner as the world price of copper had an unprecedented increase by 1974. The newly elected Papua New Guinea Government denounced the 1967 agreements and insisted on renegotiating with BCL.

The new agreement, signed in 1974, eliminated the promised tax holiday and placed the company on the normal corporate tax rate as well as an additional profits tax if profits exceeding a certain threshold in any one year. This agreement gave an immediate increase in returns to Papua New Guinea although those immediately affected by mine, viz the landholders in particular and the Bougainville people in general, received nothing. The 1974 agreement also allowed for seven year reviews of the agreement.

Dissent to Conflict

These developments and a growing awareness by the local people in Bougainville of the adverse impact on their environment of the mine development led to more calls for secession in 1975 as the agreement only emphasised the view that Bougainville was being sacrificed for the economic interests of Papua New Guinea. The actual hole in the ground was huge, being now 2.5 kilometres across and 40 metres deep and the tailings, which contained chemicals and copper and were pumped into the Jaba River system, were killing all aquatic life over a 35 kilometre stretch between the mine and the sea.

Growing resentment of the Papua New Guinea Government was exacerbated in late 1972 when two North Solomonese public servants ran over a child in the Highlands and were killed in an instant payback.
There was 'a united call for a breakaway from uncivilised mainlanders'. Faced with secession, the then Chief Minister, Michael Somare, conceded an interim provincial government which first sat in 1974. The central government failed to meet the new North Solomons Provincial Government's demand for funds and an impasse was reached in April 1975. On 1 September 1975, the Provincial Government unilaterally declared its independence, just 15 days before Papua New Guinea itself achieved its independence from Australia. The mine itself was not threatened as the stance was non-violent. Somare sought mediation and compromise which was possible as the provincial government preferred decentralised government as part of Papua New Guinea to secession. The issue was resolved in August 1976 and provincial government was instituted. Royalties were also granted from the mine to the provincial government which amounted to 1.25 per cent of the value of production.

It was important to Papua New Guinea at the time to reach a peaceful solution to this early secession issue as Somare did not want the new nation inaugurated with bloodshed and perhaps 'elevate the Defence Force to a menacing position on politics if it won, or relegate it to demoralisation if it lost'.

Furthermore, there was a need for public confidence in the new nation as foreign investment was essential for its economic future. Although agreement on the establishment of the North Solomons Provincial Government and royalties payments led to re-integration of the province into Papua New Guinea in 1976, the more complex problems of adequate compensations were still not easily resolved. Again, even though the national and provincial governments were receiving considerable funds through royalties and additional profit clauses, the landowners were receiving only 0.2 per cent of the profits plus their compensation payments which, as mentioned earlier, were mainly one-off. The total amount of compensation from 1969 to 1988 amounted to K17 million (a little over $20 million) which was very small relative to the wealth produced by the mine and returns to the national and provincial governments.

In 1979, the Panguna Landowners Association (PLA) was established to lobby for compensation payments and to oversee the distribution and investment of such payments. This group was led by the senior clanspeople whose authority flowed from their traditional rights to hold land. The PLA was not initially recognised by BCL and a demonstration was held at the Panguna mine site. The company supermarket was looted by locals who considered they were merely recouping what was morally theirs. Following the demonstration BCL agreed to review its compensation and, under a new agreement, the Road Mine Tailings Lease Trust Fund (RMTLTTF) was established 'to clarify and consolidate what could be claimed and to provide greater equity'. At the same time, however, BCL ran down its Village Relations Office and this led to a lack of communication between BCL and the local residents; this was to have a telling effect in the years to come.

The aim of the RMTLTTF was to establish a form of investment agency for the future benefit of landowners as their natural environment had been devastated by the mine operations. As such it was intended to provide basic services to the area such as education, health care, transportation and water supply. The PLA operations began on a high note as there was initially no conflict of interests. The RMTLTTF was under the umbrella of the PLA and these decisions were easily reached as there was common understanding between the two organisations' executives and also the ordinary landowners.

The problems on Bougainville continued through the 1980s. There was resentment towards the large expatriate population who enjoyed a considerably higher standard of living and also towards the large number of 'mainlanders' or 'redskins' who were employed by the company, or, having left the company, remained in the area. This influx of outsiders combined with the new levels of income 'tended to undermine traditional social structures, leading to a breakdown of existing systems of social control and to rising crime rates'.

In 1981, the first review was held of the 1974 agreement. BCL wanted the provincial government to be a direct participant in the review as there was this evident resentment about the relatively small income the province was deriving from the mine. The Papua New Guinea Government was only prepared to accord the North Solomons Provincial Government observer status and this, plus that there were no other major issues between BCL and the PNG government led to no changes in the agreement. The local residents and the North Solomon Provincial Government were further alienated by the treatment of their interests by the National Government.

Over the years too, the initial harmony between the members and the board of the PLA and RMTLTTF deteriorated. There were several reasons for this; meetings were held on an ad hoc basis and little notice was given so that only a minority of members could attend. There was a feeling amongst many members that some PLA office bearers only nominally occupied their positions because of their seniority as they were poorly educated and not fully aware of
their responsibilities. This led to the situation where a few individuals could manipulate the association’s affai

There were further grievances against the RMTLTF including restrictions on who could attend meetings and appoint the executive and the failure of the executive to provide adequate financial reports. This again led to some members alleging that the executive was using the RMTLTF for their personal gain.

The 1980s also saw a growing awareness of land degradation and environmental problems, especially in the Tailings lease. The disposal of tailings into the Jaba River system contributed to a loss of land, drinking water, timber and hunting and fishing areas. Tributary streams were blocked causing flooding. The actual area occupied by the tailings is much greater than expected and so is the chemical pollution. Villagers who experienced problems with cash and food crops blamed BCL for chemical pollution although in most cases this was probably due to overcropping or little replanting.

When the flying fox population decreased markedly, BCL was again blamed for chemical pollution of drinking water, even though there were indications that these deaths were throughout the province, indicating that they might have other origins such as epidemics, use of shotguns or extinction of natural habitats. Similarly, dead fish reported along Bougainville’s west coast were also blamed on BCL’s use of chemicals. Villagers therefore came to fear the environmental problems being caused by the mine and especially to the projected situation after the mine closed early in the twenty-first century. They considered that the island would then be lifeless, ‘scarred in the centre by an enormous hole — the barren Jaba flood plain and a new delta surrounded by areas of land and sea depleted of wildlife and fish and useless to human population’.

The 1980s also brought an increase in complaints about the health problems of Bougainvilleans living near the mine, although not all the problems are directly attributable to BCL and some are widespread problems not only in Bougainville, but also throughout Papua New Guinea. There was an increasing incidence of malaria in areas near the Tailings lease because of increased swampy conditions caused by the tailings. In the same area also, sores are common and take longer to heal amongst those people in contact with the tailings. However, it is difficult to blame BCL for increased levels of asthma and bronchitis as there is a far greater incidence of smoking. Diarrhoea and respiratory diseases have increased in the area, however, this is true throughout Papua New Guinea and Bougainville as a result of increased population size and mobility. BCL was blamed for all these problems and was seen to be responsible for solving them; this again was a cause of resentment towards BCL and the Papua New Guinea Government.

The resentment was not restricted to the traditional landowners who saw the changes to their social structure, the destruction of their land and the disharmony between members and boards of the PLA and RMTLTF. The younger, better educated clansmen accused the older generation of misusing the funds and being complacent about the needs of the less fortunate. When there was publicity that the mine would be exhausted by 2005, the realisation that landowners in new mining project areas were receiving far better deals from the transnational companies only emphasised to many that Bougainville had really been the ‘milch cow for the new nation’.

Matters reached a head when Father Momis, the member of Parliament for North Solomons, campaigned for a new agreement with BCL during the 1987 election campaign. He formulated his ‘Bougainville Initiative’ which demanded from BCL ‘a fresh start for self reliance and dignity’ in the form of three per cent gross income of four per cent of net sales revenue. This initiative raised the expectations of many of the younger generation. BCL was accused of salting away money to return to the smelters and also exporting gold illegally from the ball mill. These accusations were denied by BCL and never proven. Tension increased after a new Panguna Landowners’ Association (NPLA) was formed by the younger generation in August 1987 and this group effectively replaced the old PLA. The NPLA was led by Perpetua Sorero and Francis Ona and immediately placed several demands on BCL which included K10 billion compensation, 50 per cent of future profits and the National Government’s 20 per cent of ownership of BCL to be transferred to the North Solomonese within five years. Other demands included improved basic services such as health, education and housing, more employment for local people, greater control of pollution and a new land survey. The group was not taken seriously initially and its demands were not met. However, when Ona’s Bougainville Revolutionary Army (BRA), which included an Australian-trained former army explosives expert, began to sabotage mine installations and electricity pylons, the perception of BCL and the National Government changed rapidly.

The NPLA acted as a catalyst for many of the local
villagers’ complaints about insufficient land being available for cash crops and subsistence agriculture, the lack of local employment, the company’s control over small business and the problems associated with the presence of expatriates (mainly from Australia) and mainlanders from New Guinea itself.  

In November 1988, Applied Geology Associates Limited (AGAL) reported the findings of an independent review commissioned by the new Papua New Guinea Government; AGAL found no evidence that chemical pollution had depleted wildlife or horticulture. This was seen as a ‘whitewash’ by Francis Ona who then resigned from BCL and went into the Kongara Mountains where his demands started to increase.  

Conflict increased over the following 18 months and took on the characteristics of guerrilla warfare. As the PNG Security Forces became more frustrated by their inability to track down the BRA, they became more indiscriminate in their use of force and thus alienated many of the previously neutral Bougainvilleans who then became pro-BRA. As frustration grew, the relationship between Bougainville and National Government deteriorated and talks of secession again arose.  

In January 1989, the National Government recognised the NPLA as the true representatives of the landowners and froze the RMTLTF assets. Soon afterwards, Mathew Kove and RMTLTF director and PLA executive, was abducted and is believed to have been murdered by NPLA militants.  

In May 1989, the Prime Minister, Rabbie Namaliu, offered a peace package which was far better than any previously suggested; it included that landowners would receive half of the government’s revenue share, a $300 million development plan over the following seven years. The peace package reflected the increasing success of the BRA’s guerrilla campaign throughout the whole island and, conversely, the failure of the PNGDF and the police to stem the violence and casualties. In the same month, BCL closed the mine after renewed attacks on the mine and its workers.  

By the end of 1989, PNGDF casualties were increasing and in March 1990, the police and PNGDF withdrew completely from Bougainville leaving the BRA in control. This withdrawal was in return for a promise from the BRA to negotiate with the government, however, no meeting places were acceptable to the rebels from among those proposed by the Papua New Guinea Government. At the same time, Bougainville declared its independence from Papua New Guinea although this has not been recognised by other nations.  

An uneasy ‘accord’ stopped any fighting as the PNGDF stayed off the island until April 1991, when troops under Colonel Leo Nuia landed on the north of the island without government approval. This coincided with abuses of human rights and the use of four Australian helicopters to strafe villages and dump bodies at sea. This caused much resentment towards Australia which was seen to be giving direct military assistance to Papua New Guinea by providing the helicopters. Nuia was withdrawn but the troops stayed and have gradually increased their control over the northern part of Bougainville and Buka through a ‘hearts and minds’ operation.  

Papua New Guinea has also imposed a strict blockade on the island over the period although supplies have been smuggled from the neighbouring Solomon Islands, whose people are very sympathetic to the Bougainvilleans’ cause.  

Papua New Guinea has remained frustrated by its inability to solve this problem and in the last few months has attempted to bring more pressure to bear on Bougainville, with recent landings in the south. This followed the murder of a key negotiator, Anthony Anugu, and seven others by BRA militants which have brought an end to Port Moresby’s plan for peace and restoration of services to southern Bougainville. As Buka Island and northern Bougainville (where Colonel Nuia landed) are already under government control, this move would have left the BRA only in control of the central region of Bougainville.  

Papua New Guinea has also deeply offended the Solomon Islands by attacking a village twice in March 1992. This Solomon Islands’ village was suspected by the PNGDF of providing fuel and supplies to the Bougainville rebels. As was the case with Colonel Nuia, these attacks may have been independent actions by the local PNGDF commanders. The attacks have heightened tensions between Papua New Guinea and the Solomon Islands to the extent that the latter’s Prime Minister refused to accept a telephoned apology from his Papua New Guinean counterpart. The next meeting of the Melanesian Spearhead Alliance (which consists of Papua New Guinea, the Solomon Islands, Vanuatu and the Kanaks of New Caledonia) has also been cancelled. This could also lead to problems at the next South Pacific Forum meeting. Overall, Papua New Guinea is in a fairly invidious position and is only gradually making headway in a crisis that has now gone on for four years and continues to cost the country much in export income. Furthermore, confidence amongst foreign investors and organisations such as IMF has decreased.
Cash generated by operations 1972-1989

<table>
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<tr>
<th>Government/Group</th>
<th>Percentage</th>
<th>K million</th>
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<tr>
<td><strong>Papua New Guinea Government</strong></td>
<td>61.5%</td>
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<tr>
<td>Corporate income tax</td>
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<tr>
<td>Group tax (PAYE)</td>
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<tr>
<td>Customs duty</td>
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<tr>
<td>Miscellaneous</td>
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<tr>
<td>Dividends</td>
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<tr>
<td>Dividend withholding tax</td>
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<tr>
<td><strong>North Solomons Provincial Government</strong></td>
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<tr>
<td>Royalties (95% to NSPG)</td>
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<td>Non renewable resources fund</td>
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<td>Royalties (5% to landholders)</td>
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<td><strong>Total</strong></td>
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<td>1754.5</td>
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Economic and Political Implications

What then have been the economic implications of the closure of the mine to the people of Bougainville, Papua New Guinea and even Australia? Before the implications of closure can be assessed, it is beneficial to examine the impact the mine had on the economy of Papua New Guinea from its opening in 1972. Figure 1 shows the cash generated by operations until the mine’s closure in May 1989 at about halfway through the mine’s probable life.

The main elements of the contribution are; it has generated 45 per cent of export income, 17 per cent of internally generated government revenue and 12 per cent of GDP. However, the opening of the mine had wider implications as it provided the economic viability for the emerging independent nation of Papua New Guinea, even though with serious consequences for Bougainville and its people. Being the first major project in the mining industry, it opened the way for other projects such as Ok Tedi, Lihir Island, Misima and Porgera (see Map 1) by establishing what was needed by way of a legal and administrative framework, types of financial arrangements (although again not necessarily benefiting the Bougainvilleans) and what could be done in a technical, engineering and managerial sense in a country where no large scale investment projects of any type had gone on before.

Furthermore, BCL trained workers from throughout Papua New Guinea in a variety of skills necessary for future projects. Some 12,000 employees were trained, many of whom have returned to their home provinces to set up their own businesses or work on other mining projects. Conversely, the presence of these mainlanders has caused problems with the Bougainvilleans near the mine site.

The implications of closure of the mines to Papua New Guinea have been quite serious. In January 1990, the Reserve Bank announced a zero growth rate for the country whereas, in the previous year, growth had been 10 per cent. The unit of currency, the Kina, was devalued by 10 per cent and the budget was decreased by K100 million (A$138 million). Wage restraint measures were also announced by the government.
Papua New Guinea sought a US$50 million structural adjustment loan from the World Bank and US$70-80 million from the International Monetary Fund; these facilities were granted in March 1990. However, these funds did not fully compensate for revenue losses from the mine and the shortfall led to cuts in the public service and in development programs, both of which had political implications for the Namaliu Government.

If the crisis is solved and the financial peace package announced earlier is honoured, this could also lead to other provincial governments pushing for increased revenue for their areas as new mining projects come on stream, as well as calls for increased autonomy. Several mining projects will begin production over the next five to ten years, enhancing the government’s revenue. Others are already producing but have not yet contributed to government revenue because of infrastructure costs and capital depreciation. However, because of the colder economic climate, these projects could be slowed down. Negotiations will also be more difficult for the government as its position has been weakened by the Bougainville crisis.

The implications to Australia have also been significant as Australians are major investors in BCL and are now having to forgo dividends on their investment. Additionally, many of the expatriate community employed by BCL were Australians and any violence generated could have had serious implications for Australia, including possibly becoming involved militarily. Fortunately, this situation was avoided. Of more serious concern would be the successful secession of Bougainville which could lead to political instability in Papua New Guinea: this situation would have strategic, as well as economic, implications for Australia if political unrest leads to the closure of other mines or projects.

Overall, the political and economic implications of the mine closure are all negative for both Papua New Guinea and Australia. For the Bougainvilleans themselves, the closure has led to considerable deprivation because of the blockade of the island and the lack of revenue from the mine. Admittedly, pollution has been stopped; however, the effects of previous tailings pollution will be evident for many decades. The only positive aspect would be the economic peace package, if instigated when the mine re-opens; however, this benefit may not be forthcoming if peace is achieved through a military takeover of the island. The costs of opening the mine again are estimated to be close to A$500 million, and therefore, financial returns to the people of both Papua New Guinea and Bougainville would not be evident for quite a few years.

### Conclusion

Resentment has built up over the past two decades especially in the last few years because the Bougainville people have suffered many of the costs and few of the benefits of a mine project which they did not want in the first place. The mine and its tailings have permanently damaged the environment and affected the populace socially. Financial gains were often one-off and decreased as social costs increased.

The people consider that they are neither ethnically nor racially the same as other Papua New Guineans. They also believe that they were long neglected by successive Australian and Papua New Guinean administrations until copper was discovered on their island. These two factors make secession a viable option as they have little loyalty to Papua New Guinea since their place in that country was imposed on them as a result of colonial decisions a century ago.

The implications of the mine closure have been many, not only for Bougainville, but also for Australia and Papua New Guinea and these implications have been both political and economic; politically in the increased instability in Papua New Guinea and the region through the secession of Bougainville (although not recognised by other countries); and economically to Papua New Guinea and Bougainville and also to Australian investors. All parties involved must share the blame for this contemporary struggle and the violence which has occurred: BCL, the Australian, Papua New Guinean and North Solomons Governments, and the landowners themselves. Inevitably, in a major development project such as the Panguna copper mine, there is going to be social and environmental damage and conflict between the landowners and mine operator which no amount of compensation can ever resolve. The costs to many of the Bougainvilleans were more than they could endure or, for many, even understand, and this led finally to violence as a result of a lack of effective communication. The only benefit has been that other landowners in Papua New Guinea may now be given greater consideration when new mines are proposed and developed. This, however, does not help the Bougainvilleans themselves nor does it resolve the current dispute.

### Notes

Lieutenant Colonel Pembshaw was conscripted in 1971 and graduated from the Pfiffer Training Unit, Scheyville into RAA. He completed his National Service obligation in 1973 and was commissioned as a Direct Entry Officer in RAAC in 1975. Postings have included being IDO at RMC and a variety of corps and non-corps staff appointments and instructional postings. He is a graduate of the Indonesian Army Command and Staff College (SESKOAD) and is currently posted as the Senior Officer, Defence Centre—Melbourne.
Special Warfare Australia

By Major J. Truscott, RAE

Introduction

Cloak and Dagger is a phrase still frequently used when referring to Special Warfare. The phrase reveals an undercurrent of disapproval, as if the speaker imagined ungentlemanly goings-on. This attitude resulted 50 years ago in much antipathy and outright obstruction encountered in creating and operating the Services Reconnaissance Department (SRD), better known these days as Z Special Unit, created to provide intelligence and clandestine support in the South West Pacific. According to Major-General C.H. Finlay who commanded Z Special Unit from 1944 to early 1945, SRD developed from absolutely nothing in 1942 to the highly successful raid in Singapore in 1943, and culminated in 1945 with the outstandingly successful guerrilla operations in Borneo. The latter had the elements of the classic Special Operation about it, commencing in early 1945 with the recruitment and training and coming to full fruition in June 1945. To coincide with the landing of 9 Div. 2000 Guerrillas under SRD control commenced operations behind the Japanese lines. They killed 1500 Japanese, disrupted their tactical regrouping and seriously hindered their defence. After the Japanese surrender, SRD moved in promptly and restored civil administration long before the appropriate authorities could cope. Without doubt Borneo was saved from the insurrections which bedevilled many liberated colonial territories in the post-war period.

An Important Option

As in WWII, embodied in defence policy is the judgement that the ADF should have the ability to strike in an adversary's country. Recognising that political constraints apply, particularly in lower levels of conflict, defence policy implies that the ability to conduct Special Warfare is an important option. Special Warfare consists of missions beyond the capability of conventional units often requiring the use of an adversary's population. ADF capabilities important to conducting Special Warfare include the ability to gather intelligence, conduct raids or sabotage, provide clandestine military assistance and carry out recovery of personnel or equipment. Special Warfare can be conducted in concert with conventional ADF deployments, or it could form part of operations sponsored by other Government Departments.

Active Assistance

The range of Special warfare missions that must be considered in an adversary's country may well call for clandestine or covert methods, usually involving the active assistance of its population. While there is no substitute for effective foreign policy and persuasive non-military strategies, Special Warfare can be used effectively to preempt and at times resolve political and military impasses. For example, parts if not all of recent ADF operations to recover Australian nationals from the South West Pacific could have been conducted under the umbrella of Special Warfare or as a Special Operation, if Australia maintained and developed a greater Special Warfare capability. These operations identified the need for specialist intelligence which can only be obtained from people on the ground. In this context Special Warfare provides policy options which subtly link diplomatic initiatives with military operations, particularly those short of war. This is a large area in which Australian resources overseas can sometimes be used in a low visibility role, such as confirming points of entry. By comparison with many conventional responses, Special Warfare missions can be less physically offensive and involve the least number of personnel. As a minimum force solution Special Warfare offers a key adjunct to diplomatic negotiation. Furthermore, success in some cases can be achieved through deterrence rather than winning in strictly military terms. Even when committed to a mission, the options are open ended in political terms and allow withdrawal in military terms. They also have the potential to tie down vastly disproportionate forces on the opponent's territory.

The range of possible missions will vary. In the anticipated limited warning time for future conflict the capability to conduct intelligence gathering, recovery, psychological operations or to provide clandestine
military assistance will be vital. Raids and sabotage will provide important and varied responses should conflict become protracted of escalate. For example, offensive missions to reconnoitre or sabotage an adversary's military bases or industrial infrastructure offer a surgical and deniable response for more so than offensive strikes by submarines or aircraft. In addition they provide the ability to contain the action and to assess damage. The ability to broadcast propaganda or perhaps an alternative viewpoint from a sanctuary or distribute it within an adversary's country may be an appropriate asset to counter some types of threat. Indeed the ability to actively develop rural and urban insurgencies or civil unrest by offering either support from Australia or advisers on the ground may well constrain an opponent and allow the Australian Government at best to regain the political initiative or at worst provide the Australian Government with extended time to handle an evolving potentially hostile situation. The ability to foster resistance also allows Government to undertake a graduated response before committing conventional troops to offensive operations. Political and economic Special Warfare missions will remain prevalent and dominant in all levels of potential conflict. Typical of these would be the extraction of prisoners or hostages, assassination, the provision of security advisers to protect Australian trade interests or sabotage of industrial infrastructure. Other sensitive missions may seek to obtain intelligence about an adversary's military bases or economic and military potential.

A capability in Australia has not been developed as there is a divergence of opinion and considerable suspicion as to the motives and the nature of Special Warfare. This is largely due to a general lack of understanding by uniformed military and Government civilians at large. WWII saw the formation of a variety of organisations and interallied units under the auspices of the Allied Intelligence Bureau. These were in the main very successful but they were disbanded at the end of the war. Some unconventional skills do exist in the three Services but no more as an extension of overt training team skills than any higher direction by Defence. This latent expertise, together with the tactics and techniques of Army, Navy and Air Force Special Forces is the basis for a limited Australian Special Warfare response to a threat.

**Special Warfare Unit**

Australian Special Forces are capable of fostering a Special Warfare Unit, but what is missing is a Defence organisation such as the 'Allied Intelligence Bureau' to oversee the organisation and development of the capability. For example, military operations are a very decisive form of foreign policy. On the other hand, covert military activities are not always the answer in some contingencies eg. insurgencies, border disputes, or internal security operations. Clandestine military assistance or in country psychological operations may be the best form of support. In all cases, there will be a requirement for accurate intelligence on which to base decisions and the ability to gain this in both peace and war will be of paramount importance. Australia's experience with intelligence in WWII showed that it could 'achieve national objectives through Special Operations even when it lacks(ed) the resources for more conventional methods.'

The physical structures to conduct such missions is important, nearly as important as the people undertaking them. It is a well recognised fact that not everyone is suited for involvement with Special Warfare. At the most basic level the difference between a conventional and an unconventional soldier is his psychological makeup in terms of what to him constitutes a feasible mission. Special Warfare teams are sent on difficult tasks, in difficult places. Special Warfare personnel must be carefully selected from within the Services and Government sectors, given extensive multiskill training and testing, and be adept in working in other countries.

At present levels of capability, Australia’s ability to conduct Special Warfare missions, in particular Special Operations, is not only limited by the lack of an appropriate mixed organisation to be responsible for it, but key extant training deficiencies as well. Very little priority is accorded to unconventional skills and Australia’s ability to conduct such in other countries. The ADF’s ability to work with an adversary’s population in an adversary’s country is seldom exercised. Intelligence gathering or psychological missions requiring language skills or personnel resembling an adversary, eg immigrants, would be extraordinarily difficult to conduct. Direct action missions would be very small in size and limited very much by the lack of sophisticated ADF platforms to support these tasks and to guarantee team survival. Clandestine military assistance to insurgencies or combat search and rescue would currently be tenuous at our present levels of capability. There is a requirement for a range of existing military assets to be grouped in peace to develop skills. To achieve this, ADF priorities need to reflect operations some distance from Australia, as well as northern deployments. In regional terms in any future crisis, teams must be able to insert quickly to achieve surprise or maintain secrecy.
Planning and Training

Some Special Warfare missions may precede overt conflict while others may not be politically acceptable or militarily feasible until the conflict commences or escalates. Given the flexibility offered by Special Warfare in peace and the transition to conflict it makes sense to develop and optimise the capability as an alternative to other ADF options that may be considered. In proposing a structure to control and execute Special Warfare, the lessons derived from the operations of the Allied Intelligence Bureau during WWII are worth noting. In 1948 it was identified as essential that any future organisation of this type have a clear chain of command with a commanding officer instead of a controller. The organisation should be solely concerned with strategic matters and pass operational control of teams across to tactical commanders if and when they become involved. Component sections of any such organisation were recommended to be formed on a functional rather than an area basis to fully exploit resources. In terms of operations, it was concluded that planning and training must be done well in advance to prevent disaster or negligible results from hurriedly launched last minute operations. It was determined that a list of personnel qualified to work in any specific area should also be formulated for reference. Finally, it was considered imperative that any such organisation have its own trained and equipped air and sea transportation. One solution within the peacetime resources and priorities of Government may well be to task some elements of existing Special Force assets under an Inter Departmental unit to specifically develop a capability for Government consideration as an alternative option to more conventional military force responses in future crises.

NOTES

1. LTCOL G. B. Courtney Rtd. Officer Commanding Group A of SRD with HQ 9 Div in Borneo.
2. DOA 87 Para 3.13.
3. R. Babbage. A Coast Too Long, Defending Australia Beyond the 1990's, p.120.
4. Special Operations are those Special Warfare missions which are extremely sensitive and require the highest level of approval. They may be joint or combined on the ground.
5. They also confirmed the need for personnel on the ground to guarantee successful insertion of the initial parties.
6. Speaking on Australian regional security in December 1989 Senator Evans stated that ‘... the policy responses and instruments available to project Australia’s security are multi-dimensional. They go well beyond strictly military capabilities, essential though they are. They also embrace traditional diplomacy, politico-military capabilities in the border zone between defence and diplomacy, economic and trade relations, and development assistance ...’
7. ‘Very small forces, not particularly well armed, were capable of tying down very large numbers of British and Malaysian troops in Borneo. This made the defensive operations very costly to the British by 1965, not quite prohibitively so, but almost’. J.A.C. Mackie, Low Level Military Incursions: Lessons of the Indonesia-Malaysia ‘Confrontation’ Episode, 1963-66, Strategic and Defence Studies Centre Working Paper No. 28, Canberra 1986, P.24.
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The Interview

By Captain D.J. McNicholas, RAA

We conduct interviews every day. We know how to run them properly – or do we?

Introduction

A key skill of management within any organisation, whether private or public sector, is effective communication. This takes many forms, and is perhaps best expressed by the ability to conduct a successful interview. Proficiency in this area is arguably more important than ever today, given the widespread changes within many organisations and the understandable concerns they have raised. This article aims to provide a practical guide to both the planning and conduct of an interview.

General

Communication between people is a two way process. It remains such regardless of the intentions of the participants, the nature of the interaction, or the number of the people involved. Each participant will evaluate what they hear or observe and draw conclusions. Whether those conclusions are right or wrong will depend upon their skills as communicators and the intention of the other party. They can be effected by non-verbal factors such as environment and body language, and by individual perception. Taylor (1989) shows that the latter can itself be influenced by expectations, attitudes and emotions.

At a superficial level communication includes such things as pleasantries between colleagues or neighbours, a conversation over a cup of coffee, or shaking hands before a game of rugby. A message is sent, is received and is interpreted at face value. Such exchanges are generally unplanned in the strict sense of the word, and form a regular and necessary part of our daily lives. Taylor (1980, p 2) suggests that: ‘Communication is the primary activity that determines the quality of our lives’. An accurate statement, given the impact communication has on everything we do.

Planning

An interview differs from the interactions outlined above in a number of ways. Most significantly, it requires planning. Whilst many people might describe an interview as a formal question and answer session (and justifiably, given the experiences they may have had) an effective interview can be much more than that. Specific information objectives will have been established and the approach used will facilitate accurate evaluation of responses by all participants.

Devito (1988) has identified four ways in which interviews are different from conversations. They have a clearly defined purpose or goal; a structure; a level of control by the interviewer; and a balance which encourages the interviewee to do most of the talking. Despite these differences, an interview remains a two way process in which information is exchanged. Johnson and Johnson (1982) define effective communication as a situation in which the receiver interprets the sender’s message in the intended manner. Given the characteristics of an interview, the primary responsibility for an effective exchange rests with the interviewer, who must plan both the content of the interview, and the manner in which it will be conducted. In simple terms, content is concerned with what?, whereas conduct addresses how?

Content Planning

What is the objective or purpose? What do I know about the interviewee? What questions will I ask? What information am I prepared to exchange in return? In planning content, the interviewer considers these and other issues. Regardless of the type of interview, which will be discussed shortly, content planning can be addressed under the following broad headings:

- Determine the Interview Objectives
- Ensure Adequate Subject Preparation, and
- Develop General Questions

Interview Objectives

As with almost any process, if an interview is to be effective it must be conducted with clear objectives in mind. Beveridge (1968) supports this by suggesting that interviews are conducted in a specific context with
a specific purpose. The interviewer needs to both acquire and impart information concerning a particular situation of event. The action taken in response to an evaluation of that information may or may not be part of the interview process. Devito (1988, p 191) best clarifies objective setting with the question: ‘What do you want to accomplish in the interview?’ That question is probably more important than any which the interviewer can devise for the interviewee.

In setting objectives, the interviewer ensures that suitable questions can be developed, and that the interview remains on track. Devito (1988) suggests that general goals should be established, supported by specific content objectives. A general goal may be to determine an employee’s level of satisfaction with their present position, whereas a specific content objective is to identify their preference, preferably in advance of the interview. This will enable adequate preparation on their part, assist in the exchange of information, and save time. It may also serve to reduce tension.

Subject Preparation
An unknown author, in a guide to interviewing technique, has suggested that sound preparation will provide answers to the following questions:

- "Do you know what I am looking for?", and
- "Can I recognise it when I see it?"

The former question has hopefully been answered during the objective setting stage of content planning. The latter can require a great deal of work. In most cases the interviewer is expected to have at least some knowledge of both the topic under discussion and the interviewee. The sources of such knowledge include training, personal contact, the perusal of files of documents, and discussions with relevant people. A skilled interviewer must be able to answer questions.

Good subject preparation is not only advantageous – it is crucial if the interview is to be effective. Preparation ensures that the interview is centred on the key issues, and that the basis of any questions or responses is factual. The effects of perceptions, discussed earlier, can be reduced by replacing opinions with facts. In particular, preparation assists in establishing the credibility of the interviewer by ensuring that only necessary questions are asked, and forms a basis for a degree of empathy between both parties. In the writer’s experience, something as simple as an incorrect name can have serious implications on whether or not the interview objective is achieved.

Develop General Questions
Having determined the objectives of the interview and completed adequate preparation, the interviewer is able to produce a list of general questions. Although arguably a concurrent activity, the type of question is not of concern during content planning. Each question should relate to the broad interview objective, and more particularly to the specific content objectives.

Well planned questions will aid in guiding the interview, without dominating or retarding the communication process. The development of follow-on questions in preparation for anticipated responses may prove useful, however the structure of the interview should remain flexible enough to react to the unexpected. Resort to a ‘verbal questionnaire’ will probably inhibit the development of open and detailed responses from the interviewee. It will also restrict the ability of the interviewer to exercise non-verbal communication skills during the conduct of the interview.

Once the content planning – or the WHAT? – has been completed, the interviewer must concentrate on the conduct of the interview – the HOW?. This involves both further preparation prior to the activity, and the application of a particular approach or style during the interview process. Assuming that the interviewer is skilled, the manner in which an interview is conducted can depend on a number of factors, including the following:

- The type or nature of the interview
- The existing relationship between the participants, and
- The resources available

Types of Interviews
Opinions vary concerning the types of interviews which can be conducted. Devito (1988) suggests four main categories, which are further divided into sixteen specific types. The classification system used by Devito is concerned primarily with the topic of the interview, rather than approach used. Fear (1978) on the other hand, has used the level of control exercised by the interviewer as the main criterion in determining the type of interview, and suggests only three – the Direct, the Indirect and the Patterned Interview. The Australian Army School of Instructional Training (ASIT) (1985) addresses both topic and approach by recognising three types – General, Performance and Counselling.

Regardless of the classification system used, the type of interview, and more particularly its nature or topic, will have considerable impact on the manner in which it is conducted. To cite a simplistic example, it is unlikely that an interviewee in a military disciplinary interview would be welcomed with open arms and a cup of coffee. Similarly, a manager may well conduct
a selection interview in a different manner to that used during performance appraisal. The important point is that the interviewer needs to be aware of the interview type when selecting a means of conduct.

**Existing Relationship**

The relationship between the participants prior to the interview can have both positive and negative effects on the process. If the friendly working relationship exists, the interviewee may be prepared to respond in an open and frank manner. The interviewer will probably go straight to the point and time will be saved. If a degree of animosity is present in the relationship the interviewer’s job is more difficult, in that they must work harder to win the interviewer’s confidence.

In general terms, the approach used by the interviewer should be in keeping with the established norm of the relationship. If it is normal to address each other by title or rank for example, that protocol should be maintained. Failure to do so may lead to confusion or embarrassment on the part of the interviewee. Worse still, it may be perceived as insincere.

**Resources Available**

An interviewer with the best of intentions is still constrained by the available resources. These are the external influences on the interview process, the most significant of which are time and facilities. If an interviewer has to speak to 30 people, it may prove difficult to allocate an appropriate period of time to each. If a manager works in an open plan office, the stairwell may be the only private space available for an interview at short notice.

**Approaches to Interviewing**

Each of the above examples may effect the interviewee’s perception of the interview process. Lack of time may well suggest lack of interest on the part of the interviewer, whereas the stairwell interview reflects on their status and therefore their ability to provide help or guidance. A well skilled interviewer can often still produce good results from such situations, however they generally can and should be avoided by adequate planning.

As discussed above, the type or nature of the interview, the relationship between the participants and the resources available can each have some bearing on the manner in which the interview is conducted. Various writers have suggested principles or models to follow in addressing specific types of interviews, however it is considered that certain general principals are applicable to most interview situations, regardless of topic or environment. The approach used by an interviewer should be appropriate to the situation, encourage a two way communication process and be one with which the interviewer feels comfortable. General principles include the following:

- Establish a suitable environment
- Use appropriate and varied question technique
- Listen and respond, and
- Maintain focus on the interview objectives

**Environment**

A suitable environment for most interviews is one in which the interviewee feels at ease. Physical comfort may be a factor, however we are more concerned here with the other obstacles to communication. The interviewee may be nervous or even suspicious regarding the activity. Some may lack confidence in such situations, whereas others see it as an opportunity to dominate the interviewer and press their own case.

The interviewer can influence such environmental factors to facilitate communication. In a reference to counselling, Shertzer and Stone (1980) have identified both external and internal influences on the process. The former include such things as physical setting, proxemics, privacy and the attitudes of the parties involved. Internal influences are cited as rapport, empathy, genuineness and attentiveness.

The majority of both categories of influence are within the control of a skilled interviewer. That control is demonstrated by paying the interviewee maximum attention, which Carkhuff (1987) terms attending. Whilst the interviewer must strive to maintain a sound environment throughout the interview, it is particularly important in the early stages.

First impressions can set the tone for the remainder of the process, and Devito (1988, p 197) goes as far as to suggest that ‘the success or failure of an interview is often determined before the first question is asked’. The writer approaches the question of environment in the following manner:

- Remove any obvious distractions
- Start on time
- Greet the interviewee in a friendly manner
- Explain the reason for the interview
- Outline the topics to be covered in sequence, and
- Obtain the interviewee’s agreement on the above approach.

The removal of distractions such as the telephone or paperwork and a prompt start time serve to indicate to the interviewee both their own importance, and that of the interview. Harris (1984) emphasises the importance of an interruption free atmosphere, and includes the time clock among possible distractions. A friendly
greeting can ‘break the ice’ and serve to start the interviewee talking. The latter stages of the plan outlined above serve the same purpose, and should assist in alleviating any nervousness of concern on the part of the interviewee. Agreement on the approach to be used emphasises that both participants ‘own’ the interview, and the two way nature of the process.

**Question Technique.** The type of question used and the manner which it is asked can be as important as the question itself. Both will be determined to a large degree by such factors as the nature of the interview, the time available and skill of the interviewer. The following general rules apply:

- Ask only one question at a time
- Allow the interviewee time to consider before responding, and
- Use a variety of question types, avoiding trick questions

Readings suggest that experts disagree on whether interviewers should use direct or indirect questions, and in the writer’s experience no one type is applicable to all information needs. Indirect questions can require considerable skill if they are to be effective. Regardless of the type of questions employed, the number should be kept to a minimum, and they should be supported by non verbal communication techniques where possible. As interviewers grow in skill they will use fewer questions in gaining relevant information. The aim is to have the interviewee do most of the talking.

**Listening and Responding**

An interviewer must both listen and appear to be listening. The former enables the interviewer to ensure that the interview is conducted in accordance with the objectives, and to evaluate responses, and the latter encourages the interviewee to continue speaking. Listening can be demonstrated in a variety of ways, including facial expressions and general behaviour. The importance of skills in these areas is emphasised by Devito (1988, p 136) who argues, ‘...regardless of whether it is intentional or unintentional, one’s non-verbal behaviour communicates’. The aim is to ensure that the correct message is transmitted.

Listening can also be demonstrated in other ways. Paraphrasing of responses or asking follow-on questions is effective, as can be the taking of notes if appropriate. Where possible the interviewee should not be interrupted, as this may disrupt their train of thought, or suggest a lack of interest or tolerance on the part of the interviewer.

**Maintaining Focus**

Although we have suggested that the interviewer should encourage maximum involvement from the interviewee and limit interruptions, the maintenance of focus is very important. The interview has been called for a specific reason with certain objectives in mind. Regardless of the quality of the process used, the interviewer has failed if those objectives are not achieved.

The general and follow-on questions developed prior to the activity should serve as a guide during the interview. Whilst some flexibility is necessary, the interviewer must endeavour to centre the interview on those issues. A reference to the agreed interview plan, followed by a direct question may be all that is necessary to bring the process back on track. If an important unrelated issue is uncovered during the interview, the interviewer must decide whether to address it at the time or to schedule a further interview at a later date. In most cases it is better to address it separately in order to give both parties adequate time to prepare.

**Conclusion**

An interview is more than a conversation or a question and answer session. It requires preparation in regards to both content and conduct, and seeks to achieve specific objectives. Planning is the key factor which separates the interview from other forms of communication, and it should address such diverse areas as the development of questions, the resources available and the existing relationship between the participants.

As with all communication, interviews are a two-way process regardless of the intentions of the participants. Lack of adequate content and conduct planning will send a clear message to the interviewee.

**REFERENCES**

Army School of Instructional Training (1985) Instructor Development Handbook. Australia, Department of Defence.


The Navy's recent introduction of 'Total Quality Management' (TQM) not only bodes well for more effective utilisation of the Navy's manpower resources, its timing could also fit nicely with a renewed drive for greater integration of the Navy's permanent and reserve forces. Whether this concept ultimately translates into a practical enhancement to Naval management or simply end up as an unsuccessful 'quick fix' will largely be determined by the flexibility that can be induced from the Navy's existing structures. The following article presents an alternative approach to providing such flexibility and while the article is counteracted within the Navy, it is applicable throughout the defence force.

Tradition

'Eighty years of proud tradition unhampered by progress' is the underlying emotion often felt emanating from a group of junior officers discussing personnel management 'Navy style'. While it is simple to dismiss this as ill-conceived notions of 'Young Turks', there remains the problem that if the officers feel this way, how is the Navy as a whole going to get TQM, let alone intra and inter service integration, to work effectively down through the ranks? Such a problem is neither new nor surprising for the dichotomy of a modern military force is that the needs for a strong, structured chain of command against which individuals are exhorted to use initiative and flexibility, to overcome bureaucruptic behaviour. Added to this, as sailors and officers have never been more highly educated, they are also now more unlikely to accept 'direction without question'.

The Contemporary Approach

'Despite this knowledge, there remains firmly rooted in the Navy's culture a belief that 'everybody below the rank of commander is immature'. This in turn has meant that the introduction of TQM and the integration of reserve forces is again seen as the province of the Navy's senior management. While it is clear that the efforts of such senior officers are genuinely directed at achieving greater efficiencies, it is equally clear that their methodology continues to ignore the very fabric of their new policies: that the greatest efficiencies are achievable utilising all the Navy's manpower resources.

An Alternative Approach

In cognisance of this, the logical approach should be to start with that bottom end of the system where the mass of the Navy's intellectual resources resides. While an outwardly simple approach, its adoption is by no means simple for turning the process upside down can induce the very failures that it seeks to avoid. For example, it can be envisaged that sailors could be ordered to 'submit constructive suggestions (through the chain of command) for the integration of the reserves forces'. While a hyperbolic example, any related approach would achieve little for it does no more than superficially shroud the existence of decision making process at the top of the organisational pyramid. Indeed, should the sailors feel that such consultation is no more than a cursory measure, the net result may be a negative reaction to any top down policy 'initiative'.

One solution to this dilemma is to find a scheme whereby the mass of intellectual talent in the Navy is not only directed towards the fulfilling of organisational goals but equally, believes that the decision to move in that direction is at least, in part, theirs. One such scheme may be through the introduction of 'job sharing' between members of the permanent and reserve forces. In such a scheme personnel in those establishments that support reservists would be responsible for forming their own job sharing groups. Supervisors would then program that group to undertake whatever task is required: which individual actually carries out the task would however be at the discretion of the group members.

When considering the implications of such an approach it becomes obvious that permanent serviceman would have to be allowed to work both during the 'traditional' working hours and also during periods of reserve training. Additionally, to allow those members
of the reserve forces who are employed in shift work or other fixed scheduled work to be utilised, the ‘traditional’ working week would have to be broadened to accommodate those who wish to start early or secure late in the day. In essence, this introduces a second new concept, that of ‘flexible working hours’ for participating members.

The Advantages

From the Navy’s point of view, the advantages of such a scheme are:
1. Supervisors would be assured that personnel would be available to meet all required tasks for if the permanent incumbent of a billet was on course or ill, other members of the group would make up the shortfall;
2. If individuals where unable to participate in a work share group or a particular function was only able to be undertaken by a specific individual, this would highlight areas that may either be serving no useful function or where there is an over reliance on a particular individual’s skills;
3. It would enhance the Navy’s forward planning and leadership skills for supervisors would need to plan structured tasks in sufficient time for groups to react. Further, members of work groups would have to plan to meet their commitments. Failings in both areas would be readily identifiable (and perhaps more importantly, attributable) and therefore less likely to occur than when planning is a remote and only vaguely attributable responsibility. As individuals pass through bases where work sharpening practices are implemented, such forward planning skills would be carried throughout the Navy;
4. Quality control procedures would improve for one member of a group is unlikely to progress a task on which sub-standard work had previously been undertaken for such poor workmanship would ultimately be attributable, at least in part, to himself. Within a group, members would thus control both the quality and timeliness of each others activities;
5. Similarly, with quality control responsibilities being shared within a group, interfacing groups effectively become each others’ customers. The monitoring of quality and timeliness would therefore be exercised between groups rather than between ranks. Such a system has the effect that quality and timeliness would become a reflex action and therefore eventually become a trait that is enshrined in the Navy’s corporate culture;
6. As groups take on larger, more complex responsibilities, individuals would have the opportunity to participate in a greater variety of tasks (both through task rotation and intra-group cross training). Additionally, job enrichment would also occur for in setting their group’s work schedules, individuals experience increasing levels of task identification and decision making responsibility. Both of these factors would not only increase worker satisfaction but also result in increased productivity; and
7. Finally, such a system would take up the majority of the currently active reservists who stand to be made inactive as the result of moves towards greater integration. While providing the Navy with a greater surge capacity of skills than will exist if large numbers of reservists are stood down, this effect would also go a long way to ensuring a positive and progressive attitude from those reservists who remain in the active reserve.

The Disadvantages

Such a departure from the security inherent in the way things ‘have always been done’ has raised concerns about the practicality of the concept among some fellow officers. Often raised issues have included:
1. ‘Sailors will never be able to settle back into shipboard life’. While this has some validity it is contended that such a proposition could be applied to all shore postings for when ‘ashore’ servicemen have a higher degree of personal privacy, experience more favourable duty routines and have a greater access to sporting, cultural and leisure facilities. Collectively these would seem greater hurdles to re-orientation to shipboard life than any flexible working routine. Equally, having worked closely with reserve forces when ashore, servicemen in the fleet will be more accepting of reservists at sea. Such benefits will be of increasing importance as the ‘Ready Reserve’ comes into being;
2. That ‘writing the orders for such a job sharing system would be impossible’. While true within the confines of the Navy’s current highly structured management systems, such a job design philosophy as proposed above would necessarily be accompanied by greater devolution of decision making authority than is currently practiced. Additionally, that such a view is often expressed indicates the rigidity and the lack of trust inherent in the Navy’s contemporary philosophies; and
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3. ‘Not all individuals will participate in such a scheme’. While due cognisance must be given to such an eventually, that servicemen will be required to co-ordinate the composition of their own work group means that they must learn the same planning flexibility necessary to handle a work group of ‘one’.

Equally, the same objection could be phrased, ‘not all individuals wish to participate in existing schemes’; never-the-less existing schemes operate successfully.

On a larger scale, it is acknowledged that such a scheme is not without its down side risk but equally, it is argued that not only do the potential rewards on such a scheme out weigh the risk but also the such risk is containable. For example, such a job sharing scheme could be introduced within a small (and preferably geographically isolated) command to test its validity. If it proves useful within this limited environment then the scheme could be ‘exported’ to larger commands. In this way the down side risk is limited while the benefits will ultimately be realised throughout the fleet.

**The Bottom Line**

The greatest advantage of such a scheme is that the integration of reserve and permanent forces would become a day-to-day, ‘bottom up’ occurrence. If it achieves nothing else such a scheme would thus breakdown the costly divisions that continue to separate members of the reserve and permanent forces. While failure to adopt such a scheme will not have any cataclysmic result, as long as Naval management continues to centre around getting ideas out of the senior officers’ heads and into the heads of those that work the parts of the ship, the utilisation of the intellectual resources of all servicemen will continue to allude the modern defence force.

The bottom line is not only that by superficially dabbling with structural change, the Navy will loose an opportunity to get full value for money out of its expensive work force, but more importantly, that by failing to pursue (and indeed encourage) such a departures from current practices, the Navy will enshrine a culture centred around the pursuit of management mediocrity.

**NOTES**

1. An observation made by Admiral Elmo (Bud) Zumwalt when serving as the UNS’s Chief of Naval Operations.
2. Such an example is not totally unrealistic for the rules regarding the submission of ideas under the Defence Force Suggestion Scheme adopt such an approach.
3. While increased satisfaction does not necessarily translate to an increase in productivity, it does decrease absenteeism and employee turnover. Thus even if all other factors remain equal, the Navy will gain from decreased long term training costs.
4. In developing both resource allocations as well as task responsibility, the Navy will also improve the delegatory abilities of its senior sailors and junior officers.
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The War Never Fought — Conventional Conflict Between NATO and the Warsaw Pact

By Lieutenant Colonel L. P. Haines, RAAMC

Introduction

As one era in the international political system ends and a new one begins, it is increasingly difficult to visualise how a conventional war in Europe between the forces of NATO and the now defunct Warsaw Pact may have been fought. In the light of changes that have swept Europe in recent years, notions of such a conflict are fast receding. Indeed, there are those who would say that a conventional conflict in Europe during the Cold War was even in those times a remote prospect. They would argue that the strategic nuclear balance made both nuclear and conventional war between NATO and the Warsaw Pact unthinkable. But the avoidance of war in Europe during the period from the formation of NATO in 1949 to the demise of the Warsaw Pact in 1990 was never certain. On the contrary, there were periods of high tension which could have sparked conventional conflict and escalated to general nuclear war.

Both the Warsaw Pact and NATO had substantial conventional forces aligned along either side of the Inner German Border (IGB). Both placed heavy emphasis on armoured and mechanised forces. NATO’s forces adopted a ‘Forward Defence’ posture. Under the strategy of ‘massive retaliation’ of the 1950s and early 1960s, these forces were intended to act as little more than a ‘tripwire’ for nuclear escalation. However, with the adoption by NATO of ‘Flexible Response’ in 1967, an attempt was made to raise the nuclear threshold for a conflict in Europe. Such a strategy focussed NATO attention on the prospect of fighting and winning a conventional war. Balanced against such considerations, the Soviet position that it would use nuclear weapons from the outset of any conflict suggested that a purely conventional phase of any conflict would be rather short.

The current tactical doctrines of NATO members and other Western Nations, and of the forces of what was then the Soviet Union, are largely a legacy of those developed to fight a conventional conflict in Western and Central Europe during the Cold War. The ‘Air Land Battle’ doctrine of the United States is an example. How relevant such doctrines are to other contingencies that may arise in the new era of international politics is yet to be seen. But the doctrines developed for Europe were themselves the product of an earlier age. Soviet Deep Operations doctrine drew largely on the German Blitzkrieg campaigns of 1939 and 1940 in Poland and France, and on the earlier work of Fuller and Liddel Hart. Such doctrines were comprehensively exercised during the course of the Cold War. How they would have fared in the event of actual conflict between NATO and the Warsaw Pact is now both highly speculative and purely academic.

This article will examine the way NATO planners envisaged the course of a conventional conflict in Europe during the period of the Cold War. The factors that would influence the way such a war was fought – conventional forces available, competing tactical doctrines, weapon systems technology – have all been in a state of continuous evolution since 1945. Central to strategic considerations were perceptions of the nuclear threshold. A war fought between NATO and the Warsaw Pact in the early 1980s would have been substantially different to one fought in the late 1950s.

Comparison of Forces

NATO

In terms of the conventional threat posed by the Warsaw Pact, it was Allied Forces Central Europe that was of most importance to NATO. This command comprised the Northern Army Group (NORTHAG), the Central Army Group (CENTAG), Allied Air Forces Central Group, 2nd Allied Tactical Air Force, and 4th Allied Tactical Air Force. It was these elements, and specifically NORTHAG and CENTAG, that NATO envisaged since its inception would bear the brunt of a conventional Warsaw Pact attack. Within the Forward Defence strategy adopted by NATO at the outset, each of the national contributors of ground forces to the Central Region (both NORTHAG and CENTAG) were allocated a ‘slice’ of what was to
become known as a ‘layer cake’ defence to the West of the IGB. This arrangement was to give effect in the event of war to Article 5 of the Treaty which said that an armed attack against any one or more of them shall be considered an attack against them all. Significantly, though, NATO forces were never based permanently in these sectors. For political and economic reasons, NATO forces have remained based generally where they were at the end of World War II.

The 20 divisions NATO had available to it at its formation in 1949 remained relatively constant until the late 1950s and early 1960s when the re-armament of West Germany significantly bolstered its forces. Since the early 1960s, conventional forces available to NATO within NORTHAG and CENTAG have comprised 1st Dutch Corps, 1st German Corps, 1st British Corps, 1st Belgian Corps, 3rd German Corps, 5th US Corps, 7th US Corps and the 2nd US Corps – a total of 26 divisions in all. An additional 25 divisions have been available as reinforcements from France, Great Britain and the United States. Some 1400 aircraft were also available from NATO air forces in the Central Region.

Warsaw Pact

Since the early 1960s, the number of divisions available to the Warsaw Pact in East Germany, Poland and Czechoslovakia remained constant at around 57. These comprised a mixture of predominantly tank and motor rifle divisions. The bulk of the Soviet divisions (some 20 out of 27) were based forward in East Germany. Available for reinforcement to the Warsaw Pact were some 64 Soviet divisions in Hungary and European USSR, six divisions from Hungary itself, 10 Romanian divisions and eight Bulgarian divisions. Some 3200 aircraft were available to the Pact in this region. While the numbers of divisions remained relatively constant, the so called ‘paper’ divisions of the early 1960s were dramatically and progressively bolstered in the period from 1965 to 1980. The combat power of the divisions was significantly enhanced by massive injections of manpower (total Soviet forces in Central Europe increasing from 475,000 to 600,000, additional Soviet tanks, more artillery and more armoured personnel carriers.

Relative Strengths

By the early 1980s, it was assessed that the Warsaw Pact had an initial advantage, particularly in Central Europe of 1.2:1 in manpower, 2.4:1 in tanks and 1.3:1 in aircraft. Such ratios, however, tend to understated the Warsaw Pact advantage, particularly in short warning scenarios where NATO would have had major problems in introducing its reinforcements.
Against this background, the Warsaw Pact would have had basically two strategic options: a 'standing start' unreinforced surprise attack using only Warsaw Pact forces in East Germany and Czechoslovakia; or an attack involving a 14-28 day mobilisation of all Warsaw Pact forces in Poland and European USSR. It would clearly have been the former that would have best exploited NATO weaknesses, but it would have run the risk of not having sufficient power and momentum to secure the line of the Rhine – the most likely strategic objective of such an attack. The most likely approach would have been from Magdeburg in East Germany, across the IGB, over the North German Plain to the industrial heart of West Germany – the Ruhr. This approach covers some 300 km of terrain suitable for armoured operations, with only one major water obstacle – the Weser River. A secondary approach would have been through the Fulda Gap to the heart of NATO's US sector.

**NATO**

What could have been the strategic response of NATO's conventional forces to such an attack? In the 1950s and early 1960s, the best they could have achieved would have been to perhaps protect areas of vital ground and provide the necessary tripwire for nuclear escalation. Since the adoption of a strategy of Flexible Response, three responses have been envisaged – The direct defence, deliberate escalation or general nuclear response. Only the first of these envisaged the possibility of a purely conventional response. The ability of NATO to conduct an effective, forward, conventional defence against the Warsaw Pact threat would have been questionable – essentially because of the disadvantages it suffered in relation to the Warsaw Pact already cited. Principal among these were its quantitative inferiority and difficulties it would have experienced in concentrating and reinforcing. A further issue in doubt is the extent to which it could have made up for these in terms of its qualitative superiority over Warsaw Pact forces. In any event, a purely conventional response by NATO would have been measured in days rather than weeks. To this extent, despite the adoption of Forward Defence and Flexible Response, it is likely that NATO's conventional forces could have achieved little more than to continue to act as a tripwire.

**One Scenario**

Within the strategic circumstances outlined, a number of conventional conflict scenarios could have been developed. The one described could have occurred in the late 1970s or the early 1980s. It focuses on a land battle in the Central Region.

**Warsaw Pact Offensive**

The development of Soviet tactical doctrine from 1945 can be categorised in various ways. For example, Soviet focus during the 1950s was in the adaptation to nuclear weapons, while in the 1960s and 1970s theory and doctrine were converted to missile warfare. A watershed in the development of Soviet tactical doctrine, however, was the death of Stalin. The sort of Blitzkrieg offensive described above was very much a product of the post-Stalin era. Soviet doctrine was stifled during Stalin's period in power through insistence on his 'Permanently Operating Factors' which focussed on size, quantity and the destruction of an enemy army in a land war. There was little place for surprise and manoeuvre, but continuing focus on the 'pincer' as exemplified in the Great Patriotic War. From the early 1960s, the Soviet military began to have a greater say in the development of tactical doctrine. This led to the emergence of Soviet Blitzkrieg theory. This produced a greater focus on 'combined arms' teams and the need to manoeuvre to achieve local concentration of force.

An offensive along the main approach mentioned above may have proceeded as follows. An attack against the 1st British Corps sector would have...
involved attempting to penetrate by throwing up a 1st echelon division against each NATO brigade. Behind those two 1st echelon divisions would have been two 2nd echelon divisions of the 1st echelon Army, and behind those a second echelon Army. The 1st echelon divisions would attempt to destroy the opposing brigades and penetrate the NATO forward defence. If they couldn’t, the second echelon divisions would move forward. In the event that the NATO defence still held, the 2nd echelon Army would move forward. At this point, say some three days into the conflict, a NATO nuclear response would be looming, as Warsaw Pact reinforcements began to move in from the East.

Despite the developments in Soviet doctrine since the 1960s, there have been some enduring weaknesses. Included among these are the predictability of Russian tactics, the hierarchical and rigid command structure, the rigid observance of doctrine and preconceived plans, inadequate training and a lack of self-propelled artillery.

NATO Defence

How would NATO have responded to such an attack? This would have depended, of course, on the warning it had. NATO generally assumed it would have a minimum of 96 hours warning of such an attack. However, some have suggested that a Blitzkrieg attack could have been launched with as little as a few hours warning.7 Assuming that NATO forces did have time to get to and prepare their General Defensive Positions (GDP), however, they would have attempted to exploit the weaknesses of Soviet doctrine by conducting mobile defence. The aim would have been to exploit the killing grounds. As mentioned earlier, though, the tactical doctrine employed would have varied between the various contributor to NATO. Each of the NATO members developed doctrine specific to its own particular slice of the ‘layer cake’. In the 1st British Corps sector, for example, the late 1970s saw a push to exploit the effectiveness of anti-tank weapons and the spreading urbanisation on the Hannover Plain for its defensive posture. In what was termed the ‘pinball’, Warsaw Pact tanks would have been engaged with anti-tank weapons from the myriad of villages on the Plain and literally bounce from one to the other in ‘pinball’ fashion as they were attacked. The conduct of a conventional defence by NATO would have been based on attrition and would have had to make best advantage of the qualitative superiority of its forces to stand any chance of success.

Recent Developments in Tactical Doctrine

In the last 10 to 15 years there were some significant developments in both Warsaw Pact and NATO doctrine that would have resulted in a different conventional war scenario to that outlined above. Within Soviet doctrine, the revival of the Operational Manoeuvre Group (OMG) and an increasing focus on Deep Operations served to expand and build on the strengths of the Blitzkrieg. Within NATO, Deep Operations also received attention with the development of a doctrine for the Air Land Battle, Follow-On Forces Attack (FOFA) and a speculation on a ‘non-linear battlefield’. Each of these was developed with the specific intention of exploiting an advantage of minimising the effect of a disadvantage.

Warsaw Pact

In response to the lessons of the 1973 Middle East War, the Soviets improved the protective capability of their tank armour and increased the flexibility of their armoured forces. The OMG – a task-oriented force that allows for more effective combined arms cooperation – was also revived. OMGs were designed to penetrate NATO defences in quick thrusts. In the scenario outlined above, for example, if the Soviet 1st echelon divisions had been held, as the 2nd echelon divisions were advancing the OMG may have seized an opportunity to penetrate an opening on a flank. An increasing focus on Deep Operations was intended to expand the Blitzkrieg doctrine. Airborne operations, air mobile operations, missile and air strikes against key targets in NATO’s rear areas also became of increasing importance – with NATO Lines of Communication, bridges, ports, communications centres, logistic installations, airfields and headquarters being key targets. The use of chemical weapons also received increasing emphasis with the Soviets regarding them as means of facilitating a short, sharp conventional Blitzkrieg. Again, the key targets are likely to have been ones in depth and the aim being to disrupt NATO resupply and reinforcement. The success of a Warsaw Pact offensive, even with these developments, would have depended to a large degree on its ability to sustain its momentum, to move forward its 2nd echelons and reserves and to support itself logistically. Developments within NATO within the last 10 years were specifically designed to thwart this.
NATO

These developments focussed on Deep Strike and are largely a product of the 1980s. The extent to which they would have been sufficiently integrated into NATO doctrine to have been effectively employed is questionable. They were all based on the assumption that the NATO defenses could have held the Warsaw Pact 1st echelon but may have collapsed on the arrival of the 2nd echelon and/or reinforcements. Each was concerned with the disruption of these follow-on forces and the eventual isolation and destruction of the 1st echelon. The Air Land Battle concept was codified in the US Army Field Manual 100-5 in 1982. Its general thrust is away from the static defence and the repulse of attacks by attrition towards manoeuvre warfare. It has been dependent on emerging target acquisition technology and its features have included deep strikes in a Corps Commanders area of influence out to 150 km in front of the Forward Line of Own Troops, defence aimed at securing and retaining the initiative, destruction of the synchronisation of the enemy’s forces, flexibility for subordinate commanders and the use of the entire length of the battlefield. The FOFA concept is in a similar vein but was developed by NATO specifically for the Alliance. It accepted that its forces would target all Warsaw Pact troops from the Forward Line of Enemy Troops to as deep as its acquisition systems would allow. It would have involved deeper strikes than that envisaged by the Air Land Battle doctrine – up to 300 km in front of NATO defensive positions. It was intended to exploit the limited approaches of the Warsaw Pact, choke points and river crossings, and to disrupt Warsaw Pact follow-on forces, thereby buying time for the reinforcement of NATO’s own front line troops.

Conclusion

Given the major changes in the international political system that have occurred recently, any consideration of the course of a conventional conflict between NATO and the Warsaw Pact is now purely academic. But there are lessons to be drawn from such an examination. The relevance of strategies developed by NATO during the Cold War has already been the subject of serious consideration within the Alliance. A more important issue, perhaps, is the ongoing relevance of tactical doctrines for the sorts of military contingencies that may arise in the new era of international politics. Some would say that the successful application of the Air Land Battle doctrine in the 1990-1991 Gulf War is sufficient proof of its enduring relevance. But this conflict, too, was quite scenario specific. Inevitably, the force structures and tactical doctrines that do emerge in the post Cold War era will continue to be influenced by those developed to fight a conventional war in Western and Central Europe.

NOTES

3. Ibid., p.147.
5. Lewis, op. cit., p.291.
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Motivation and the Army Student

By Captain M. J. Davies, Aust Int

Preface

Picture this, a classroom full of students in a training facility somewhere in the Australian Army. It is 3.15 pm on a Thursday afternoon about three-quarters of the way through the course. As we focus on the glazed faces of the students, one can almost read the thoughts running through their minds . . .

Why am I here?
What's the point?
If I put in just enough to jump through the assessment hoop then I can go home.

If we are honest with ourselves, these sorts of feelings would have been, at some stage, common to anyone who has ever been on a course.

Introduction

Each year the Australian Army spends millions of dollars training its personnel. Despite the considerable effort put in by Instructors, Training Development and Administrative Staff (the Training Staff) in the end the success of training is largely determined by the motivation of the students to learn. And yet, even a basic understanding of student motivation is not normally a topic for the training of the Training Staff themselves.

Motivation is undoubtedly a complicated subject and a detailed understanding of what motivates a student on a course could only come from an equally detailed study. What follows are some thoughts on student motivation which may provide an initial point of focus.

What is Motivation and Why is it Important?

There are many academic, psychological and sociological definitions available to describe motivation. Simply put, motivation is 'the degree to which an individual wants and tries to do well at a particular job'. In an Army Training context this means not just 'jumping through the assessment hoop' but maintaining and increasing the desire to learn.

Libraries worth of research has been done in the civilian world to examine the question of motivation. For a business, the degree of motivation of employees direct towards a particular task equates directly to the degree of productivity and profit for the firm.

In the Australian Army no significant research has been conducted into what motivates our employees in their prime task - training for war. The profit or productivity gain for the Army increasing its employees motivation is potentially a higher standard of training and an increased readiness and a competency to fight if called on. Given the importance of this subject then it is perhaps a worthwhile area for further research and in turn, formal inclusions in Training Staff preparation.

Motivating the Army Student

The bad news is, the Training Staff cannot be taught how to 'motivate' a student. People motivate themselves. Psychologists and sociologists have long given up on the concept of being able to 'motivate' people. It is now believed that people are self activating individuals who are not motivated by something but motivate themselves.
The good news however, is that training staff can help students to motivate themselves. How? By understanding some of the factors of variables which influence student motivation. If the Training Staff understand these variables they can emphasise those that support the training objective and reduce or remove those which do not.

Motivational Factors or Variables

From the outset two most important points should be noted about these variables. Firstly, a student's motives behind his or her performance cannot be seen or precisely quantified. They can only be inferred from observed behaviour. Secondly, these variables do not exist in isolation, they compete, conflict and support each other. As such, effectively balancing these variables is a delicate task which requires consideration and a detailed understanding of each.

These variables fall into two basic groups, pre-course variables and course variables.

Pre-Course Variables

Some aspects of a student’s motivation towards a course will be determined well before he or she marches in. The student’s planned approach to the course, degree of preparation and overall goals could already be determined be factors in the student’s background. These factors or variables include:

Training Background

On any given course students will come from a variety of different training backgrounds. Although the steps through recruiting, initial training and Corps related training are ostensibly the same, individual student will vary greatly. Students will bring to a course the ‘baggage’ of other courses. This could include beliefs about their own capabilities or about the ‘fairness’ of the assessment system. Such baggage will of course influence their attitudes and approaches to the current course.

Career Background

It is a dangerous generalisation to assume that all students attending a course are there by choice. In some cases students are simply directed to attend the course to fulfil a unit requirement or for career progression purposes. Under such circumstances some students motivation could already be low. On the other hand, some students will be volunteers for a course. Their motivation is likely to be much higher.

Female Students

The motivation of female students is an important topic because of its specific nature. Some female students may be motivated by a desire to prove their equality and competitiveness against the male students. This can be an influence which can create great drive for a student. Other female students, by virtue of past experiences, may feel that they cannot compete, particularly physically. This may often be despite possessing the ability to do as well as the other students.

These and quite possibly other variables, may significantly affect a student’s approach to a course even before march-in. The trick lies in recognising the motivational influence and then channelling its strengths. Take the case of a student who arrives on a course suspicious of the assessment system because of a ‘mauling’ received on a previous course. The training staff should identify this fairly quickly by either the student’s reluctance to produce anything but the ‘safe’ solution and or the student’s cynicism or sarcasm of the assessment system. The role of the training staff, particularly the instructional staff in this case becomes to provide the security of clear, stated and consistent assessment standards.

Course Variables

Given that some aspects of a student’s approach to the course may be pre-determined, student motivation will still rise and fall during the course itself. It is interesting to note how many training facilities in the Australian Army have some form of ‘Days to Go’ board. The degree of interest shown in this board by the students is often a good, if crude measure of their motivation.

The variables which affect a student’s motivation during a course are different to those before the course. There are four key variables or perhaps groups of variables to consider. They are not listed in any order of importance as for a different person in a different situation, each variable will have a different importance.

The Instructor

The role of the instructional staff in student motivation is pivotal. The instructor has the most contact with
the students and becomes the human embodiment of the course. The instructor has two key areas of responsibility. The first lies with instructional abilities. A student's motivation to learn a particular subject will be greatly influenced by the degree to which the subject is made interesting by the instructor. Interest is generated by the instructor who must package his or her experience and understanding of the doctrine into a format which appeals to the students. There is never any excuse for statements like, 'I know this is boring but I have to teach it to you.'

The second responsibility of the instructor lies with leadership. The instructor is an authority figure and a leader to the students. This leadership responsibility is as demanding as any regimental or command appointment. As such, the instructor must be fair, firm and friendly. Fair in assessment, firm in direction and counselling and friendly and approachable to student difficulties or weariness.

The Group

Individual motivation will be influenced by the group's motivation. Groups on courses are either an essentially solid or cohesive group or a fragmented series of cliques. A solid cohesive group is preferable because they will share a common goal or objective. The danger however, is that the common goal becomes the 'common enemy' and that the focus shifts from training to a group dislike of some aspect of instruction, administration or the training environment.

Again the role of instructor is important here. The leadership and teaching ability displayed by an instructor can make the group's 'common enemy' the desire to master a skill or an aspect of knowledge.

Administration

Efficient administration of students on a course is vital. It is virtually impossible for a student to increase or even just maintain the motivation to learn if the greater concern is over an error in his pay or allowances for example. Worse still concern over the care of their sometimes distant families. The administrative staff must have as their prime focus the removal or control of aspects of administrative which will detract from the training objective.

If the Training Staff want to assist the student to maintain and increase his or her motivation their aim must be to create and maintain a learning environment. This environment must support all of the student's physical and administrative needs and allow the student to focus on learning free from distractions.

Conclusion

Picture this, a classroom full of students in a training facility somewhere else in the Australian Army. It is 3.15 pm on a Thursday afternoon about three quarters
of the way through the course. As we focus on the bright keen eyes of the students it is easy to tell that they are striving to learn and absorb what the training staff are teaching them.

Unfortunately just understanding that student motivation is a major factor in the success of training will not automatically achieve this picture. The Training Staff cannot ‘motivate’ an unmotivated student. They can however, create a learning environment in which the student can be assisted to motivate him or herself. A key step in this process is to ensure that all the different motivational influences affecting a student are considered in the administrative and instructional conduct of the course.

This article has only been an initial examination of a very big subject. Student motivation does form a big part of the success of Army training and as such much work remains to be done. More comprehensive and precise studies must be conducted by appropriate agencies so that a more mature understanding of student motivation can be gained and developed to support current and future training procedures.

NOTES
2. This comment is based on enquiries made to 1 Psychology Research Unit in Canberra and other AA Psych Corps elements.
6. Ibid., p.252.
7. McGregor, op cit., pp.55-57, McGregor is not specifically talking about assessment standards in a training environment in these pages. He is referring to assessment of employees in the work place. The principles however, seem applicable.
8. Ibid.

BIBLIOGRAPHY

Books

Journals
Dingley, J. C., 'Recent Developments in the Area of Motivation', in Industrial Management and Data Systems, Jul/Aug.

Interviews
The following interviews with staff and students from the School of Military Intelligence (SMI) Kokoda Barracks Canungra provided numerous valuable insights into the thinking and approaches of both students on the course and the training staff who support them:

a. SMI Staff
1. Major Dave Rawson.
2. Major Ellie Wolf.
3. Captain Jeff Corkill.
4. Captain Wally McColl.

b. Students from the 1/92 Regt Offr Basic Course (INT)
1. Captain Paul Clark.
2. Lieutenant Cameron Kelly.
3. Students from the 1/92 Initial Employment Training Course.
   1. Private Kym Johnson.
   2. Private Cameron Jamieson.

Cartoons
The cartoons used in this article were drawn by Corporal David O'Hanlon, Tactics and War Administration Wing, Land Warfare Centre.

Recollections of Cross Channel Duels, Rockets, Pluto, Mulberry and Funny Tanks, 1944-45 (Part 3)

By Colonel John P. Buckley, OBE, ED. (RL)

MULBERRY HARBOURS

Winston Churchill, mindful of the gigantic task required to land and maintain an invading Army on the shore of North-West Europe, wrote to the Chief of Combined Operations (CCO-Mountbatten) on 30th May 1943, highlighting the need to provide 'Piers for use on open beaches which must float up and down with the tide'. It was clear Churchill realised that the main French ports would be put out of action by Allied and German bombing, German demolition, ground fighting, ship bombardment or a combination of each.

It was vital for the build up of the Allied army that the enormous quantities of equipment and stores be available in an organised and steady flow from the beginning of the battle. As the ports of Cherbourg, Boulogne, Le Havre, Dieppe, Calais and the smaller ports in between may not be captured or may be rendered useless, Churchill charged the CCO with providing a solution to the problem of the piers. He concluded his letter with the challenge, 'Don't argue the matter, the difficulties will argue for themselves'.

The War Office Royal Engineers rose to the occasion by trying to develop and design such piers. At a subsequent important meeting (June '43) called by Mountbatten to consider the matter with the chief planner for the invasion (General Morgan), it was suggested that the piers be used in conjunction with a suitable breakwater. This meeting was attended by senior representatives of the British and American armed forces.

It was agreed that the provision of artificial harbours was to be a vital part of the invasion plan developed by General Morgan. Many persons have claimed to have suggested the provision of the harbours later to be known as 'Mulberry'. General Morgan of COSSAC gives the credit to Commodore John (Jock) Hughes-Hallett, RN (later Admiral) for the final concept, but Churchill and Mountbatten both seem to have a claim for initiating the project. However, as the 'Overlord' plan for the invasion had not, at this time, been approved, no preliminary design of the Mulberries could be commenced pending approval of total 'Overlord' plan which was formally given at the August 1943 meeting.

Then began the rush to get the massive and complicated engineering work researched, developed and manufactured in less than 10 months. At this stage, I should say that the total weight of the prefabricated steel and reinforced concrete used in the construction amounted to over 2 million tons. (At the time a rough estimate of the cost was well over 20,000,000 pounds sterling). This had to be manufactured and held in, or adjacent to, the south coast ports of England. I know of no other such large engineering task in World War II. Its success was due to the brilliant civil and marine engineers, some of the most eminent in the United Kingdom and their counterparts in the Navy and Army with their 'back up' by skilled craftsmen, both service and civil — a wonderful team effort in which the Royal Engineers played a dominant role.

A key portion of the harbour complex was the provision of sheltered water by the sinking of obsolete merchant ships and several useless warships. About 70 ships were used. These were to be brought into place under their own power and sunk in a definite pattern with explosives. The breakwaters were code-named Gooseberries and it was planned to have them completed in the required positions about 5 days after the landing — some tall order!

Following on the correct placing of the sunken ships as breakwater, it was planned to tow the huge 'caissons' of ferro concrete across the channel and sink them in correct alignment with the breakwater as set out in the sketch plan.

Note:— A caisson is a large watertight structure opened at one end. Water can be kept out by air pressure — a boat shaped concrete vessel.

Manufacture of the caissons, in part, was done at converted London docks including East India, South and Surrey. The alterations to the Docks was
a major engineering project to convert them into dry docks.

It will be noted also that two lines of caissons extended towards the beach leaving entrances for ships to enter to the pontoon piers which were anchored, but were free to move up or down with the tide. Likewise, the floating roadways were free to move with the rise and fall of the sea. The photograph shows the detail of the roadway. At the time the photograph was taken there was a lull in discharge of stores. The whole installation had its own anti-aircraft guns and was known as Mulberry. One was constructed for the British and Canadian forces at Arromanches and the other for the Americans at St Laurent (Omaha) beach. Shortly before ‘D’ Day a crossword appeared in a well known daily newspaper — the clues and the solution pointed to the actual details of an artificial harbour. They gave the code names, i.e ‘Mulberry’ etc. It created quite a sensation in official circles — near panic occurred. An investigation found that the code names of the Mulberry pieces were well known by nearly all the population on the South Coast, but they did not know what use was to be made of the strange items. The crossword was an innocent invention of its creator.

The movement of the block ships from the UK to form the breakwater started on ‘D’ Day. The UK ships were sunk on an even keel in the correct position by explosive charges commencing ‘D’ Day plus one and completed three days later. The American installation took slightly longer.

The next part of the task was the most difficult, getting the huge concrete caissons across the Channel into position. Each had to be towed by tugs which were in extremely short supply. Some had to be obtained from the US and elsewhere. There were over 200 concrete caissons to be towed into position. These varied in size depending on the estimated depth of the water where they were to operate. The largest was nearly 70 yards long, 18 yards wide and 20 yards high, weighing over 6,000 tons. Imagine the problem of towing such a high structure in rough seas and strong winds.

Moving the caissons also started on ‘D’ Day — it took roughly two days to get them in position. The rise and fall of the tide at the location was about 20 feet and a speed of over 2 knots. This called for very special skills in the Royal Navy supervising officer. His team was a combination of sailors and soldiers who had been well trained in England. The caissons had ‘flood’ valves. It took over 30 minutes to settle the structure. It was vital for the items to be held steady by the tugs during the process. The strong wind and tides made the task very difficult. In spite of the many problems, the results were good.

When the caissons were settled in position, it was possible for the Port Construction units of the Royal Engineers to commence assembling the piers inside the breakwaters. The sappers were in everything — some of them were amongst the first ashore on ‘D’ Day in their AVREs. The Port Construction units performed splendidly throughout the campaign. They certainly had plenty of work to do and they did it well. Good progress was made until the stormy weather made the movement of supplies of the piers and floating roadway from England a hazardous task. In all 23 floating pierheads and 10 miles of articulated roadway were required for the complete Mulberries. Each tug could tow 160 yards of roadway on each trip across the channel.

The control of the huge fleets crossing the Channel and their return for more loads with minimum delay was a master achievement. The organisation for ‘Build Up, Movement and Turnaround Controls’ was a most efficient inter-service group.

It was fortunate that the USAAF and RAF had been able to weaken the enemy air force before the invasion commenced. More importantly, the Allied air forces were able to minimise enemy air attacks whilst the harbours were being assembled. However, Nature was about to deliver a deadly blow. On 19th June the worst storm in 40 years struck. Much of the massive components for the harbours were caught in raging seas, waves over 8 feet and winds blowing over 30 knots — sometimes even at gale force. The storm lasted four days leaving a mass of destruction and disaster everywhere. Included in the losses crossing the Channel were nearly three miles of floating articulated roadway and several caissons.

The damage to the British ‘Mulberry’ was small compared with its American counterpart which to all intents and purposes was written off. The Mulberry components were subjected to 8 times the force they were designed to resist. The British breakwater had mostly held fast during the gale and provided protection for hundreds of craft until the storm abated. Although some damage had been done to the floating piers and roadway, a little unloading was possible even during the storm.

When the gale finished the whole of the invasion coast was strewn with huge piles of wrecked small craft and equipment. It was to take months to repair and refloat many of the small ships which were in great demand — some were to be sent to the Pacific later.

A few of the British caissons were replaced by stronger ones, hastily designed and built before the
winter storms began. Within weeks, Mulberry was working again at full capacity — a monumental effort by the Navy and Army repair technicians.

The Mulberry continued to operate for many months until its distance from the battlefields and the opening of the Channel ports further north resulted in a more limited use. When the author first visited the harbour, many German prisoners-of-war were used as waterside workers. They had been captured in Normandy and the Channel ports. They were working happily and with great vigour, as were some displaced persons.

Before concluding the story of the British Mulberry I should like to mention that I had my first briefing of its detail at the War Office just before ‘D’ Day. General Evetts with typical kindness had arranged for me to attend ‘Mulberry Operations Room’ where the Director of Transportation, Major General McMullen had a most elaborate scale model of the whole plan. It was agreed that I could send details to Australian Army Headquarters on or after ‘D’ Day plus 7. It was another example of the trust placed in Australian officers by the senior directors at the War Office. No information was ever denied me.

My friend, Commodore Dacre Smyth, who served in nearly every major theatre of the war, has a most detailed knowledge of the cross Channel activities when Mulberry was being built. He was serving as First Lieutenant (Gunnery) in a cruiser, HMS Danae, which was alternatively providing protection for the never ending fleet of transports and tugs and then shelling shore installations. He still remembers one of the damaged Polish cruisers Dragon, a sister ship of Danae being used as a blockshop for the harbour, and also the huge bobbin in the stern of a specially built transport which carried flexible pipeline for PLUTO (Pipe Line Under the Ocean). At one stage, Dacre was ordered to take a group of sailors ashore to help the soldiers dig trenches behind the invasion beaches. They performed well, in spite of blistered hands and stiff backs.

Whilst Mulberry had its problems mainly due to
that record gale, it was responsible for providing over 35 per cent of the British warlike stores landed in France up to 31st August 1944. The breakwaters also provided shelter for all the small craft landing stores on the beach in the area. One of its major contributions was to provide that vital shelter for all the ships in the area when that dreadful storm struck in June.

The task of researching, developing, building and transporting the artificial harbour across the English Channel and starting its construction on 'D' Day on the enemy shore was a magnificent concept in vision and implementation. Let me repeat Churchill's direction to Mountbatten:- 'Don't argue the matter. The difficulties will argue themselves'. They did and they were solved by brilliant marine and civilian engineers drawing on a team of outstanding scientific and technical support.

The Official Report of Admiralty on Mulberry states, inter alia:-

'One of the most essential features of the 'Overlord' plan was a rapid building up of troops and materials during the first 14 days. On this depended the Allied ability to meet an enemy counter offensive. Of the three breakwater components, the blockships were in position first, to be followed within two days by the Bombardons. The Phoenix units did not arrive in quantity until several days later. The weather in the first fortnight was bad, and on a number of occasions the winds blew Force 5-6 and the sea was rough. During this initial and very critical period, both blockships and floating breakwaters played their part by sheltering hundreds of craft, and their presence enabled many operations to take place which would have otherwise been impossible'.

The Mulberry Harbour at Arromanches will always remain one of my most vivid recollections. I was fortunate to see some of the components being manufactured, and finally to see the full project in operation on the enemy shore. Without the protection of the blockships and the floating breakwaters, who knows what would have happened during that dreadful record breaking storm?

Note:- Should any RAE officers be interested in reading the complete technical details of Mulberry Harbour, they can be found in The Civil Engineer in War, A symposium of war time engineering problems. Volume 2. Docks and Harbours. Institute of Engineers, London, 1948.

In World War II the research, design and production of the pipe line under the ocean (PLUTO was another engineering masterpiece.

PLUTO (Pipe Line Under The Ocean)

It was clear to the planners of the invasion of Europe that there would be great difficulty and danger in supplying the requirements of petrol, oil and lubricants by tanker fleets across the English Channel for the advance of the Allied armies across France, Belgium, Holland and Germany.

Admiral Mountbatten (Chief of Combined Operations) raised the problem with Mr Geoffrey Lloyd, the Secretary of State for Petroleum Warfare during April 1942. At that time the Petroleum Warfare Department was under the direction of Major General Sir Donald Banks whom I have mentioned earlier (Part I). Sir Donald had as his principal technical adviser, Mr Arthur Hartley, who had been obtained on loan from the Anglo-Iranian Oil Company.

Hartley was a brilliant executive petroleum engineer already well known through his work for the armed forces and the Anglo-Iranian Company. Later, he was to develop FIDO (Fog Investigation Dispersal Operations) which enabled fog to be dispersed over fog-bound RAF operational aerodromes, but that is a story in itself.

Hartley was aware of the Channel tidal conditions; the great variations in the depth of water; the very long pipeline required; the need for ships carrying the pipeline to be anchored whilst 'jointing', which would be an invitation for enemy interference from air, sea or submarine. These were just some of the difficulties.

As usual with such projects, the Navy and Army engineers played a vital role in the development and implementation of the PLUTO project. In particular the Royal Engineers seemed to be able to take a very active and positive part in every major project in preparation for the invasion, including planning for repairs and rebuilding railways, road and rail bridges, roadways, waterways, ports and harbour installations in Europe, and not forgetting their role in manning the assault tanks and their normal RE responsibilities.

After preliminary investigation, Hartley was convinced that the only chance of success would be to make a pipe of one complete length and put it in position at a speed to enable it to cross the strong tidal currents experienced in the English Channel. Also he thought that the methods used in manufacture and laying submarine cables could be varied to make high pressure petroleum pipelines.

Hartley was able to get all the major cable
manufacturers, the Post Office, the National Physical Laboratory, the Admiralty Research Laboratory, electric supply companies, steel companies and others to participate in the early experiments with pilot models of the pipeline. Originally 2 inch internal lead pipe was used for ‘mock ups’. Surrounding this core were a number of layers of various materials (compound paper tape, bitumen cotton tape, steel tape, jute bedding, approximately 60 turns of steel armoured wires and finally more jute).

Eventually it was decided to use 3 inch internal diameter lead pipe operating at up to 1500 lbs per square inch pressure. The external diameter was just under 3½ inches. The early laying trials were carried out by the Post Office ships but because of their limited capacity, the Royal Navy modified one of its ships to take a longer length of pipe which was laid across the Bristol Channel.

During the development stage two different types of pipe construction were used, the lead HAIS (Hartley Anglo Irian System) and the steel HAMEL (Hammick Ellis). The HAIS pipe was held on a large bobbin on the stern of a specially adapted ship. The HAMEL steel pipes were loaded on a large floating drum and towed by two large tugs and one smaller one at the rear. When design had been cleared it was decided to call on US manufacturers to assist in the production of the cable, about 1/5 of the total 150 miles required.

In the early stages it had been decided to place the cable across the Channel from Dover to Boulogne. Later, it was agreed that a crossing should be laid from the Isle of Wight to Cherbourg, about 70 miles. It was thought that there would be too much enemy interference with the Dover/Boulogne pipeline in the early stages of the invasion.

A RN Task Force PLUTO was set up which contained three converted ships to carry the 3 inch pipe, HMS Algerian 30 miles of pipe, HMS Latimer and Sandcroft to carry 100 miles each. Several other supply ships and large barges were used by Force PLUTO to complete the shore ends of the pipeline. It was envisaged that from the invasion shore, pipelines would be built across France, Belgium, Holland and into locations in Germany. This was truly a mammoth engineering technical task, pumping POL across England, under the Channel and then by land for hundreds of miles across and under rivers, mountains and obstacles made by Nature and man.

During my early visit to HQ 79th Armoured Division I had expressed a keen interest in the Crocodile flame thrower tank. Sir Percy Hobart suggested I should contact Sir Donald Banks, the Director General of Petroleum Warfare to obtain details and to view production of the apparatus at Lagonda Motors and elsewhere.

I called on Sir Donald and was given full details of the Crocodile and then taken to see the production of the flame thrower.

During discussions, Sir Donald told me about PLUTO and FIDO. Arrangements were made for me to visit the major PLUTO installation on the Isle of Wight accompanied by Major Mark Robson (PA to the Director General Petroleum Warfare). On the way down from London we called at ‘Langhurst’, the headquarters of PLUTO and other Petroleum Warfare projects. I was introduced to Mr Arthur Hartley, the Technical Director who was responsible for PLUTO and FIDO.

Hartley briefed me on the research, design and development of the PLUTO project from its inception. There were many problems in the early stages of its creation, but due to the excellent teamwork of the scientists, engineers and production authorities and the leadership of Hartley, success was achieved.

In order to provide reasonable safety, free from aircraft attacks, tankers were unloaded in west coast English ports. The oil was pumped overland to the two British terminals, one on the Isle of Wight and the other at Dungeness, not far from Dover.

On reaching the Isle of Wight I was taken to Sandown, one of the two pumping installations on the island. (The other was known as Shanklin). The Sandown plant was very well camouflaged, inter alia, as a golf course. The storage tanks were underground. The Club house was a mass of pumps, valves, pressure guages and control gear for such a large facility. Sandown had 16 reciprocating pumps of 36,000 gallons per day capacity and 2 centrifugal pumps of 330,000 gallons capacity. Shanklin was of somewhat lesser capacity.

It was planned that the Isle of Wight terminal would be used to provide the POL by the pipeline to be laid to Cherbourg. It would be the first to be laid.

I was amazed at the complexity and the size of the PLUTO installation at Sandown and the excellent camouflage. It seemed hard to understand how the German Air reconnaissance failed to identify this important facility.

I made several more trips to Sandown when its pipes had been laid across to Cherbourg and it was in full operation. Lady Banks, the wife of the Director General lived at Lymington, opposite the Isle of Wight, so it was always pleasant to have light refreshments before returning to London.
At Dungeness, the installation covered three locations, well dispersed in case of enemy attack. It was slightly larger than the Isle of Wight project.

Both terminal installations were erected by the Anglo-Iranian Oil Company using private contractors and Royal Army Service Corps personnel, who would man PLUTO when it became operational.

The beach terminals to which the incoming pipes were attached included complicated control rooms and equipment. In the case of the Dungeness/ Boulogne pipeline, the main storage tanks were well dispersed and camouflaged. Petrol supplies to the advancing army depots were made by 6 inch land lines which eventually went through Calais, Antwerp, Eindhoven, Emmerich (Germany) and from Cherbourg to Mainz. Later whilst in Europe I saw some of the pipeline which had been constructed. My mind went back to the source of the petrol at the terminal in England.

A total of 170,000,000 gallons of petrol was delivered to the Armies from the pipeline. This was in excess of a million gallons per day whilst the pipeline was operating. A duplicate pipeline project was being prepared right up to VE Day in case the existing facility was destroyed by submarine or other means.

Hartley carried very heavy responsibility for the development, production and laying of the complete installation including all its subsidiary and attendant equipment. He played a very important role in ensuring the success of the invasion of North-West Europe.

Because of the secrecy surrounding Pluto, it or its creator received no publicity during the war and very little since. Hartley was awarded a CBE and the US Medal of Freedom. Later he was to become President of the UK Institution of Civil Engineers. He surely should have been knighted for the success of PLUTO.

The 50th anniversary of PLUTO will be in June 1994. I hope Hartley will be remembered for his significant contribution to the success of the invasion of the Fortress Europe. So also should Sir Donald Banks, the most efficient and imaginative Director General of Petroleum Warfare. Following on his visit to Australia, Sir Donald was a great admirer of this country and was always most helpful to Australians.

Another important feature of the war in North-West Europe was the damage to, and later, the repair of railway systems, bridges and rolling stock.

In the weeks preceding the invasion, the Allied air forces devoted much time to the destruction of railway rolling stock and bridges. This was to deny the Germans the use of the trains to maintain their forces in Normandy and elsewhere. Together with the destruction of the road bridges it was planned to isolate the Normandy battlefield.

The Allied bombing was most successful and those bridges not destroyed by the Allies were later destroyed by the Germans in their retreat back to Germany. This left a huge task for the specialised units of the Royal Engineers which consisted of Railway Construction Companies, Railway Survey Companies, and Mechanical Equipment Companies. These Units were supplemented by Pioneer Corps Companies.

The Military Construction Units were under the control of the Director of Railways, who was responsible to the Director of Transportation at 21st Army Group HQ.

At the end of 1943 detailed planning commenced on the railway requirements for the British and American Armies in Europe. This was coordinated by Supreme HQ Allied Expeditionary Force (SHAEF).

Railway systems were designed to replace those which had been destroyed. These systems were to play a most important role in transporting stores to the advancing Armies. Civilian railway engineers, contractors and construction workers in the European countries were to be used where possible. On one occasion, during a visit to North-West Europe, I travelled by car from Antwerp through to Mulberry Harbour, over 300 miles. Every railway bridge I saw was destroyed. Likewise, it was almost impossible to find a road bridge standing except a few replaced by Royal Engineers. In later visits, I saw the wrecked railway systems in Holland and Germany. The destruction of the Ruhr had to be seen to be believed. Nothing seemed to be intact. I wondered if it could ever be the same again. Yet later, I saw the excellent work of the RE units which seemed to perform miracles in getting railways restarted.

In order to cope with the task of replacing railway bridges about 200 officers and 7,000 RE soldiers were available, plus thousands of civilians from the liberated countries.
Excluding the work done by the civilians, the British Royal Engineers and Pioneers personnel completed by VE day:-

122 railway bridges,
246 new bridge spans erected,
47 original spans repaired,
20,324 lineal feet of bridging constructed or repaired,
1,630 miles of damaged main line railway repaired, and
501,000 cubic yards of earth work used for construction.

By VE Day 18,000 tons were carried each day by the repaired railways.

Also by VE Day, the British had repaired, rebuilt and reopened railway lines from railhead at Antwerp to just short of the advancing Army. This involved bridging the Rhine after the crossing. It was a magnificent performance by the Royal Engineers. One of my memories of Europe will always be those hundreds of large railway bridges blown into the very large rivers in France, Holland, Belgium and Germany. Our bridges over the Murray are small compared with their European counterparts.

Over 100,000 Bailey Bridge panels were used in North-West Europe - a wonderful tribute to Donald Bailey, that modest engineer at the Experimental Bridging Establishment RE at Christchurch, near Bournemouth. He was knighted in 1946.

Army engineers interested in the building and repair of military bridges during the war in North-West Europe will find much information in The Civil Engineer in War, Vol 1, Airfields, Roads, Railways and Bridges, published by the Institution of Civil Engineers, London 1948.

It was expected that most of the railway rolling stock in France, Belgium, Holland and later Germany would be destroyed by Allied air force bombing or the Germans in their retreat to their homeland. Plans had to be made for the production, storage and transportation across the English Channel of the huge quantities of equipment required.

I visited Longmoore which was a very large railway storage and training HQ area for the Railway Royal Engineers who were to man the trains and systems in Europe. Troops were given on-the-job training and all trades were catered for, e.g. signalmen, drivers and examiners etc.

It was expected that the following rolling stock would be necessary to meet Army requirements in Europe:-

Locomotives — 2,000 (some were manufactured in the US),

All bridges were destroyed or damaged in Normandy. The photo shows destroyed bridge over Seine at Rouen and the Triple Bailey erected by R.E. Photo: J.P. Buckley
Wagons — 20,000.
Ambulance trains — 40.
In addition special wagons including POL tankers, breakdown cranes and other vehicles were required — everything necessary to build a modern railway from scratch.

Getting this mass of rolling stock across the English Channel presented great difficulty and had to be done concurrently with the huge war requirements of an Army in battle.

Several special ships were modified to be able to carry the locomotives and other rolling stock, and special terminals had to be constructed in England and in Europe to ship and receive the locomotives weighing about 80 tons.

Needless to say, the railways necessary to convey the requirements of the Allied Armies were established quickly and were most successful in their execution — a fitting memorial to those excellent sappers. No doubt some of the bridges are still in use in France, Holland, Belgium and Germany.

*Finis Coronat Opus.*

**BIBLIOGRAPHY**

The Tanks, Vols I & II. Captain S.H. Liddell Hart.
The Civil Engineer in War Vols I, II & III. Institution of Civil Engineers, London 1948. (Kindly loaned by Mr Bill Banks).
The Struggle for Europe. Chester Wilmot.
Armoured Crusader. Kenneth Macksey.
The Story of the 79th Armoured Division. John Borthwick. (John researched and published the book in a matter of weeks and I think it was published whilst he was still with the Division.

It is the outstanding description of the 'Black Bulls' at war). The 79th Armoured Division. Major General Nigel Duncan. (Nigel Duncan became Lieutenant Governor of Chelsea Hospital and Honorary Colonel of the Royal Tank Corps after retiring). The World at Arms, Readers Digest.

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The Managing Editor and Staff of the Australian Defence Force Journal for their interest and help.
Colonel Lumley (Jim) Rhys-Jones, ex GSO 1 (T) of the 79th Armoured Division, who lives in Sydney. He helped me so much in 1944/45 in North-West Europe. He has written a short introduction and provided the photograph of Monty on his knees examining the V2 Rocket.
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Finally, it was General Peter Grattan's final comment in his foreword to 'Recollections of the Syrian and Iraq Campaign 1941' (ADMFJ May/June '91) which has motivated me to write this story about North-West Europe '44/45. General Grattan has kindly consented to write the foreword and I am most grateful for his continued interest and encouragement.

The author's previous contributions to the Australian Defence Force Journal include articles on Lieutenant Generals, Sir Edmund Herring and Sir Vernon Sturdee; Sir Frederick Shedden; Prime Minister, John Curtin. Archbishop, Sir Frank Woods, Father & Son on Gallipoli and Recollection of Syria and Iraq.

A regular soldier, the author served in the AIF in the Middle East, New Guinea, France and Germany. He was known as the 'Roving Staff Officer'.

In 1949, he resigned from the Army to become an Assistant Secretary in the Department of Defence and later as a First Assistant Secretary, for a period of 24 years. During this time he served on top level Committees with the Department, Inter-Departmental Organisations and International Committees.

John Buckley served directly under Sir Frederick Shedden for 7 years and was associated with him for a further 15 years when the latter was writing a book on Australian Defence Policy.

The author was awarded a SEATO Leadership Grant in 1968 by the U.S. State Department for advanced studies in the United States. He visited the United Kingdom and Canada on Defence matters at various times.

In writing this story, the author had the advantage of knowing and in many cases working with some of the principal persons mentioned in the narrative.

He completed the story in his 80th year.
ALL ABOUT SID — THE STORY OF A GUNNER IN WORLD WAR II by Sidney Raggett. Published by S.G. Raggett, 102 Bentons Rd, Mornington 3931. Price $25.00 plus postage.

Reviewed by Colonel John Buckley, OBE, ED (RL)

This is the autobiography of Sid Raggett covering his experiences during the Great Depression, his six years service during World War II and post-war. Sid had a versatile experience as a signaller and gunner during his period in the Middle East, Greece and Crete, and New Guinea. Mostly he was with the elite 2/2 Field Regiment.

It is refreshing to read a very good autobiography by a man who rose from the ranks and gave very good service as a regimental and staff officer.

Sid’s description of the battles of Greece, Crete and the Western Desert are particularly interesting; his selection of photographs complement the narrative.

Likewise well covered with interesting experiences is his post-war occupation as a caravan park owner and consultant.

A good story about a good ‘Aussie’ battler — told with both modesty and pride. It’s very hard to write about one’s own life and experiences, but Sid has done it well.

It is a well prepared and quality publication which I hope is a good seller.


Reviewed by Lieutenant Colonel D.A.K. Urquhart

John Essex-Clark, (the big ‘E’), is a character who has inspired many happy hour stories. My knowledge of him is derived mainly from such sources. I was motivated to review the book by a curiosity to see if his story matched the legends. The book traces his life in the Rhodesian and Australian Armies during 34 years of service.

About two-thirds of the book is devoted to his combat/emergency situation experiences in various locations of Africa and Asia. I thought this ratio was warranted as the big ‘E’ had more opportunity than most modern infantrymen to practice his craft and his experiences in these theatres were worth recording and make interesting reading. I particularly enjoyed the chapters on his service with the Rhodesian Army.

His observations on Duntroon held some surprises for me. Obviously by 1980, enough time had elapsed since the 1969 ‘massacre’ for old habits to regenerate. As for a Nazi Party within the Corps — ‘wouldn’t have happened in my day’!

His writing style is very much the short, clipped sentences highly prized by military writers. Yet I found that it tended to interfere a little with the flow of the story. Certainly his personality comes across strongly in his words and his views are forcefully expressed. Essex-Clark’s views are often contrary to the conventional wisdom and as is common in books of this kind, he has taken the opportunity to do a little preaching without fully justifying his stance. There were times when the style of the book (and the author) grated on me, despite agreeing with much of what he wrote. Perhaps many of the legends are true!

Overall, I found the book to be ‘a good read’ and would recommend it.

THE INTELLIGENCE OF WAR IN THE GULF by Professor Desmond Ball. Published by Strategic and Defence Studies Centre, ANU, Canberra Paper on Strategy and Defence No. 78.

Reviewed by Wing Commander Mark Lax

Professor Desmond Ball will be no stranger to most readers, being a prolific publisher on defence related matters (over 150 titles), many covering sensitive areas such as intelligence, EW and systems technology. This particular article focuses on intelligence systems used so successfully by all sides (US, Soviet Union and Iraq) in the Gulf War. Subjects covered include satellite system, airborne systems and signals intelligence systems. All five chapters are fully footnoted and a comprehensive bibliography is included.

To quote the paper’s introduction, ‘the most lethal and some of the most expensive weapons systems used in the Persian Gulf in the seven months from the Iraqi invasion of Kuwait on 2 August 1990 and the ceasefire on 28 February 1991 were not the missiles, the fighter aircraft, the tanks, or even the
ships (apart from aircraft carriers and some of the other major surface combatants). Rather, they were the plethora of intelligence and electronic warfare systems which had been deployed or directed to the area since the Iraqi invasion. These systems range from billion dollar, 37,300 lb intelligence satellites to vehicle-mounted electronic intercept and direction-finding systems.

The paper itself is published in the usual SDSC format, has a good glossary of terms and includes 24 pictures. Three tables neatly summarise US and Soviet systems, but there is no table listing the Iraqi systems. The only minor error I found was the captions to figures 14 and 15 should be reversed. The following quote summarises the main thrust of the paper: ‘Saddam had some pretty good stuff. He had some good fighters, T-72 tanks, etc., but he couldn’t put it together because he lost the electromagnetic spectrum’.

This publication will make prescribed reading for those with an interest in intelligence matters and at $12.50 represents good value for money. Professor Ball nevertheless writes in an easy, understandable style which makes the 82 pages of text readable and enjoyable.

Recommended.

**THE FANATICS — A BEHAVIOURAL APPROACH TO POLITICAL VIOLENCE** by Maxwell Taylor, Brassey’s (UK), London, 1991.

Reviewed by Lieutenant Colonel R.E. Bradford

In his introduction to the book, the author, a professor of psychology, suggested that much of the technical accounts of the behavioural processes may be skipped without substantial damage to the arguments presented. In my view, without the benefit of some education in psychology, the reader would only follow the arguments presented with a deal of difficulty, which detracts greatly from the book. I found the book difficult to follow, and as a consequence almost impossible to concentrate on the arguments being developed by the author.

The continuation of worldwide political violence demands that people the world over develop a greater knowledge of the reasons behind such violence, as well as the reasons why people are attracted to violent political solutions. In this and previous works, Taylor investigated, in behavioural terms, the factors that might influence the development of political violence. In doing so he covers the concept of political fanaticism, including the psychological context of that fanaticism. The discussions on these psychological aspects of the work, despite the attempts of the author to do otherwise, was for me and I suspect most readers, difficult to understand.

Elements of the book do have relevance to the military reader despite the reservations outlined above. The chapter on the development of the German SS and their actions during World War II, and the subsequent discussion on the My Lai massacre in Vietnam remain of particular note. The ways in which people who otherwise would be regarded as psychologically normal, became involved in terrorist type activities is well worthwhile reading. I would not suggest, however, that those interested in such matters rush out to buy this book, unless they have some training in psychology.

**GALLIPOLI — ONE LONG GRAVE** by Kit Denton. Published by Allen & Unwin. RRP: $29.95.

Reviewed by Colonel John Buckley, OBE, ED (RL)

Much has been written about the Gallipoli campaign during and after the 75th Anniversary in 1990, all of the books having made a contribution to the knowledge and history of the period. Denton’s book contains some excellent photographs which I have not seen before and which add interest and understanding to the Gallipoli story.

I consider the narrative could have been written with a little more detail about the ‘tunnels’ and the ‘jam tin’ bombs, to quote only two examples.

Who were the officers in charge of these important facets? Many of the senior officers fail to get a mention but Stan Watson and his pier are mentioned on at least seven occasions including page 149 where he was suppose to be the last officer sent aboard at the evacuation. The last officer to leave Anzac Cove and Helles was Captain Staveley, R.N., (Principal Beachmaster). Staveley, as a Lieutenant, had raised the British flag at the Relief of Khartoum in the presence of Lord Kitchener.

No mention is made of the principal R.N. planners who made the evacuation possible, namely Staveley and Captain Boyle of the ‘Bacchante’. They were assisted by Brudenall White, who planned the land side of the evacuation.

The Royal Navy has never been given credit for its planning and execution of the evacuation from Gallipoli. It’s time that Australian historians realised the dominant role played by the Royal Navy.

I enjoyed reading this book — it’s very easy reading and its photographs of Gallipoli are the best I have seen.

Reviewed by Lieutenant Colonel R.E. Bradford

Recent world events have highlighted the uncertain nature of political and defence affairs. The breakdown of the communist grip on Eastern Europe and the subsequent internal problems of the USSR held the headlines for quite sometime and began to give the pacifist in all of us some hope for the future. Talk of reduction in armed forces was soon followed by action in Europe. Then in the midst of this reduced European tension an act of aggression on Kuwait by Iraq, quickly set the world on edge, resulting in a number of regional nations backed by the United States and other lesser powers providing military assistance to Saudi Arabia. Such rapid and changing current world scenarios provides sufficient reason to believe that Australia could be put under threat at short notice, and this is what this book is all about.

The Cocos (Keeling) Islands situated in the Indian Ocean, some 2000 kilometres from mainland Australia is part of the Commonwealth of Australia. In this book, the island and its population of 400 Australians is captured by Indian Armed Forces on behalf of the Cocos Liberation Front, the 'suppressed minority'. The military action of forcibly taking the island is backed up by aggressive submarine action against Australian shipping and diplomatic action in the United Nations forum. With this as the background, the majority of the book is then concentrated on what Australia needs to do military and morally to recapture the island.

Political intrigue and military ill preparedness are the predominate themes of the book. The deliberations of the Government, bordering on an inability to recognise the problem, and then a desire to let the status quo remain is most realistically described, as is the pressure placed on the Government by the Press Corps and other groups. Equally well described is the deliberate planning processes of the military although I feel intelligence information as portrayed was too easily obtained and too free of improbabilities to be totally believable. Description of military action abound in the text and provide an edge of excitement, adding to the overall effect. The military actions however are not the central theme, the preparedness (or lack of preparedness) of the military, and the lack of political willpower is in fact what is under scrutiny.

Whilst the book has minor faults, some of which I have mentioned, I believe the author captured the essence of the dilemma facing Australia. The financial resources available to Australia will always remain limited, and will mean that we will continue to take defence shortcuts, which in themselves limit military effectiveness and capability. O'Connor has shown in the book, in times of need and given a little leeway the opportunity will exist to at least partially make up some of the shortcomings and thus restore the military capability. This could only occur, however, when the political willpower to do so is strong. The emotional struggle and political deliberations of Ministers in the book making political not military decisions, is directly compared to the European appeasement towards Hitler in the late 1930s and is well made. The necessity for Australia to have to stand alone against aggression in certain international political and economic climates is another theme developed. Some limited help will always probably be forthcoming but the improbabilities of internal elections of allies and economic pacts will often affect the type, nature and amount of aid provided.

Michael O'Connor has been well prepared to write a work of this nature. His background includes work as a naval intelligence officer, political researcher and organiser of defence policy research. His previous work To Live in Peace was a critical analysis of Australia's national security policies and this book develops themes expressed in that work. His active involvement in defence matters has allowed him to realistically develop the hypothetical situation for Australia in such a way that reality seems to readily blend into fiction. I wholeheartedly recommend the book not only to those interested in the Australian strategic and defence debates but to those who like a good yarn centering on political and military matters. An Act of War will satisfy both sets of readers.


Reviewed by Michael Fogarty, Department of Foreign Affairs and Trade

Volume IX covers the first six months of 1946, documenting particularly Australia's contribution to new international organisations, external economic
relations, colonial administration, British Commonwealth cooperation, the relationship with the United States, the occupation of Japan and emergent nationalism in the Pacific.

As a specialist publication, the book offers much interest to academic historians and others working in the field who will appreciate the selection of and commentary of this archival material. Weighing in at 1.4 kilograms and totalling 608 pages, the book is vectored to a narrow sectoral base but its utility is more lasting. Anyone who has been distracted lately by recent appeals to nationalist sentiments will welcome the evidence tabled here suggesting that our strategic interests were also being vigorously asserted almost fifty years ago.

The historians of the project section have achieved a highly professional standard in the preparation and publication of this book. As well they might as the series has to meet the quality set by the official archives published by other foreign ministries. Those archival series include ‘Documents Diplomatic Français’, ‘Documents on British Foreign Policy, 1919-1939’ and ‘Documents on German Foreign Policy, 1918-45’. The Australian volumes are also correctly burdened with the usual scholarly apparatus which distinguishes such works.

The editor and his staff do not offer this collection as a history — it is a collection of documents. As Sir Paul Hasluck has previously commented, in an instructive article, ‘... documents are not history but part of the materials of history in much the same way as a heap of blue metal is not a road but part of the materials for making a road.’ (See Sir Paul Hasluck, Archives, Anthologies and other Source Books, Australian Outlook, AIIA, Volume 32, 1978).

Volume IX examines some of the acute political problems Australia had to contend with in the immediate post-war period. Clearly, the pre-war political order had been radically changed and there was much instability in Asia as nationalist aspirations manifested themselves, challenging attempts by colonial powers to re-assert their diminished authority and influence in former possessions. Australia too had vital interests to preserve, defend and promote as she sought to influence events which impacted on our strategic interests.

If Australia’s policies were to succeed then they required skilled representatives to implement them. This country was fortunate in having such people on the ground at the time. The efforts achieved by W. McMahon Ball in Tokyo and Alfred Brookes in Batavia demonstrated their political skills and overall representative capacity. Australia then had an embryo foreign service and Asia was the cradle for many wartime entrants who later went on to increasingly senior appointments in the then Department of External Affairs — at home and abroad.

Australia’s envoys had to contend with some highly sensitive issues and their resolution presented not only political but legal dilemmas as well. For example, the problems presented in the judicial process involving investigating the murder of several RAAF officers at Buitenzorg is a case in point — see documents 240, 304 and 311. Recognising the right of pre-republican Javanese courts to try insurgents for crimes would entail recognising the sovereignty of those courts and the wider political implications which followed from such a decision, at a national level, in government to government relations. In a volatile political environment, characterised by suspicion and mistrust, Australia had to finely balance its interests between the two opposing groups.

Elsewhere in Japan, other situations were equally testing. See documents 323 and 328. Australia had representation on the Allied Council for Japan and McMahon Ball had to liaise with General Douglas McArthur, Supreme Commander, Allied Powers in Japan. Ball delivered Evatt’s views on the Japanese constitution to McArthur who reacted strongly considering them as destructive and an attack on McArthur’s administration. Ball exercised consummate diplomacy to placate an irate McArthur and Australia’s political adviser only succeeded in mollifying him through an unctuous appeal to McArthur’s renowned natural modesty.

The above examples are two of many and serve to demonstrate the complexity and nuances of some of the diplomatic exchanges covered in the work. The photographs and biographical notes locate many of the officials and adds to a more informed understanding of events.

Re-inventions of nationalism aside, the book reminds us that our foreign policy was not solely determined as a footnote to a cabinet agenda item in Whitehall or as an aside in the corridors of Foggy Bottom. The decisions were ours, as they had to be, if the government was to take any responsibility for Australia’s interests. And again, as a major ally of both countries, Australia had to manoeuvre as best as it could.

The last words should be left to Gordon Craig who wrote in his article ‘On the pleasure of reading diplomatic correspondence’, Journal of Contemporary History, Volume 26, September, 1991. ‘... (In the last analysis, the key to national security lies in the health and vigour of our own society. Only someone who is insensitive to the role of the individual in history could be bored by this kind of literature. All in all, these forbidding buckram-bound volumes deserve more readers than they get.’
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