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Contents

Transports carrying the combined British and French forces assembled in Mudros Harbour, Lemnos in April 1915 prior to the Landing on Gallipoli. The British were to land at Cape Helles, on the toe of the peninsula, and thrust for Achi Baba; the French to feint at Kum Kale, south of the entrance to the Dardanelles, and the Australian and New Zealand Army Corps (ANZAC) to land near Gaba Tepe and strive to reach Mal Tepe, overlooking the Narrows. In these attacks

The 'Red Rats' and Phuoc Tuy

Captain Ian Hutchison,
Royal Australian Infantry

A purely academic study of war by itself is today unrewarding. It is important that the future Commander or Staff Officer should understand the inter-action of political, geographic, economic and military factors in the various parts of the world and that our military studies be set in these realistic settings.
— Major-General M. A. H. Butler CB. CBE, DSO, MC (Commandant, Staff College, Camberly) 1 March 1967

Introduction

ON 8 March 1966 the Prime Minister of Australia announced that an Australian task force would be despatched to Vietnam as part of Australia's increasing military commitment.[1]

On 23 April 1966 the reception, disembarkation and processing of personnel and equipment of the major units of the 1st Australian Task Force through the surface and aerial ports of Vung Tau and Saigon commenced. By 5 June 1966 the majority of the task force had deployed by helicopter from Vung Tau to its area of operations in Phuoc Tuy Province, where it established itself at Nui Dat in torrential monsoonal rain.

The reasons for the deployment of the task force to Phuoc Tuy Province were two-fold. The military reason was to end the Viet Cong[2] domination of the area with a view to securing National Highway 15 for major military movement from Vung Tau to Saigon. This was necessary in order to allow the development of the port of Vung Tau and thus relieve the congestion of military shipping in the port of

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Between January 1965 and February 1967 he was GSO3 (Trg) TF HQ, HQ 1 Div and later GSO3 (Ops) HQ 1 ATF in South Vietnam. He is at present posted as GSO3 DMO&P, AHQ, Canberra.

The term 'Red Rats' was affectionately bestowed on the 1st Australian Task Force in Phuoc Tuy Province by the South Vietnamese peasants. Its derivation stems from the red kangaroo which was initially painted on all the Task Force vehicles. As the Vietnamese had never seen a kangaroo, and as there was therefore no comparable word for it in their language, they inevitably called it 'the red rat'.

PROVINCE BOUNDARIES
OF
SOUTH VIETNAM

N

LAOS

QUANG-TRI

THUA-THIEN

QUANG-NAM

QUANG-TIN

QUANG-NGAI

KONTUM

I CTZ
XXX
II CTZ

BINH-DINH

PLEIKU

PHU-BON

PHU-YEN

DARLAC

KHANH-HOA

QUANG-DUC

TUYEN-DUC

CITY OF CAM RANH

CAMBODIA

PHUOC-LONG

NINH-THUAN

BINH-LONG

LAM-DONG

TAY-NINH

BINH-DUONG

LONG-KHANH

BINH-TUY

BINH-THUAN

HAU-NGHIA

GIA-DINH

BIEN-HOA

KIEN-TUONG

LONG-AN

PHUOC-TUY

CHAU-DUC

KIEN-PHONG

DINH-TUONG

GO-CONG

II CTZ
XXX
III CTZ

PHU QUOC

KIEN-GIANG

AN-GIANG

VINH-LONG

KIEN-HOA

III CTZ
XXX
IV CTZ

PHONG-DINH

VINH-BINH

South China Sea

CHUONG-THIEN

BA-XUYEN

BAC-LIEU

AN-XUYEN

STATUTE MILES.
10   0   10   20   30   40   50

(Approximate)

Saigon. The political reason was to assist in providing the security necessary for the Government of the Republic of Vietnam to proceed with its Revolutionary Development[2] programme in the province.

Aim

The aim of this article is to briefly study the inter-action between the political, geographic, and economic environment of Phuoc Tuy Province and the activities of the 1st Australian Task Force.

THE CONTEMPORARY SETTING

Phuoc Tuy Province is one of eleven provinces comprising III Corps Tactical Zone (Map 1). It is divided into the five districts of Long Le, Long Dien, Dat Do, Duc Thanh and Xuyen Moc.

Phuoc Tuy Province is located some forty kilometres south-east of Saigon. Its average length is approximately 50 kilometres and its average depth approximately 40 kilometres, with a total land area of some 1,958 square kilometres.

Topography

Most of the land area within the province consists of piedmont alluvial plain which varies from flat to undulating in nature[4]. Isolated low hills protrude above the plain, the two most notable of these being Nui Dat and Horseshoe Hill on which units of the task force are based (Map 2). Nui Dat is a granite outcrop 101 metres high and is covered with clear forest and scrub, whilst Horseshoe Hill is an extinct volcanic cone which is almost devoid of vegetation and is 82 metres high. Areas of evergreen forest, rubber plantations, padi, and lalang type grass cover the surrounding alluvial plain which has been the stage for many Task Force operations. Readily available helicopter landing sites exist in the numerous cultivations and clearings. During the dry season (November to April) the MII3 armoured personnel carrier can traverse most of the terrain, the evergreen forests imposing the greatest restrictions on movement.
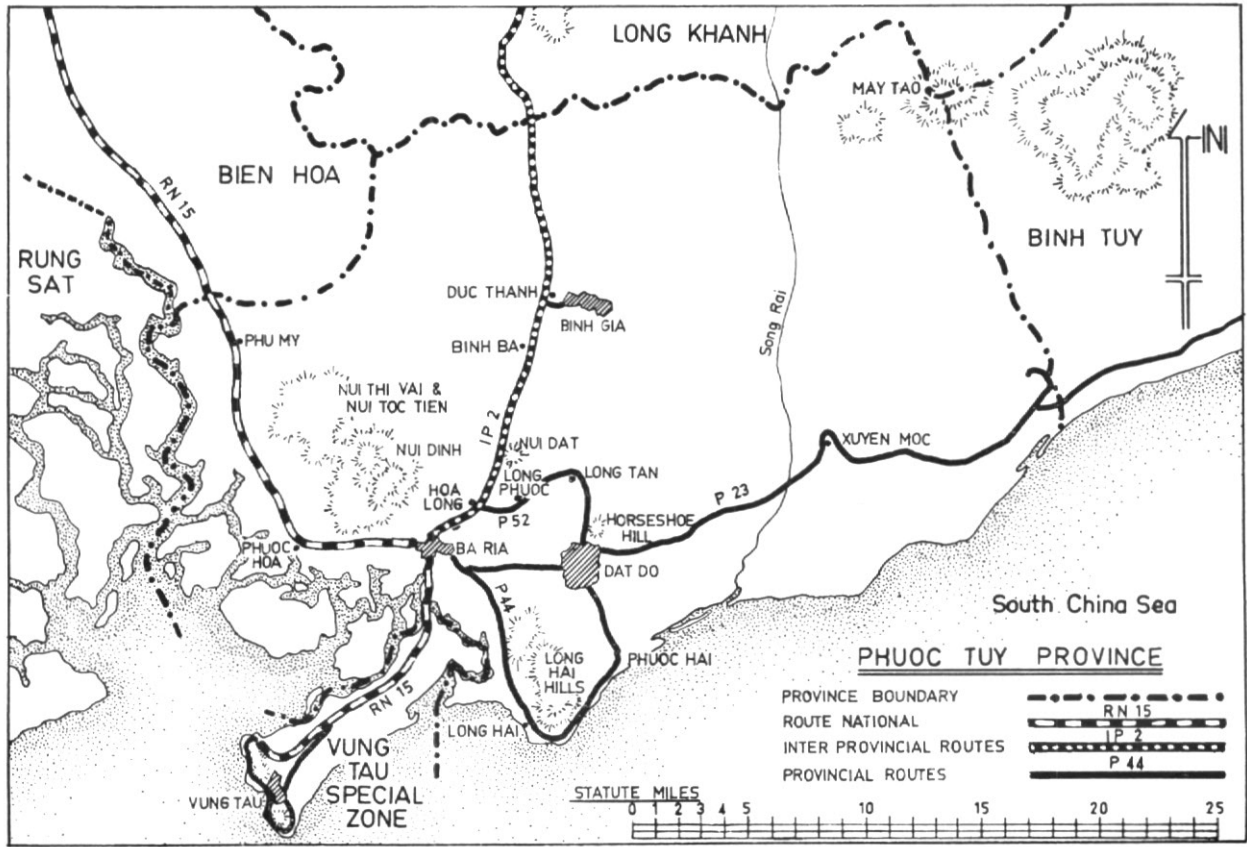
Foot movement is unrestricted across open areas but is limited to about 500 metres per hour in the evergreen forests. The rate of

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1   'Vietnam — February 1966 to October 1966', *Select Documents in International Affairs*, (Department of External Affairs), December 1966, No. 9, pp. 11-12.
2   Individuals of either South or North Vietnamese origin who actively and willingly support activities of the National Liberation Front of South Vietnam, by participating in or supporting attacks, subversion, or sabotage directed against nationals, facilities, installations or military units of the Republic of Vietnam, United States, or Free World Military Assistance Forces. (This, and similar footnotes in this article, state the working definitions approved by the various allied military forces in South Vietnam).
3   The integrated military and civil process to restore, consolidate and expand government control so that nation building can progress throughout the Republic of Vietnam. It consists of those co-ordinated military and civil actions to liberate the people from Viet Cong control; restore public security; initiate political, economic and social development; extend effective Government authority and win the willing support of the people toward these ends.
4   Data for this article was obtained by research and field experience during the author's tour of duty in South Vietnam.

LONG KHANH

MAY TAO

BIEN HOA

BINH TUY

RUNG SAT

RN 15

DUC THANH

BINH GIA

PHU MY

BINH BA

Song Rai

NUI THI VAI &
NUI TOC TIEN

NUI DINH

NUI DAT

LONG TAN

P 2

XUYEN MOC

LONG
PHUOC

HOA
LONG

P 23

P 52

HORSESHOE
HILL

PHUOC
HOA

BA RIA

DAT DO

South China Sea

P 44

LONG
HAI
HILLS

PHUOC HAI

PHUOC TUY PROVINCE

RN 15

VUNG
TAU
SPECIAL
ZONE

LONG HAI

PROVINCE BOUNDARY
ROUTE NATIONAL   RN 15
INTER PROVINCIAL ROUTES   P 2
PROVINCIAL ROUTES   P 44

VUNG TAU

STATUTE MILES
0 1 2 3 4 5   10   15   20   25

movement is slower during the wet season (May to October) when the red brown soil turns to mud and large areas, mainly padi, are inundated. MII3 rates of movement are reduced by waterlogged soil, although the higher water level reduces the height of stream banks and makes them easier to traverse. The Song Rai is the major river in the region. From its headwaters in Long Khanh Province it flows generally south through Phuoc Tuy Province before meandering across its flood plain and finally entering the South China Sea.

Rising above the piedmont alluvial plain are four hill regions. In the north-east the May Tao region rises to a height of 704 metres on the boundary of Phuoc Tuy, Binh Tuy and Long Khanh Provinces. To the south lies the Long Hai region, a granite promontory which rises to a height of 327 metres. Both these hill regions are shrouded in dense evergreen forest and are dissected by non-perennial streams.

To the south-west of the piedmont alluvial plain is the Nui Dinh region in which 6 RAR conducted a search and destroy[5] operation codenamed 'Vaucluse' in September 1966. It is a horseshoe-shaped granite hill mass with a deep ravine from north-east to south-west which separates the two arms and forms the draw of the horseshoe. The highest point of the hill mass is 504 metres. The area is deeply dissected with non-perennial streams. However, these streams do not constitute serious obstacles to movement. Gradients vary from 1 in 2 to 1 in 4. Dense vegetation, comprising mainly bamboo and low scrub with vines and creepers, covers the area. Visibility is limited in most areas to 20 to 30 metres and tactical foot movement is sometimes noisy and restricted to no more than 500 metres per hour. Good observation is obtained in all directions from the feature, particularly over the Task Force base camp and Highway 15, although visibility is, at times, impaired by haze, cloud or mist.

Adjoining the north-west edge of this hill region is the Nui Thi Vai and Nui Toc Tien hill region in which 5 RAR conducted two search and destroy operations code-named 'Canberra' and 'Queanbeyan' in October 1966. This region is shaped like a butterfly, the two features being joined by a wind gap or saddle. Nui Thi Vai forms the western wing and Nui Toc Tien the eastern wing. The non-perennial streams have their headwaters in the vicinity of the saddle, both streams terminating in the mangrove swamps of the Rung Sat. The region attains a height of 467 metres and is deeply dissected by watercourses, whilst steep gradients, granite outcrops, caves and cliff faces are characteristic. A fairly dense growth of evergreen forest cloaks the area. Foot movement is difficult and slow on the steep slopes except where trails have been established.

To the south-east of the province are the coastal littorals, a wide strip of white sandy beaches bordering the South China Sea. These are

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[5] An offensive operation conducted for the purpose of seeking out and destroying enemy forces, installations, resources and base areas.

backed by lateral sand dunes, stunted sparse vegetation and decaying pillboxes — a remnant of the French colonial era. Inland, the piedmont alluvial plain is flat and low lying with extensive tracts of padi and clear forest interspersed. Foot and MII3 movement is generally unrestricted.

Bordering the south-west of the province is the periphery of the Rung Sat. It was in this region that the task force conducted 'Operation Hayman' in November 1966, a search and destroy mission in which task force headquarters (main) deployed forward onto Long Son Island. It is a region of dense mangrove swamp interlaced with tidal rivers and streams and is inundated throughout the year. The island of Long Son is in the centre of this region. The mangroves vary between 3 and 5 metres in height and afford protection from air observation. Foot movement is greatly restricted. The many streams and waterways afford easy movement for sampans and other light craft. However, movement by boat is restricted at low tide, the mean difference between high and low tides being eight feet. Tidal currents restrict MII3s to operating around the landward periphery. Nui Nua, located on the eastern area of Long Son Island, rises to a height of 183 metres and dominates the skyline of this low-lying area. The main village of Long Son nestles at its base on the eastern extremity of the island. Low brush, clear forest, padi and isolated areas of dense forest or jungle cover the island. Some helicopter landing sites are available in the region and rappelling techniques may prove useful.

Population

The province has a population of approximately 103,000, the major population centres being located in the central, southern and western areas of the province. Those formerly living in isolated settlements have been largely resettled into these areas as part of the Government's Resettlement Programme. As a result, about 90 per cent. of the population are now living in government controlled areas.

Economy

The economy of the province is based upon agricultural production and related agricultural industries. Major cultivated crops are rice, rubber, peanuts and corn. Minor crops are manioc, sweet potatoes, fruits such as bananas and pineapples, pepper, sugarcane, vegetables and coffee. Rubber plantations are scattered throughout the central and northern areas of the province, the three largest being the French owned Gallia plantation at Binh Ba, the Courtenay plantation with its headquarters at Cam My in Long Khanh Province, and the Vietnamese owned plantation around Nui Dat within which the Task Force is based. Neither the Nui Dat plantation nor other plantations which are located in Viet Cong controlled areas of the province are at present being worked by rubber tappers, and subsequent loss of income to owners is reimbursed by war claims payments.

Other industries providing a source of livelihood are fishing, timbergetting, sawmilling, charcoal production, rice milling and salt processing. The majority of the salt evaporating ponds in the province are located in the Long Dien District, with others in the vicinity of Long Son Island and the village of Phuoc Hoa.

Miscellaneous business activities include blacksmith and welding shops, service stations, tailors' shops, pottery and weaving. The provincial ice works, laundry and a salt processing plant are situated in the provincial capital Ba Ria. Ba Ria is generally out of bounds to Australian personnel, the exception being that selected personnel are allowed to proceed on duty to the laundry contractor and to Sector Headquarters.

Search and destroy operations in the wet season, Phuoc Tuy Province.
Photograph: *Army Public Relations*

The task force has periodically assisted Vietnamese Government forces on Security Operations[6] at the request of the Province Chief. November to January are particularly important months for the conduct of such operations as this is the period of the rice harvest and its denial to the Viet Cong.

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[6] Operations designed to protect friendly resources or installations. For example: district capitals, populated areas, lines of communication, food stores, production areas, depots and base areas.

Roads and Towns

Major towns and villages are situated along the three main high-ways and along the coast. Of these, the most important is National Route 15, covering a distance of approximately 100 kilometres from Bien Hoa City, through the western and southern periphery of Phuoc Tuy Province, to Vung Tau City.

Route 15 has a bituminous surface in fair to good condition which varies in width from fourteen to sixteen feet. The highway traverses a sparsely settled alluvial plain from Bien Hoa City to the village of Phu My, whilst south of Phu My it frequently passes through or adjacent to the mangrove swamps. Those portions of the highway which lie in close proximity to the mangrove swamps require frequent maintenance due to the poor drainage and relatively heavy military traffic. Thirty-one bridges, with widths of ten feet or less are inter-spersed throughout the 100 kilometres from Bien Hoa City to Vung Tau City. Due to their narrow width the bridges constitute critical points. West of Route 15 the terrain is generally open, whereas the area to the east of the highway is generally wooded. Movement off the road to the east is restricted by swamps in the south and rice padi in the north.

Route 15 was the scene of four Security Operations in late 1966 when the task force secured the route between Ba Ria and Phu My for the movement of newly arrived United States formations from Vung Tau into the hinterland of III Corps Tactical Zone.

The provincial capital, Ba Ria, is situated at the junction of Route 15 and Inter-Provincial Route 2. The latter highway snakes North from Ba Ria to Xuan Loc in Long Khanh Province. Between Ba Ria and Hoa Long it has a bituminous surface in fair condition, but from Hoa Long northward past Nui Dat it is surfaced with laterite. Width of the road varies from 10 to 16 feet. The Nui Dinh hill region overlooks both highways in the vicinity of Ba Ria. Ammunition, equip-ment, rations, and other supplies vital to the existence of the Task Force base camp at Nui Dat are conveyed by daily convoys along National Route 15 from the Australian Logistic Support Group at Vung Tau to Ba Ria, and thence along Inter-Provincial Route 2.

The district towns of Long Dien, Dat Do and Xuyen Moc are situated along Provincial Route 23, whilst the villages of Long Hai and Phuoc Hai are situated along the coast on Provincial Route 44.

In August and September 1966 the 5 RAR group conducted two 'Road Runner' operations[7] from Nui Dat to Phuoc Hai. Whilst neither of these operations resulted in contact with Viet Cong forces, it was a most impressive sight to see the armoured column of mounted

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[7] The concept of 'Road Runner' is a specially tailored force traversing main and sec-ondary roads to demonstrate the intention and ability to use and keep open existing roads.

infantry, supported by artillery and an umbrella of air cover, motoring along Routes 2 and 44 at a time when Route 44 was regarded as a Viet Cong domain.

In the centre of the province, along Inter-Provincial Route 2, is the Roman Catholic resettlement village of Binh Gia and the Montagnard resettlement area at Duc Thanh. In close proximity to the task force base camp are the villages of Hoa Long, Binh Ba, and the site of the former Viet Cong fortified village of Long Phuoc.

Hoa Long village is located 4 kilometres north of Ba Ria and 2 kilometres south of the task force base camp, being astride the junction of Inter-Provincial Route 2 and Provincial Route 52. The village is situated on gently sloping ground, is oval in shape, and covers an area of approximately four square kilometres. It is surrounded by an earth embankment varying in height from 1 to 2 metres, forward of which is a ditch of corresponding size.

The people obtain their water from wells. Some engage in the family industry of weaving, whilst others labour in the padi fields, the rice mill, or the sawmill. Many of the houses are constructed in timber and are surrounded by vegetable patches and banana trees.

Produce is sold in the local market which was constructed in November 1966 at the request of the people under the auspices of the provincial administration with local material and artisans assisted by task force engineers and financed by Australian civic action funds. By constructing the market in this manner the Government's Revolutionary Development Programme was assisted; the Australians were held in esteem for having the villagers' interests at heart; the villagers were not forced to accept something which they did not want and their traditional Vietnamese pride was not hurt because they had assisted in the project themselves and did not feel that it was a hand-out to the underprivileged.

Also located in the village is the District headquarters, an old fort, an orphanage, a school, a dispensary, and a pagoda.

During the cordon of Hoa Long by the task force and its search[8] by Vietnamese military forces on 'Operation Bundaberg' in October 1966 the Viet Cong infrastructure[9] in the village was largely eliminated. The only complaint made by a villager concerning this operation was made by the village chief. Apparently he was so preoccupied in assisting in his official capacity that he missed seeing the Vietnamese movie show which was provided for the friendly villagers by the then

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[8] An operation in which forces encircle a village, hamlet or area to prevent entrance to or exit from the area, and to provide security to forces inside the encircled area while they perform searches for Viet Cong, Viet Cong infrastructure, draft dodgers, illegal residents, contraband, etc.
[9] The overt and covert administrative, political, and intelligence organization and networks which have been established by Viet Cong to control and administer areas they dominate or to carry out their subversive programmes in areas they cannot control.

ad hoc task force civil affairs unit after the Viet Cong suspects had been detained. To the north, east and west of the village the terrain is generally flat and is covered with a variety of vegetation — open grassland, banana plantations and secondary growth, none of which

M113 Armoured Personnel Carriers of A Squadron, 3 Cavalry Regiment travelling along Inter-Provincial Route 2, Phuoc Tuy Province, in the dry season.
Photograph: *Army Public Relations*

constitutes a serious obstacle to movement. To the south and south-west the village is surrounded by rice padi. This area was cordoned by the 1st Armoured Personnel Carrier Squadron, dismounted so as to not damage the rice crop as harvest time was imminent.

One kilometre to the east of Hoa Long and two kilometres south of the task force base camp is the site of the former Viet Cong fortified village of Long Phuoc. The village was located astride Provincial Highway 52 which bisected the village SSW to NNE and was situated on a gentle slope on the southern side of a low hill 63 metres in height. The village was irregular in shape and covered an area of two square kilometres. Between 25 May and 5 July 1966 most of the known Viet Cong in the village were apprehended, the other villagers were resettled in Hoa Long, and the tunnel complexes and fortified houses were subsequently destroyed by 6 RAR and 1st Field Squadron on 'Operation Enoggera'. Numerous artillery bombardments and air-strikes caused some damage to buildings and extensive cratering of open ground. Prior to this period well constructed dwellings with teak furniture had nestled amongst shade trees and numerous cultivations of bananas, pineapples, grain and root crops. Much of this vegetation

and numerous hedges and fences still interlace the area. A stand of mature, generally clean rubber exists to the south of the former village, whilst padi surrounds most of the remaining area. Due to the vegetational cover fields of fire are generally limited, varying between 30 metres and 200 metres, but often being the former.

Some 5 kilometres north of the task force base camp is the village of Binh Ba. The vegetation between the base camp at Nui Dat, and this village consists of rubber plantations, numerous swamps and disused padi fields.

Binh Ba is located on flat ground. The village is rectangular in shape with minor cultivations of fruit and vegetables existing within the area. It is situated adjacent to, and to the west of Inter-Provincial Route 2 and is surrounded by the French owned Gallia rubber plantation which is the major source of income for the villagers. A dispensary is operated by the French for the mutual benefit of themselves and their employees and two short range transport airfields are also located in the area. In order to keep the plantation operating, prior to the development of the task force influence in the area, the French owners paid taxes levied by the Viet Cong. In August 1966 the task force cordoned and searched the area and rendered the Viet Cong infrastructure ineffective during 'Operation Holsworthy'. The pacification of the village was carried out by 5 RAR in conjunction with Vietnamese Government forces. Activities such as medical treatment, soccer matches and soldiers attending church with the villagers assisted in improving relations with the villagers. Inter-Provincial Route 2 was secured and people were able to travel without paying Viet Cong tax for the first time in three years. Thus villagers were able to travel to Ba Ria, market their produce and return home without losing most of their profits to the Viet Cong toll-keepers.

It is in this geographical environment that the Provincial Government has been faced with the task of defeating the Viet Cong in the field whilst simultaneously trying to govern and develop the province politically, economically and socially. The government has strived, with notable success, to achieve these ends due to a co-ordinated military and civil effort.

LOCAL GOVERNMENT

Within Phuoc Tuy Province military officers occupy key governmental positions in every level of the local government organization, their positions combining military and civil functions in a single office. This is a foreseeable long term trend as many of the most able and experienced Vietnamese administrators are in uniform. It is important to note this distinction between those officers with both military and civil functions, and the purely military officers in field units, as the actual responsibility of the former officer category varies considerably from rank held.

The Province Chief

Until September 1967[10] the Province Chief of Phuoc Tuy was Lieutenant-Colonel Le Duc Dat who had been appointed by Ngo Dinh Diem when he was President of the Republic of Vietnam. Like so many of the recent leading figures in South Vietnam, Lieutenant-Colonel Dat was born in the north. Furthermore he was the only province chief who had retained office since Ngo Dinh Diem's assassination on 1 November 1963 in spite of numerous Viet Cong attempts on his life.

Due to the insecurity in Vietnam and the need for the concentration of civil and military power in the hands of province chiefs they are usually chosen from military men of the rank of major, or, as in the case of Le Duc Dat, lieutenant-colonel. Although he is assisted by various staff organizations (Chart 1) the Province Chief is personally responsible for all governmental functions within his province.

CHART 1 PROVINCE ORGANIZATION

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                                      ┌──────────┐
                              ┌───────┤ PROVINCE ├───────┐
                              │       │  CHIEF   │       │
   ┌─────────────┐            │       └────┬─────┘       │    ┌───────────────────┐
   │ PROVINCE    │            │            │             │    │ TECHNICAL SERVICES│
   │ REVOLUTIONARY│           │      ┌──────────┐        │    │ — NATIONAL POLICE │
   │ DEVELOPMENT │            │      │PROVINCIAL│        │    │ — PUBLIC WORKS    │
   │ COUNCIL     │            │      │ COUNCIL  │        │    │ — EDUCATION       │
   └─────────────┘            │      └──────────┘        │    │ — HEALTH          │
   ┌─────────────┐                                            │ — AGRICULTURE     │
   │GENERAL SECRETARY│                                        │ — REFUGEES        │
   │PERMANENT BUREAU │                                        │ — OTHERS          │
   └─────────────┘                                            └───────────────────┘
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RURAL CONSTRUCTION SECTION — ADMINISTRATION & FINANCE SECTION — PLANNING SECTION — INSPECTION & REPORTS SECTION

DEPUTY FOR ADMINISTRATION

DEPUTY FOR SECURITY

ADMINISTRATION SERVICE — FINANCE SERVICE — SOCIO-ECONOMIC SERVICE — SECRETARIAT — TRAINING SECTION

SERVICE OF SECURITY & MILITARY AFFAIRS

BUREAU OF POLITICAL AFFAIRS — BUREAU OF SECURITY & MILITARY AFFAIRS

DISTRICT — DISTRICT — DISTRICT — DISTRICT — DISTRICT

The functions of the Province Chief are political, administrative, financial, and military. In many respects these functions resemble those of the prefect in France (a resultant influence of the period of French colonization).

Politically, the Province Chief is directly responsible to the Prime Minister as the representative of the Government in the Province. In this capacity he has the overall responsibility of supervising the operations of all services in the province; the authority to recommend the transfer of civil servants working in field offices of the minis-

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[10] "Slow War in the Villages", John Bennetts, *Canberra Times*, 5th October, 1967.

tries; the authority to recommend his own candidates for appointment as district chiefs, and the symbolic duty of presiding over all official ceremonies.

Administratively, the Province Chief is consulted on and makes suggestions on the establishment or implementation of government projects in the province, and co-ordinates all activities performed by both the overhead services under the provincial administration and the technical services under the supervision of the Government Ministries concerned. In this and in his financial capacity he is assisted by the Deputy Province Chief for Administration who is a career-civil servant.

Co-operating with the Province Chief in the administration of the province is the *Provincial Council* whose members are directly elected by the electorate. Its meetings are attended by the Province Chief or his representative and are open to the public except when matters concerning national security are being considered. Before implementation, decisions on some matters must be ratified by the Prime Minister, or by the Minister concerned.

Whilst a detailed analysis of the foregoing is beyond the scope of this article, an example of how this provincial machinery has affected the operations of the 1st Australian Task Force is of interest. After the decision was made to deploy the task force to a forward operational base at Nui Dat the task force commander decided that, in order to enhance the security of the base, it would be necessary to resettle civilians living in isolated hamlets in close proximity to the base. This would give task force patrols, artillery, and mortars a free fire zone surrounding the base. It necessitated not only the resettlement of the local populace but also an order restricting civilian entry to the zone and explaining the dangers inherent in such entry. In order to realize this aim it was necessary for the Province Chief to be advised, for the matter to be considered and approved by the *Provincial Council,* and for local government agencies to resettle civilians and promulgate the warning. The difficulty experienced by the District Chief in ensuring that all people in the area were advised of this decision was compounded by the fact that there were no newspapers or radio and television stations in the province (such modern media were confined, in the main, to Saigon).

Financially, the Province Chief directs the execution of the provincial budget after its formulation by the *Provincial Council* and its approval by the Prime Minister through the Minister for Finance. Funds for the budget are derived from income from provincial lands, property taxes and licence fees, taxes paid for the ownership of boats, vehicles and draft animals, and other taxes such as those on amusements and patronage of bars and restaurants, parking fees for communal vehicles and junks, vehicle inspection and registration taxes, and head taxes on residents born outside the province. However, the

funds raised from these sources are insufficient and the budget is subsidized by funds allocated to the Province Chief in the national budget. Additional funds are allocated by the national government to the heads of technical services in the province.

Militarily, the Province Chief is responsible to the Commander of III Corps Tactical Zone for security and public order. He co-ordinates the activities of the Police[11], the Military forces[12], and special agents within the province. He is assisted by the Deputy Province Chief for Security, a career Army Officer, by his District or Military Sub-Sector Chiefs, and by the Sector Senior Advisor (a United States Army lieutenant-colonel).

The Province Chief is also Chairman of the *Provincial Revolutionary Development Council.* This council has a Permanent Bureau of nine military officers and two civil servants as its executive agency. Enhancing continuity of effort and improving administration within the Revolutionary Development structure, the chairman at each echelon is a member of the council at the next higher level. Hence the Province Chief is a member of the Divisional Revolutionary Development Council which is subordinate in turn to the Regional and Central Revolutionary Development Councils whilst the District Chiefs are members of the *Provicial Revolutionary Development Council.*

The Province Chief prepares the Revolutionary Development Plan for his province based on the guidelines published by the Ministry of Revolutionary Development in Saigon. After review and approval of the plan at Divisional, Regional, and Ministry level, the Province Chief is then responsible for its detailed execution. Military plans, including those of the task force (when appropriate), are co-ordinated with the Provincial Revolutionary Development Plan.

[11] National Field Force Police (NFFP). The basic operational unit is the company. Personnel are trained to perform the tasks of civil police or soldiers as required. The company-size unit is lightly armed and is capable of operating in a minor field tactical context. (e.g. mobile defence of villages and hamlets against Viet Cong guerilla groups, whilst PF platoons provide static defence). NFFP units operate in 'task districts' which are selected by the Province Chief and included in his Provincial Revolutionary Development Plan. NFFP also participate in combined operations with the Australian Task Force to eliminate Viet Cong infrastructure in selected villages.

[12] Vietnamese Military Forces.
a. Army of the Republic of Vietnam (ARVN) units stationed in the province in support of the Provincial Revolutionary Development Programme are under the operational control of the Province Chief — the Commander of Phuoc Tuy Military Sector. Tasks include the conduct of clearing and securing operations, security operations, psychological operations, and military civic action. On occasions they participate in combined operations with the Australian Task Force to eliminate Viet Cong infrastructure in selected villages.
b. Regional Force (RF) units in the Province are under command of the Province Chief, although he may place some of them under the operational control of his District Chiefs. The basic combat unit is the infantry company. RF units are normally recruited and deployed within the province. Tasks include the destruction of Viet Cong guerilla forces and Viet Cong infrastructure; the security of key points and lines of communication; assistance to Popular Force units in protecting villages, and the provision of a province reaction force for assisting village and hamlet defence forces.
c. Popular Force (PF) units are recruited from and deployed in their parent villages. They are organized and equipped as infantry platoons, their commanders being responsible through their Village Chief to the District Chief. Their task is to maintain security in and around their village.

The task of the military forces in support of Revolutionary Development is to attain the requisite level of security in and around selected hamlets and villages so that civil activities can proceed. Within areas selected for Revolutionary Development military forces conduct Clearing and Securing Operations to rid the areas of Viet Cong Main Forces[13] and to establish and maintain local authority. Concurrently, other military forces are employed in surrounding areas to establish a protective shield against Viet Cong forces that seek to penetrate the areas where Revolutionary Development is in progress. Military psychological operations[14] and civic action[15] are conducted as part of the military support for Revolutionary Development with considerable effect.

Civilian moves to improve political, economic and social development within the hamlets and villages run concurrently with the military operations. They aim to win over the population and to establish firm governmental control of the area. South Vietnamese Civil Revolutionary Development Teams[16] and Province Representatives of the United States Mission Agency, designated as the Office of Civil Operations and Revolutionary Development Support (CORDS)[17], assist in this regard.

The District Chiefs

Subordinate to the Province Chief are the five district chiefs who constitute the lowest territorial echelon of governmental administration (Chart 2). These district chiefs are career military officers of the rank of captain who are appointed by the Minister of the Interior on the recommendation of the Province Chief and the Commander of III Corps Tactical Zone. They are prepared for their administrative

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[13] Those Viet Cong military units which are directly subordinate to the Central Office South Vietnam, a Viet Cong Military Region, or sub-region.

[14] These operations in Phuoc Tuy Province are designed to:
a. Win the hearts and minds of the people with a view to gaining their co-operation. To achieve this aim it is necessary to instil in the people confidence in their government — its measures to improve their well-being, defeat the Viet Cong and ensure their security.
b. Lower the morale of the Viet Cong and induce them to defect by capitalizing on weaknesses of leaders, defeats and shortages, and the advantages of surrender.

[15] The term describes the use of military forces on projects contributing to social and economic development of the local population in such a way as to improve the standing of the established government with the people. The Australian Task Force Civil Affairs Unit is employed directly on such projects but seeks to remain in the background and assist indirectly through civilian agencies. In this way the maximum possible credit accrues to the Provincial Government.

[16] Once the many and varied government military forces have achieved the required degree of security in an area, Civil Revolutionary Development Teams, each 59 men in strength, are deployed into each village. Their tasks are to plan, motivate and assist the villagers in self-help projects; to develop the political, cultural, social and economic posture of the village; and to organize and train a village self defence force.

[17] The Province Representative of CORDS is responsible for all United States civil activities within Phuoc Tuy and for the co-ordination of civil activities with military operations. CORDS is supported by the Joint United States Public Affairs Office (JUSPAO) and the United States Agency for International Development (USAID). Activities include New Life Development, psychological operations, participation in the Chieu Hoi Programme, and aspects of public safety. As a specific example, the Office of Public Safety, USAID, is responsible for providing advisors to the NFFP.

functions by training courses at the National Institute of Administration. They co-ordinate all administrative activities in their district and are in continual contact with the local population, directly through inspection tours and matters requiring their decisions and indirectly through communal committees chosen from the people. In technical matters they can call on the services of the ministries represented in their districts.

CHART 2. DISTRICT ORGANIZATION.
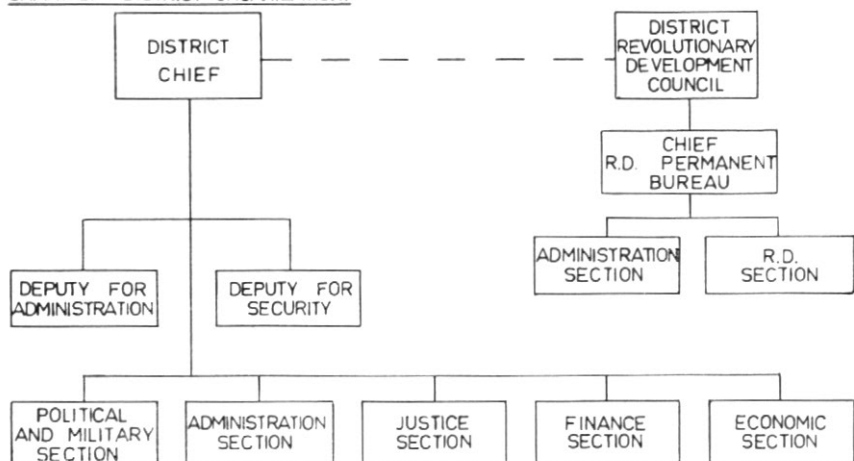
Each district chief is assisted by two deputies (administration and security) who deal with routine matters and hence allow the chief to give more attention to Revolutionary Development in his area. In his military capacity he has direct control over the Vietnamese military forces stationed in the district and the head of the district branch of the National Police is responsible to him. He is assisted by the Sub-Sector Advisor (a United States Army captain).

Within each district, every village and hamlet has its own administrative organization consisting of a popularly elected Village or Hamlet Citizens' Council and a Village or Hamlet Chief who is appointed by the Council.

Political Development

Since mid-1966, in spite of hostilities, the Government of the Republic of South Vietnam has introduced democratic methods of election, viz:

- On 11 September 1966 for a Constituent Assembly.
- In April 1967 for Village and Hamlet Councils.
- On 3 September 1967 for the Presidency, Vice-Presidency and Senate.

● On 22 October 1967 for the Lower House of the National Assembly.[18]

Despite Viet Cong threats to kill some voters, officials and candidates; to bomb polling booths and to destroy ballot boxes, a very high percentage of the eligible voters in Phuoc Tuy Province cast their votes. Understandably however, the political maturity of the electorate is still in its infancy. The report of the Australian delegation on the election of 3 September 1967[19], for example, describe how:

> Very few of the candidates have any substantial organized support, and political parties in the Australian sense do not exist. In some areas it is too dangerous to hold election meetings unless armed protection is provided, and often it is not possible to move by road from one place to another without protection. When the election was first announced, many people did not understand what an election of this sort meant, and some means of explaining this to poorly educated people was needed. It was necessary therefore in this election for the government administration to lend assistance to candidates in situations where in other countries it is customary for the candidate to be left to his own devices.

THE AUSTRALIAN TASK FORCE

Channels of Command, Co-ordination and Operational Control

From the foregoing it is understandable that the 1st Australian Task Force channels of command, co-ordination and operational control[20] are complex in nature (Chart 3). The task force is under the operational control of II Field Force Vietnam — the United States Army Corps deployed in the III ARVN Corps Tactical Zone; is under command of Headquarters Australian Force Vietnam in Saigon on national, administrative and logistic matters; and effects co-ordination with the Headquarters of the ARVN Division in whose tactical area it operates, the 1st Australian Logistic Support Group at Vung Tau, and the provincial authorities. These authorities include the Province and District Chiefs, the Sector and Sub-Sector Advisors, and the Provincial representative of CORDS.

Operations — Concept and Execution

The Task Force was allotted a tactical area of responsibility (TAOR)[21] which either included the major centres of population or which was interposed between these areas to the South and the sus-

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[18] 'Current Notes on International Affairs', *Republic of Vietnam: Elections*, (Department of External Affairs), September 1967, Volume 38 No 9.
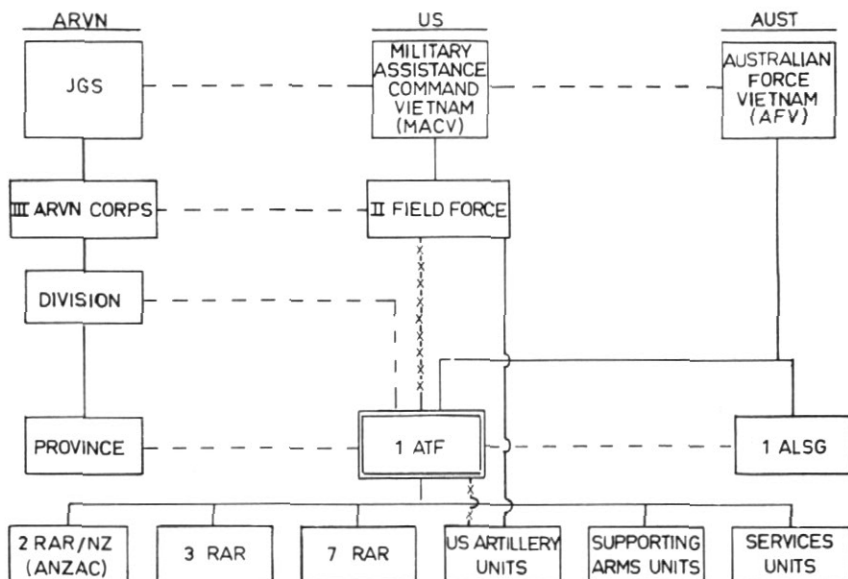[19] *Ibid.*
[20] The term indicates that the commander who has operational control can employ the formation, unit or sub-unit in accordance with his operational plan, but the parent formation or unit remains responsible for administration and logistics.
[21] That area within which a commander, after co-ordination with and approval by the commander having senior tactical responsibility for the area, assumes primary tactical responsibility and need not obtain further tactical approval to conduct operations. The commander of the TAOR does have the following continuing responsibilities to be co-ordinated as necessary with the responsible military and civil authorities:
a. Defence of key installations.
b. Conduct of operations, including such reaction operations as are necessary to secure the area against organized military forces.
c. Support of Government Revolutionary Development activities as required.

pected locations of the Main Force Viet Cong to the north. The Task Force has been successfully conducting operations in the province which have progressively removed Viet Cong influence from the TAOR and established a vacuum zone in which the Viet Cong can gain little or no intelligence and from which he cannot supply local force[22] or main force troops. These TAOR operations, and operations in areas outside the TAOR[23], have created a security umbrella over the densely populated areas which has enabled the implementation of the Provincial Revolutionary Development Plan in these areas.

CHART 3.   1ST AUSTRALIAN TASK FORCE (1ATF)
CHANNELS OF COMMAND, COORDINATION AND OPERATIONAL CONTROL

ARVN	US	AUST
JGS	MILITARY ASSISTANCE COMMAND VIETNAM (MACV)	AUSTRALIAN FORCE VIETNAM (AFV)
III ARVN CORPS	II FIELD FORCE	
DIVISION		
PROVINCE	1 ATF	1 ALSG
2 RAR/NZ (ANZAC)	3 RAR	7 RAR	US ARTILLERY UNITS	SUPPORTING ARMS UNITS	SERVICES UNITS

LEGEND
————————— COMMAND
— — — — · COORDINATION
-x-x-x-x-x-x- OPERATIONAL CONTROL

As operations have progressed the Viet Cong have been forced to react by attacking Task Force combat elements and by attempting to penetrate back into areas which have been thoroughly searched and cleared by the Task Force and which have subsequently been kept under

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[22] Those Viet Cong military units which are directly subordinate to the Provincial Party Committee.

[23] An area outside the TAOR in which a unit will operate tactically for prescribed periods of time. These areas and the responsibilities and authorities of the military units within them will be co-ordinated with responsible military and civil officials in the course of operational planning.

ground and aerial surveillance. This is understandable as the alternative course of action open to the Viet Cong, namely to accept loss of control over the civil population and loss of influence over the main lines of communication, has been unacceptable.

It is now history that a Viet Cong Main Force Regiment — reinforced by a North Vietnamese Battalion, and a Viet Cong Local Force Battalion reacted to the early achievements of the Task Force by attempting to attack the Task Force operational base at Nui Dat on the night 18/19 August 1966. D Company of the Sixth Battalion, the Royal Australian Regiment, was on a routine company fighting patrol in the area of Long Tan, some 3000 metres east of the Task Force base, when it encountered the enemy force. In conjunction with the Third Armoured Personnel Carrier Troop, and supported by Task Force artillery and air support, heavy losses were inflicted on the enemy force. The enemy sustained 245 killed, confirmed by body count the following morning, and extensive equipment and material losses, whilst the Task Force units suffered seventeen killed and twenty two wounded (one soldier subsequently dying of wounds) and negligible equipment and material losses (one M16 Armalite rifle).

Despite achieving heartening results in reducing the influence of the Viet Cong Main Force and Local Force units, which still pose a constant threat however, the Task Force has still had to contend with Viet Cong Guerillas[24] and the Viet Cong infrastructure. Small guerilla groups are frequently encountered by patrols in the TAOR and it is a difficult process to identify and eliminate clandestine Viet Cong organizations operating in government controlled villages.

Operation 'Bundaberg', planned and conducted by the Task Force Headquarters and Phuoc Tuy Sector Headquarters in October 1966, is a notable example, not only of the difficulty of eliminating the Viet Cong infrastructure, but also of the co-ordination and co-operation between the Task Force and the Provincial military and civil organisations.

Until late May 1966 the village of Long Phuoc (Map 2) was Viet Cong dominated. It was used as a Viet Cong base area and safe haven and was extensively fortified and tunnelled. As a result of a combined[25] joint[26] United States and ARVN operation Long Phuoc was cleared of known Viet Cong and the remainder of the population was resettled in Hoa Long and Long Dien. Some 1,460 people were relocated in Hoa Long which itself had been Viet Cong dominated until May 1966.

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[25] An operation conducted by forces of two or more nations acting together for the stay in their home village or hamlets. Typical missions for guerillas are collection of taxes, propaganda, protection of village party committees, and terrorist and sabotage activities. Guerilla elements are subordinate to village and hamlet level Viet Cong organization.
[26] An operation conducted by forces of two or more nations acting together for the accomplishment of a single mission.
[26] An operation conducted by two or more services of one nation.

Since its arrival in the area on 5 June 1966, the Task Force had expended considerable effort in the pacification of the village by supporting the operations of the District Chief in providing armour, artillery and infantry support to the Regional Force and Popular Force units stationed in the village with a view to enhancing the security of the village, and by conducting civic action programmes in the village. A government census in September 1966 recorded the village population as being 3,756.

Airmobile operations in the dry season, Phuoc Tuy Province.
Photograph: *Army Public Relations*

Despite the combined efforts the province intelligence agencies[27] found that the village population was infiltrated with Viet Cong guerillas, families and relatives of the Viet Cong, Viet Cong intelligence agents and cadre members, Viet Cong sympathisers and previously neutral villagers and refugees who were anti-government and anti-allied forces due to recent resettlement and curfew restrictions.

Viet Cong activities in the vicinity of Hoa Long had consisted of:
- Attempts to aggravate the obvious grievances of previously neutral villagers and refugees in order to recruit Viet Cong sympathisers, agents and guerillas, and to foster anti-government and anti-Australian sentiments.
- Continual intelligence gathering activities by Viet Cong agents within the village.

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[27] These include the National Police and Military Security Services (MSS).

- Infiltration within the village in order to commit acts of terrorism against the village elders, the District Headquarters, and pro-government citizens; to collect food and taxes and to visit relatives and friends.
- Attempts by Viet Cong local force units to carry out harassing and intimidation raids against friendly forces in the village.
- Attempts at mining, booby trapping and sniping which were primarily directed against government and allied forces in the area — especially along Inter Provincial Route 2.

It was therefore decided to conduct a combined Task Force/Phuoc Tuy Sector operation to destroy the Viet Cong infrastructure in the village. A planning conference was then held at Task Force Headquarters to co-ordinate the operation, the conference being attended by the Province Chief (Sector Commander), the United States Sector Senior Advisor, and Task Force officers holding key appointments.

On 30 October 1966 the Task Force cordoned Hoa Long village with two battalions (5 RAR and 6 RAR), the Third Special Air Service Squadron, and the 1st Armoured Personnel Carrier Squadron, and provided civil affairs, civic action, and psychological operations support. This support was provided for both the civilians evacuated to the Province Interrogation Centre at Ba Ria and to those civilians permitted to remain in Hoa Long. Every effort was made to display to the civilians that the action being taken was for their own benefit and with sincere intentions. This action included medical treatment, dental treatment, provision of Vietnamese entertainment type movies and music, assistance in feeding arrangements, distribution of psychological leaflets, and the use of a psychological operations audio broadcast aircraft and vehicles. Phuoc Tuy sector forces, comprising an ARVN infantry battalion, a NFFP company, and another company size unit, conducted a search of all dwellings in Hoa Long Village and arranged for the evacuation of selected villagers to the Province Interrogation Centre at Ba Ria. Determination of status of evacuees after interrogation was done by members of the Task Force assisted by Phuoc Tuy Sector personnel.

Despite the collection and collation of detailed intelligence information on the people in the village, co-ordinated planning, the maintenance of security regarding the operation — which included a credible cover plan — and the efficient conduct of the operation, in retrospect it was only possible to assess that the Viet Cong infrastructure in the village had been severely disrupted and not eliminated, despite the interrogation of 630 detainees which resulted in 38 Viet Cong, 41 Viet Cong suspects and 18 draft dodgers being apprehended.

In summary, the 1st Australian Task Force has:
- Conducted operations to clear Viet Cong Main Force and Local Force units from areas of the Province in accordance with the Provincial Revolutionary Development Plan.

- Conducted combined operations with ARVN and/or NFFP to destroy Viet Cong guerillas and infrastructure in selected villages.
- Conducted Population Control and Resource Denial Operations in the coastal areas to prevent infiltration of Viet Cong personnel and supplies from outside the province.
- Conducted Military Civic Action in accordance with the Provincial Revolutionary Development Programme.
- Assisted the Province Chief and District Chiefs in training ARVN and RF units.
- Conducted psychological operations in support of the Vietnamese Chieu Hoi Programme.[25]
- Constructed RF and PF posts.
- Repaired some provincial roads and bridges.
- Constructed, recorded, and maintained minefields.
- Provided tactical support to provincial military units when requested by the Province Chief.
- Liaised with provincial agencies in the dissemination of intelligence.
- Conducted route security operations along National Route 15 during major military movement from Vung Tau to the hinterland.
- Conducted other security operations, such as rice denial, at the request of the Province Chief.
- Conducted 'Road Runner' operations along major provincial highways.

CONCLUSION

In Phuoc Tuy Province, as in other provinces in Vietnam, Allied military and civil authorities are endeavouring to fight a war against an enemy from without and within its borders whilst simultaneously striving to satisfy the basic aspirations of the people, to establish firm governmental control, and to initiate political, economic, and social development.

Working arrangements based on mutual respect and trust have developed between the Province, District, Village and Hamlet Chiefs, the United States military advisors, and those members of the Task Force who daily co-ordinate matters affecting the well-being of the province.

Tangible results of operations by the Task Force were reflected in a survey conducted by the Provincial Government in early 1967 into the attitude of the villagers in government-controlled areas towards the Task Force. The villagers appreciated the protection provided against Viet Cong forces, the military civic action, and the professional competence of the Australian Task Force. ☐

[25] This term, when literally translated, means 'Open Arms'. The aim of the Chieu Hoi Programme is to cause insurgent forces to surrender to government forces and become normal citizens.

Military Purpose and Human Factors

Colonel D. G. Levis, OBE,
Late Royal Army Medical Corps

WHEN I first looked at the content of this Exercise I became uncomfortably aware of the range and extent of the subject matter it included. And I felt somewhat overawed. And now when I look at the distinguished audience that faces me I feel very humble. I also feel that what I have to offer to you may appear to be something of an anti-climax and a little out of the general context. Indeed I rather suspect that at this very moment some of you are already relaxing into your seats, having mentally prepared yourselves for a lantern lecture on latrines and refuse disposal from one of 'those tiresome hygiene people'. This is a common reaction and is, I feel sure, a product of a philosophy upon which I propose to expand a little since it is relevant to my theme. While I will agree that latrines and refuse disposal are necessary adjuncts to healthy living I will never agree that the total health of armies is entirely dependent upon them any more than I will agree that the sole duty of a medical service is simply to treat the sick and injured. Indeed, any military organization that holds these views is guilty of a grave over-simplification and will sooner or later run into trouble. The philosophy which produces this outlook has its roots in Australian history:

> It is less than 20 years ago that the Australian Regular Army was established. Any 'Regular Officer over the age of 30 today can recall the days when the Duntroon graduate was given to understand that

Colonel Levis graduated in medicine from Cambridge University and St. Thomas Hospital, London and joined the RAMC in 1936. He served in Hong Kong and Shanghai until 1940. Active service as a DADMS and ADMS followed in SW Pacific, Malaya, Java, Ceylon and Europe. At the end of the war he was OC of a divisional field ambulance. From 1946 to 1948 he was stationed in Germany, first in command of a field hygiene section and then Assistant Director of Hygiene Hamburg District. He was Assistant Director of Army Health, HQ British Troops in Egypt (1949-51) and then saw active service in Korea as DADAH British Commonwealth Forces until 1953. From there he returned to Malaya where he was ADAH Malaya Command during operations in that country.

Returning to UK in 1955 as ADAH at the War Office he went to Germany in 1958 as DDAH, HQ Rhine Army. Promoted Colonel in 1960 he returned to the UK in 1962. After four years as Commandant Army School of Health he came to Australia in 1966 on an exchange appointment as Director of Army Health at AHQ, and returned to UK in February this year to take up the appointment of DDAH, Strategic Command.

Colonel Levis read this paper at the Biennial Exercise of the DGMS AHQ held at RAAMC School of Army Health in November 1967.

the main part of the Australian Army consisted of people who did other things for a living and that if Australia went to war the soldiers would be enlisted off the streets and the C-in-C would not be a professional soldier.   (AAJ. June 1967, p. 30)

This philosophy of amateurism survives to some extent today in the attitude and relationship of the Staff towards the Medical Services. In those days as long as a doctor (not, mark you, a medical officer) was available to treat the sick and injured when troops came together for training and, provided he had some sort of 'medical organization' behind him (i.e. a hospital bed), then a Medical Service could be considered to exist. If war came then the Staff could lift a medical order of battle from the appropriate official manual or pamphlet and after that the Australian capacity for improvisation would take over and 'she'll come good' (A battle cry that chills the hearts of conscientious administrators). Consultation by the Staff with the Medical Services on the medical implications of raising and training an expanded Army, and of the planning and preparing for war in a variety of overseas theatres, tends to be sporadic — sometimes it seems to me to be almost an afterthought — and even then is mainly concerned with the therapeutic aspects; the arrangements for the treatment of sick and injured. Anything outside this is apt to be regarded as an interference with training or the military plan, or as being of no medical concern. Preventive medicine programmes tend to be equated exclusively with refuse disposal while this particular activity itself appears to me to have been invested with a degree of medical mystique which apparently puts it safely beyond the comprehension and responsibility — or beneath the contempt — of real soldiers.

In addition the idea is deep rooted in Australia that doctors should do nothing else but treat — or at least be seen to treat — people. The idea that a doctor should actively try to keep people well (the primary role of a military medical service) and thereby debase his public image (and incidentally his income) is not readily acceptable.

This overall philosophy that a medical service exists if treatment facilities and refuse disposal are provided is not only an over-simplification but is against the best interest of the Australian soldier. It is agreed that preventive medicine is a 'hard sell'. Everyone is interested in disease or injury as it may affect them. On the other hand health and well-being are taken for granted until some departure from them occurs and even then such a happening tends to be regarded in some way as the doctor's fault. This is clearly incorrect; such departures are the concern of all of us—Staff, Regimental and Service —who are engaged in running an industry, the raw material of which is men; with its dividends paid in the form of trained, fit, vigorous and immediately available soldiers. What I wish to do today is to try and induce an attitude of mind so that you, as senior and respected medical officers, will attempt at all times and at every opportunity, to break

through this over-simplified philosophy and try to direct the military thinking of others to the idea that the ultimate executive of all military planning and purpose is the man. The combination of the present age of rapid technological progress and a mistaken military medical philosophy is likely to lead to this human factor being overlooked. The human beings who may be involved are placed at an unnecessary disadvantage. Even though the military purpose may be achieved the price in terms of human wastage can be, and often is, unnecessarily high.

For whatever military purpose a plan is made; in whatever way the problems involved may be approached, and however the plan may be framed it is impossible to escape the human factors.

Whether the techniques are concerned with the global and nuclear, or are designed to meet the limited and conventional, the differences as they affect human beings are only those of degree.

There may be adjustment or compromise; there may be mechanization and automation, and there will be improvisation, but always in the chain of events which begins when the military plan is conceived, through all the moves and shifts towards its birth and in the final moments of its delivery, there will be human beings. All of whom will have the genetic pattern which makes them what they are and the biological learning which has enabled them to survive and be available for the particular military purpose. In their daily lives they are continuously subjected to a complex pattern of environmental forces and natural processes with which they must compete if they are to achieve an equilibrium with them and survive. Some of these forces and processes are readily recognizable to us as medical officers but are less obvious to military planners. Some are obviously hostile; for example, extremes of climate and epidemic disease. Some are obviously advantageous; for example, natural supplies of food and water. Some of them are not immediately visible but can be anticipated; for example, the effects of the communal military existence upon varying degrees of individual immunity, the psychological reactions to military employment or the physical effects of training regimes or new military technologies. Such forces have one thing in common. All of them are capable of active manipulation, either for their neutralization or attenuation if harmful, or for their development or enhancement if beneficial. Today the ability of man to manipulate the processes of nature for his own economic, social, physical and psychological advantage is steadily increasing. It is to this particular ability that I would direct your attention, because it is in this field that the present military medical philosophy of military planners is apt to be most lacking and which, as clinicians to a military community, it is our duty to correct.

There is an overwhelming eagerness to seize upon and employ the technical and instrumental agencies which, broadly speaking, permit

more of something to be done in a shorter time by fewer men; equipments that increase hitting power; the means which permit of the rapid movement of men towards the places in which they may be needed. But in the acceptance of such agencies the purely human aspects are liable to be overlooked. Such matters as the correct conditioning of the men who are to use them or the effects upon them as *users of the plant, weapon or instrument system*. The very fact of moving human beings rapidly between differing climates brings a row of human problems. There is a tendency to see in military operations of any kind merely the movements and the purely military training of the soldier without according full recognition to the less seen agencies which ensure that he remains healthy and vigorous. This is too narrow an outlook today yet such an outlook exists. It is not an outlook that is deliberately adopted. As an English Secretary at War wrote after a visit to the Front and Low countries in 1794, 'One sits at home quietly and overlooks such particulars but the fate of Armies and Kingdoms is decided often by nothing else'. (In this particular instance while guns had been provided by the planners they had *forgotten to provide the drivers for them*). The military planners do tend to overlook these less seen agencies partly because they are less seen and partly as a result of a mistaken philosophy. As a medical service we must bring such agencies constantly to their notice.

The whole environment of any military plan, whether it be for the expansion of an Army by National Service or for an operation in SE Asia, must be considered, and by environment I do not mean just the geographical surroundings. I mean anything and everything that has any relation at all to the individual soldier who will be engaged. Not only will there be natural forces at work capable of influencing his anatomy, his physiology and his psychology but there will also be forces which derive from the military plan itself which may influence these qualities. An example of the latter may be seen in the modern high velocity weapons. No one can be blamed if, in the conception, production and decision to use such weapons, his thinking did not embrace considerations of the human auditory nerve and the impact upon it of high frequency noise. War is a noisy business anyway. Yet we know that nerve deafness can be produced in the users of such weapons. Militarily they are good weapons; they will achieve their military purpose. But can the human factor be overcome? Can we apply some manipulation to neutralize this adverse force? Should it be applied to the weapons or their users? The answer is of course obvious. We suggest a modification of the man which will require him to use ear defenders under certain circumstances during his training. But now we encounter the human factor in the military planners who react with the criticism that such a modification will interfere with the military function of prompt obedience to the spoken military order. The fact that our modification is designed to ensure

that this very function will be at its most efficient under operational conditions when it is most required escapes their thinking. So we are now faced with the need to modify an intellectual process in the planners and a physical attribute in the soldier. Until we achieve the former we will never succeed with the latter. But we must continue to try, even if we are continually blamed for causing, by medical re-classification, a growing number of valuable trained soldiers to be removed from their military purpose.

This small example serves to illustrate the type of question and approach that must always be uppermost in military thinking when the adoption of anything new into the Service is contemplated because equipment, revised training schedules and the like are just as much a part of the soldier's environment as is the climate of South-East Asia.

It is our duty as Service medical officers to force such consider-ations upon the Staff; to encourage them to think in the same way and to make such matters the subject of discussion with us *before* and not after possible human damage has occurred. No single activity of the military human being who is involved in the military planners purpose can be viewed in isolation. Because either the activity itself may modify his well-being and his conduct, or the natural forces he meets on the road towards the activity and the area of the activity itself may influence them. The military human being lives in two worlds. The accepted one into which he was born and with which he must compete to live his daily life and the military one into which military planning, purpose and circumstances have, or will, thrust him and with which he must also come to terms. Failure to achieve this quality of living will mean a departure from either health or effici-ency, or both. It is the task of the Army — assisted by the Medical Services — to see, in its military interests that he achieves this quality. The present philosophy, with its emphasis on treatment, operates against this and, in consequence, military purpose will always tend to be in jeopardy.

It is essential therefore that any form of military planning should take this into account from the moment such planning is begun. It is easy to make this statement but there is the complication that mili-tary planning is itself subject to extraneous forces. The object may require continuous modification, its timing may depend upon political expediency, resources in manpower may be arbitrarily limited and may have to be assembled from widely separated sources, new equipment and development programmes may be behind schedule, transportation difficulties may arise, public opinion as to the justifi-cation of the object may be divided. These and many other permuta-tions and combinations of circumstances tend to produce in any mili-tary plan an environment of its own against which human factors must compete for consideration. As a priority therefore they may become

low and when we raise them — which as a Medical Service we must
— they may be treated with a weary intolerance. Yet — and this
must be hammered home by us — each and every shift, change or
modification of the military plan can have a human impact which
could be harmful and which could affect ultimate success. The Plan
itself may become sacrosanct and any alteration or addition suggested
by us whose duty it is to preserve the total health of the humans en-
gaged in it, if indeed we are consulted at all, may be summarily
rejected or modified to the extent of neutralization. If I may be per-
mitted for one moment to use the world of fantasy I will try to
illustrate this peculiar feature of military planning. You may or may
not be familiar with the Official History of the carefully planned
operation, *The Hunting of the Snark* which was given to posterity
by Lewis Carroll. This demonstrates well the reluctance on the part
of planners, in spite of well-reasoned suggestions from their Service
representatives, to amend what was to them the perfect and tidy
plan. The Order of Battle for this particular operation included a
Butcher and a Beaver. The former had taken a dislike to the latter
and ostentatiously kept stropping a cutting-up knife in his sight. In
the words of the official history:

> It was strongly advised that the Butcher should be conveyed in
> a separate ship,
> But the Bellman* declared this would never agree
> With the plans he had made for the trip.

This led as you all know to a severe psychological stress on the
Beaver with a consequent loss of morale and efficiency. In other
words there was a reluctance to manipulate conditions to meet a clear-
cut human requirement which could have endangered the total health
of the force and even have jeopardized the success of the operation.
The history goes on to relate that rather than do this simple thing the
planners introduced, at a very late stage, a complicated modification
into the logistic planning. They made a special clothing issue ('a
secondhand dagger-proof coat') and arranged for a complicated type
of life insurance policy for the Beaver. Neither achieved the require-
ment which was to raise his morale. He still travelled in the same
ship.

Human beings in any military plan are therefore liable to
additional stresses which arise directly from the qualities of the plan
itself. Psychological stress, for example, may be increased in a con-
script or reservist called up if the plan should require this. Not only
because of the natural forces of separation, finance and interruption of
careers, but because these can be enhanced if the timing of the plan is
changed and unduly long periods of delay and inactivity, apparently
pointless, elapse before departure on the purpose of the plan or before

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* Chief of Staff.

a stand down can be ordered. Such factors, when combined perhaps with a divided public opinion as to the rights and wrongs of the operation, can cause morale — an aspect of total health — to suffer all round. I do not suggest that such things can be entirely avoided. But I am suggesting that as human factors they deserve serious consideration.

Military purpose and the plans to achieve it must include the act of thinking about their relationship to the total environment of the soldier, and the measures that may be required to manipulate it in his favour, along with any necessary steps that may be necessary to condition and manipulate him to meet it. It is essential therefore for the medical services to be in on any planning right from the start. But are we? If not, why not? Anatomically and physiologically speaking the soldier is a creature of the past insofar as overnight alterations of these two systems can only be provided by injury or disease; and even so, unless there is gross anatomical distortion or an irreversible damage to his physiology, on recovery he is much as before. But psychologically speaking he is liable and can be conditioned by education and training to accept biological manipulations of his system, such as immunization and paludrine prophylaxis against particular hazards, or to put into practice a physical manipulation of his surroundings, so as he can live on terms with them. Such activities as the correct use of special clothing and footwear, the care of his feet, methods to replace the 'mod con' and safe water supplies which have hitherto been an accepted part of his daily life; the use of mosquito nets, safety practices with weapons and equipment, the use of a respirator and a host of other similar activities. These are manipulations which can only be a product of total military training but without which he would fail to reach equilibrium. These are part of the less seen agencies which keep him healthy and vigorous but which are apt to be sacrificed in favour of the more obvious military skills. It is just these agencies which are our concern and we must ensure that they are seen and seen early by those who make military plans. It must be appreciated by the planners that just as the soldier can be given confidence from having the right weapons and skills for the military task, he can and must be taught to appreciate these other activities in the same light. He must be prepared to meet his surroundings just as much as he must be prepared for his military task. Using the Official History of Operation Snark once again as an example, the need for this preparation is well brought out. The arrival of the Force in the theatre of operations was described as follows:

The journey was past,
They had landed at last,
With their boxes, portmanteaux and bags,
But at first sight the crew,

Were not pleased with the view,
Which consisted of chasms and crags.

Military planning must therefore take into consideration the reactions of its human agents against the geography, climate and theatre, against the purely physical agents such as the weapons and terrain of the task, against the particular biology of the proposed enemy tactics he will encounter, the clothing that may be necessary, the equipment, the accommodation and the methods of transportation. None of these reactions and relationships can be worked out as the situations arise. They must be considered and planned far in advance and systems for neutralization or modification of known or potentially adverse reactions must be part of military planning.

It is rare for suggestions regarding techniques and methods for the physical protection of the body against weapons to meet with resistance. No one, for example, would neglect to train men in advance in the skills necessary for the digging of weapon pits and shelter. But to suggest that soldiers be trained to dig deep trench latrines and garbage pits and learn the correct use of a mosquito net as health measures is regarded as time wasting and liable to interfere with the achievement of purely military skills. Likewise suggestions for specialized pre-training in either established or new techniques for the protection of the physiological or psychological components in the human make-up are liable to be disregarded or given mere lip service or, as sometimes happens, become an intense last minute preoccupation with the tendency to blame the Medical Services if the requirement, e.g. filling the hygiene dutymen and anti-malaria establishments of units with trained men a week before departure on the plan, cannot be met. The results that such a last minute preoccupation will produce will be poor, the human component will be worse off and the wastage bill will be unnecessarily high.

A medical service does not exist solely for the treatment of sick and wounded. This is only one aspect, but it is almost the only one that receives attention in military planning. There is a relatively greater expertise required to keep men well. Wounding in action we must expect and accept, but this is not so in the case of disease and sickness. Their prevention and avoidance are a conjoined responsibility of the staff and regimental side, with their executive powers, and of people like ourselves whose duty it is to study the problems and techniques of prevention and to advise accordingly.

In military planning, once the objective has been defined, perhaps the first task is to decide upon the size and composition of the Force likely to be required. The 'Shopping List' will invariably include certain specialized units which will be essential to keep the whole cutting edge of the Force in physical equilibrium with the particular surroundings it will meet. Such matters as bulk water supply systems,

specialized clothing support to meet climates, a feeding organization with consideration being given to the most suitable type of ration, specialized servicing units for particular equipments, laundry and bathing units, hygiene units to meet specific hazards, a medical organization for the care of casualties. This list is by no means complete but if you think about it, every element of it has a direct relationship to the physical well-being of the Force and yet probably the only one of them in which the Medical Service is considered to have any concern at all is the organization to care for the casualties. This just isn't true. So even at this stage of planning the Medical Service must demand to be taken into the confidence of the Staff. There are three main reasons for this consultation.

FIRST *to suggest to the Staff any specialized type of organization* that experience and medical knowledge has shown will be essential to assist in the manipulation of the total environment in favour of the whole Force in the particular theatre of operations, e.g. a Field Hygiene Company, the medical component for the Public Health aspects of Civil Affairs, laundry and bath units and so on, and also to *indicate their place in the time table of the 'build up'*. To try and get such things included at the last minute when the Order of Battle is complete and the overall transportation plan for the Force has been made leads to a lot of strife.

Again, if I may, I would illustrate this from the Official History of Operation Snark. You will recall how one of the logistic support elements:

Had forty-two cases all carefully packed,
With the name painted clearly on each,
But because he omitted to mention the fact,
They were all left behind on the beach.

In other words he had been overlooked by the planners and had failed to get himself included in the bidding conference for transportation space. He had also failed to draw attention in sufficient time to the need for this particular organization, with the probable results we all know. His Preventive Medicine Organization got in about $D+60$ to find an Augean stable in the Logistic Support and *Communication Zone areas with all the treatments units —* probably put in by the planners, on a rule of thumb ex pamphlet basis — crowded out and bogged down with preventable sickness.

SECOND to anticipate and indicate to the Staff any special hazards which are likely to emerge and to suggest measures to counteract them which may be essential *in advance* of the move to the theatre and to indicate which of these will require continued practice within the theatre.

THIRD to indicate and carry out the arrangements for checking over the human material that is to be employed to ensure that, as

far as may be humanly possible, it is not only physically, psychologically and immunologically fit for its individual and particular military task, but that it will be able to carry out that task in the particular setting of the military plan. None of this can be a last minute affair. This is particularly the case when the Order of Battle must be made up by drawing upon units from a variety of localities or even possibly from outside Australia itself and which may only meet either in the actual theatre or in one of the concentration areas for the operation. The provision of certain administrative units to meet the Order of Battle planned for the Suez operation in 1956 typified this human problem. A large proportion of the human material in some of these units, while able to carry out their military tasks in the setting from which they were to be drawn, was revealed to be below the Physical Employment Standard considered necessary for the proposed theatre. This type of human factor problem cannot be unravelled when units are on the move and are essential for a planned build-up. If the Staff fail to consider the physical standards required in the humans who are to be involved in their plan then we as their Service advisers must remind them to do so. Failure will mean a theatre cluttered up with human material which will require evacuation, will lower Force efficiency and put an unnecessary burden on transportation facilities. The advice that we can and should give in this respect can only be distilled from as complete a picture that can be given of the plan and of the type of military environment it will produce.

A further example of the need for our early participation in planning lies in the field of immunology. Certain types of immunization require a varying time for the production of an effective response otherwise their efficacy may be questionable. They must therefore be timed in advance. This may entail adjustment of training programmes. These matters must be removed from last minute preoccupation.

· There may be a specialized ration requirement. It is our duty to advise on the nutritional aspect of such a ration and to see that its use is based on physiological principles and not logistic convenience which is particularly liable to omit consideration of the human factor. In this connection I would remind you that drinking water is an integral part of any ration. I have known it suggested that the use of a special type of small bulk concentrated ration — scientifically proven to have an upper limit of five days for its use, after which it had to be replaced by something more substantial — should have this five day period extended and the space so saved in the lift used to carry extra mortar ammunition. The question here was not 'is this a good logistic idea?' It clearly was, but it took no account of the human factors and should have been 'will the humans concerned be physically and psychologically capable of

using the extra ammunition?'. This particular idea was in fact put up to 'medical' during the planning phase, but too often such ideas are not, and when we find them out by chance and oppose them we are likely to be unpopular. But unpopularity is an occupational risk for advisers and this should not deter us. It is easy to use transportation space purely for men and their weapons and to omit the necessities for living or rely on their availability on arrival. Such an outlook will defeat its object. Once arrived, men will need food and the means to cook it, shelter and the means to erect it, cleanliness in living and the means to achieve it. Without such things they cannot achieve equilibrium with their environment. Yet such things do happen. As our friend the Secretary at War in 1794 observed, 'it is easy to overlook such particulars'. It is our duty to see that they are not.

The importance of the military purpose sometimes causes planners to overlook the human and housekeeping details of the means to achieve it and it is then that the natural forces take over. Once they are in command the manpower wastage bill will rise.

The Medical Services therefore must be aware of the implications of any military plans as they may affect their human executives. They must anticipate hazards and dangers that may not be immediately obvious to the planners and they must be prepared to advise and recommend techniques for their neutralization. This will not only entail active participation in military planning but it will require a close knowledge of the soldier. What the soldier does, how he does it, what he does it with and where he does it; what he is likely to require for his protection against specific and known hazards, the extent and type of training he must receive to practise successfully such protective measures. We must help the Staff to prepare and train the soldier to meet and live successfully in whatever circumstances he may be put as the result of military planning. Some of these circumstances may be known and anticipated; some may only be obvious to us, but all the time we must be watching for the emergence of the new or unexpected which may act to his disadvantage and for which we must be prepared to recommend immediate neutralizing techniques. We must go beyond regarding ourselves and being regarded, merely as the providers of treatment and refuse disposal facilities. We must overcome the mistaken philosophy which has produced this attitude and endeavour to teach ourselves and our masters that the preservation of the health and well-being of the soldier is a dynamic process in which we are both actively involved. It is a matter of observation, anticipation and training.

I have no desire to spoil a legend. But the Australian soldier, as I see him, differs but little from other soldiers I have met. He is not, because he is Australian, automatically immune to adverse

influences in his military environment. He is, in nine cases out of ten, the product of an essentially urban community and, as such, must be trained to live healthily and safely out of that context.

It is our duty, and at all times, to help the Staff to teach him to do so. And at the same time impress upon them the true role of a Military Medical Service.

I will conclude by quoting the Administrative Instructions given by the Commander on 'Operation Snark'. I would like you to note the 'broad brush, she'll come good' approach and the complete neglect of those 'less seen agencies' so essential for the Health and Vigour of the Force:

'England expects' — but I forbear to proceed,
T'is a maxim tremendous but trite,
You'd best get together the things that you'll need,
To rig yourselves out for the fight.

Armies need a lot of things to ensure that their military purpose will be achieved. But above all they need fit men. ☐

AAJ ANNUAL PRIZES

The Board of Review has awarded the annual prize of $60 for the best original contribution published in the Australian Army Journal during the year ended June 1967 to Lieutenant-Colonel R. S. Garland's 'Search and Clear Operations' (September issue).

The second prize of $20 has been awarded to Lieutenant-Colonel R. F. Morison for his 'Chinese Communist Revolutionary Warfare: Theory and Application' (January issue).

Von Lettow-Vorbeck in East Africa

A Bizarre Example of Successful Guerilla Warfare

Major C. H. Ducker, MC
Royal Australian Infantry.

ON 11 November 1918 the Allies were celebrating their victory in the Great War. On that very day, however, a German force was confidently invading Rhodesia. Such was the situation at the conclusion of a bizarre, four-year campaign in East Africa; a 'forgotten war' it was Allied policy not to publicise.

This article concerns Colonel (later General) Paul von Lettow-Vorbeck, the central figure of the campaign and a masterly tactician and inspiring commander. Cut off from Germany, he brilliantly led a largely Askari force averaging less than 5,000 men against a total of 300,000 Empire, Belgian and Portuguese troops. He thus contained a force considerably larger than that used by Lord Roberts in the Boer War and prevented it from participating in the main theatres of war.

Von Lettow was a professional German soldier who had served as a junior officer during the serious Hottentot uprising in 1904. Against a skilful enemy he learnt bushcraft and techniques for ambush and living off the land. At the time he also came in contact with many Boer leaders. Little did he realize how valuable this experience would be only a few years later.

At the age of 44, just before the outbreak of World War I von Lettow left Germany for German East Africa (Tanganyika). He was to command the colony's Schutztruppe (Protective Force), which at the outbreak of the war consisted of 216 Europeans and 2,540 Askaris. With a police force of only 45 Europeans and 2,154 natives

Major Ducker graduated from the Royal Military College in December 1955 and was allotted to infantry. After a period with 15 NS Training Battalion he was posted to 3 RAR and in 1958 was awarded the Military Cross during the Emergency operations in Malaya. Service with 3 Cadet Brigade and the Infantry Centre Ingleburn followed. Posted to 1 RAR in February 1963, 4 RAR in January 1964, he is now a senior instructor at OTU Scheyville.
   This article was written as an essay during Major Ducker's attendance at Staff College in 1967.

the Schutztruppe was responsible for the protection of German East Africa; seven hundred by six hundred miles of swamp, jungle, savannah and mountains. There were only 5,000 Europeans in the colony of 8 million people, and the Germans did not seriously consider defending it. Their soldiers were armed with museum piece rifles made in 1871. At the outbreak of war the German Governor, not wishing to see his new colony destroyed, tried to surrender.
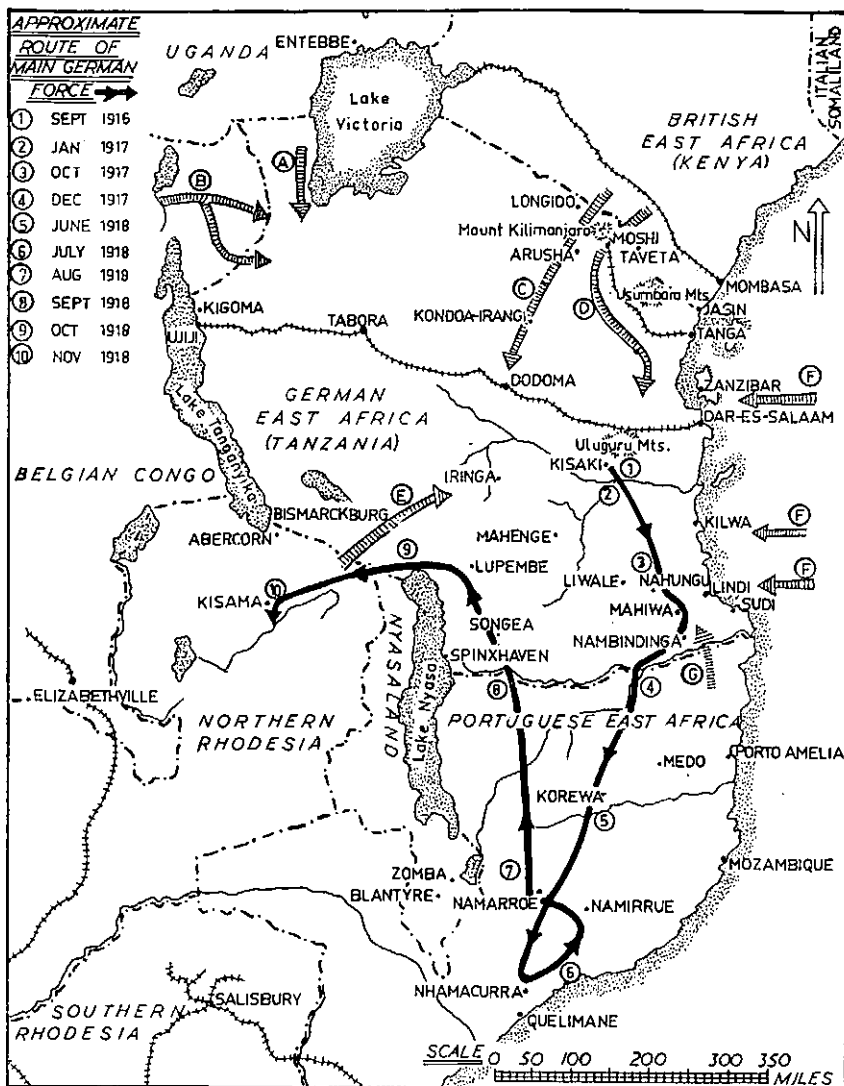
Colonel von Lettow, however, refusing to have any part of surrender immediately organized a foray into Kenya, capturing Taveta where he set up a base to harass the British forces and in particular the vital Nairobi-Mombasa railway.

His initial action had the desired result; the British despatched a force of 8,000 from India. Major-General Aitken's men were told they would be home, victorious, by Christmas 1914. However, the British force was untrained and ill-equipped and, most serious of all, under-estimated the enemy. Aitken's first objective was the capture of Tanga from the sea but through efficient intelligence von Lettow learnt of the impending landing and mustered 1,000 men at Tanga.

Although the British force managed to land it lacked aggression and was bewildered by von Lettow's swift counter-attack. Surprised by the quality of the well-disciplined German native soldiers many of the Indian troops fled. Aitken re-embarked his force in confusion leaving 800 dead, 500 wounded and several hundred missing or prisoners of war. Even more serious they left machine-guns, hundreds of rifles, 600,000 rounds of ammunition and many other military stores. Von Lettow, who suffered only 69 casualties, was now able to re-equip his ragged force and the victory galvanized the whole colony to his side. Lord Kitchener replaced Aitken with General Wapshare and news of the Tanga disaster was withheld from the British public.

Wapshare, requiring victory, sent a force of 1800 and captured the border town of Jasin. Von Lettow besieged the British and let sickness and the sun take their toll. Although they fought well the defenders ran out of water and capitulated with 700 casualties. In characteristic fashion von Lettow paraded the Indian survivors and congratulated them on their good fight. Despite the fact that he had been wounded himself von Lettow entertained the captured British officers to dinner before returning their weapons and letting them return home on parole.

Nevertheless, von Lettow was not without problems. He had an uncooperative Governor, his little army remained unaugmented and he was unable to communicate with Germany. Having lost six officers at Jasin — one seventh of his regular officer strength, he decided he could not afford any more set piece battles. Luckily the British, now seriously worried about von Lettow, played into his hands by adopting defensive tactics.

APPROXIMATE
ROUTE OF
MAIN GERMAN
FORCE ➤

① SEPT 1916
② JAN 1917
③ OCT 1917
④ DEC 1917
⑤ JUNE 1918
⑥ JULY 1918
⑦ AUG 1918
⑧ SEPT 1918
⑨ OCT 1918
⑩ NOV 1918

UGANDA   ENTEBBE

ITALIAN SOMALILAND

Lake Victoria

BRITISH EAST AFRICA (KENYA)

LONGIDO
Mount Kilimanjaro   MOSHI
ARUSHA   TAVETA
Usumbara Mts.   MOMBASA
JASIN
TANGA

KIGOMA
UJIJI   TABORA   KONDOA-IRANGI
DODOMA
ZANZIBAR
DAR-ES-SALAAM

GERMAN EAST AFRICA (TANZANIA)

Lake Tanganyika

BELGIAN CONGO

Uluguru Mts.
KISAKI ①
②

BISMARCKBURG   IRINGA
ABERCORN   ⑨
KILWA
MAHENGE
LUPEMBE
LIWALE   NAHUNGU   LINDI
MAHIWA   SUDI
KISAMA ⑩   SONGEA   NAMBINDINGA
SPINXHAVEN   ⑧   ④   ⑥

ELIZABETHVILLE

NORTHERN RHODESIA   PORTUGUESE EAST AFRICA   PORTO AMELIA
MEDO

NYASALAND   Lake Nyasa

KOREWA   ⑤
MOZAMBIQUE

ZOMBA
BLANTYRE   ⑦
NAMARROE   NAMIRRUE

SALISBURY

SOUTHERN RHODESIA   NHAMACURRA   ⑥
QUELIMANE

SCALE 0 50 100 200 300 350 MILES

ALLIED INVASIONS OF GERMAN EAST AFRICA 1916-1917

Ⓐ CREWE (BRITISH), JULY-SEPT 1916   Ⓔ NORTHEY (BRITISH), JULY 1916-FEB 1917.
Ⓑ TOMBEUR (BELGIAN) JULY-SEPT 1916   Ⓕ INVASION OF SEAPORTS (BRITISH) SEPT 1916
Ⓒ VAN DEVENTER (BRITISH) MARCH 1916 JAN 1917 Ⓖ GIL (PORTUGUESE)(SEPT) 1916
Ⓓ TIGHE & MALLESON (BRITISH) MARCH 1916

In 1915 a German ship ran the blockade, only to be intercepted by the Royal Navy off East Africa. The ship was fired and apparently left ablaze and sinking. It was learnt later, however, that the Germans had deliberately lit a fire on the decks, and badly needed stores, including 1,800 modern rifles, reached von Lettow.

The German raider Konigsberg had been worrying the Royal Navy in the Indian Ocean ever since the outbreak of war. Finally in July 1915 the British were able to sink it in its hiding place — the Rufiji River. The 322 sailors on board volunteered to serve with von Lettow's force. The cruiser's armaments, including the 4.1-inch guns, were salvaged and von Lettow converted the sailors to artillery.

This was not the only improvisation organized by this resourceful man. A crude ammunition factory was established at Dar-es-Salaam, benzine was made from coconuts, quinine was produced from a local bark and tyres were made by pouring latex on rope. The German women wove cloth to produce uniforms and much needed boots were made. Von Lettow's most popular move was to set up a whisky distillery and a brewery.

All through 1915 von Lettow organized raids on the Kenyan railways. Raiding parties usually consisted of two German ex-planters and six Askaris, mounted on horseback. The raids were launched from the slopes of Mt. Kilimanjaro. Because of the unhealthy climate, large waterless distances and wild animals, the men required fortitude as well as a guerilla spirit. In the period March to May 1915 they blew up 32 trains and 9 bridges. The raiders would then tap in on the telephone line and learn where to ambush the rescue squads.

By March 1916 von Lettow was able to increase his force to a maximum of 3,000 Europeans and 11,000 Askaris. He had insufficient regulars or weapons to do more.

The British had to take new steps to deal with this embarrassing situation in Africa. Through captured mail von Lettow learnt that in February 1916 General Jan Smuts had been appointed at the head of a large force augmented by 27,000 South African Boer War veterans. Aircraft were also being brought to Africa. Smuts launched an offensive in March 1916 with 30,000 combat soldiers to rid the Kilimanjaro area of the Germans. Von Lettow could oppose him with only 6,000 men.

Smuts, a great guerilla leader in the Boer War, now found the position reversed and he was fighting in enemy territory. He had little inclination for staff work and the administration of his force was appalling.

As von Lettow expected, Smuts' advance could not be matched by his supply organization. Heat and disease took a terrible toll and thousands of porters died. The underfed troops could not keep up the advance and eventually only one tenth of the troops were fit for of-

fensive action. The situation was ideal for von Lettow's guerilla tactics. He organized hit-and-run raids as he gradually withdrew south, extending Smuts' lines of communication.

Having no regard for his personal safety, von Lettow was a constant inspiration to his men. He would reconnoitre enemy lines on horse or on his bicycle, the former being shot from under him on one such mission. Not only was he an inspiring leader, he was a gallant and fair-minded opponent. He treated his prisoners well, sharing his force's meagre rations. Whenever he could be released his prisoners provided they undertook to take no further part in the war.

A strange bond developed between the two opposing commanders. Smuts repeatedly asked the German to surrender but von Lettow would politely decline. Smuts informed von Lettow that the Kaiser had promoted him to General and that he had been awarded Germany's highest decoration. Once, while visiting a machine-gun post, von Lettow had the red-bearded Smuts in his sights when the latter was on a reconnaissance. Von Lettow considered it unsporting to kill Smuts under the circumstances. In later years von Lettow was to be glad of his leniency to Smuts. Having refused Hitler's offer of a commission at the outbreak of World War II he was reduced to poverty. Smuts sent food parcels to him in Germany and after the war used his influence to restore his old enemy's pension.

By the middle of 1916 von Lettow was gradually being surrounded (see map). General Crewe was advancing from Uganda, General Tombeur's Belgians were advancing from the Congo, General Northey from Rhodesia, and the Portuguese were threatening his southern flank. Even more serious the British started to occupy the seaports in September 1916. Von Lettow was forced to give up some of the best country and withdrew south of the Rufiji River with his main force (see map for route). He took with him as many supplies as his carriers could manage and he also drove hundreds of cattle ahead of his column. Some of the Konigsberg guns and ammunition were manhandled over terrible terrain.

It was amazing that von Lettow was able to continue; not only was he wounded but he contracted malaria four times, he was also losing his sight and the use of his left foot. His determination and fortitude were an inspiration to his tired troops. It was also amazing that the Askaris followed him for as long as they did — they were constantly being encouraged to surrender and there was of course no pay for them. However, their devotion to von Lettow was intense because of his kindly attitude towards them and he had shown the Africans they were equal to white men in battle.

At the end of Smuts's 350 mile follow up from Kilimanjaro to the Rufiji River his force was exhausted. 12,000 troops had to be evacuated to South Africa; Smuts himself left in January 1917. Most of the

white troops were replaced with native troops from Kenya, Nigeria and the Gold Coast who could live in the environment more easily.

Occasionally von Lettow would concentrate and stand his ground. He did this in October 1917 and General Beves launched an assault with 6,000 men against his 1,500. Although von Lettow inflicted 1,800 casualties and captured much needed ammunition he could ill-afford his own losses of nearly 500. Closely squeezed into the south-east of the colony it appeared the end of the campaign was in sight but by pruning his force to 200 Germans, 1,800 Askaris and 3,000 carriers von Lettow was able to continue. He also kept the one luxury he always allowed his troops — their wives and concubines. Apart from their obvious comfort the women cooked and cared for the sick and wounded.

At this time the Germans made a desperate attempt to resupply von Lettow. In November they sent Zeppelin L59 with 3 tons of ammunition from Bulgaria on the longest journey attempted until then. However, a false British message informed the pilot over Khartoum that von Lettow had surrendered.

Von Lettow audaciously re-equipped his force. In December 1917 he marched into Mozambique and captured one Portuguese fort after another. He managed to completely re-equip his force as he marauded the Portuguese over hundreds of miles. The British troops followed his trail but were never really sure of his position. After an epic march up and down the wilderness of Mozambique von Lettow crossed back into German East Africa in September 1918. His 40,000 pursuers and their 124,000 carriers were left floundering behind.

In October von Lettow's replenished force changed direction and advancing into Rhodesia caused confusion in the colony. Only news of the Armistice halted his advance. Out of respect for his prowess his force was given a month to surrender its weapons.

At the conclusion of the campaign von Lettow's small army had suffered 6,572 casualties. This figure included killed in action and deaths from disease and wounded. By comparison Empire casualty figures were 62,220, which included 48,328 deaths from disease. In addition the Belgians and Portuguese each suffered 3,000 casualties. During the course of the war von Lettow had 120 generals in the field against him but despite all their efforts he remained unconquered.

The story of World War I in East Africa is a fascinating one. It is essentially a story of a gallant and remarkable German commander who handled his largely native troops with remarkable skill. Not only a great tactician he was a superb strategist who for four years deliberately kept a very large Allied force away from the main theatre of war. Von Lettow and the disease-ridden terrain inflicted more casualties on the Allies than they lost during the Boer War. Von

Lettow, although little known, was one of the great field commanders of World War I. Against heavy odds, completely cut off from Germany, he was never defeated.

The East-African campaign is well worthy of study. It is a splendid example of how a small well-organized guerilla force can achieve a strategic aim. The fact that the force consisted largely of primitive native troops should be of special interest to those serving with indigenous soldiers. Above all, von Lettow's campaign is a striking example of skilled and determined leadership by a master tactician. ☐

Looking back upon that throng of great-hearted countrymen riding in to enlist for service oversea, one ceases to feel astonishment at the war deeds of the Australian light horsemen. For these men were the very flower of their race. All were pioneers, or the children of pioneers. Ninety-seven out of every hundred came from pure British stock; they were children of the most reckless, adventurous, and virile individuals of that stock; many, deserting in their youth the limited holdings of their pioneer fathers near the coast, had followed the explorers' lonely footsteps and "pushed the outposts further out." All were workers; the Australian countryside is not yet old enough to support luxurious drones. All were men of resource, initiative, and resolution; all were accustomed from their earliest boyhood to carry responsibility, and to take an intelligent interest in the growth of crops or the breeding and care of live-stock. All were horsemen of various degrees of excellence; not mere riders of educated horses, but men who had from their school-days undertaken, as a matter of honour and pride or of necessity, the breaking and backing of bush-bred colts and the riding of any horse that came their way. Their horsemanship came next to, if not sometimes before, their religion.

— H. S. Gullett, *Sinai and Palestine*

British Services Logistics Computers

Lieutenant-Colonel A. E. Limburg, CVO
Royal Australian Army Ordnance Corps

PART III

Royal Air Force Stores and ADP

THE Royal Air Force Supply Control Centre is located at the famous, but now disused, airfield at Hendon. On 3 January 1966 operations started in the new computer orientated supply organization for the Royal Air Force.

The Supply Control Centre is the nerve centre of the new RAF Supply Automatic Data Processing System. It houses and operates two large British made AEI 1010 computer systems and a large communications centre. The SCC is linked to all RAF stations and depots by either telegraph land-lines or by radio circuits and is manned, 24 hours a day seven days a week, on a three shift system.

The two computers and communications network are used to maintain a central record of the stocks, and consumption of spares, at each of the 150 RAF stations and depots at home and overseas. When the conversion programme to the new system is completed about 100,000 individual supply transactions will be reported to the SCC daily over the communications network. These transactions will be processed within twentyfour hours of receipt to maintain some $3\frac{1}{2}$ million up-to-date stock and spares consumption records for 750,000 different items.

The Need for ADP

The problem of ensuring that the right equipment is in the right place at the right time and in the right quantity increases year by year in the Royal Air Force. Each new generation of aircraft is more complicated than its predecessor and requires more equipment to support it and a much wider range of spares to maintain it. The cost of spares and equipment continually rises and the spares provisioned for maintenance now runs at about £40 million annually. The problem is further aggravated by more frequent changes in deployment plans which are made possible by the longer range of modern aircraft and by in-flight refuelling.

In the old supply system each station and overseas depot was responsible for manually calculating its forward requirements for spares based on its own past consumption and for requisitioning

replenishment stock from the main depots in the United Kingdom. The whole efficiency of the system was dependent on the regular calculation of forward requirements and on airmen noting the need for replenishment when up-dating their local stock records.

Because it was impracticable to maintain a central record of distributed stock and actual consumption for every station by manual or punched card system methods, global provisioning had to be based on issues from and the stocks held at the main depots in the United Kingdom. Although stocks issued from the main depots were regarded as consumed in the global provisioning calculations often they were not used at all by the stations requisitioning them. This tended to inflate the quantities provisioned as replacements. It also meant that, because the whereabouts of this unused stock was not known centrally, it was not readily available to meet a requirement at another station.

The shortcomings of the old system were well known but little could be done to improve it until the advent of large scale computers and accurate high speed data communications made the present system possible.

Preparation and Transmission of ADP Data

The supply squadrons at stations and depots at home and overseas use National Cash Register Class 31W machines to maintain their local stock and management records. As a by-product of this operation, details of every supply transaction and demand for spares or equipment which occur locally are automatically punched into paper tape. Throughout the day the punched paper tape is removed from the machines and the data is transmitted to the Supply Control Centre. Punched paper tapes for urgent priority demands for spares are removed and the data transmitted to a special priority receive terminal at the SCC, immediately they are produced. Each supply squadron in the United Kingdom is equipped with an automatic telegraph transmitter and teleprinter receiver which are operated by supply staff and used exclusively for the transmission of supply data. Because of the problem of engineering radio circuits, supply squadrons overseas pass their punched tapes to area communications centres for the transmission of data to the SCC.

It is vitally important that the data reported to the SCC is accurate. To reduce to a minimum the risk of errors in the preparation of data a series of automatic checks has been built into the operation of the keyboard accounting machines. These checks cause the machine to lock or clear its registers automatically if the operator makes a mistake. The operator then has to again start the whole operation from the beginning. The accuracy of the data is protected during transmission by error detection equipment on land-lines and error

detection and correction equipment on radio circuits. The incoming data is finally checked by a computer input/edit process before it is used to update the records.

Data Processing

The Supply Control Centre maintains, on magnetic tape, the central record of stocks and spares consumed at each supply squadron at home and overseas. Magnetic tape records are also maintained of catalogue information, quantities ordered and due for delivery from production contractors and repair organizations, and of provisioning data and management stock control and re-order levels. These records are automatically brought up to date daily by the processing of supply transactions and demands reported over the data communications network and by management information reported by post. The data received over the communications network is automatically received as punched paper tape ready for direct input into the computer. Management information, such as details of new items added to the catalogue, new quantities ordered from contractors and new control and provisioning levels, are received in document form and are punched into paper tape and verified at the SCC.

All routine demands for spares and equipment are processed in the once-daily processing cycle, but urgent priority demands are transmitted to the SCC immediately they arise and are dealt with by a separate self-contained process within one hour of receipt, regardless of the time of day or night. This priority process is based on a management by exception technique which overcomes the need for random access to the main records. It operates on the basis that stock is normally available in the main depots in the United Kingdom. A magnetic tape record is therefore maintained which identifies the depot which normally holds each range of spares, and records alternative sources of supply for items which are not available from depot stocks. Priority demands are processed against this record and, if the item does not appear on the record, it is assumed that there is stock in the depot. If the item does appear on the file the demand is allocated for issue by a station with stock or by any other source of supply which may be recorded.

The system has been programmed to automatically search other station records for stock to satisfy both priority and routine demands when no stock is available at the main depot. If no stock is available from any RAF source, and the priority of the demand justifies it, a request is automatically output for stock to be diverted direct to the supply squadron from a production contractor or from repair. The system has also been programmed to re-calculate global and local forward requirements every month on the basis of recorded past consumption at stations and the provisioning and stock control levels supplied by management. The requirements so calculated are used to

automatically initiate the replenishment of station and overseas depot stocks and any new procurement or repair which may be necessary.

Computer Outputs

In the course of processing, issue orders, advices of priority issues, diversion orders and other urgent instructions and advices are punched into paper tape by the computer and are then transmitted

RAF AEI 1010. General view showing magnetic tape units, console and display unit

to stations and depots. All stations and overseas depots receive these outputs on page copy teleprinters. The main depots in the United Kingdom receive most of these punched outputs. They therefore receive the outputs in the form of punched tape which is then processed together with a programme tape through a Creedomat document printer to produce typed issue document sets and a register of every issue order received. A variety of less urgent supply management reports such as requests for new procurement and new repair programmes, delivery hasteners, low stock reports and supply situation reports are printed during processing and despatched by post.

Advantages of New System

The RAF Supply ADP System is one of the largest of its kind in the world and represents a capital investment of about £2 million. It is, however, confidently expected to improve supply effectiveness

and economy in the provisioning and distribution of spares and equipment and very quickly pay for itself because:

(a) The location of all stocks at home and overseas will be known centrally, therefore all stocks will be available to meet a need wherever it arises in the world. This facility will ensure that the best possible use is made of available resources and will minimize the effects of frequent changes in deployment plans.

(b) Much more accurate and up-to-date data will be readily available for provisioning and supply decisions. This data includes details of past consumption based on issues from supply squadrons to users and is therefore more realistic consumption than was available in the past.

(c) The efficiency of supply support at RAF stations will be improved by the automatic re-calculation of local forward requirements and by automatic replenishment of stocks.

(d) The average running costs of the improved system will be substantially less than those of the old system.

(e) The indirect savings on new procurement resulting from (a) and (b) above is estimated to be about £2 million a year.

Future Development

The creation and maintenance of an up-to-date central record of global assets and spares consumption is regarded as only the first essential step in the development of the Royal Air Force Supply Automatical Data Processing System. It is in the long term development of the system that the greatest gains are expected. The new system will provide the data and ADP facilities necessary to make use of the developing operations research techniques to determine more accurately the stock levels which should be maintained at stations and depots and, more important, to predict more accurately the future requirements of spares and equipment. In making these calculations it will be possible to take account of the probable size and frequency of demands for individual items, the relative operational importance, the unit cost and the holding and transportation costs of each item. Work is already in hand on these developments. More accurate stock-holding levels and more accurate prediction of future requirements would substantially improve still further the effectiveness of supply for the Royal Air Force and, at the same time, would reduce the investment in stocks and thus lead to a reduction both in holding costs and in redundant equipment.

Equipment Supply Depot Computers

It is planned to install at each of the four Equipment Supply Depots a computer which will be linked to the central computer at

the SCC and completely compatible with it. When these installations are completed in 1968 the RAF will have an automated system to aid all the processes of stock recording, stockholding, control and provisioning. Considerable staff savings are expected as a direct result of transferring clerical processes at the depots to the computers.

Computer Hardware, SCC, Hendon

The computer hardware consists of two AEI 1010 central processors with an array of peripheral equipment. In normal use one complex has on line, 16 Ampex magnetic tape units, one ancillary core store, one magnetic drum and a flexowriter. The other complex has on line, eight Ampex magnetic tape units, two magnetic drums, three AEI CRP 1 high speed paper tape readers, three Creed 3000 paper tape punches, one Elliott card reader, one Xeronic printer, one Anelex printer and two flexowriters. The installation has been designed to give the maximum possible flexibility. The power supplies and data highway system have been designed to provide the facility for connecting any peripheral equipment to either of the central processors without physically moving the equipment. This is done by simply transferring three plugs from one set of data highways to the other. A supervisor's display panel indicates which peripheral equipment is connected to each central processor.

The installation is operated for 24 hours a day, seven days a week on a three shift system. To ensure constant power supplies a diesel standby generator has been provided. This standby generator cuts in automatically if the main power supply fails. All the computer hardware is maintained by AEI resident engineers under contract.

Punched paper tape is read by the CRP 1 readers at the rate of 60,000 characters a minute. Punched cards are read by the Elliott card reader at the rate of 36,000 characters a minute.

The central processors can add two thirteen digit numbers together in 18 millionths of a second. This means that 50,000 such numbers could be added together every second. Data is read and transferred within the central processor at the rate of one decimal digit every millionth of a second.

The Creed 3000 punches produce punched paper tape outputs at the rate of 18,000 characters a minute. Printed outputs are produced on the Xeronic printer at the rate of 3,000 lines of print a minute or on the Anelex printer at the rate of 1,000 lines of print a minute.

It is estimated that about twenty miles of punched paper tape will eventually be read into the computer every day and a further four miles of punched tape will be output daily for transmission to RAF stations and depots. About six million punched cards will be read into the computer to initially construct the records for the 750,000 items.

Details of the hardware are:

		Computer No. 1 (Input/Output)	Computer No. 2 (File Updating)
(a)	2 *Control/Arithmetic Units* (Each with IAS of 4096 words)	1	1
(b)	1 *Auxiliary Core Store* (Fast backing store of 8192 words)	—	1
(c)	3 *Magnetic Drums* (Backing stores of 8192 words each) for (1) Priority Process (2) Supersession Routine (3) Data/Programme	3	—
(d)	20 *Ampex TM 2 Tape Decks*	6	14
(e)	3 *CRP 1 (Paper tape readers)* (1 for Priority Process) (2 for Routine input)	3	—
(f)	3 *Creed 3000 (paper tape punch)* (1 for Priority Process) (2 for Routine output)	3	—
(g)	3 *Flexowriter (Enquiry Typewriter)* (1 for Priority Process) (1 for each computer)	2	1
(h)	1 *Xeronic (High Speed Printer)*	1	—
(j)	1 *Anelex (Line Printer)*	1	—
(k)	1 *Elliott Card Reader (B.42)* (for initial file construction)	1	—
(l)	2 *Supervisor Desk and Display Panels*	1	—
(m)	2 *Alternators and necessary Power Units*	—	—
(n)	2 *Creed Reproducers*	Preparation of Programmes	
(o)	1 *Creed Comparator*	Checking of Paper Tape	

Spare Equipment (together with various buffers):
(a) 4 Ampex T.M.2 Magnetic Tape Decks
(b) 1 CRP 1 (Paper tape reader)
(c) 1 Creed 3000 (Paper tape punch)
(d) 1 Flexowriter

Organization of Supply Control Centre

The organization is shown in Figure 7. The systems analysts, programmers and computer supervisors employed at the Supply Control Centre are selected from officers of the RAF equipment branch and civil service executive branch. These officers attend short courses of training conducted by the Treasury followed by internal continuation training. The future appointments of these officers are

not restricted to automatic data processing duties. They return to normal duties after a tour of duty at the SCC and enjoy the normal career and promotion prospects of their branches.

FIGURE 7
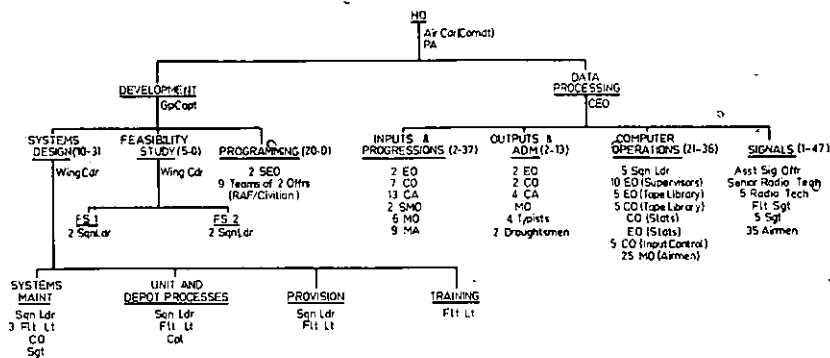
Communications Equipment

The Supply Control Centre is linked to all RAF stations in the United Kingdom by the RAF administrative telegraph automatic switching system and to all RAF stations overseas by the Commonwealth Air Forces radio network. The terminal equipment is standard GPO telegraph equipment modified for the transmission and reception of data traffic. The equipment is rented from and is maintained by the GPO.

There are five receiving reperforators specially allocated for the reception of priority demands, 33 reperforators for the reception of routine data from United Kingdom stations, eight for routine data from main UK depots and nine for routine data from overseas. For outgoing data traffic there are 15 telegraph auto-transmitters for transmissions to' UK stations, eight for transmissions to main UK depots and nine for transmission to overseas stations and depots. The links to the main UK depots are by point to point private wire because these links will carry a substantial proportion of the total incoming and outgoing data traffic.

Station supply squadrons dial one of the numbers to establish contact with the SCC, one for priority demands and the other for routine demands and supply transactions. The installation of the receiving reperforators has been designed so that, if the first receiver is engaged, the incoming call is transferred to the next receiver and so on until a free one is found. Only if all five priority receivers and all 33 routine receivers are engaged will the supply squadron fail to make immediate contact with the SCC.

The error detection equipment used on landlines was developed by the GPO. The error detection and correction equipment on overseas radio circuits is standard equipment on the Commonwealth Air Forces network and operates on the Van Duuren system.

Organization of ADP Supply System

Each stockholder will be equipped with one or more National Cash Register Company class 31W keyboard accounting machines for the maintenance of local stock control records. These machines will, as a by-product of the maintenance of local records, punch automatically into paper tape selected data for transmission to the SCC.

Each stockholding unit and depot in the United Kingdom will be equipped with standard GPO auto-transmitters and teleprinters. The depots will also be equipped with modified printing reperforators which will produce a fully punched tape without printing. This equipment will be used solely for data transmission and will be operated and controlled by equipment staff. Overseas units and depots will not be equipped with data communications equipment. Data tapes produced on keyboard accounting machines will either be transported physically to the main area communications centres or will be transmitted to them by local signals sections. The transmission of all data from overseas areas will be undertaken by specialist signals staff from the main area communications centres.

Stockholders will accumulate data input messages concerning issues, receipts, demands, discrepancies in consignments etc., on paper tape in batches of about 60 messages in the United Kingdom and in larger batches overseas. The size of the batches overseas will be dependent on local arrangements for the transportation or transmission of data to main communications centres. These messages will be transmitted to the SCC as each batch is completed. These transmissions will normally take place between 0800 hours and 1800 hours daily. High priority demands, however, will be transmitted immediately they are created and will be received at the SCC on a priority receive position at any time throughout the 24 hours of each day. Management input data will normally be received by post each day and will be converted from documents to punched paper tape at the SCC. All input messages will be punched in the International 5-unit teleprinter code No. 2.

High priority demand inputs will be processed within one hour of receipt at the SCC. All other input messages will be processed and ADP records brought up to date within twenty four hours of receipt. The data so accumulated will be used to calculate global and local stock control and reprovisioning levels every month based on the assumption that future recurring consumption will be directly pro-

portional to past consumption. The appropriate forecast factors and forecasts of non-recurring issues will be provided by management for the calculation of the various levels. Each day the assets of each item processed will automatically be compared with the local and global control levels and deviations translated into printed or punched outputs to indicate the appropriate procurement or repair action required by management or the re-distribution of stocks necessary between stockholders.

RAF consumer units will normally satisfy local requirements for equipment and spares from their own maintenance stocks. Demands which cannot be satisfied from their own stocks will, in the case of UK supplied units, be posted to a demand record to create a demand input message which will be transmitted to the SCC. Overseas units will demand requirements, which cannot be satisfied from their own stocks from their area depot: if the area depot cannot satisfy the demand it will create a demand input and transmit it to the SCC. Demands from non-RAF and other consumers not linked to the SCC will be channelled through UK depots. UK depots will not satisfy these demands from stock but will create demand input messages and transmit them to the SCC.

Demands received at the SCC will normally be satisfied from UK depot stock. When there is no stock at a depot to meet a demand a search will be made of the stock records of other consumer units to find one from which the issue can be made. The choice of a unit to issue will depend not only upon the stock it holds but also upon its geographical proximity to the demanding unit and to its relative functional priority. Demands from non-RAF consumers will not at any time be automatically satisfied from RAF consumer unit stocks. Code numbers have been assigned, as unit identification numbers, to each RAF consumer unit which will indicate its geographical location and functional priority. Code numbers have been allocated to non-RAF consumers which will indicate their functional priority but not their geographical location. Contractors or RAF repair organizations will be requested to divert stock to satisfy high priority demands when no stock is available for issue at either UK depots or consumer units. Demands which cannot be satisfied from any source will be recorded on an inabilities record and both management and the demanding unit will be informed.

Input Data

The volume of input messages to be processed each day is expected to be about 120,000. It is estimated that about 90,000 of these will be originated by units and depots and the remainder by management. There will be about 400 different input messages which may be received for processing but of these some 30 message types will

account for 95% of all inputs processed on any one day. The input messages from units, depots and management will contain an average of 60 characters of data.

Unit and Depot Input Messages

All unit and depot input messages will be prepared on keyboard accounting machines in punched paper tape form as a by-product of the maintenance of local visible record cards. To reduce to a minimum the risk of errors in the preparation of input data, a series of automatic checks, together with the automatic punching of some fixed data, has been built into the keyboard accounting machine operation. The failure of any one of these checks causes the machine either to clear automatically all its registers or lock the keyboard before it punches or prints. The checks are designed to prove thirteen of the sixteen fields of data in each input message.

Each keyboard accounting machine will automatically serially number each punched paper tape message it produces. It will also automatically number each transaction recorded on the local visible stock record for each reference number and punch this line number into the paper tape message. The line number and the stock balances associated with it will be checked when the unit or depot ADP record is up-dated by the message.

The input data from units and depots will be contained in standard 16 field input messages, each field being separated by a field marker. There will be two main types of message; transaction message, containing quantities and balances and demand message containing details of consignee, priority and accounting unit. The fields in individual messages will always contain either a fixed number of characters, a variable number of characters up to a maximum, or be blank.

When data input messages have been prepared the unit or depot will dial one of two numbers which will give a direct connection to either the routine or priority receive position at the SCC. Once the connection is made, the unit will transmit its data direct to the SCC where a copy of the input tape will be produced on a reperforator. Priority demands only will be transmitted to the priority receive position. The accuracy of transmission will be protected by an error detecting device which is expected to ensure an undetected error rate of less than one character in error in every million characters transmitted.

Management Input Messages

Management input data will be received at the SCC in document form. The data to be punched from the documents will be coded and then converted to punched paper tape input messages by hand

operated keyboard perforators and verifiers. Some input documents will contain data for only one input message; others may contain data for from one to three hundred or more input messages. On these documents which may contain more than one message, more than half the data will be common to all input messages produced from them. To reduce punching and therefore the risk of errors, the common data on the input documents which could be multi-line will be punched as a header followed by the variable data for each line. The individual complete messages required for processing will be built up in the input edit process.

Management input messages will be of variable length up to a maximum of 20 fields, each field being separated by a field marker. Each message type, identified by a message number, will contain a fixed number of fields and the data contained in the fields of each type will always be either a fixed number of characters, a variable number of characters up to a maximum or be blank. Management input messages will contain neither serial numbers nor line numbers.

Priority Process

It is a mandatory requirement of the ADP system that the total elapsed time between the receipt of a high priority demand and the transmission of the relevant issue instructions shall not exceed one hour. The number of such demands is expected to be about 2,500 per day with a peak of 500 in one hour.

To meet this requirement it is essential that high priority demands shall be processed either by a 'breakthrough' programme or by a programme which can be operated in parallel with any of the other programmes used by the system. Since it will not be possible to gain access to all stock records during the priority process a 'Nil Stock File' will be created in the UK daily process each day. This Nil Stock File will be used as the basis for processing priority demands by a series of priority runs during the next 24 hours.

Nil Stock File

The Nil Stock File will be in reference number order and capable of being processed independently of other processes. It will contain:

- A record of each catalogue sub-section indicating the stock-holding depot for the sub-section.
- A supersession record for each obsolete item showing the reference number of the superseding item.
- A record for each reference number for which the UK depot available stock has fallen to or below one eighth of the short of stock level or a quantity of three whichever is greater, or which is subject to Air Ministry control. The record will show the available stocks, if any, at UK depot and units;

contract data for up to two contracts, if any; and if the item has been superseded, the reference number of the superseding item.

There are expected to be some 900 sub-section records and 1,000 supersession records. The reference numbers expected to be in the nil stocks or low stock condition and controlled by Air Ministry may be as high as 200,000.
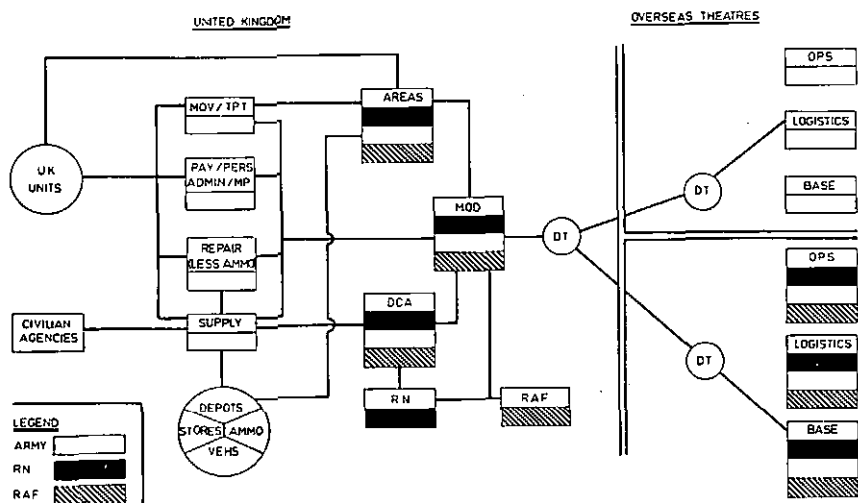
Main Processes

The main processes are:
(a) Overseas Daily Processes.
(b) UK Daily Processes.
(c) Monthly Processes.
(d) Progression Processes.

FIGURE 8   PROPOSED LOGISTIC ADP SYSTEM

PROPOSED LOGISTIC ADP SYSTEM

A diagram of the proposed Logistic ADP System is shown in Figure 8. The diagram concentrates on the Army system but indicates how RN and RAF systems will be integrated into the total system. It is expected that most of these computers will be working by the early 1970s.

There will be five Army data banks in the UK; a data bank being a place where all the information about a particular function is held. The Army data banks proposed are:

(a) *Supply and Ammunition Reliability*   The existing two RAOC computers and the proposed Bicester computer provide the basis for this.

(b) *Repair*   The Repair and Reliability of vehicles and equipment computer is expected to commence operation in 1967.

(c) *Pay, Personnel Administration and Manpower Accounting*   A pay computer has been in operation since 1962.

(d) *Movement and Transport*   This will include capacities and requirements for movement and central transport control. Programmes for the Air Trooping Task have already been written.

(e) *Army Data Bank*   Forming part of a Ministry of Defence (MOD) computer complex, concerned with central staff policy and presenting the Army logistics picture within a framework of Joint Service Planning.

A Central Data Branch will also be located at MOD to control the information service provided by the Army data banks and to ensure maximum standardization of codes and procedures within the Services logistic ADP Systems.

The Area computers will deal with tasks not covered by the data banks — such as Command statistics, accounting for rations, POL and barrack inventories, the control of civilian staff and local transport. They will not necessarily be tied to the Command structure, but will operate in the geographical area in which the tasks arise.

The Supply computer will have direct links with the Repair computer, the Defence Codification computer, and with civilian agencies. These tasks are closely associated and require a regular exchange of information. The supply service depots, some of which will be operating small depot management computers, will also require links to the Area computer system.

The diagram shows in the upper right hand corner a single service field logistic ADP system. Beneath this it shows a similar but Joint Service system. In both cases there will be a field logistic system, linked where necessary to a theatre base system, and reporting in some instances direct to the UK. The field logistic systems will combine all the functions of the UK data banks.

To obtain the full benefit of the speed of the computers, facilities will be required for transmitting logistic data within the planned communication system. The data terminals (DT) are included to store and control the passage of data, as priorities dictate. ☐

BOOK REVIEWS

WHY VIETNAM?, by Frank N. Trager. (The Pall Mall Press Ltd., London, 1967, 35s sterling.)

Reviewed by Major J. F. Clarke, a candidate at the Australian Staff College, Queenscliff during 1967. Other reviews included are by fellow officers attending the staff college in 1967.

THE truths and realities of Vietnamese history that have led to the current war and the Free World's involvement in this conflict have long since become distorted and confused. This is because our daily news reports are invariably clogged with a mass of widely divergent and sometimes highly suspect 'expert' opinions, journalistic exposés and scoops and pseudo-intellectual debates. There can be no doubt that the Communists have found this confusion very helpful to them in their cause. They have quickly and effectively produced their version of the Vietnam conflict and in widely distributing it have tricked many otherwise loyal citizens into believing that the Free World is the actual aggressor in Vietnam. We all know that the defence against this form of propaganda is knowledge of facts; but how do we obtain these facts? One way is by reading Frank N. Trager's *Why Vietnam?*

Trager's main thesis is the international legality of American involvement in the Vietnam conflict. He uses the history of the Vietnamese people's struggles against alien domination, the weakness and inadequacy of the Geneva Conference of 1954 and the various agreements, conferences and correspondence between the USA and Republic of Vietnam to produce the case for the legality of American intervention. He also takes time out to effectively counter the US critics of American policy in Vietnam. For this he bases his arguments upon actual North Vietnamese actions, the stated policy of North Vietnam and the various international agreements that have been accorded about Vietnam.

Whilst *Why Vietnam?* is a refreshing book to read, Trager has not produced anything that is new or earth-shattering. He has simply used the information that has been available to readers of the daily press, weekly news magazines and watchers of the more serious and dependable television current affairs programmes. However, he has taken this information, reduced it to its basic facts, assembled them in an historically acceptable order and presented

them to the reader clearly and concisely. The reader follows Trager easily through the brief political history of Vietnam up to the French defeat at Dien Bien Phu. A simple appraisal follows of the more important aspects of the agreements of the 1954 Geneva conference with the ambitions, responsibilities and actions of the participating major powers being brought into sharp focus. Trager then moves onto the Ngo Dinh Diem regime and in a calm and sober assessment allows the reader to see Diem in, I think, his true colours and appreciate the enormous struggles that this man, in spite of his obvious personal deficiencies, underwent, and the vast achievements of his regime. The tempo of the book commences to build up as we trace the internal struggle for power, the communist build-up with its increased military activity and the deepening US involvement. However, when Trager reaches the present tense he refrains from any attempt at prediction and by dealing only in the documented evidence keeps our feet on the ground and allows us to see for ourselves the direction that this conflict is taking and the absolute necessity for the current and continued presence of USA in Vietnam.

The Australian reader will probably recoil at Trager's rather pointed attacks on the French and his lavish praise of any American action, opinion or statement. But it must not be forgotten that Trager is an American and this book is directed towards the American public and, this being the case, he can be excused this little pandering to national feelings and pride if this is necessary to get this important book widely read in his own land. A full presentation of the Declarations of the Geneva Conference of 1954 would have been most welcome. It became rather difficult at times to determine the full import of the criticisms of the individual articles from the rather brief and incomplete reference Trager allowed them in his book. The existence of the full Declaration of Honolulu, 1966, taking six pages and numerous other extremely lengthy quotes appeared inconsistent and further highlighted this important omission.

If your interest ranges from purely the possibility of service in Vietnam to being a serious student of current affairs, this book is strongly recommended, for from it you can derive a clear understanding of a serious and complex world problem. ☐

THE GERMAN ARMY, by Herbert Rosinski. (Pall Mall Press Ltd., London, 1966, 45s sterling.)

Reviewed by Major A. R. Clunies Ross.

THE German Army has long been regarded as an exceptional military force and held in considerable and well-merited respect by friends and enemies alike. In this book Herbert Rosinski, a former lecturer at the German Naval Staff College, links the history and progress of this military force with the development of the German nation

itself.   It has been said that an army reflects the character, aspira-
tions and ideals of the nation from which it springs. Rosinski, a
German, demonstrates conclusively that, until the rise of Hitler,
there was no greater proof of this statement than the link between
the progress of the German people and the development of the
national army.

The father of the German Army, Frederick the Great of Prussia,
developed his conscripts and mercenaries to such a pitch of dis-
ciplined skill that they became both the envy and terror of eighteenth
century Europe.   The officer corps was linked to the person of the
sovereign by making the administration, discipline and allotment of
officers his personal prerogative.   This link was never broken and
made the officer corps of the German Army the most close-knit
and cohesive in Europe.

Perhaps the major contribution of this book to significant military
history is the detailed evaluation of the contributions of the major
military thinkers and planners to the development of the Army.
Rosinski ranges in this field from Frederick, in the eighteenth century,
to the far-reaching reorganization of the Army by Seeckt, at the end
of World War 1.

The ideals of discipline, honour and the foundations of the regi-
mental system were laid down by Frederick.   Scharnhorst followed
in the Napoleonic era. when the German states were struggling for
survival, laying down basic tactics and elementary staff principles
and formulating the concept of the soldier as a disciplined thinking
individual.   The latter was revolutionary, as up to this time all that
had been required of the common soldier was blind obedience.
Clausewitz conceived the major tactical and strategical principles
and Schlieffen grafted his concepts of mobility onto Clausewitz's
principles and produced the modern German theories of mobile
warfare.   Each made a distinct contribution to the thought and
character of the Army, much of which survived, at least until the
end of World War I.

The most interesting aspect of Rosinski's book for the modern
military reader is the description of the selection and training of
the general staff and the unique relationship of commanders to their
principal staff officers during the Great War.   Germany undoubtedly
placed greater emphasis on staff training than any other nation and
competition to be selected as a cadet staff officer was exceptionally
keen, training extremely arduous and the end product highly pro-
fessional.   After graduation the young officer generally remained
on the staff throughout his career, reaching the pinnacle, as chief
of staff to a corps or army commander, or to the Army itself.   The
author produces numerous anecdotes to show how, in many cases,
the brilliance of the staff officer made up for the stupidity of the

commander and how, when both commander and chief of staff were brilliant, the results were exceptional.

In summary *The German Army* is a work of military history that exceeds the narrow terms of that description. It shows clearly and distinctly how the Army developed and progressed into an institution of surprising efficiency and high ideals.

Rosinski does not provide popular history in the accepted sense for general consumption but a solid and scholarly work of significance for students of the art of war. The style — heavy, Germanic and humourless — lacks appeal and in certain sections the original sense has been lost in translation. Despite this, the genuine student will find the book interesting and rewarding and well worth the time spent in reading. The superficial student of military history however, more interested in modern techniques and latter day campaigns, than in the growth and development of ideas and ideals, should undoubtedly leave *The German Army* where he found it; on the library shelf. □

AN INTRODUCTION TO STRATEGY, by Andre Beaufre. (Faber and Faber, London, 1965, 25s sterling.)

Reviewed by Major N. E. Ford.

IT has long been the custom to criticize our military planners for being a war or so behind in their thinking. Certainly, there appear to be reasonable grounds for such criticism in British Commonwealth countries. One has but to recall the War Office thinking on the formulation of strategy. Furthermore, strategy must be planned concept of the same period.

The failure of the Versailles Treaty of 1919 and of the post-World War II arrangement of the world has given rise to another body of criticism — this time directed at our political planners. In the 20th Century military victory has rarely led to successful peace. These political failures can fairly be attributed to lack of foresight on the part of our national leaders.

These two propositions are at the heart of General Andre Beaufre's thesis. Strategy based solely on precedent, he maintains, is demonstratively suicidal. Rapidly changing situations in all fields — politics, economics, technology, diplomacy, tactics, relative strengths — make it imperative for national leaders, and their military advisers, to apply continuing research and original thought to the formulation of strategy. Furthermore, strategy must be planned in depth, 'to the last shot', as it were. Only by thinking strategy through to the end can governments avoid loss of control in their dealings with other nations.

General Beaufre is well qualified to write about strategy. He has had a distinguished career in the French Army and was at various times Deputy commander of the French Union Forces in Indo-China, Commander of the French forces at Suez in 1956, Deputy Chief of Staff SHAPE, and French Representative on the NATO Standing Group in Washington.   He is at present the Director of the French Institute of Strategic Studies, an organization set up in Paris to carry out fundamental research into strategic studies.

An Introduction to Strategy is, of course, much more than a thesis.   It is a comprehensive writing on the theory of strategy and an analysis of modern strategic thought.   As such it makes a first class textbook.

General Beaufre has dealt with his subject under five broad headings, each of which is covered in a separate chapter in the book. Chapter One deals with the theory of strategy, Chapter Two with the evolution and application of military strategy, Chapter Three with nuclear strategy and Chapter Four with 'indirect' strategy. The fifth chapter is a general conclusion to the writing.

Chapters One and Two are probably the most interesting and instructive for the Australian military student.   Chapter One gives a thorough explanation of the process for formulating strategy.   In it, the author redifines strategy to include all of the functions of modern government.   In his terms, military strategy is now only part of 'overall' strategy, which encompasses politics, economics, diplomacy, technology and military activities.   He also stresses the absolute need for formulating different strategies for different situations.

Chapter Two explains how modern military strategy has evolved. The author's key points in this section are, first, the necessity for military planners to keep up with the continual changes in the act of war, and, second, that the true objective in war is the will of the enemy.

In Chapter Three, General Beaufre traces the development of nuclear strategy from the early massive deterrent days to the present graduated response policy. He concludes that present policies work but still leave room for freedom of action at lower intensities, i.e. for limited wars.

On the whole, Chapter Four is disappointing. The author does make a powerful case for the employment of indirect strategies by governments and movements facing enemies who possess superior resources. However the conclusions he reaches about countering enemy indirect strategies do not seem to be very convincing. One feels that the General was struggling to fill up space. For example, he main-tains that the West should not become involved in South-East Asia. Whilst Generals De Gaulle and Macarthur undoubtedly agree with

this line it is regrettably of little help to such nations as the United States, for whom the only alternative to involvement in South-East Asia is dishonourable withdrawal.

Despite this one weakness, *An Introduction to Strategy* is very good value for the military reader. The book is easy to read and to understand. The author's style is attractive and he uses metaphor and imagery to good effect. The organization of the subject matter is also good. There are excellent 'Conclusion' sections at the ends of chapters and the final chapter — 'General Conclusion on Strategy' — in itself makes the book worth having.

This reviewer has no hesitation in recommending this book to the military student and to any person interested in the conduct of national affairs. ☐

THE NEW FACE OF WAR, by M. W. Browne. (Cassell and Company Ltd., London, 1965, 25s sterling.)

Reviewed by Major J. M. Stewart.

THE author, an Associated Press reporter, spent three years in South Vietnam during the crucial years of 1961-64 when the Vietnamese government had almost lost its grip on the revolutionary situation.

The New Face of War is the result of observations and experiences during this period. It is not a history, but a clear and complete exposé of Communist revolutionary warfare as practised in Vietnam.

The author contends that this type of warfare stems from principles expounded by Mao Tse-tung and Ho Chi Minh and that it evolved from hard-learnt lessons in China and Indo-China. Today it is exported to other underdeveloped nations and may in the future become the only feasible form of warfare. Thus the 'new face of war' needs to be understood by both soldiers and civilians if it is to be opposed.

This book shows the Viet Cong at work; it shows how they permeate every part of the country's structure from village to government departments; wreaking destruction, havoc, and fear throughout.

This war is reported authoritatively and with deep insight into the difficulties encountered by troops working with limited information about an enemy who is indistinguishable from the people who support him.

Paddy field war, ambushes, village attacks, destruction of outposts, and guerilla tactics; are all part of this book. Bloody, vivid, and often sickening accounts of these events impel the reader to

admire the courage of the soldiers and people who live and fight in surroundings where brutality and terror are ever present.

Sophisticated weapons and 'gadgets' of a modern army are often rendered ineffective by the Viet Cong who use home-made or captured weapons, initiative, cunning, good intelligence and propaganda to turn the tide of battle to their favour.

'War on the family plan' is the author's description of the involvement of all men, women and children in the Viet Cong activities. The author's description of this involvement, brought about through blackmail, extortion and terror makes the reader realize how helpless simple people can be exploited to support a cause not of their choosing.

But war is not one-sided; faults also lie with the government. Inept leadership, corruption and a lack of unity of purpose all have their effect in making a bad situation worse.

The American influence and failures in Vietnam do not escape the author's criticism. He believes that the American government has shown shortsightedness and a lack of understanding of the situation which has let the war deteriorate to a stage where it may be lost.

This book is written in American journalistic style. It is easy to read, well indexed and has a number of general interest photographs. The preface is written by Mr. Henry Cabot Lodge, US ambassador to South Vietnam during the period discussed by the author.

I commend this book to readers in general, and to army and political leaders in particular. □