

MAINTENANCE PROBLEMS OF ARMIES IN DEVELOPING COUNTRIES

Brigadier P. De S. Daluwatte, Sri Lanka Army

Background

Until 1971, when Sri Lanka faced insurgency, the Army was largely ceremonial, seen only on independence day doing a march past in all its glory in the Capital. It was less than an infantry division in strength, concentrated on one cantonment about 10 km from Colombo, with Area Command in the North, and in the West Coast MNR, with the main Training Centre in hill country at Diyatalawa. Equipment was limited to a small number of vehicles, soldiers' personal weapons, and a few armoured cars and artillery weapons. The EME catered for maintenance needs of that equipment through LADs, each with an artificer, to maintain guns and armoured cars. One Field Workshop backed by a Base Workshop met all other needs. The teeth to tail ratio was about 3:1, reasonable for an Army which is not equipment heavy.

Troops were deployed in the North in Anti Illicit Immigration and Anti Smuggling roles. Coast watching points were maintained along the sea coast, monitoring fishing activities. There was no armed threat, so only personal Infantry weapons were deployed. Two LADs met the maintenance needs of the deployed troops.

The Police, which until the insurgency were limited strictly to policing duties, were hardly armed. They were unable to contain the insurgency situation and called in the Army. From then onwards a military presence was needed throughout the island, but mainly in the South. Area Command started appearing in the South and Anuradhapura. The Infantry began to expand, but service units did not, because there was no build up of equipment.

Expansion

In 1983 terrorism raised its ugly head in the North. The troops deployed there for anti smuggling operations were now required to actively fight a terrorist war. From 1983 to 1997 there was rapid expansion of the Army. Since the need was bayonet strength, teeth arms expanded rapidly. The need to build up service elements proportionately was well understood, but economic considerations did not permit it.

Re-equipment

Since bayonet strength was the need of the hour, teeth arms kept expanding, up to almost sixteenfold, while the service elements increased only fourfold, resulting in a teeth to tail ratio of about 7:1. At the same time the Army had to better equip itself. From a 1971 Army with only .303 rifles, the Sri Lanka Army acquired tanks, very sophisticated artillery, night vision equipment, mortar locating radars and more and more heavy calibre weapons. For economic reasons much of this equipment was bought second hand. Since it was needed in a hurry, the Sri Lanka Army ended up with numerous makes and models of differing vintages. Some of this equipment did not have any spares backing at all. Though it is good practice to buy spares up to about 10% of the value of equipment, some equipments were bought without the spares component, again due to financial constraints. All efforts to standardise equipment fail in such a scenario. Further, minimum required numbers have to

exist before considering effective maintainability. *Comment made at a recent tender board: since the Army has so many types of equipment, the addition of further models will not make a lot of difference.*

Reserves

Lack of reserves means sudden needs have to be catered for. These are currently met by purchasing off the shelf according to availability. For instance, a recent purchase of 30 tractors included four different makes, two of which had not previously been used in the Army.

Inventory

Inventory costs must be controlled. Only fast moving spares are held for each model, so almost all repair tasks require a few items to be locally purchased. These result in additional downtime which the Army can ill afford. The problem is compounded by the fact that 60% of the troops can only be accessed by air or sea. With the limited aircraft availability in Sri Lanka, cargo gets lesser priority than personnel, resulting in long delays getting spares to users. **Specialising technical personnel on individual equipments becomes a dream in that scenario!** The way equipments are deployed in various detachments, makes it impracticable to concentrate one type of equipment in a particular area. For example, we have 3000 'B' vehicles, with over 200 makes and models. Age is a major factor in maintaining vehicles. Although a discarding policy has been laid down, it is not possible to adhere to it due to non availability of funds for replacements. Hence equipment is maintained well beyond economic repair life, resulting in further problems and additional expenditure.

Standardisation

Having understood the problem, which must be similar in many developing countries, we can address possible solutions. Standardisation of equipment is undoubtedly the best answer. But how can we overcome the impediments to standardisation such as tender procedures, lack of adequate funds, and lack of reserves resulting in ad hoc off the shelf purchases, since developing countries are not producing this equipment but are dependant on industrialised countries?

A Possible Solution

I can think of one solution, which a forum such as PASOLS could initiate. The solution seems to be regional standardisation of equipment, with central holding of reserves by an organisation like PASOLS. Equipment could be stocked at strategic locations so as to be available at short notice. Government to Government understanding of availability of credit etc will be required. Such reserves need not necessarily be new, the equipment may even be lent, so that once the need is over it can be returned to reserve stock. A maintenance team could keep such mothballed equipment ready for use at short notice.

If this principle is accepted the next step would be to identify equipment to be held by brand and type. There will be a need for agreements with manufacturers to ensure continuity of production as well as spares backing.

An arrangement of this nature would be of great benefit to both the user and the manufacturer.

NEW ZEALAND

Host Country for PASOLS XXVII and the PDC

New Zealanders take pride in the term "down under". Except for Antarctica and islands of the southern oceans, New Zealand is as far from the world's major population centres as it is possible to get. Isolation from other land masses, low population density, and the huge surrounding sea area, have helped New Zealand maintain its centuries old ecological balance almost intact. The downside is freight costs which impose a time and cost premium on all export goods.

Europeans discovered New Zealand in 1769, when Captain James Cook, RN, found a country rich in sea life such as whales and seals, and prolific in timber suited to shipbuilding. Serious settlement, mainly from European countries, started in the 1830s, and continued on a large scale until tapering off in the early 20th century. The earliest settlers were opportunists seeking to exploit the country's natural assets, then followed people wishing to create a new lifestyle. There was a further influx of immigrants, again largely European, in the 1960s.

The original Polynesian people of New Zealand, the Maoris, are unique in eighteenth and nineteenth century colonisation. They were never, as a race, defeated in battle. They were committed and well organised fighters, and the early colonial government recognised that a treaty between the two races would be more productive than war. The Treaty signed at Waitangi, in North Auckland, in 1840, gave certain rights and privileges to both parties, guaranteed continuous Maori occupation of land, fishing grounds etc, and provided for fair land purchases for immigrants. There have been, and still are, disputes between Maori and European, but by and large the treaty achieved its purpose of creating a framework for the races to live and work together in harmony.

New Zealand has a land area roughly equivalent to the British Isles, with a population of 3.7 million, slightly more than Singapore in roughly 400 times the land area. Population density is about 13 people per sq km, compared with 2.3 for Australia, and 330 for Japan. Over half the population lives in the North Island, mainly in the Auckland area, which has a very temperate climate. The South Island is very sparsely populated, with nearly two thirds of the land but less than half of the population. The land of rural New Zealand is covered in either grass or trees. The terrain ranges from undulating dairy farms in North Auckland to the rugged peaks of the Southern Alps, where skiers, hunters and climbers find ample challenge.

The benign climate makes New Zealand a very competitive food producer, even when transport costs to main markets are included. Exports include dairy foods, meat products, wool, forest products, sea foods and fruit. Industrial products account for only about 12% of exports, but a high proportion of imports. Main areas of export are Asia (mainly Japan and China) Australia, North America, the United Kingdom and the Middle East.

Auckland, venue for PASOLS XXVII and the PDC, is the largest population centre (about 1 million people), and the main New Zealand entry point, although there are other sea ports on the long coastline, and three other international airports.

The New Zealand Defence Force looks forward to meeting PASOLS delegates in 1998 at Auckland's Sheraton Hotel.

PASOLS XXVI

Held in Vancouver, Canada

5-9 August, 1997

PASOLS XXVI again met a key PASOLS objective, providing delegates with the opportunity to share in discussing professional logistics issues, and learn of the culture, military capacity and heritage of their host nation.

The Canadian PASOLS organisation was impeccable, as was the Canadian Defence Force search and rescue display, watched by delegates from on board HMCS Huron in the beautiful Straits of Georgia. AIRSHOW Canada provided an opportunity not often available to see world wide aviation developments.

The Seminar was attended by 125 delegates from 21 member countries and 8 observer countries. Vanuatu was inducted as the 21st member.

Future hosts for PASOLS are as follows:

- ?? 1998 **New Zealand.**
- ?? 1999 **Fiji**
- ?? 2000 **Philippines**
- ?? 2001 **Australia**
- ?? 2002 **Korea**
- ?? 2003 **Singapore -**

The PASOLS XXVI theme: **Logistics Co-operation: Technology Solutions** was developed in three Discussion Topics.

The **KEY RESULTS** from the Panel Discussions, recommended by **PDC**, and approved by the **LSG** were:

Pacific Area Quality Assurance Forum (PAQAF) The seven participants agreed that the Forum can offer substantial benefits. Australia will host the next meeting, and is keen to encourage greater representation and support from members.

Pacific Area Cataloguing System (PACS). New Zealand provided an update on PACS, and Canada presented information on implementing a cataloguing system. This initiative will continue as a forum.

Internet and PASOLS Home Page. Canada and Australia provided briefings on the Internet. Canada introduced delegates to the World Wide Web, and Australia demonstrated uses for a PASOLS Home Page. The Home Page will be further developed to include the following functional pages:

- ?? Civilian and military interface
- ?? Change management
- ?? Preservation and packaging techniques and training

Initiatives. Past and recent Initiatives for action or consideration were reviewed. Additional Initiatives were generated during the discussions, and all were prioritised, top priorities being:

LOGISTICS INFORMATION MANAGEMENT SYSTEMS: Australia is taking the lead in a forum to share information on this subject.

MULTILATERAL AGREEMENTS: The next PDC will plan the way ahead.

PRESERVATION AND PACKAGING: An information exchange will be established on the PASOLS Home Page. The US will investigate including training material. Members are to add such contributions as they are able.

SHARED MAINTENANCE CENTRE: PASOLS Delegates are to explore ideas in their own country, for discussion at the next PDC.

RETROSPECTIVE CATALOGUING - THE MALAYSIAN EXPERIENCE

Major Othman bin Md Jahim, RMAF

Malaysian Armed Forces Cataloguing Authority

Introduction

The Malaysian Armed Forces Cataloguing Authority (MAFCA) was established in 1981 as part of the modernization and expansion of the Malaysian Armed Forces (MAF). The requirement was to establish a single, centrally controlled and maintained Supply Management Information Data Base Logistics System. The first task was to retrospectively codify items of supply .

Aim

The aim of this article is to share our experience of retrospective cataloguing in the hope of providing useful guidance to new NCS user nations.

Background: Before the MAFCA

The Army, Navy and Air Force had been using differing catalogue systems. Some were inherited from the old British system and others were the combination of many systems.

The diversity of these systems created many difficulties and much wastage such as duplication in buying and difficulties in identifying items. MAFCA was established with the immediate aim of finding solutions to these problems by using a common supply language, and also to develop a single cataloguing system for the three services.

Retrospective Cataloguing

When MAFCA was formed, its main task was to identify and codify as many existing items of supply as possible. This was a tedious job and until recently an ongoing pain in the neck. Main activities involved are:

- ?? Acquiring cataloguing information related to item identification;
- ?? Screening items of supply submitted for retrospective cataloguing;
- ?? Preparation of data for exchange with other countries;
- ?? Item identification for:
 - ?? Locally manufactured items; and
 - ?? Items manufactured by non NCS nations.

Acquiring Cataloguing Information

To ensure item identification is carried out properly, data such as drawings and specifications must first be acquired. Likely documentation and information sources include:

- ?? Illustrated parts catalogue (IPC);
- ?? Engineering Drawings;
- ?? Reference Numbers;

- ?? Specifications and Standards;
- ?? Related documents to assist item identification.

All the above will help determine the **type** of item identification. If information is complete, item identification will be the most comprehensive, type 1. This is quite hard to come by for retrospective items. Most will result in type 2 or type 4 item identifications.

The basic sources of information for retrospective cataloguing are:

- ?? Contractors or Suppliers;
- ?? Manufacturers;
- ?? Submitters - (the three Services);
- ?? End users or user depots;
- ?? New manufacturers, or current manufacturers when items are being remanufactured;
- ?? Other government or private sector agencies.

Interrogation and Screening

The screening process for items of supply using cross reference lists (CRLs) will only be carried out after reference or part numbers have been identified. This is done through interrogation of the IPC or any form of reference given by suppliers or manufacturers. Common CRLs used are FED LOG and NMCRL. Screening of retrospective items of supply will determine whether any have been assigned NSN, which will further enhance the next process, the request for LAU and LSA.

A common problem faced by MAFCA during this process is to obtain correct part or reference numbers. At times reference numbers simply do not exist, in which case the identification product will usually be type 2.

Preparing Data for Exchange with Other Countries

The majority of the Malaysian defence inventory has been procured abroad, mainly from Europe and the United States, and genuine spares can usually only be obtained from the original equipment manufacturer. The only practicable way to exchange data and information on an item is through the NATO Codification System.

Mistakes in preparing NCS data could lead to rejection by overseas NCBs. The manual process of ensuring data is error-free is very tedious, but can be done smoothly and efficiently with the help of computers.

The Malaysian NCB is mainly involved with European countries and the United States, using two types of request, LSA and LAU. Late replies from some NATO nations have delayed the achievement of our objectives. Initially data was exchanged via magnetic tape but the recent introduction of Mailbox System has substantially reduced the time to exchange data.

Data can only be transferred between NCS participating countries. A bilateral agreement to exchange information between NCBs is mandatory. Malaysia is fortunate in having such agreements with the majority of NCS participating countries, so that data exchange such as LAU and LSA can be carried out efficiently and smoothly.

Items Manufactured Locally or by Non NCS Nations

MAFCA has developed an item identification process for items manufactured locally or by non NCS nations such as Russia and India. It will only work if all the required information and documentation is available. In the case of Malaysian made items, the documents can usually be purchased from manufacturers or suppliers, but procurement of documentation from non NCS nations may be impossible. Manufacturers may simply refuse to cooperate for fear of their company's secret falling into the wrong hands, a particular problem with equipment procured from Russia.

Problems Encountered

The problems most often encountered in cataloguing retrospective items are:

- ?? difficulty acquiring information where the original contract did not include codification clauses;
- ?? services' difficulties in deciding which retrospective items are to be codified;
- ?? late responses to LAU/LSA requests from manufacturing nations' NCBs. This is usually caused by their own difficulties in getting information;
- ?? mistakes during the preparation of LAU/LSA transactions, leading to rejection of requests by NCBs, and subsequent follow up action. Mistakes can be due to lack of training for personnel; and
- ?? the unreliability of some CRLs.

Summary

Retrospective cataloguing has been a problem to MAFCA. A small task may require detailed, but uneconomical, research. Therefore it is essential to prioritise items of supply that really need to be codified. For example, items procured during World War 1 may have to be the last priority or even may not be required to be codified at all.

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Major Othman was born in 1956 in Melaka, Malaysia. He trained at the Officer Cadet School, Port Dickson, Malaysia and was commissioned into the Logistics Branch of the RMAF in 1981. He has held a number of logistics appointments prior to his present one in MAFCA.

Major Othman has attended training courses in the United States and Australia as well as Malaysia, and holds a Diploma of Business Studies from Mara Institute of Technology, Malaysia.

DISASTER RELIEF - TECHNOLOGY CAN HELP

Col Tadashi Takenawa, Ph.D.

Based on a presentation by Japan during PASOLS XXVI in Vancouver, Canada, August 1997

Introduction

The aim of this Article is to provide an account of the Japan Self-Defence Forces' (SDF) disaster relief activities in response to the Great Hanshin-Awaji Earthquake in 1995 and to explain our support of International Disaster Relief, Peacekeeping Operations, and Related Activities. The article also discusses logistic activities that were implemented to help people recover from the earthquake damage and the SDF's international peace co-operation efforts using its logistics capabilities.

The Great Hanshin-Awaji Earthquake

On January 17th 1995, a shattering earthquake of Magnitude 7.2 struck the cities of the Hanshin area and Awaji Island. Six thousand citizens were killed at once and about 180,000 houses were destroyed. Between 200,000 and 300,000 citizens were evacuated to schools and public facilities in surrounding areas. Kobe City, a 3 million metropolis and the economic centre for the region, lost its functions completely within 20 seconds. This earthquake caused the largest disaster in Japan since the end of WWII.

As soon as the earthquake occurred, the SDF started gathering information on the disaster from aircraft and dispatched several units to conduct relief operations in areas surrounding SDF bases. At the request of the Governor of Hyogo Prefecture for an SDF disaster relief dispatch, all the Services of the SDF launched various relief activities. Some units were sent to Kobe Port by sea as part of a joint effort to avoid the heavily damaged traffic system.

The SDF relief activities included Forward Looking Infra Red aerial reconnaissance and an airborne telecasting system. Computer systems were used extensively to analyse the situation and to prepare orders. Various communication devices such as Multiplex Radio Equipment, Satellite Communication Systems and Over the Horizon Mobile Communication Systems were also used to provide extensive communication capability to SDF forces dispersed over a large area.

The SDF conducted search & rescue operations for missing people, risking their own lives for possible unforeseeable developments, such as aftershocks. Medical activities, such as emergency helicopter transport of wounded patients, establishment of first-aid stations with capabilities for surgical operations and dental care, circuit medical examinations, health care for the elderly, and fresh milk for babies were provided immediately. About 25,000 citizens received immediate medical care from the SDF.

The SDF tried to make maximum use of its ground, sea and air capacity to transport relief goods from all over the country. It provided rations, blankets from its own stockpiles and hot meals with outdoor kitchens, each of which can prepare rice, miso-soup and other hot dishes for about 200 people in less than one hour. More than 600,000 hot meals were

served. The SDF also supplied the community, including local hospitals, with water. Emergency goods and supplies were also provided by US Forces in Japan.

Activities also included installation and maintenance of family-size shelters for evacuees. Similar tents were used for SDF troops at the rear area. Bathing facilities were set up on Maritime SDF ships and on land to provide comfort for over half a million people. Sanitary support included outdoor toilet facilities and garbage collection. These activities were carried out in severe weather conditions while fires and aftershocks continued.

After February, the focus of SDF activities shifted from search & rescue to quality of life-related operations such as restoration work. Accordingly, the SDF dispatched technical units with high civil engineering capabilities to do restoration work. Before clearing destroyed private houses, soldiers helped people recover personal belongings. The SDF even provided music to help improve citizens' morale.

The disaster relief operations continued for approximately 100 days. During this time, a total of about 2.2 million personnel were dispatched (more than 20,000 per day), 340,000 vehicles, 13,000 aircraft missions and 700 vessels. The disaster relief operations for the Great Hanshin-Awaji Earthquake were the largest conducted by the SDF since it was established in 1954.

In view of protecting people's lives and property, and minimising damage if the country should be subjected to a contingency, the government, the local public entity and the people, should combine their efforts to establish a civil defence system. Such a system will serve the purpose of disaster response, rescue and evacuation. It will further serve to deter aggression, and have significant potential for national security.

However, until recently, the people of Japan showed very little interest in the mission of the SDF. There were several reasons for this lack of interest. One of the chief causes was the fact that there have been no wars involving Japan since WWII. Japan has enjoyed a long period of peace, prosperity and progress, without having any need to think seriously about the SDF or national defence issues.

But now, through the SDF's visible activities after the earthquake, the people of Japan have recognised the importance, mission, and capabilities of the SDF and have come to realise that SDF personnel are dedicated professionals ready to risk their own lives when the country is facing a national crisis.

International Disaster Relief Activities

The Government of Japan is ready to dispatch Disaster Relief Teams overseas, particularly in the Asia-Pacific Region. Teams can be provided at the request of the governments of disaster-hit countries.

Planned activities by the SDF may be in such areas as:

- ?? Medical care, such as provision of first aid and preventative measures against epidemics.
- ?? Airlifting emergency goods & supplies by helicopters.
- ?? Supply of potable water, using water-purification systems.

The size of a disaster relief team may vary, depending on such factors as the scale of the disaster or the specifics of requests from the governments concerned. The size of a team

may also be limited within a range of a few hundred personnel because of the limited capabilities of the SDF.

The Ground SDF maintains disaster relief capabilities in each of its five Armies. Disaster relief responsibilities are rotated on a quarterly basis so that it is capable of carrying out relief operations in a self-sufficient manner when necessary. The Air and Maritime SDF maintain readiness for airlift and sealift operations to transport units to disaster-hit areas. So far the SDF have had no opportunity to dispatch Disaster Relief Teams overseas.

Peacekeeping Operations and Related Issues

After the Gulf War in 1991, Japan dispatched a fleet of mine sweepers to the Persian Gulf for 6 months to conduct mine sweeping operations. That was a first time international operation by the SDF.

In September 1992, Japan sent an Engineering Battalion and cease-fire observers, a total of about 600 personnel, to the United Nations Transitional Authority in Cambodia (UNTAC) for one year. The Engineering Battalion repaired roads and bridges in Southern Cambodia to help facilitate the election process.

The third operation was a Movement Control Company that was sent to support the UN Operations in Mozambique (ONUMOZ) for about 2 years from May 1993 to February 1995. During this time, presidential and parliamentary elections were held as planned in October 1994.

Japan's first humanitarian international co-operation activity was a SDF task force of about 400 personnel dispatched to the former Zaire in late 1994 to provide relief assistance to a large number of refugees who escaped from the civil war in Rwanda. The SDF provided medical and sanitation services and water supply for 3 months.

Since early 1996 the Japanese Government has maintained a contingent of about 50 personnel in the Golan Heights. They provide logistics support to the UN Disengagement Observer Force (UNDOF) which is located between Israel and Syria. The SDF unit is specialised in ground transportation and road repairs. They procure daily supplies and foodstuffs for the 1,000 personnel of the UNDOF.

The Japanese Contingent Team is part of the UNDOF Logistic Battalion, whose main body is formed by the Canadian Contingent Team. The SDF is very grateful for the daily support of the Canadian Contingent.

Japan expresses its heartfelt thanks to Canada for their co-operation and friendship. Japan also expresses its appreciation to the United States, the Philippines, Thailand, Malaysia, Singapore, Sri Lanka, Seychelles, Maldives and other Asia-Pacific countries, for their co-operation and outstanding support to the Japanese PKOs and related activities.

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PACIFIC PATROL BOAT UPDATE

In Nov '93, Peter Hudd, Pacific Patrol Boat Project ILS Manager, wrote an article for PASOLS Log outlining the logistic arrangements for the support of the class throughout the Pacific. At that time there were fifteen vessels in service in eight nations, while another five were either in course of construction or approved, lifting the tally of owner/operator nations to eleven.

Introduction

And then there were twenty two

In Nov 1997, some ten years after the hand-over of the first of class and with the construction phase over, there are twenty two of these 170 tonne patrol vessels in the service of twelve Pacific Forum nations. The Republic of Palau received the twenty first, while the Federated States of Micronesia jointly funded acquisition of their third, the final patrol boat.

Despite the financial problems experienced by some nations and the perils of the sea (mostly bad weather and sharp coral) all vessels remain in operational service.

The Through-Life Support Concept

The maintenance and logistic support of these vessels, spread thinly from Indonesia to French Polynesia, poses some questions and presents unique challenges. The provider (Australia) and the isolated owner/operators share the goal of keeping the vessels in service for (at least) the design life of fifteen years, but each nation's differing circumstances pose a wide range of problems. These range from an initial lack of suitable berths alongside at several bases to the difficulty of obtaining 240 volt light globes in the former US Territories.

Isn't it unusual for a Shipbuilder to be providing long-term after sales service?

Not now.

Perhaps not usual commercial practice ten years ago, today it is increasingly common for the logistic plan to call for the shipbuilder to be involved "cradle to grave". Such involvement is a great way for the owner/operator to reduce his exposure to construction problems which only become evident long after the warranty has expired.

Why long-term support?

One might deem the planners of this arrangement "paternalistic" in their attitude, or just see them as determined to give the Australian taxpayer maximum value for their investment. Whatever the motives, the logistic plan was sound, and, despite the unforeseen expansion in vessel numbers, the arrangement continues to function, with very few requests for assistance going unanswered. Canberra has provided ongoing encouragement and practical support, including funding a Half Life modernisation programme and initiatives to help habitability and maintenance.

What does it cost to operate a Pacific Class Patrol Boat?

Sorry, we don't know!

The FOSA organisation is funded by Australia to provide a trading and technological link between the operator and the equipment manufacturer or supplier. Each year FOSA purchases over a million dollars value in spares and/or services on behalf of the nations, but as the owners are not obliged to act through FOSA, the cost of support from other sources is unknown. FOSA technical support services are provided free and goods are passed on at cost, so it is reasonable to assume most spares and marine stores other than food, fuel and oil should be cheaper through FOSA, although cost may not always be the imperative. Salaries are another unknown.

Because we only see what nations spend on maintenance we can not draw specific comparisons, other than noting that maintenance costs vary by at least 500%. Some smaller nations have demonstrated that dedication to preventative maintenance is the key to cost-effective operation. Expensive repairs, or replacement of unmaintained equipment is a very poor option.

Can one align FOSA with commercial organisations?

Yes.

Many of the technical and supply-support functions are very similar to the work of expeditors employed by mining companies and construction groups to support activities in isolated areas. Expeditors (or facilitators) working close to suppliers and transport facilities aim to cut downtime and keep the wheels turning. With a main office in Brisbane and a branch by the Suva slipways we are well located to provide procurement and technical assistance for clients.

Conclusion

How well has the Pacific Patrol Boat Project logistic support concept worked?

If the objective was to help owners keep the boats going (and prevent rusty hulks littering the Pacific) it should be seen as a success. Bad news travels quickly, and there isn't much of that. If one takes the line that "value is in the eye of the beholder", then only the Owner/Operator is in a position to measure the "worth" or cost-effectiveness of these vessels - whether for national prestige, life saving, fisheries protection, law enforcement or revenue raising.

Does it work?

I believe the whole thing is working very well because the nations say so.

This update is prepared by Harry Warnick, Manager of the Follow On Support Agency (FOSA), a contract service provided to the Australian Defence Department by TENIX DEFENCE SYSTEMS, the shipbuilder.

ANZAC

THE MAKING OF A NATION

Members who stay in New Zealand after the PDC will be able to observe New Zealand's most important day of remembrance.

On 25th April 1915, the ANZACs (Australian and New Zealand Army Corps) landed on the Gallipoli Peninsula in an attempt to gain control of the Dardanelles, a key strategic feature of early World War I. It was literally an uphill struggle, and for months the ANZACS clung tenaciously to the small amount of territory occupied after the first assault. A series of other attacks advanced them little more, until finally they were ordered to withdraw in the middle of December. The casualties were massive, the operation showed up strategic and administrative incompetence, and the campaign was a disaster, except that, from New Zealand's point of view:

- ?? It was the first major engagement by New Zealand troops in the 1914 - 18 war, and demonstrated that this colonial army was up to international standards.
- ?? Soldiers showed great courage and daring in appalling conditions and against enormous odds.
- ?? An 'esprit de corps' developed which still binds Australian and New Zealand troops together.

The battles of World War I, and Gallipoli in particular, are now recognised as demonstrating for the first time that New Zealand, as a nation, could play a decisive part in world affairs. ANZAC is described in modern New Zealand books as "the making of the nation."

Each 25th April, New Zealand troops past, present, and future (represented by the Cadet Corps and youth organisations), parade in remembrance. Wreaths are laid on memorials in most small towns, and the sacrifice of people and families in the first ANZAC battle and other wars is remembered as a commitment to taking all possible steps to prevent repetition on any scale.

What has this to do with PASOLS, apart from the coincidence of the dates?

The sentiments epitomise the role of today's armed services and their logisticians in particular. If the aim of modern military forces is to prepare for war but take all possible steps to prevent it, the next step is to prove to any likely antagonist that fighting will not be worthwhile. And, put simply, logisticians provide the proof.

Military might is one thing, ensuring its capacity to fight better and longer than the opposition is another. ANZAC Day is not just a day to remember past glories. All remembrance days have the additional purpose of recalling lessons learnt and bringing us, the military, back to the reasons for our existence.

Acquisition and Cross-Servicing Agreements

Lieutenant Colonel George J. Borowsky, USAF

Introduction

As US support forces overseas started to reduce in the 1970s, there was a corresponding increase in reliance upon host nations for support. During this period, US forces acquired support through the use of formalised commercial contracting procedures. Response to allied requests involved processing of a formal Foreign Military Sales case under the Arms Export and Control Act. The procedure was impractical, being rigid and time-consuming.

In 1980 Congress passed the NATO Mutual Support Act (NMSA) to provide the Department of Defense (DOD) with authority to acquire logistics support, supplies, and services outside traditional commercial contracting procedures. It authorised DOD to enter into cross-servicing agreements for reciprocal logistics support with NATO allies and organisations.

There have since been several revisions to the NMSA. The statute has been expanded to include non-NATO nations, leading to replacement of the term *NMSA* by the term *Acquisition and Cross-Servicing Agreement* or *ACSA*. The statute now includes the United Nations and other regional organisations, and allows for exchange of airlift services. It may also be used during international exercises, and allows loans as well as sales. The statute was changed again last year to include non-lethal items not designated as significant military equipment on the US Munitions List, such as some communication equipment.

ACSA Application

Types of items authorised for transfer include food, water, billeting, transportation (including airlift), clothing, petroleum, oils, lubricants, communication services, ammunition, base operations support, storage services, use of facilities, training services, spare parts and components, repair and maintenance services, calibration services, and airport and seaport services.

Items excluded from coverage include:

- ?? Weapon systems, major end items of equipment (except lease or loan of general purpose vehicles and other non-lethal military equipment not designated as significant military equipment).
- ?? Replacement and spare parts associated with the initial order of major items of organisational equipment covered in tables of allowances and distribution, tables of organisation and equipment, and equivalent documents.
- ?? Items prohibited by respective laws and regulations of either country. Specifically excluded from transfer by US law and regulation are guided missiles, naval mines and torpedoes, nuclear ammunition (including such items as warheads, warhead sections, projectiles, demolition munitions and training ammunition), cartridge and

air crew escape propulsion system components, chaff and chaff dispensers, guidance kits for bombs or other ammunition, chemical ammunition (other than riot control agents), and source, by-product, or special nuclear materials or any other item the transfer of which is subject to the Atomic Energy Act, 1954.

ACSA Ceiling Limitations

Annual statutory limitations to the transactions are:

US Purchase Authority:

- ?? **NATO:** \$US200M (not to exceed \$US50M for supplies other than POL).
- ?? **Non-NATO:** \$US60M per country (not to exceed \$US20M for supplies other than POL).

US Sales Authority:

- ?? **NATO:** \$US150M.
- ?? **Non-NATO:** \$US75M per country.

These limitations do not apply when supporting contingencies or non-combat operations such as humanitarian, foreign disaster assistance, or peacekeeping operations under Chapters VI and VII of the United Nations Charter. Exchanges (RIK or EVE) are not charged against ceiling limitations unless they revert to a cash reimbursement.

ACSA Countries and Organisations

- ?? **USACOM:** Canada, SACLANT.
- ?? **USCENTCOM:** Bah-rain, Jordan.
- ?? **USPACOM:** Australia, Japan, Korea, Malaysia, Thailand, Tonga.
- ?? **USEUCOM:** 22 European countries or organisations.
- ?? Another 59 nations are determined as being eligible to enter into such agreements.
- ?? New agreements are currently being negotiated with Latvia, Finland, Estonia, Austria, Fiji, Singapore, Oman, Ukraine, Romania, and Indonesia.
- ?? Existing agreements with Spain, Australia, Korea and Jordan are being revised.

ACSA Usage.

ACSA activities supporting contingency operations, humanitarian and foreign disaster assistance include:

- ?? Emergency supply airlift (generators, rolling stock) from Edmonton to Montreal, Canada in response to winter storms that left 3 million people without power. Also provided and transported 60,000 cots from the US to Montreal (US-Canada ACSA)
- ?? Provided airlift, telecommunications and computers to Canada in support of Guardian Assistance (Zaire). (US-Canada ACSA)
- ?? Loaned 150 containers to LANCENT for deployment of headquarters into Sarajevo in support of Operation Joint Endeavor. (US-SHAPE ACSA)

- ?? Provided two Roll-on, Roll-off vessels for the UK to deploy the Allied Rapid Reaction Corp (ARCC) into Croatia. (US-UK ACSA)
- ?? Provided satellite channel access to SHAPE and UK for IFOR. (US-UK & SHAPE ACSAs)
- ?? Loaned USAF radio beacons to the German and Italian Air Forces for Bosnia. (US-German & Italy ACSAs)
- ?? Airlifted vehicles and equipment for Belgium and the UK to support non-combatative evacuation operations in Central Africa. (US, UK & Belgium ACSAs)
- ?? Support services (food, billeting) in exchange for engineering support rebuilding a bridge (US-Hungary ACSA)
- ?? Providing medical services to the British and French in Tuzla in exchange for like services for US in Sarajevo. (US-France & UK ACSAs)
- ?? Providing medical services to the Nordic Battalion (Tuzla) in exchange for hospital facilities, ambulance services, some medical equipment provided by Norway. (US-Norway ACSA)
- ?? Provided airlift of spares/ parts into Qatar in exchange for access to training range in Spain. (US-Spain ACSA)
- ?? US aircraft received 700,000 gal of fuel at Chitose Air Base and repaid with replacement-in-kind. (US-Japan ACSA)
- ?? US (MARFORJ) received billeting and food during exercise and repaid in cash. (US-Japan ACSA)
- ?? US (USARJ) received services such as billeting, meals, parking fees, jet fuel, transportation in support of three exercises. (US-Japan ACSA)

Conclusion

ACSAs are proving to be a responsive and flexible tool used by Unified Combatant Commanders to respond to peacekeeping, disaster relief, and contingency operations.

For further details on ACSA, contact the US Pacific Command's ACSA focal point, LCDR Bobbi Collins, J-45, Commercial: 808-447-0948.

Lieutenant Colonel George Borowsky is the Chief, USPACOM International Logistics Branch, Directorate of Logistics, the Joint Staff. He is principal logistics advisor to the J4 and CJCS on Mutual Support Agreements, Acquisition and Cross-Servicing Agreements, USPACOM host nation support, and War Reserve Stocks for Allies issues.

Colonel Borowsky was commissioned in July 1976. Supply assignments include:

- ?? *Deputy Chief, Weapon System Support Branch, Barksdale AFB, Louisiana;*
- ?? *Supply Division Chief, Torrejon AFB, Spain;*
- ?? *Combat Operations Support Flight Chief, MacDill AFB, Florida;*
- ?? *AFLC Liaison to the Director of Logistics, then Chief, FMS Programmes and Logistics, Headquarters, Pacific Air Forces;*
- ?? *Chief, Augmentor Section, F100 Engine Division, then Chief, Distribution Division, San Antonio Air Logistics Centre, Kelly AFB, Texas.*
- ?? *Prior to assuming his current duties in June 1995, he was Supply Squadron Commander at Eglin AFB, Florida .*

SUPPORT COMMAND AUSTRALIA

Major General D M Mueller, AM

Commander Support Australia

A paper presented at the Defence Procurement Conference, Canberra, 1997

The outcome of sound, imaginative logistics will be scarcely noted or acclaimed but the results of failure will be unhappily spectacular. The consequences of logistic failure are dead Australians and outcomes inimical to the national interest. To prevent this, support from industry as an integral part of the Defence Logistic System is vital.

Introduction

Logistics is the bridge between the National Economy and the Defence Force. National economic capacity and priorities limit the combat forces which can be created, while logistic capabilities determine the forces which can be deployed and sustained on operations. Economic and logistic factors therefore shape and often limit strategic options for the employment of the combat force in joint operations in national defence, or in pursuit of wider security interests.

It is not always understood nor acknowledged that logistics is the foundation of military capability. Indeed, good logistics makes its contribution to combat power at the "sharp end", not the "blunt end", as some would have us believe.

Economy of effort is essential to attainment of logistic objectives, but economy, of itself, is not the aim. Logistic measures must be judged by their impact on effectiveness under operational conditions rather than by the sole criterion of peacetime economy. However, the demands of economy, from the standpoint of both the Defence budget and the military principle of economy of effort dictate that logistic support be furnished at minimum cost and in such a way as to develop the maximum fighting power of combat elements.

Support Command

Support Command Australia came into being on 1 July 1997. It will take several years to refine and align its business processes, systems and organisational structures. Development of a corporate joint culture that complements, but does not subsume Navy, Army and Air cultures may take up to seven years, and will depend on a continuous and vigorous cultural change programme.

Some of you are possibly wondering why it was necessary to form Support Command Australia. Conventional wisdom would suggest that it has been done through economic necessity. It is true that Australia now invests less in its national security, as a percentage of the wealth we create each year, than at any time since 1938. That, however, is a matter for Government and the people.

That said, it is inescapable that if we continue to run the business of logistics as we have in the past, we will not be able to deliver the logistic support required by Navy, Army and Air Force in the 21st century.

It has been acknowledged that at some time in the future Australia might have to increase its Defence expenditure, but Defence will first have to demonstrate that it is doing the best

it can with what it gets. The Defence Efficiency Review concluded that we do not yet meet that test.

But the need for change is deeper than that. The world is changing at an increasingly rapid rate. The stability and certainty we once enjoyed has gone forever. Investment, industry, information and individuals flow with increasing ease across boundaries of all types, including the boundaries Navy, Army and Air Force have sometimes established around themselves.

Modern technology, especially information technology, has been the catalyst for much of this change. The future Defence Force must organise around information, not functions or institutions, and as cross-functional teams. Organisations must learn continuously and recognise that versatility and flexibility are more important than functional specialisation.

Joint Logistics

Future operations will therefore be joint in nature with logistic support for all Services integrated and rationalised to the extent practical.

The nature and amount of logistic co-ordination required between organisations conducting joint operations is seldom recognised. Combat forces are designed to accomplish different but complementary tasks and a joint logistic system must comprehend both the differences and the similarities.

While the exercise of joint command requires some compromise at strategic, operational and tactical levels, many of the major difficulties often stem from logistic considerations. Single Service Commanders have sometimes been reluctant to depend on other organisations for support or to surrender control over logistic resources. This reluctance can lead to considerable difference of opinion as to the meaning of joint logistics.

At the centre of the debate is usually the outdated cultural value that effectiveness and efficiency are based on ownership and control of resources. This is no longer valid in a world of rapidly advancing technology and situational awareness.

Joint logistics is defined as *The co-ordination and direction of logistic operations by a Joint Force Commander to support the operational forces of two or more Services.*

Interpreted narrowly, this definition implies that joint logistics is no more than varying degrees of co-ordination. This in no way expresses the meaning of joint logistics, which describes the authority required over logistic operations in war and peace. There must be unity of command.

Unity of command is critical to obtain unity of effort. Unity of command of itself has no virtue. It is valuable only as it contributes to unity and economy of effort in the accomplishment of logistic objectives.

A joint logistic system can work successfully only by unity of command, development of common objectives and common processes, fast and free exchange of information, appointment of good logistics commanders and staffs, development of mutual confidence and establishment of a compatible, though at times imperfect, organisation.

Historical Experience

The United States experience with joint logistics in World War II is particularly instructive. Of interest is the observation that the United States Armed Services had little in common at the beginning of the War, either in the form of logistic policies, business processes or information.

In spite of all efforts, the United States Armed Services remained far apart in handling of logistics when the War ended. Many of the gains were achieved only after months of negotiation. Many pressing needs for joint action were never met.

It was concluded that too much logistic success was accompanied by inefficient business practices. Success was accomplished only by placing terrific strain upon the energies of logistic leadership. Too little could be attributed to sound organisation and efficient processes and systems.

Defence Efficiency Review

The Defence Efficiency Review noted that, while all services run their logistics as best they can to meet their own needs, gaps and overlaps can be corrected to improve both efficiency and effectiveness.

It was therefore decided to bring together logistics in each of the Services in the form of Support Command Australia. Over time, the organisations that currently deliver logistic support will reduce in size and change in culture. We must learn to look at ourselves differently and go about our work more smartly. We must not become a smaller version of what we were.

Core Business

Our core business will be those parts of logistics which can be described as materiel support. This involves the acquisition, design and development, inventory management, warehousing, transport, maintenance and disposal activities needed to support ships, aircraft, vehicles, weapons and other impedimenta that a modern Defence Force requires.

This financial year we will spend approximately \$A1.5 billion on goods and services. Big business by any standards.

Let me emphasise, however, that we are not a distribution and engineering organisation; we are a service delivery organisation and we exist only to look after our Navy, Army and Air Force customers in combat and training forces.

Organisation

What of Support Command Australia itself? It consists of a Joint Headquarters in Melbourne, with Navy, Army and Air Force components. The Joint Headquarters includes the two star Navy, Army and Air Force component Commanders and their staffs.

Around Australia each component has a number of business units, complemented by agencies (some providing technical advice to business units) and extensive use of commercial contractors to deliver logistic services.

The **Navy** component will be responsible for:

- ?? materiel support of ADF Sea Platforms and systems, including Army watercraft;

- ?? management of all ADF fuel and lubricants;
- ?? management of all ADF explosive ordnance; and
- ?? corporate management of disposals and customs.

The **Army** component will be responsible for the materiel support of:

- ?? all ADF Ground Platforms and systems, including combat communications except those embedded in maritime and air platforms and systems;
- ?? information technology hardware and office items;
- ?? general stores;
- ?? combat and non-combat clothing; and
- ?? workshop equipment.

We will progressively develop, with the assistance of industry, a Defence integrated distribution system with warehousing and freight distribution managed by the **Army component**. *Packaging this activity for market testing poses quite a challenge.*

The **Air Force** component will be responsible for the materiel support of:

- ?? all ADF Air platforms and systems and their technical airworthiness;
- ?? all ADF laboratory and test equipment; and
- ?? corporate management of purchasing and foreign military sales activities.

Rationalisation

Many logistic business processes and systems inherited by Support Command Australia are characterised by:

- ?? complex, segmented and non-standard processes with much variation;
- ?? gaps in logistic information or the use of inadequate substitute data;
- ?? performance measures that often emphasise efficiency and overlook effectiveness;
- ?? uncertainty over ownership of logistic processes and software applications; and
- ?? poor visibility of logistic assets, including material in transit.

To rationalise these processes and systems, a new joint logistic systems agency will refine and align joint logistic business processes and systems.

Defence Industry

Commensurate with the priority which our Defence strategy attaches to investment in, and maximisation of, combat capabilities, Support Command Australia's in-house service delivery capability is in many respects, modest. At the strategic level in particular, a key requirement is for the ADF to be supported, to the extent practicable, by Australia's wider resources. This will be especially important in meeting any surge in the requirement, making it essential that Australian industry be involved to the maximum extent in provision of logistic support.

Commercial Support Programme

Our job is to ensure that our customers get the services they need, not to actually deliver those services. Virtually all our service delivery activities are therefore exposed to competition from the private sector through the Commercial Support Programme. It is not a matter of private sector versus public sector, but rather competition versus monopoly.

The Commercial Support Programme, or competitive tendering and contracting as we prefer to call it, offers significant advantages:

- ?? it reduces the costs of delivering logistic support;
- ?? it increases community involvement in Defence;
- ?? it enables us to shape industry capabilities of importance to Defence;
- ?? it gives us access to the greater depth that exists in some logistic capabilities in industry;
- ?? it gives us access to best practice in logistics; and
- ?? it enables us to avoid duplicating industry capabilities inside Defence.

Purchasing Australian

Occasionally there appear to be some misconceptions as to how we apply the current Purchasing Australian policy. The Defence Procurement Policy Guide states that Australian small to medium enterprises must be given every opportunity to compete in the supply of goods and services. It specifies a range of initiatives, consistent with 1994 Government procurement reforms, to further that aim.

It also states, quite unequivocally, that *Purchasing officers are required to buy locally, providing value for money is not compromised*, and emphasises further that *Value for money is the essential test against which any procurement must be judged value for money being a comparison of relevant benefits and costs on a whole of life basis*.

Summary

In summary, logistic support in the 21st century will be information based. Increasingly it will mirror best practice in the commercial sector where the key considerations driving logistics are integrated logistic management, quality in the context of conformance to requirements, cost reduction and customer satisfaction. Modern information technology and management techniques suitably modified to allow for the friction of war will cause military and commercial logistic practices to converge. There will be growing opportunities for industry involvement in delivery of goods and services.

Major General Des Mueller, AM, was born in Adelaide, South Australia, in 1943. He enlisted in the Australian Army in 1961.

Major General Mueller has served with Australian Artillery units and several tours as Instructor in Gunnery. After attending the Australian Staff College in 1976 he was posted to Canberra, firstly to the Directorate of Artillery then to Establishments Division. After attending the Joint Services Staff College in 1982 he was appointed Chief Instructor of the School of Artillery. Following that appointment he was promoted to Colonel and has since held a number of senior staff appointments.

On 1 July 1997 Major General Mueller became the first Commander Support Australia.