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Contributors are urged to ensure the accuracy of information contained in their articles: the Board of Management accepts no responsibility for errors of fact.

Permission to reprint articles in the Journal will generally be readily given by the Managing Editor after consultation with the author. Any reproduced articles should bear an acknowledgement of source.

The views expressed in the articles are the authors' own and should not be construed as official opinion or policy.
A view of the Australian Staff College, Queenscliff.
The change in design in last issue (January/February) was brought about by a Government Instruction, which requested, that publications prepared by departments display the Commonwealth Arms as a primary identification of their course. The major loss is that of the Joint Service Insignia from the front cover. The inside cover definitely looks much better with the new typeface and the reproduction on the front cover photograph with a caption. If there are no major objections the design should remain the same during 1981.

It is our intention continually to improve the content and design of the journal within the restrictions of our budget, while still maintaining a dignity befitting a professional publication.

* * * * *

We welcome a new member to the Board of Management, Group Captain R.W. Bradford. He replaces Group Captain J.M. Chesterfield who has assumed command of Royal Australian Air Force Townsville. On behalf of the Chairman and the other members of the Board of Management I wish Group Captain Chesterfield every success in his new appointment. We also look forward to a long and happy working relationship with his predecessor.

* * * * *

We would also like to take this opportunity to welcome Brigadier F. N. Paramor as the new Director of Public Information. Brigadier Paramor is the second Director of Public Information in Defence, the first being Commodore E. E. Johnston, who was appointed Administrator of the Northern Territory in December last year.

* * * * *

I have had a number of complaints recently about distribution. This old problem seems to be with us once more. The journal should be reaching the readership within a reasonable time after printing. If you are experiencing any difficulties in this field, please contact me and I shall endeavour to eliminate the problem.

* * * * *

The Royal Australian Air Force celebrates its Diamond Jubilee on March 31st, 1981. Formed on 31st March 1921, the Royal Australian Air Force evolved from the Australian Flying Corps of World War One. At the time of its formation the RAAF had only twenty-one officers and 130 other ranks. By comparison it had 157 aircraft, most of them donated by the British Government in appreciation of Australia's involvement in World War One.

The RAAF 'came of age' during World War Two. With a total of 72 squadrons, it participated in every theatre of operations.

Since World War Two, the RAAF has been involved in many other operations including the Berlin Airlift, Korea, Malayan Emergency, garrison duty in Malta, and Vietnam. It has also contributed to the United Nations peacekeeping forces in many parts of the world.

Apart from its defence role, the RAAF is well trained and equipped to assist in civil emergencies including flood and bushfire relief and search and rescue operations on land and sea. Rarely a week goes by without the RAAF being called in to assist the civilian community in one way or another.

Today, operating in a peacetime environment the RAAF is constantly training for any contingency. The men and women of today's RAAF are proud of their service and are determined to maintain the high standards set by their predecessors.
Dear Sir,
What a pity that Major McNeill's excellent presentation on Australian involvement in Vietnam (DFJ No 24) should be marred by a lack of attention to detail.

Naval involvement on shore in Vietnam did not cease in May 1968 for RAN HFV, nor in September 1967 for DCT3 — both units served in-country until mid 1971.

I. W. HALL
Commander

AUTHORS REPLY

Dear Sir,

My apologies to the Navy.

I. G. McNEILL
Major

Sir,
I note from the latest copy of the DFJ (January/February 1981) that the articles published, other than those which were reprints, were received between October 1979 and March 1980. While in some instances this long lead time may not matter (in cases of historical articles for example), I feel that topical articles should be published in a much shorter time period than seems to be the case at present. Perhaps a 'bumper' edition to catch up on the backlog might be one solution.

C. O. G. WILLIAMS
Major

Perhaps a monthly publication would eliminate this problem

— Editor

Dear Sir,
On leaving the Services a non-commissioned person is “discharged”, an officer “retires”. My Oxford Dictionary defines “Discharge” as: to unload, to dismiss or to get rid of . . .

On the other hand, “Retire” is: to withdraw or give up one's occupation . . . Servants and hirelings are discharged for unsatisfactory service and this connotation has been used for too long. I think the social climate is about right for non-comms to “retire”.

LESLIE J. LAUB
Chief Petty Officer, RAN
a solution to australia's surveillance problem

By WGCdr W. A. TrewARTHa, RAAF

"Defence of the north-west requires the development of an infrastructure in the area which could support military operations relatively independent of the south-east."" INTRODUCTION

In the 1976 Defence White Paper, the Minister for Defence Mr D. J. Killen emphasised the importance of maritime surveillance, reconnaissance and offshore patrol. Australia's imminent declaration of a 200 nautical mile Exclusive Economic Zone (EEZ) will further increase the importance of surveillance and patrol at a time when men and equipment devoted to protecting our resources are 'either inadequate or not correctly employed to provide both effective surveillance and policing.' During the first half of 1978 many boats containing refugees from Vietnam have arrived undetected in the north-east of Australia. Additionally, reports of numerous intrusions of Australia's airspace by light aircraft are widely accepted as fact by Northern Territory residents. Although the responsibilities for policing such incursions are shared by many Commonwealth departments (including Health, Immigration, Business and Community Affairs, Primary Industry and Transport) criticism over the demonstratable ineffectiveness of surveillance activities is invariably levelled at the Defence Force.

In speaking of the necessity for defence forces despite their high cost, Dr T. B. Millar has said 'We do not have to be looking for enemies to justify expenditure on defence; we have simply to look to our own determination to protect our people, our society, our property and our values.' Problems arise, however, in justifying the use of high-cost, specialized military equipment to detect illegal boats. Conversely, in a period of severe financial restraints, the Defence Force is hard pressed to obtain enough of the equipment it needs to meet its primary role, without having to meet surveillance tasks which necessarily detract from important specialized training requirements: the essentially civilian 'policing' nature of Australia's present problem ideally calls for an integrated agency much like the Coast guard of the United States. Financial practicalities, however, rule out such an agency in the near future. The Defence Force therefore will be required to continue its involvement in both policing and defending Australia's resources. This being the case, emphasis must be placed on co-ordination of all existing resources together with a carefully selective acquisition programme designed to obtain maximum surveillance effectiveness at minimum cost while progressively building up an autonomous policing agency.

A program to upgrade Australia's surveillance and enforcement capabilities was announced recently by the Minister for Transport, Mr Nixon. Key points of the program are the repositioning of Customs launches to Geraldton and Port Hedland, and the appointment of the Minister for Transport to be Government spokesman on civil coastal surveillance. The program aims at improving co-ordination of existing resources to achieve greater effectiveness at little extra cost. As such it is a beginning, but clear and concise guidelines must be determined so that all further action and expenditure can be taken

This article first appeared in the RAAF Staff College Papers.
within the framework of a definite long-term objective.

This article will discuss existing policing equipment and the problems related to its use, with the aim of determining the best possible surveillance force obtainable within financial limitations. Guidelines within such a force could be developed will be proposed.

THE REQUIREMENT

When the 200 NM Fishing Zone comes into operation, Australia will face the immense problem of maintaining control of a maritime area roughly equivalent in size to that of the Australian mainland. Even now, as Dr Millar says, 'foreign naval, intelligence, fishing, pearlimg or other vessels can operate in our environment beyond our capacity to do anything about them. Air Force or Naval reconnaissance aircraft may observe them, but the Navy just does not have the ships to intercept them'. While this is quite true, there are many different operating factors which should be considered when seeking to improve the situation.

Broadly, surveillance is carried out so that information can be obtained on the movement and purpose of all air, land, sea and undersea vehicles in a specified area. Ideally Australia's needs in this area are:

a. a capability for surveillance and policing of littoral areas, offshore resources and deeper military surveillance;

b. an ability to deter hostile actions and to defend focal areas and port approaches;

c. readily transportable and mobile land, air and naval forces to meet hostile actions; and

d. a mobile continental air defence capability.

Problems arise, however, because military surveillance and civil policing activities become interwoven, with the consequent diversion of expensive specialized equipment to tasks which could adequately be carried out by much less expensive vehicles. Short-term financial restrictions dictate the continued use of expensive equipment for coastal surveillance, but the long-term aim should be to develop an effective policing capability which will enable re-direction of specialized military equipment to its primary military role. In short, the requirement is for a firm long-term policy for the conduct of coastal surveillance, with clear direction as to the final composition and structure of the force required to meet policy aims.

SURVEILLANCE PROBLEMS

Successful policing of maritime zones requires (among other things) with capability for detection, identification, arrest and search, together with the use of applicable levels of coercion. Some of these capabilities can be provided by aircraft and some obviously must be provided by surface vessels. For an effective surveillance capability, the equipment must be of sufficient numbers to satisfactorily cover the zone of responsibility. Although air surveillance could be stepped up using available military and civilian resources, the paucity of available surface vessels severely limits our interception and arrest capability. Additionally, the immense area of responsibility and the present disposition of Australia's surveillance assets practically guarantees unacceptably long reaction times in checking suspected illegal operations. Compounding these difficulties is the present spread of responsibilities between several Government departments with the consequently expensive duplication of effort, the lack of compatibility of techniques and equipment, and poor cost effectiveness.

In discussion problems faced by the United Kingdom, a recent article in the RUSI Journal commented that 'Departments are funding the RAF and the RN for resources activity, but the vehicles used (Nimrod aircraft and Island class frigates) are war machines and any extra or replacement will still require a war-fighting role'. A very similar situation also faces Australia, with deep concern being felt about the 'overkill' in cost and capability when using ASW aircraft and larger Navy ships in policing roles. Mr Killen has expressed disquiet at the problems associated with the armed forces fulfilling functions involving the powers of apprehension and arrest'. The Norwegians are sufficiently concerned about the use of armed forces in this role that they have formed a coast-guard service for the purpose of maintaining law and order, and the Foreign Ministry considers that 'the coast-guard vessels should be of such an appearance as to differentiate the ships and their personnel from other naval units'. The recent Commonwealth Heads of Government Regional Meeting at Bowral dramatically highlighted the contentious
issue of the use of armed forces in essentially civilian capacities. Similar problems will certainly have to be faced at sea if Defence Force personnel continue to be used in policing roles.

Little attention has been paid as yet to the type of evidence necessary to successfully prosecute foreign nationals for illegal activities within Australia’s fishing zone. The situation could easily arise where surveillance aircraft may observe a ship within the zone, but by the time a surface vessel arrives the intruder has withdrawn. Should an arrest be made, the legalities and the required type of evidence would raise complex issues in International law. Finally, the recent report by the Permanent Heads Committee on Surveillance highlighted the misconception on the part of the public of surveillance aims and achievements. The Committee made special mention of public unawareness of the considerable efforts required to guarantee interception of any kind of intruder, and suggested incorporation of a publicity program designed to show that surveillance and policing activities can still be considered adequate even though a percentage of incursions might go undetected.

CURRENT SURVEILLANCE ASSETS

For the task of aerial surveillance, Australia presently uses a mixture of both civil and military aircraft. Light civil aircraft are chartered by specific Government departments to provide an essentially visual search capability on an irregular basis. RAAF P3 aircraft, although costly to operate, are used for surveillance of specific areas, while RAN S2G aircraft are used for selected periods to search the north-western approaches to Darwin for refugee boats. There is, in fact, a considerable amount of aerial surveillance carried out at present, and a more effective coverage could be readily achieved but at the cost to the military of a large diversion of effort from primary tasks.

This aerial surveillance capability, however, substantially outweighs our surface intercept and arrest capability. There are seven RAN patrol boats and three Customs launches available to patrol the area from Geraldton to Cairns. Such a force is scarcely able to ‘show the flag’ in most areas, let alone attempt the timely interception and inspection of the many ‘contacts’ made by aircraft. Understandably, the RAN has little inclination to divert larger ships to the task, and the recent order for fifteen new patrol boats will not greatly increase surface inspection capability because of the planned concurrent phase out of the ‘Attack’ class boats. Purpose-built Customs boats are few in number and most are fully utilized. Unfortunately therefore, the sea-borne policing task — although the weakest link in our surveillance chain — seems to have little immediate prospect for expansion.

Apart from the assets already discussed, Australia does have a considerable amount of potential surveillance capability in existence but as yet untapped. Offshore oil rigs, scheduled civil flights, Royal Flying Doctor Service aircraft, geological survey teams, road haulage companies, shipping lines, fishing boats and military training tasks are all potential sources of information. Additionally, remote farms and mission stations could report unusual aircraft movements, while police and council workers could easily be organized to include coast-watching as part of their normal duties where appropriate. Obviously, if all such sources were to be used, a properly manned and equipped control centre would be necessary to sift and collate reports to evaluate the informations and to co-ordinate any required action. It would be far better to establish, test, and refine such an organization in a low-threat period than to wait for the confusion of priorities inevitably associated with the emergence of a threat.

TECHNOLOGICAL ADVANCES

In discussing the policing roles of the United States Coast Guard, the Asia Pacific Defence Forum said in part ‘Because of the potential for confrontation and the nature of the devices available to dissidents and terrorists, the weapons and sensors of Coast Guard ships and aircraft must keep pace’. Although Australia does not have a Coast Guard, we must nevertheless remain current with technological progress in surveillance areas so that maximum value can be derived from our limited resources. World-wide real-time surveillance using satellites already enables the super powers to detect and monitor any major military activity. Presumably Australia would have some access, even though restricted, to pertinent information from present satellites and from future more capable satellite systems.
Whether Australia wished to set up a satellite surveillance system would be debateable considering the enormous cost and the possible vulnerability of satellites. American Airborne Early Warning and Control Systems (AWACS) such as the Grumman E2C and Boeing E3A are capable of searching both air and surface areas on a massive scale, and potentially can provide 200 mile coverage against air intrusion as well as detection of small surface 'targets' and control of the complete electronic spectrum in a given area. The UK has had ten years experience in AEW with its modified Shackleton aircraft. The ability of the Shackleton to detect naval vessels and control aircraft against them is such that semi-covert attacks can be made against surface forces hundreds of miles outside the cover of fixed radars. Again, such systems are expensive and are perhaps as vulnerable as satellites. However, it behoves our Defence Forces to continually monitor such technology so that they could procure and operate the equipment if the need arose.

Further down the scale of technology there has been a proliferation of specially designed or modified aircraft for the surveillance role. Aircraft such as the Fokker F27MPA and the Hawker Siddley Coastguarder can provide quite sophisticated electronic surface-search capabilities at comparatively low cost, while the profusion of light twin-engined civil aircraft modified for less sophisticated operation demonstrates the extent of the eventual market foreseen by manufacturers.

Over-the-horizon (OTH) radar systems being developed should eventually have a range of 2000 kilometers against surface targets and even greater ranges against airborne targets, but localization and identification of targets is a problem which can only properly by overcome in conjunction with AWACS aircraft and surface vessels. Nevertheless, the potential of OTH radar should be realized and maximum advantage taken of its capabilities. Local area 'gap-filler' radars such as the Westinghouse AN/TPS-63 and the Thompson CSF coastal radar generally have ranges out to 120 kilometers against low flying aircraft, but even though some of these radars are air-transportable they lack the range of AWACS aircraft and the flexibility of less complex surveillance aircraft. Ship-borne radars generally suffer from the same limitations as gap filler radars when used for surveillance, but improved performance by radars in later RAN ships might be anticipated.

When in service, Australia's new patrol boats will have much better speed, range and sea-keeping capabilities than the present 'Attack' class boats, but there will not be enough of these boats to properly conduct arrest and search operations. Of particular interest to Australia therefore is the private venture proposal from the Hawker de Havilland Australia company for a 26 metre patrol boat. Although without the sea-keeping qualities of the RAN's patrol craft, this type of vessel is significantly cheaper and should combine good speeds with reasonable ranges and low maintenance requirements. Computer studies indicate that such a boat could operate in most of the sea states likely to be met in Australia's northern waters; therefore, it could provide a comparatively cheap method of increasing Australian capability to conduct surface policing actions.

While amphibious aircraft could be particularly useful in surveillance tasks in addition to providing a platform for boarding and arrest parties, present generation aircraft are hampered by their relatively low sea-state capabilities and by salt water corrosion. Amphibious aircraft should therefore be kept under consideration in case future technology can overcome their present limitations and enable their full potential to be realized.

Although generally regarded as a military requirement only, the need for rough-terrain vehicles should not be ignored when considering surveillance problems. Access into remote areas nor serviced by roads is a capability required for Customs and Quarantine tasks as well as for Army operations, and the new generation of Armoured Personnel Carriers (APC) and off-road vehicles being considered for the Army could well have characteristics very much suited for non-military purposes.

USE OF A CIVILIAN FORCE

In announcing a program to upgrade Australia's coastal surveillance and enforcement capabilities, the Minister for Transport, Mr Nixon, said that 'The concept of a separate coastguard system had been examined and rejected for the time being as a costly duplication of existing and available
resources. Whilst this may be true, the legal complexities of using the Defence Force for civil policing duties are already evident, and there seems to be a very strong case for increasing civilian involvement in surveillance, with the long-term structure of our coastal protection agency being entirely civilian in nature. Estimates for the required composition of a separate-coastguard vary greatly, but a minimum force of about 30 aircraft supported by 20 or more patrol boats would seem to be required. The US Coastguard has much more equipment than this of course, but its roles include search and rescue, maintenance of maritime navigation aids, icebreaking and oceanographic research. To meet the cost of its coastguard, the US has determined that fees and fines paid by foreign fisherman should not only be enough to cover all costs of the coastguard, but also provide additional revenue. Although such a system could be operated, Australia would face an enormous bill (estimated by some sources to be as high as SA400M) to initially establish a civilian agency. Training times for personnel and the initial establishment of bases and infrastructures would impose a considerable time penalty on this operation, and could well cause an appreciable increase in estimated costs.

The alternative to a coastguard for Australia would be an upgrading of present activities. At present there are several different Government departments with differing responsibilities and budgets all engaged in activities which are partly related to coastal surveillance and protection. This situation has been demonstrably inefficient in the past, and in a time of stringent financial measures is an unjustifiable waste of resources.

USE OF THE DEFENCE FORCE

'The first thing that is seen to disappear in a state which is disintegrating is the navy.'
— Daveluy

Although Daveluy was not referring to Australia, the RAN is in fact suffering from a shortage of vessels, and the situation is not likely to change dramatically in the foreseeable future. With the Minister for Defence already on record as having said that it is 'difficult to draw up defence reports when there (is) no clearly conceived threat to the nation', there is no great likelihood of increased defence budgets for some time. If the Defence Force should have to carry an increasing share of surveillance responsibilities, however, the serious shortage of policing vessels would have to be redressed by diverting even more naval ships away from their primary defence tasks. It is important that Australia's limited funds for defence should not be used to provide equipment primarily suited to the peacetime role of coastal surveillance.

That is not to say that the Defence Force does not have a peace-time surveillance role. Although military equipment is mainly used in more sophisticated roles than that of policing, a great deal of assistance can be given to civilian agencies as a 'by product' of normal defence patrolling. The admittedly low effectiveness of present surveillance activities could be dramatically improved merely by having a central co-ordinating authority to receive, process and act upon the information already available from many sources. The two basic problems in diverting Defence Force activities to peace-time patrol duties are, firstly, the inevitable waste in using highly-trained personnel and specialized equipment in roles that detract from the primary tasks of the military and, secondly, the contentious issue of the legal rights of servicemen when they are used in civilian tasks. Given Australia's present economic situation, continued involvement of the Defence Force in civilian-type operations will have to continue for some years, but the cost of such activities must be borne by the Defence Force, and a solution to the legal question must be found urgently.

The White Paper on Australian Defence was presented to Parliament in November 1976. Although the nature of Australia's overall defence characteristics is outside the scope of this article, one characteristic which receives substantial emphasis is that of 'readily transportable and mobile land forces, with adequate capability for reconnaissance to meet hostile incursions at remote localities'. With the greater proportion of our land forces and their equipment based in the south-east of the continent, and all incursions and policing problems occurring in the north and north west of Australia, the mobility of our land forces should be closely examined. Road and rail communications with the more remote areas of Australia are notoriously unreliable for long periods each year, therefore land forces would
have to rely on sea or air transport for mobility. Rapid development by air presents particular problems in that, although troops could be moved if necessary by civilian aircraft, much specialized equipment can only be transported by C130, and in fact the deployment by air of an Army division with its equipment could completely occupy our air transport elements for several weeks even if no tactical transport support were required. Selective prepositioning of some specialized equipment could alleviate deployment problems, and the use of such equipment during appropriate joint exercises would have the benefit of providing realistic training to the Defence Force while at the same time increasing the military presence in remote areas, with the ‘spin off’ of providing more comprehensive intelligence on terrain and coastline.

COMBINED OPERATIONS

The realistics of Australia’s present position are such that combined military and civilian surveillance operations are inevitable in the short term. There is ample evidence to suggest that independent operations conducted by several different agencies are wasteful of both manpower and finance. The Defence Force is clearly unable to take over all policing and patrolling duties without an injection of substantial amounts of extra money, and even so any extra equipment purchased would probably have the capabilities far exceeding those required for coastal surveillance. For the sake of expedience, a combination of civilian and military activity should continue at present but the arrangement must clearly be recognized as expedient and temporary, and all future civilian and military surveillance decisions should be made in the light of the eventual evolution of an autonomous civilian Maritime Control Agency (MCA) controlled by the Department of Transport.

The MCA envisaged would be based at selected population centres — with existing airfields and small ship berthing facilities — around the north-west and north coast of Australia. There would be a central headquarters responsible for receipt and processing of surveillance information, and for co-ordinating patrol and policing activities within and outside of the MCA. Personnel would be mainly civilians from the relevant Government Departments with all uniforms, ship and aircraft markings, vehicles and flags such that ready identification and recognition of the MCA could be assured. Provision would be made for military personnel to be seconded to the MCA as part of their normal career progression, and MCA equipment would be basically identical to that of the Defence Force, but internally equipped to meet the specific requirements of the civilian force. Defence Force exercises would be conducted at MCA bases and surrounding areas, with full participation by MCA aircraft, ships and vehicles. Legislation would be in force allowing full powers of arrest and search to MCA personnel, and enabling revenue from fines, confiscations and licences to go directly towards the operating costs of the agency. Such an agency would require time and money to establish, but an effective force could be in operation fairly quickly at comparatively low cost if it were predominantly military at the beginning, with a gradual ‘civilianization’ of the agency over a period of years.

THE CONCERT

If the military is to remain involved in policing and peace-keeping operations, legislation would have to be enacted to give a form of ‘law-enforcing’ power to specified Defence Force personnel. Additionally, revenue obtained as a direct result of these operations would have to go automatically towards the operating costs of the proposed MCA. For many reasons, the necessary administrative action empowering the formation of an MCA (initially using both military and civilian personnel), allowing the directing of funds derived from policing activities towards the cost of maintaining the MCA, and conferring specified powers of arrest and search on members of the MCA (military and civilian alike), should be taken simultaneously, and should be the first step towards the eventual establishment of an autonomous agency.

As announced by the Minister for Transport, the Marine Operations Centre in Canberra is to be strengthened and renamed the Australian Coastal Surveillance Centre (ACSC). This centre will aim to better co-ordinate existing surveillance activities and encourage increased reports of incidents from voluntary reporting systems and the general public. With such responsibilities, the ACSC already is ideally
placed to form the basis for the eventual MCA headquarters. Experience will dictate whether the headquarters eventually should be relocated, but for reasons of economy and ease of access to Government departments who have vested interests in MCA activities, there would seem to be a strong case for the policy making the co-ordination activities to remain in Canberra, provided always that effective communication with MCA bases could be maintained. The optimum number of MCA bases required will again be dictated by experience. At various times Geraldton, Leamont, Port Hedland, Broome, Darwin, Gove, Weipa, Cairns and Townsville have all been suggested as bases for one or another type of surveillance activity, but the eventual number and location of bases will depend largely on the surveillance and patrol capability of the equipment used. There already exists a capability for visual surveillance by RAAF aircraft at Darwin and Townsville; Broome has been used by detachments of RAN Tracker aircraft and already has Customs launches based there; while Learmonth has existed for some time as a prepared forward base for the military. In keeping with the concept of establishing the MCA at minimum cost, Learmonth should be the location for the establishment of a first base. Formulation and refining of operational procedures would be the initial aim of the bases, with co-ordination between the headquarters and the base and its surveillance assets being of prime importance. With an existing Customs facility and previous use as a base for Tracker aircraft, Broome would be the logical position for a second base, with further bases being established in other locations as time and experience dictate.

The responsibilities of the MCA initially would be limited to policing of the new Australian Fishing Zone together with customs and quarantine duties. These activities would gain revenue to help defray operating expenses, and also would provide a variety of operations to test and refine operational procedures and air to surface co-ordination. As the agency becomes more established, a search and rescue role could be added, and eventually the MCA could be responsible for further activities such as the upkeep of marine navigational aids, port control, pollution detection, maritime anti-hijack and counter-terrorist duties, and hydrography. At all time compatibility of equipment and procedures with those of the Defence Force would be necessary so that the agency could function as a specialized coastal arm of the military forces in times of threat. To contain initial expenditure, part of the existing facilities at RAAF Base Learmonth could be used for the first MCA base. Aircraft refuelling and parking areas, personnel accommodation, small mooring, and a refuelling jetty already exist at or near the airfield. A customs launch is scheduled to deploy to Port Hedland shortly; should the location later be changed to Learmonth, and should the Defence Force simultaneously deploy two Nomad aircraft and one or two patrol boats to Learmonth, a basic unit equipped for co-ordinated air and sea patrol and policing would be in existence. With suitable compatible communications, techniques could be developed for shore and area searchers, co-ordinated aircraft and ship activities, and search and arrest. Communications networks between Learmonth, ACSC and military electronic surveillance aircraft could be established and tested, and later Broome (with Tracker or Nomad aircraft, a customs launch, and possibly a patrol boat) could be established as a second MCA base to further test operational techniques, communications, and co-ordination.

Equipment purchases by any Government department, in relation to coastal patrol or policing, should be aimed at compatibility of type for the future MCA. To this end, the eventual structure of the MCA should be defined as quickly as possible. As a postulation, the eventual composition of the MCA could be along the following lines: a large number of relatively inexpensive aircraft with search radar, accurate navigation equipment and the ability to record and store data in a manner that would stand up to analysis in a court of law if necessary; a smaller number (2 or 3) of larger, more specialized surveillance aircraft; 15 of the less expensive 22 to 26 metre patrol boats; three or four larger vessels of the same type as the new RAN patrol boat; communication equipment compatible with that used by military surveillance aircraft and patrol craft; and the capability to readily fit in-service weapons to all craft.

The build-up of such a surveillance force could readily be adopted to assist Australian industry. Initial experience with Army Nomad
aircraft could profitably be utilized if, for example, Searchmaster 'L' aircraft were chosen to build-up the MCA. An order for 15 'Arafura' patrol boats (to be phased-in to the MCA over a period of years) together with the ordering of a further three 42 metre Brook Marine patrol boats, would give substantial impetus to Australia's defence industry, and could well give rise to further orders from neighbouring countries because of the resultant commonality of equipment and the on-going defence co-operation programmes in the region. The larger, more specialized surveillance aircraft would not be required quickly, and could, therefore, form part of a purchase order for new tactical transport aircraft for the RAAF. A rear-loading version of the well-proven F27 has been proposed as a Caribou replacement, with a good deal of design and production work available to Australian industry if the aircraft were ordered. Two such aircraft could easily be equipped for surveillance while maintaining a useful freight capability should the aircraft be required for unscheduled tasks. No doubt similar proposals have been made on behalf of the HS748 and its Coastguarder derivative, and the advantages to be gained by having proven aircraft with a history of Australian operating experience are many.

Manning of the MCA would be predominantly military at the beginning, with the ration of servicemen to civilians gradually changing as the agency builds up its operation until finally there would be a civilian controlled and operated MCA with perhaps some specialized military men assisting the agency when required. Participation by servicemen in the agency could best be achieved by secondment or attachment to obviate possible associated legal problems, and while military personnel would wear MCA uniform during their tour of duty, such tours would be regarded by the Defence Force as part of normal posting and career progression. Civilian personnel would likewise be drawn from the applicable Government departments, and would return to their departments on tour completion. Administrative complexities such as length of tour (for military and civilian personnel); allowances and conditions; and regulations governing servicing, operation and manning of aircraft and boats during "civilianization" of the agency would have to be resolved during the formation of the agency.

A TIME-TABLE FOR CHANGE

In determining a possible program for establishing and building up an MCA, many factors must be considered. Some, such as available finance and manpower, are restrictive now and probably will continue to be so for many years. Others, such as related military equipment procurement and the attitudes of neighbouring countries towards Australia, may be subject to considerable change during the life of the program. Notwithstanding these factors, definitive guidelines as to the eventual structure of the force should be established, and a time-table determined to enable that structure to be achieved in as short a time as possible, while at the same time allowing for flexibility in the event of changing conditions. The following time-table calls for a fully established civilian operated and controlled agency to be in operation by 1988. Maximum use is made of existing manpower and facilities so that an operating force can be formed quickly but cheaply, with the force then progressively being strengthened and civilianized as resources permit.

As a first step, legal and administrative processes should be taken to enable the formation of the MCA; to give personnel within or seconded to the MCA search, arrest and impounding powers; and to provide for revenue gained from MCA activities to be used in defraying the cost of the agency. The final organization, composition and responsibilities envisaged for the MCA should be clearly detailed so that duplication, incompatibility of equipment and wasted effort can be avoided. Responsibility for co-ordination of present and planned surveillance resources, and for planning of communications requirements should be given to the ACSC, which, in conjunction with military personnel, will form the headquarters for the MCA. During 1979, two Army Nomads, one Customs launch and two 'Attack' class patrol boats should be deployed to Learmonth so that operational techniques and co-ordination of activities can be tested and refined. Plans should aim for the permanent MCA base to be operational by 1980, and for the second base at Broome to become operational by 1981. During 1979-81, Orion Tracker and chartered aircraft should
still operate as at present while the MCA bases are ‘working up’. A decision on the less-expensive type of aircraft required for the MCA should be made so that orders can be placed in time for the first aircraft to become available in 1981. An order for the cheaper type of patrol boat should also be placed so that the craft can be phased in to service from 1981. The present requirement for Customs to replace their vessels, and the contract shortly to be let for light, twin-engined surveillance aircraft are pertinent reminders of the urgent need to define the long-term structure of the MCA so that incompatibility of equipment and wastage of resources can be avoided. Orders for the RAN-type patrol boats and the specialized larger surveillance aircraft should be placed when appropriate for both the MCA and for the related procurement programmes of the Defence Force. Additionally, during this period of the ACSC should define the roles and responsibilities of a volunteer coast-watching net, and plan for the co-ordinated processing of information from other ‘casual’ sources.

During 1982-86, progressive ‘civlisation’ of the MCA would take place, further bases would be established, and the previously ordered equipment would be received into the agency. ‘Military-compatible’ communications systems, refined operating techniques, and active participation in ‘tailored’ Defence Force exercises in and around MCA bases would all assist in increasing the effectiveness of personnel and equipment. From 1986 to 1988 the most expensive equipment (the larger surveillance aircraft and the large patrol boats) would be introduced into service, the chain of bases would be completed, and, apart from a few seconded military personnel, the force would be a fully operating, autonomous, civilian MCA under the overall control of the Department of Transport. Close links would be maintained with the Defence Force, including participation by the MCA in pertinent military exercises and re-equipment programmes.

CONCLUSION

A recent article on surveillance in the Pacific Defence Reporter stated that ‘The traditional view that the Defence Force should be responsible for off-shore law enforcement has not stood the test of increased assaults on the relevant laws. Calls for the diversion of Defence Force resources to this role will only reduce its ability to perform its proper role.’ This view is strongly supported by Elizabeth Young in the previously quoted article in the RUSI Journal of June 1977. Should we then follow the lead of several other nations (not the least of which is the USA) and form a separate policing agency, there immediately arises the question of how to meet the enormous cost.

Establishment of an embryonic agency, largely with Defence Force personnel and equipment, followed by a steady progression towards an eventually autonomous civilian MCA is a practical, albeit comparatively slow, alternative for Australia. Clear guidelines and a definite concept for the eventual composition of such a force, however, is needed to enable Australia to steadily upgrade her control over the AFZ while at the same time phasing out the present misuse of expensive, specialized military equipment. Even though the process may still be expensive, full cognizance should be taken of the fact that some revenue will be earned to defray costs, that Australian defence industries will receive an appreciable boost, and that Australia will have gained a permanent para-military presence in her more remote and presently unprotected areas. The Defence Forces, freed from essentially civilian policing duties, would be better able to concentrate on their specific military roles. Purchase of new military equipment of a low scale MCA related type would be undertaken only after consultation with the Agency and with full cognizance of the long-term structure of the MCA. Higher technology equipment such as E2C or E3A aircraft, satellites and OHR would be capable of providing an information ‘spin-off’ to the MCA, and the introduction of any such equipment into the Defence Forces should provide for the channelling of pertinent information into the ACSC.

To achieve maximum effectiveness, the MCA should be equipped with the same basic types of aircraft and vessels as are in service with the Defence Forces and should participate in regular military exercises so that it can readily change from a role of off-shore policing in peace time to that of an efficient and effective coastal protection force should the need arise. Malcolm Booker recently stated that ‘whatever power dominates the water approaches to Australia can control Australia.’ The very
existence of an efficient and well-trained paramilitary force along Australia’s coastline would contribute greatly to the protection of our marine resources in time of peace, and would greatly enhance the capabilities of our Defence Force to control our water approaches if circumstances should so dictate.

Notes and Acknowledgements
2. Joint Committee on Foreign Affairs and Defence, reported in the Canberra Times, Canberra, 2 June 1978.
7. Oakes, L. ‘S.O.S.: We want a Coast Guard (or do we?)’, The Courier Mail, Brisbane, 11 April 1978.
12. The vulnerability of satellite systems was highlighted by Titterton, Professor Sir E., reported in The Canberra Times, Canberra, 21 March 1978.
15. See Ball, D.J. ‘New Military Technologies for the Defence of Australia’, copies of an address to the California Seminar on Arms Control and Foreign Policy, Santa Monica, 9 August 1977.
18. Young, op cit.
23. ibid.
26. Young, op cit.
28. For a recent report on AWASC and OHR, see Cranston, F. ‘Eyes to Watch the North’, The Canberra Times, Canberra, 4 October 1978, p 13.

AWARD: ISSUE NO 26 (JANUARY/FEBRUARY 1981)
The Board of Management has awarded the prize of $30 for the best original article in the January/February 1981 issue (No. 26) of the Defence Force Journal to Major D. M. Horner for his article Staff Corps versus Militia: The Australian Experience in World War II.
THE INSTRUCTIONAL NEEDS OF C.M.F. RECRUITS IN THEIR INITIAL TRAINING PERIOD

By Trevor Cook
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ABSTRACT

The Army way of life is structured and hierarchical in nature with great emphasis on discipline and expertise and competence. For the recruit, therefore, the training period is very important. For the CMF recruit, it is paramount that much be learned in a short period of time. This article argues that the structure of the Army and the resultant behaviour ethos or way of doing things can impinge upon the instructional needs of the recruit. These include a competency model in his instructor; for his own competencies to be used as a basis of instruction; that his curiosity be developed and that a situation of reciprocity be developed. The aim of satisfying such needs is more efficient learning of skills and procedures in less time. It is also argued that modifying instructional methods to cater for the instructional needs of the recruit is not inimical to the needs of the Army; nor does it imply less stringent individual or group discipline.

Each year at regular intervals, CMF recruits undergo a basic recruit course of two weeks' intensive training at a Regular Army Centre designed for such specific training. The aim of the course is to induct the recruit into Army life. Such objectives as personal and group discipline are central as well as instructing the recruits in basic weaponry and field crafts training. Other aspects such as military law and history, organisation, health and welfare are covered in lectures. However, for the bulk of the time, parade ground drill and structured weapons practice are the modes of induction to the Army way of life: the former aimed at establishing unconditional discipline, the latter, basic competence. A formidable learning task in two weeks with some implications for both recruits and trainers.

This article aims at investigating some of these implications by establishing some of the perceived instructional needs of recruits based on the phenomenological perspectives of the writer as a recruit and from his perceptions of the reactions and perceptions of other recruits following personal dialogue and as an actor and participant in the proceedings. Although generalisations will have to be made, specific insights will be attempted by the use of personal 'pen pictures', the aim of which will be to give the reader an insight into what it is like to be a recruit. The aim of the article is to specifically outline some motivational needs of recruits which are not being met from an educational or instructional point of view. Better learning outcomes can be attained in such a short, structured course, and a more disciplined and better trained recruit will emerge. The premises of the aims of the course are therefore accepted, but some of the instructional premises are not.

To deal first with weaponry instruction, several factors emerge. Firstly, the recruits must be trained to a high degree of competence and confidence in the use of the SLR rifle and F1 submachine gun, culminating in a range shoot. Emphasis is placed on safety procedures at all times. Secondly, they are trained as a group and instruction on the two weapons occurs concurrently but in different sessions during the first week.

Weapons instruction sessions are highly structured. Sections are marched to their designated area and group instruction, step by step, takes place. The individual must respond to the steps, in unison with the group. Failure to do so ensures censure from the instructor which raises the anxiety of the learner, compounding the
learning problems, decreasing confidence, causing confusion, and as a result, negative learning aspects arise on the part of the learner. For example, a recruit becomes confused, fear of failure develops and he adopts methods which confound him more and compound the learning deficit. He may adapt the strategy of watching the recruit next to him even though the recruit is a stage in front. He effectively is then learning by rote a procedure which is wrong in terms of the step he ought to be proceeding with. He may, for example, load the rifle before checking safety, simply because he has seen the recruit next to him do this. He has missed a vital step, has not learned the logical procedure and has "turned off in the learning sense. He now has to unlearn the procedure. The recruit may become completely confused and regress to such an extent that he is now making mistakes with procedures already learned. He is also holding up the session and enduring the wrath of his peers. This can, in effect, extend the period of training unduly, because all members must wait for the now remedial recruit. This does not mean the recruit is slow, or unintelligent, but that he is responding to anxiety. A remedial learner is one who is learning at a rate below his potential.

Instructional methodology must now be considered and the premise of whole group instruction reviewed. Firstly, in the field, the soldier would not necessarily respond as a member of a group. He would need to individually work his weapon through the various procedures in response to his own instructions as a function of emergencies and the needs of the situation. Secondly, from an educational point of view, because the whole group must wait for the individual, a greater learning period in total is needed, than if individual, or small group instruction, is established. The learning methodology is therefore less efficient and more time-consuming considering that in a group or section, as many as one-third may be suffering remedial effects at any one time and individually most will experience it during training.

The lessons are basically skills orientated, yet a hierarchy of skills is not established in logical order. Most skills are dependent on earlier skills. Higher order skills are dependent on lower order skills being developed. To attempt higher order skills before mastering lower order skills develops the remediation effect. For example, it is necessary to cognitively understand the working of the SLR and the firing cycle before the steps of checking safety, loading, taking action position followed by instant, firing and unloading can be effectively carried out. Similarly, to carry out an Immediate Action necessitates an understanding of the mechanism and cycle stage before the logic of what to do emerges. For example, one must understand that with a gas stoppage, not enough gas has been available to ram a cartridge into the breech and moving parts must be let fly forward, not eased, to ensure a cartridge is rammed into the breech. Also, safety must be checked prior to bringing the rifle to the body to alter the gas setting because the rifle is ready to fire. To teach this procedure without the recruit fully understanding the cycle and causes is to attempt to teach a higher order skill and understanding before a lower order skill and understanding has been learned. It also emphasises the need to develop skill and understanding concurrently. This is therefore one of the instructional needs of the recruit.

To develop a suitable teaching methodology a hierarchy of skills and understanding needs to be developed by the instructor, with provision for remedial work, in individual or small groups should the need occur. This will result in a reduction in overall learning time, and a more confident and competent recruit.

A word is necessary here about fear and anxiety in the learning situation. To develop fear or anxiety, whether planned or by accident, causes learning deficit. This is perhaps more so the case when the learner is internally motivated. That fear can be an external motivator to learning is a poor teaching strategy. It is true that fear of failure will cause a learner to adopt pseudo-learning strategies such as mimicking or copying, but real learning is not occurring, such being the case in the example cited earlier in the article, where the recruit copied the recruit's action next to him. Such behaviour can only confound the learner, and cause regression.

Bruner (1966) in his *Towards a Theory of Instructions* stated four criteria to a good instructional procedure:

1. a good model — the trainer;
2. that the competency of the learner be utilised;
3. that the learner's curiosity be stimulated; and
4. that a situation of reciprocity be established between the learner and the teacher, thus dissipating fear.

These four criteria mean essentially that the learner must have a good model, a teacher who
THE INSTRUCTIONAL NEEDS OF CM.F. RECRUITS IN THEIR INITIAL TRAINING PERIOD

shows competency and demonstrates the correct procedure. It also means that the competencies the learner already has, are utilised, that his skill level is ascertained and that the skills he already knows are used as a basis for what he is to learn next. Next it means that the learner’s basic curiosity is developed, that he is curious to learn the next step because he is confident of the one he has just learned and is curious to investigate the next one. He is curious about the unknown. If he is curious of the next step, he will more readily learn it and will become internally motivated. Finally, reciprocity is a criteria to learning, that is, that a reciprocal relationship of confidence is established between the learner and the teacher, devoid of fear of failure, and supportive. All four are commonsense one might say, yet rarely do all four emerge in the instructional procedure for the recruit. Usually, there is a very competent model, but the latter three stages are very hard to develop because of the demands of whole group instruction. Certainly, discipline is not diminished by allowing competency, curiosity and reciprocity to emerge in the learning situation. Reciprocity does not mean licence or lack of discipline. Reciprocity leads to respect. Lack of reciprocity often leads to anxiety, perhaps fear and certainly disrespect.

A case study will be briefly utilised to explain the phenomena. In a group learning period on the SLR, Recruit A, having seen a film on the workings of the SLR but not fully having had time to reflect upon or revise, does not fully understand the cycle. The instructor competently demonstrates the whole procedure of checking safety, loading, action, instant and unloading. He then leads the group through the procedure step by step. He now commences a session on checking safety. He demonstrates, going through in turn: ‘safety on’, ‘turn to right’, ‘pull working parts back’, ‘turn to left’, ‘look’, ‘ease working parts forward’, ‘safety off’, ‘fire’, ‘safety on’. He then says: ‘Do that’. Recruit A commences. He puts safety on, turns to right to pull working parts back so that a shell in the breech would be ejected to the ground should it be there, turns to the left to inspect the breech, but then releases the working parts forward. He has reached his point of incompetence. He does not understand that there is no cartridge in the breech and he therefore may ease the working parts forward to save undue wear. A higher order understanding has not been learned and the higher order skill cannot be effectively developed. Recruit A has remembered the Instructor releasing the working parts forward during action and has modelled this behaviour but without the understanding at the wrong stage.

Recruit A becomes more confused because his need is not diagnosed and remedial action is not taken, partly because the lesson has not been structured towards a hierarchy of understandings and skills. Recruit A fails his test and leaves in confusion. Back at the hut, he takes the situation into his own hands. He knows little about rifles and asks assistance from his comrades. The working parts of the rifle and its cycle are explained in detail and he writes these down. His understanding increases, with the reciprocation of his mates and he becomes curious to operate the rifle again, which he does at the first opportunity. Remedial action has been taken and confidence grows with understanding and competence develops. Finally, all skills are mastered. At the next lesson, Recruit A passes the test first up with confidence. Recruit A has successfully mastered the learning task. However, the point of the case study is that Recruit A could have achieved this during the initial session, saving time for both himself and his comrades, and his instructor.

What strategies could have been adopted by the instructor? The following are suggested:

1. A lesson plan including a hierarchy of skills and understandings such that higher order skills and understandings are not attempted until lower order skills and understandings are mastered.
2. Evaluation be carried out during the lesson to diagnose remedial cases.
3. Establishment of remedial small group or individual posts for remediation. Successful recruits could act as competency models to explain understandings and skills.
4. A supportive environment which allows a recruit to seek remedial help without fear of ridicule.

A clear and concise lesson plan is needed including considerations of the following, drawn from the Rational Curriculum Planning Model (Walton, 1976).

1. Aims and Objectives
2. Content
3. Learning and teaching strategies
   i.e. — hierarchy of skills
   — provisions for remediation
   — provision for the development of:
     — reciprocity
     — competency
— a model
— curiosity

4. Learning Activities i.e. what the recruits will do.
5. Evaluation of whether or not the aim and its objectives (the step by step procedures towards accomplishing the aim) have been attained.

The concept of a hierarchy of skills may be the hardest to rationalise, yet it is the most important. It is simply the step by step understandings and skills, carefully established and followed so that basic skills are learned first and mastered in their correct developmental stage so that the higher order and more difficult understandings and skills can be more quickly grasped. It is essential not to rush the procedure and if not rushed, the complete competency behaviour is more quickly attained. The use of sketches, developmental cards showing stages, films and cassettes could assist.

Essentially, the same applies in drill sessions which can be extremely time consuming. Remedial work is often needed and needs to be early diagnosed. Such learning procedures are not inimical to the aims and objectives of such lessons, the development of group and individual discipline as well as co-ordination and skills development. A change in basic attitude, however, may be necessary.

McGregor’s (1960) X and Y theory of human motivation may help to understand the assumptions sometimes implicit in instructional procedures. The X theory suggests people need to be motivated externally: to be supervised, controlled, manipulated and dominated. The Y theory suggests that people are basically internally motivated and need to be supported to have this motivation elicited. Most certainly, people can be made to do things following a basic X theory approach, but it may not be as productive as if Y theory strategies are adopted. Laird & Thomas (1978) argue, for example, that the NSW Department of Education, because of hierarchical and inflexible structure of supervision, reflects X theory assumptions of motivation, which in effect are, in their manifestations, counter-productive to internal motivation, essential in learning. Likewise, it could be argued for the Army, which by definition must have an absolute authority structure of discipline whereby the individual is subjugated to the group. However, such a necessity should not be confused with procedures essential in a learning situation in which Y theory strategies may be more appropriate and where internal motivation is desirable.

The basic aim of this article is to recommend that recruits have certain instructional needs of among others, a competency model; to have their own competencies used as a basis for further competencies; to have their curiosity stimulated; and to have a learning situation of reciprocity. It is also argued that the very nature of the Army way of life and hierarchical structure may interfere with good instructional methodology in the learning situation in instructional periods. It is argued that the learning or instructional needs of the recruit should be considered and introduced in instructional methodology and that such instructional needs outlined in this article are in no way inimical to the overall aims and objectives of the Army.

NOTES
An Alternative Financial Strategy for the Acquisition of Defence Capital Equipment

By SQUADRON LEADER R. P. Hayes, RAAF

INTRODUCTION
Economics and the National Interest
Since World War II, there are signs that the Australian electorate's support of defence outlays is declining. Like most other industrialised countries this decade, Australia is suffering from an economic malaise concurrently with mounting pressures for socio-economic reforms. These conditions have stimulated the public's interest in Government revenue and expenditure decisions to an unprecedented level. The national defence effort is expensive and it accounts for a substantial proportion of the Government's annual expenditure. The current keen public interest in the Government's defence outlays reflects the growing public concern of the 'economic burden' of defence. Undoubtedly, the Government's statement in August 1974 'that no significant requirement is likely to arise for the operational commitment of our forces' added impetus to the concern. The two most costly components of defence are manpower and new equipment. Consequently, public interest is more concentrated on these two areas, particularly decisions relating to new capital equipment.

The existing economic conditions are tied closely to the national interest as an element of national power. The declining support for defence and social aspirations spurred by the economic malaise herald changes influencing the national interest. The principal domestic economic issues which are pressuring such changes are:

a. inflation,
b. high unemployment, and
c. limited revenue.

Each of these issues is debilitating and weakens economic strength and thus national power. The restoration of a sound economy is essential to the national interest and is the stated objective of the Government.

Resource Limitations
Maintenance of the national interest therefore requires strict Government management reflected ultimately as 'continued fiscal, monetary and wage restraint and an appropriate external policy'. Thus the Australian Defence Force is beset with continuing expenditure restraint and growing competition for resources, and these conditions are most likely to become a permanent feature. The growing competition for resources stems...
from demands for socio-economic reforms on one hand, especially welfare, health and education, and the need for capital investment and production stimuli on the other.

Despite recent relative freedom from military involvement and the absence of threat, Australia carries a heavy defence burden in relation to other nations of similar development. This burden derives from her contrasting large territorial commitment and low population density. The size and growth of the population is a key factor in the country’s future economic and military well-being. Justification of defence needs requires consideration of this issue also.

**General Approach**

The approach of this article will be to examine those issues in Australia and on the world scene which point to a need for an alternative method of financing capital equipment for the defence forces. Once this has been accomplished the practicalities of leasing as an alternative approach will be examined.

**AIM**

The aim of this article is to demonstrate that Australia’s future acquisitions of defence capital equipment by lease agreement is essential and practicable.

**ECONOMIC PROBLEMS**

**Population Trends** — According to the first Borrie Report, the growth rate of Australia’s population will decline over the next 20 years or so. This would mean a population between 6 and 8 million fewer than previously planned. This trend has enormous significance because most current public and private enterprise planning is based on the expectation that 1960s (growth) rates would continue this century. However, Jones argues that reduced population growth would make for more rapid (economic) development. Provided inflation and unemployment are brought under control, prospects for continued economic growth would seem favourable. Regardless, the problem of imbalance between small population and large territorial commitments will continue into the 21st century. Furthermore, the high taxation needed to finance public sector development and growth will probably be sustained in the foreseeable future.

**Government Funding**

**Outlays and Borrowings** — Since 1973 there has been a steady increase in public sector outlays which trail comparable OECD countries such as the UK, France, West Germany and the USA. However, paralleling the increase in Australian Government outlays there has been a ‘tremendous increase in overseas borrowing’ and domestic borrowings. This trend suggests that increases in Government outlays are being met by borrowings.

**Outlays and Taxation** — The $21.67 billion outlays in 1974-75 were financed by $17.719 billion in taxation and the balance of nearly $4 billion in borrowing. Defence expenditure is the fourth largest of these outlays (currently at 6.6 per cent). In the five years 1972-73 and 1976-77 $836.6 million was spent on capital equipment, or 10.3 per cent of the total outlay on Defence. The Prime Minister stated in his Liberal Party Policy Speech of 27 November 1975 that ‘... our freedom, our prosperity, the self-respect of many Australians has been eroded — eroded by the highest taxes in our history ... ’ In his 1977-78 Budget speech, the Treasurer emphasised the burden of taxation and the Government’s determination to reduce public sector outlays. Further increases in taxation therefore appear unlikely. Thus, increases in defence expenditure will become even more sensitive and will be a major public issue in the longer term.

**The Cost of Technological Change**

The impact of technological change has fallen heavily in the area of defence hardware. This is because ‘... a considerable amount of technological sophistication is unavoidable in the solutions to the problems of modern day limited war’. Accompanying the changing technology have been rapid obsolescence and higher costs. The rate of change in some areas has been such that many sophisticated weapon systems are obsolescent before they can be made operationally effective. Technology has not only been the driving force behind new weapons acquisition, but has also escalated costs. At a presentation at the Strategic and Defence Studies centre on 28 October 1976, Messrs Dudzinsky and Digby stated the ‘... many new and improved conventional weapons systems represent quantum jumps in
cost'. From an American viewpoint, Augustine has written that 'the unit cost of major items of military hardware has been increasing at a significantly faster pace than the DOD Budget ... or the GNP ... (if trends continue) we will reach a point in the year 2036 where the Defence Department will literally be able to afford only one aircraft'. The implications of this trend for Australia are most serious when considered in relation to the future constraints on defence expenditure.

Technological change has also produced implications of both a strategic and tactical nature. Strategically, the possession of current technology weapons provides a deterrent. Tactically, current technology weapons are essential for battle-field survival. New conventional weapons form a spectrum with improved replacements for ageing weapons at one end and entirely new weapons (capabilities) at the other. There is a trend of replacement weapons becoming bigger, more sophisticated, and more powerful without necessarily increasing military effectiveness. However, recent technical developments and a variety of developments in entirely new weapons suggests that these past trends may be in the process of reversal. Thus premature commitment to a conventional weapon system of a given military effectiveness — at prohibitive cost — could prove worthless in a short space of time.

**Force Maintenance Costs**

Expenditure on capital equipment is in competition with the cost of other defence functions. Concerning high cost equipment, Deitchman warns that ' . . . the relatively few multi-million dollar systems that absorb the greatest expenditure of resources are the ones which must be watched most carefully in the planning and management of the defence effort'. Recently, the Deputy Defence Secretary announced plans to increase the capital equipment expenditure from the 1974-75 low of 6 per cent to about 20 per cent in 1980-81. However, the average annual cost per person in the Armed Forces has also been increasing. The chart depicts a trend of a decline in the relative share of manpower costs. This trend suggests that unless an increase in overall defence outlays is forthcoming, funds for increased capital outlays will be offset by reduced manpower costs.

Capital equipment replacement cycles range from 15 years for aircraft to 25 to 30 years for ships, whilst the basic costs for aircraft range from $1.5 million to $10 million, and for ships $20 million to $1.5 billion. The anticipated life expiry for the current inventory of capital equipment will cause substantial fluctuations in capital outlays. Because ' . . . procurement investment is naturally subject to peak years and valley years; public and political opinion tend to regard the budgets of valley years as proof that defence can do with less funds and the peak years as proof the military always exaggerate' Each replacement decision must therefore become more difficult in the face of increasing criticism.

**Cost Effective Studies**

Continuing evidence of the economic malaise suggest that the need for austerity in financial management will continue long into the future. There can be no denying the importance of cost-effectiveness in the Government’s expenditure decisions in these times, or at any other. The normal approach to cost-effective studies in defence has been to compare the purchase costs of a variety of alternatives which meet stated objectives. There are many commercial examples however, where purchase is not a cost effective acquisition strategy. The Defence Force structure and capabilities and the types and qualities of capital equipment provided are resolved broadly through cost effective analysis techniques. Studies of force capabilities and the types of equipments required in the light of the present and future strategic environments is an ongoing process. However, little consideration has been given to alternative capital equipment acquisition strategies.

Future capital equipment needs can only be met through increased defence outlays or a reduction in manpower costs. Manpower cannot be reduced without decreasing defence combat power unless weapon lethality and firepower are increased. This would aggravate the technology problems discussed previously. On the other hand increased Government expenditure is doubtful, therefore, acquisition of modern technology capital equipment without incurring an increase in defence outlays, is essential to preserve an effective defence capability.
GOVERNMENT POLICY AND FORCE CAPABILITIES

This segment of the article examines the relationship of Government defence policy to the formulation of force structure and capabilities. The effects of changes in Government policy deserve special attention because of the influence such changes have on the acquisition and use of different equipments.

Effects of Policy Changes

The formulation of defence policy is the responsibility of the Government. A change in Government can lead to substantial changes in policy as evidenced in the 1975 Defence Report statement that '. . . equipment acquisition and training are being progressively re-oriented from the earlier strategy of forward defence to accord with the Government’s policy . . . of continental defence'. Policy changes of this and even lesser magnitude result in considerable changes of emphasis in force capabilities and equipment needs. Policy changes may even occur without a change of Government through the ongoing studies and analysis of the strategic forecast and defence objectives. Regardless of the source of policy changes, there is a high risk of equipment redundancy. When redundancy occurs, there is a wastage of capital. Fortunately, such waste was avoided when, in 1972, the new Government cancelled the Navy’s guided missile destroyers before delivery was made and deferred construction of a new fleet replenishment ship. Conversely, the fleet transport, HMAS Sydney, was paid off ahead of time, and a Mirage fighter squadron was phased out.

Redundant Capabilities and Capital Equipment

In the early 1960s the Government of the day moved to acquire the F111C bomber for the RAAF to counter Indonesia’s acquisition of Badgers. Subsequent cost escalations and uniqueness and lengthy delay before the aircraft became operational, threatened early obsolescence before delivery. After delivery in 1973-74 — eleven years after they were ordered — a change occurred in the basic strategy; from forward to continental defence. This change was announced in the 1975 Defence White Paper. The disappearance of the Indonesian threat well before the aircraft were delivered, coupled with the change in basic strategy raise grave doubts about the relevance of the F111C capability today. The cost effectiveness of the F111C in its current role is questionable because the basic role parameters have changed since the decision was first made to purchase. On 27 October 1975 the Defence Minister stated '. . . we will also have to restructure our forces to meet the requirements of Continental Defence', thus emphasising the relationship between policy and capabilities. Addressing the need for a Mirage fighter replacement, the Minister went on to say '. . . what has yet to be assessed is how the requirements of Continental Defence will influence the value we give to the varying criteria on which selection will be made'.

These examples demonstrate the risks of capital equipment becoming redundant. Such redundancy will continue to occur. The extent of the wastage is a factor of the initial cost, the remaining life of equipment and the cost effectiveness in alternative roles. When costly equipment is purchased to meet a stated capability which subsequently becomes redundant, much effort is spent deriving alternative applications. For example, much work has been done on developing tactics and training for use of the F111C in maritime strike and surveillance. Rarely, as in this case, are such alternative applications cost effective because of the existence of other less expensive purpose designed equipment.

Capital Equipment Requirements

On 9 April 1974, the Defence Minister made the following statement in the Parliament — '. . . The determination of a proper equipment programme, with items that satisfy the strategic needs of the present and form a basis for projected future needs is a complex matter. We need to identify the force capabilities relevant to Australia’s future strategic circumstances; to conduct analytical studies of the kinds of weapons and equipments which would best provide those capabilities; and to put these into a total equipment programme which takes account of the long lead times and the long life times of major equipments and brings forward projects for decision at the right time'.

Also, the Deputy Secretary wrote in May 1977 that procedures of 'deliberate con-
siderable complexity’ have been developed in the recent past so that full value is obtained for the defence dollar.\textsuperscript{34} The Five Year Defence Programme (FYDP) is a summary of development needs of particular force capabilities — for the next five years in specific terms — and more generally for 3 years beyond that.

Despite the complex processes and commendable intentions, the durability of capabilities in their originally perceived form and the effectiveness of equipments procured to meet such capabilities is a matter of chance. This is inevitable with the long procurement lead time and life time of equipment compared with the shorter 5-8 year period of forward visibility. The solution to this dilemma requires the two time frames to be aligned. Either the period a capability is required is aligned with the life of the equipment and reviewed on this basis or equipment life is aligned with the more variable interval of capability needs. The first alternative is impractical because of the basis on which capabilities are derived. Conversely, provided equipment is acquired in such a manner to permit the life to be tailored to the period of capability, once again redundancy could be avoided and the proportionate wastage of capital avoided. The key factor of this latter alternative is the meaning of ‘equipment life’.

**Equipment Life**

Conventional meaning and usage of the term ‘equipment life’ are explicit. In the Australian Forces context it means the operational life of the equipment. This normally extends from the date of introduction of the equipment and terminates when the equipment is withdrawn from service. In every case, new equipment is procured by ‘outright purchase’. In every case the most costly squares and supporting GSE are included with the initial equipment purchase in quantities to last the life of the equipment. Only the inexpensive consumables are purchased at regular intervals throughout the equipment life.

Procurement of replacement equipment normally occurs at the end of life although earlier replacement may sometimes occur. However, RAAF aircraft tend to be introduced much later and remain in front line service for longer than in other advanced countries.\textsuperscript{35} The Australian sub-sonic Sabre is a good illustration of the general pattern. The Sabre design first flew in 1948 but the first Australian orders were not placed until 1951. Five years later, in 1956, the first deliveries entered service. The last deliveries were made in 1961 and the aircraft remained in front line service until 1969.\textsuperscript{36} A series of later generation supersonic aircraft was introduced to the USAF as early as 1958. It could be argued that this pattern of delayed introduction and withdrawal raises grave doubts for Australia’s thoughtfulness of the issues surrounding the possession of current technology equipment discussed earlier. On the other hand, the more likely explanation is one of prohibitive costs.

The discussion to this point has demonstrated that there is a need for a new approach to capital equipment acquisition. The remainder of the article is directed at arguing the practicalities of leasing as an alternative acquisition strategy.

**THE USED ARMS MARKET**

The practicalities of many commercial leases hinges on the existence of a sound market for used equipment. It is necessary therefore to examine briefly the nature and extent of the used arms market before proceeding with an examination of leasing.

**Principal Arms Sources**

The world arms trade was estimated in 1975-76 to have reached about SUS10 billion a year.\textsuperscript{37} Seventy-five per cent of this figure is spent collectively by the US, USSR, PRC, UK and the Federal Republic of Germany.\textsuperscript{38} In addition to the ‘principal’ (new) arms suppliers, there is a host of secondary and private arms suppliers. Private suppliers generally operate as representatives of Government through official permission to make transactions previously approved by Governments. The private suppliers or dealers deal primarily in second-hand equipment and can supply everything from pistols to jet aircraft. Such a dealer is the INTERARM-CO INC which grosses nearly SUS100 million in arms sales per year.\textsuperscript{39}

**Conventional Arms Deals**

Though arms are becoming obsolescent more quickly, their life is not shortening.\textsuperscript{40} For example, 20 years after the F86 Sabre was first produced in the US, it was being purchased as Luftwaffe surplus by Iran.\textsuperscript{41} Stanley and Pear-
on point out that the sale of surplus and obsolete arms is a most financially attractive proposition. As an illustration, they compare the $2,000 scrap value with the $32,000 resale value of the M47 Patton medium tank. Furthermore, commentators upon the arms trade are united in the belief that the world is increasingly becoming a buyers market. That is, unless a country is seeking very expensive and complex prestige items.

An illustration of the buoyant market for second-hand capital equipment is the US export sales of 92 major-type combat vessels between 1954 and February 1968. New generations of weapons produce vast quantities of secondhand stocks which are sold to finance the new and ever more costly items.

In recent years, the international arms trade has taken on increasing military, political and economic importance. There has been a rapid expansion of arms transfers to the less developed world and a tendency towards conventional arms proliferation. During most of the post-war era arms sales to developing (Third World) countries generally consisted of used and relatively simple weapons. Despite international attempts at control or limitation of the arms trade, the prospects are very poor. The prospects of a continuing and substantial cutlet for used conventional weapon systems, particularly capital equipment, appear favourable.

**AVAILABILITY AND SOURCES OF CREDIT**

The matter of credit sources and availability is also relevant to lease financing.

**Credit Availability**

As at 30 June 1978, Australia had borrowed $26,993 million; $13,992 million for Commonwealth Government purposes and the remainder for State Government purposes. Of the $13,992 million raised by the Commonwealth Government, $3,333 million was raised overseas with the remainder being raised in Australia. The average interest rate against these loans was 7.51 per cent, varying from a maximum of 8.15 per cent on US loans to 5.75 per cent for loan from Canada. Tables 17 and 18 of Budget Paper No. 6 — Government Securities on Issue at 30 June 1978, are attached at Annex B. These tables show the extent of loans from the Export-Import Bank (of a number of lending institutions) for aircraft and defence purchases (Table 17) and the sources of funds for aircraft loans for the period 1963 to 1978 inclusive. Of the $249 million loan for aircraft in 1978, only $60 million was borrowed from the Export-Import Bank.

The extent of these loans portray Australia's high credit rating among international financial institutions and the extent of available international credit. Also, the statement was made in the Australian Parliament 'that Australia commands a three star rating in the money markets overseas'. Most other countries today also enjoy favourable conditions for international borrowing. 'Led by the major money centre institutions, more and more banks view international lending as an independent profit opportunity or envisage themselves as truly international institutions exploiting market opportunities wherever they appear'. Furthermore, loans to shaky, less developed countries are snowballing and 'business development teams from literally thousands of offices owned by hundreds of banks are seeking lending opportunities'. But the lenders are seeking ways and means of reducing their risks and loss ratios.

Leasing offers such lending institutions diversification, and a means of financing large borrowings at debt service levels manageable to prospective borrowers. According to Stanley and Pearston, 'the largest arms purchases today are made with borrowed money'. Moreover, the credit terms alone are sufficiently important for them to determine a procurement decision from a choice of comparable alternative weapons.

The Governments of the US, USSR and France are the only three which provide credit to bolster the efforts on their arms manufacturers. Other countries either avoid this practice on principle or because of the ample sources of private credit available. There are also government institutions or departments that provide credit guarantees for military exports in Belgium, UK, France, Germany, the Netherlands, Switzerland and Sweden. The Soviet Union sells arms on credit at 2 or 2½ per cent interest repayable over 10-12 years. The French Treasury provides credit finance for negotiable interest rates and periods normally up to 7 years. In the US, credit for arms sales is available from the Pentagon and the Export-
Import Bank at current market interest rates for terms of 5-7 years in the case of the Export-Import Bank and 10 years for the Pentagon.

Balance of Payments
A nation's trade balance is generally very small in relation to the total volume of goods exchanged. The balance can therefore be influenced by relatively small shifts in any of the items making up that balance. Arms sales can enable a supplier country to command a disproportionate economic influence. Furthermore, the export of arms is unlikely to be critical to the balance of payments of any exporting country either now or in the future. However, the converse could apply to importing countries, owing to the irregular nature of arms imports.

In 1975-76 Australia had a trade deficit with the US, UK and a number of European countries, traditional arms suppliers to Australia for many years. It can be argued that the cause of this unfavourable trade balance is due to the import of costly defence hardware. As the cost of weapon systems increases, this trade imbalance is likely to deteriorate — unless an alternative acquisition strategy is adopted.

LEASING
Military Precedents of Leasing
Definition — The Australian Society of Accountants defines a lease as ‘an agreement between an owner of property (the lessor) and a user of the property (the lessee) whereby the lessee compensates the lessor for permitting the lessee to retain possession and use of the property’.  

Early Uses — Leasing has been in use for over 4000 years. The Babylonians leased ships in 2000 BC, although the modern form of leasing was originated about 100 years ago by two American telephone companies. The telephone companies decided to lease their equipment rather than sell it. In this form, leasing became a sales aid to equipment manufacturers, which continued until the early 1960s.

Latter Cases — Leasing has grown to a well established form of financing on a world scale. ‘Since the early 1960s merchant banks and finance houses entered the field and marketed equipment leasing as an additional financial service’. In Australia, there has been a rapid growth in leasing since the late 1950s. The balances outstanding under lease agreements have increased from $70 million in 1965 to $1430 million in 1975, reflecting an annual growth rate of 23 per cent. In addition to this general world trend, two specific military precedents are of particular interest, the US ‘Lend-Lease’ programme, and the more recent lease of 24 F4 Phantoms from the US Government for the RAAF. These two illustrations are of interest because they demonstrate the advantages of leasing military hardware.

The US ‘Lend-Lease’ Programme
On 11 March 1941 a Bill (HR1776) embodying the idea of ‘lend-lease’ became law in the United States. This bill was in response to British requests for military supplies which could not be paid for at the time. The nature and purpose of the ‘lend-lease’ programme is aptly outlined by the figure of speech much quoted in the United States at the time. ‘Lend-Lease’ was compared to ‘the loan of a fire hose to a neighbour whose house was dangerously ablaze; when the neighbour had extinguished the blaze, he would, of course, have to return the borrowed hose or offer some fair equivalent’. Over the whole period of ‘lend-lease’ (March 1941 to August 1945), the cost of assets provided under the programme amounted to $US27,023 million. Of this figure, $US15,930 million was for military hardware and stores (excluding fuel) and the balance for petroleum and other consumables and services. The British had made (lease) payments (expressed as reciprocal aid in the agreement) totalling $US5,667 million, leaving a balance in favour of the US of about $US21 million. The final settlement required Britain to pay $US650 million only, being the sum for equipment retained at the end of the war. Surviving equipment not retained was handed back to the US Government. However, there was no obligation for equipment destroyed or consumed during the course of the war. The ‘lend-lease’ programme enabled Britain to acquire the vast military (and industrial) materials essential for the successful prosecution of the war in Europe, at a time when Britain could neither manufacture nor purchase her needs. The lease was primarily conceived to overcome Britain’s inability to pay for her needs. British technicians and the supporting infrastructure managed to cope with the arrangements and foreign technology with no apparent adverse effects.
The Australian Lease of 24 Phantom Aircraft

A more contemporary and equally successful demonstration of the leasing concept is the short term (2 years) lease of 24 McDonnell F4 Phantom aircraft by Australia from the US Government in the early 1970s. The RAAF required an interim strike force between the withdrawal of the Canberra from front line service and the delayed introduction of the F111C. After the two years had elapsed, the aircraft would have been surplus to RAAF needs and therefore redundant. The US Government offered the 24 Phantom aircraft on a two year lease for a total of A$23.3 million. Of this figure, only A$12.8 million were incurred by leasing. The remainder of the cost was attributed to such items as aircrew training, spares, and a host of other incidental and administrative expenses, all of which would also have been incurred if the aircraft had been purchased. On the basis of published pricing data, purchase of the aircraft would have cost the Australian Government about $A71 million less any proceeds from resale. The advantage of leasing the aircraft was a saving of $A58 million by the Australian Government.

It may be argued that this saving ignores the proceeds from resale if the aircraft were purchased. Resale to any other country other than the manufacturer would be most unlikely because of the political ramifications stemming from the UN Resolution of 16 December 1969 on Disarmament. Australia endorsed this resolution. Also constraining 'open market' resales is the influence of the United States. For example, the US Government includes a clause in all Foreign Military Sales Agreements prohibiting disposal without the prior approval of the US Government as part of the US Arms Export Control Act of June 1976. In his address to the United Nations General Assembly on 4 October 1977 on Arms Control and Disarmament President Carter stated:

'... The matter of conventional arms control is ... a ... matter of the ... immediate present. For its part, the US has now begun to constrain its arms export ... we hope to ... cut back on the flow of arms and to reduce the rate at which weapons ... spread around the world ... we are committed to stop the spiral of increasing sales ... we must share these obligations for our mutual survival and prosperity ...'

The F4 lease programme permitted the acquisition of a current technology strike force to fill a short term need at far less than the purchase costs.

Use of Leased Defence Equipment

Some may argue that a lessor could restrict the use of defence equipment obtained under lease. Such restrictions may arise through an alignment of the lessor (or other party to the lease) with an adversary of the lessee. However, constraints such as this may be experienced even if the equipment is purchased. The French threatened to cut off spares support for the Mirage if those aircraft were used in operations in Vietnam. A similar problem arose with the use of the Army's Pilatus Porter. The potential for constraints being imposed on the use of leased capital defence equipment is no greater than if the equipment is purchased.

Types of Leases

All leasing contracts can be divided into two broad categories, financial and operating leases, which are defined as follows:

(a) Financial Lease. A financial lease is defined as a contract under which the lessee agrees to make a series of payments to the lessor which, in total, exceed the purchase price of the asset acquired.

(b) Operating Lease. An operating lease is defined as all other leasing contracts, and typically are cancellable by the lessee upon giving due notice of cancellation to the lessor.

This important distinction permits leasing plans to be evaluated and compared with other methods of acquisition and thus the most desirable alternative in any specific situation determined. Operating leases can be evaluated by using well developed techniques of capital expenditure analysis. Financial leases require a radically different analytical procedure which distinguishes the financial decision (lease or borrow) from an investment decision (lease or buy).

Vancil claims that 'in almost every decision involving a choice between buying or leasing a piece of equipment, a prospective lessee can readily observe that the sum total of all his payments will probably be greater than the
purchase price less the salvage value of the equipment acquired. Nevertheless, many lessees find that leasing is more attractive than purchasing'. Vancil goes on to claim that a lessor performs functions which make leasing more attractive than buying and which can be grouped into three broad categories as follows:

(a) ‘Allowing the lessee to pay only part of the full purchase price at the time he begins using the equipment — in effect granting credit’.
(b) ‘Shouldering part or all of the risk that the equipment will soon become obsolete’.
(c) ‘Packaging’ a series of legal, administrative, tax and other expenses and adding them to the price of the lease.'

The Income Tax deductions which are implicitly packaged in the terms of a leasing contract are one of the frequently claimed advantages for equipment leasing available to lessees in the private sector. This advantage would not be applicable to Government lessees. Since the performance of these functions by the lessor usually entails a cost for the lessee, it is important to recognise that the lessee’s direct cost of performing those same functions would be when computing the cost of acquisition by outright purchase.

**Granting Credit** — The most distinguishing characteristic of a leasing plan is that it permits the lessee to avoid paying the full purchase price of a piece of equipment on the date that it is acquired. In order to compare acquisition alternatives, the lessee should compare the cost of a leasing plan against the cost of raising the same amount of capital through debt financing at the lowest available rate.

**Obsolescence Insurance** — The technological life of equipment is one of the most important estimates made by a prospective purchaser of that equipment, particularly in industries which experience a rapid rate of technological change. Wrong decisions in this area can be very expensive, and can be made either by:

(a) failure to acquire a piece of equipment soon enough in the hope that a more advanced model will come out within a short period of time; or
(b) acquiring a piece of equipment too soon, only to find that it is shortly rendered obsolete.

The high probability of making a wrong decision encourages a preference not to purchase such equipment outright but to lease it from another party which will absorb the risk of early obsolescence. The extent to which the risk of obsolescence is absorbed by a lessor is determined by the terms of the lease contract.

**Lease Evaluation**

The choice between buying a piece of equipment and acquiring it under an operating lease is essentially an investment decision, which can be resolved quantitatively using familiar techniques. Conversely, financial leases require a special analytical methodology. From a business viewpoint, lease evaluation focuses on comparisons of investment value, costs and revenue in monetary terms. However, in a defence context, ‘costs’ and ‘revenues’ are more meaningfully expressed as deficiencies or gains respectively in combat power or related values of defence capability.

**Operating Lease Decisions** A decision to acquire a new piece of equipment which can be procured either by purchase or under an operating lease hinges on the best choice of the following three courses of action:

(a) Decide against the acquisition and continue the status quo.
(b) Purchase the equipment.
(c) Enter into an operating lease for the equipment.

Two steps are required to identify the best course. From a business viewpoint the first step involves a comparison of ‘the relevant costs and revenues’ in monetary terms of continuing the status quo with what would be obtained if the equipment was acquired under an operating lease. The alternative with the lower ‘costs’ or the higher ‘revenue’ is the better. In combat power terms, the decision must be to acquire the new equipment. The second step then involves the comparison of a stream of future annual leasing payments (at present value) with the cost of purchasing (a routine ‘investment’ decision).

Vancil broadly concluded that an operating lease will be the best choice when:

(a) ‘the lessee’s “opportunity rate” is higher than the discount rate used by the lessor in establishing the amount of future lease payments’, or
(b) ‘the lessor estimates that the economic life of the equipment is longer, or the residual value is greater than the estimates made by the lessee’.
From a Government monetary viewpoint, the 'opportunity rate' is synonymous with more profitable alternative uses and with the political gains of reducing defence outlays in favour of other uses.75

Financial Lease Decisions — 'A financial lease is one way of financing the acquisition of an asset without immediately paying cash for it'.76 After the decision has been taken to purchase a piece of equipment, management must consider the alternative methods of financing the acquisition because of the significant cost differences that may exist. The alternatives available are:
(a) purchase for cash;
(b) purchase on an instalment plan or some other method involving debt financing, or,
(c) a financial lease.

However, financial leases are generally negotiated for periods not exceeding five years due to the short term nature of finance company borrowings. As such they are not a satisfactory means of financing the acquisition of very expensive assets with lives of up to 25 years.77 A new form of leasing, termed leveraged leasing, has been developed in the US over the past decade. With a leveraged lease, large sums ($5 to $50 million in the private sector) can be financed in a single transaction on a long term basis of five to twenty-five years.78

Leveraged lease financing permits an owner/lessor to acquire and enjoy full benefits of equipment ownership (in particular, taxation advantages of depreciation, investment allowance, etc.) for the payment of a portion of the asset cost, thus lowering the cost of financing, which can be passed on to a user. There are four principle parties to a leverage lease; the broker, the lender, the lessor and the lessee. The functions of each of these parties are taken from Business Finance.

(a) The Broker. 'A leverage lease is organised and managed by a broker. Besides a lessee, the broker must also find two other parties to participate in the financing of the asset. A lender prepared to lend long term debt funds to a lessor which then adds sufficient of its own funds to the borrowed funds in order to purchase the required asset.' In the case of a typical defence capital acquisition, the equipment manufacturer is envisaged with this role.
(b) The Lender. 'This role is performed by one, or more, institutional lenders (e.g. international banks) which lend from between 60 to 85 per cent of the cost of the asset to the lessor'.
(c) The Lessor. 'The lessor comprises an institution with sufficient profits to take the full advantage of the depreciation charges and investment allowances allowable on the asset. The lessor provides the additional funds not provided by the lender and purchases the asset.' An international arms dealer is envisaged in this role in the case of defence equipment.

(d) The Lessee. The lessee enters into a normal lease agreement, agreeing to lease the asset for a specified period of time and to make specified lease payments.

The attractions for parties to the lease are as follows:
(a). The lessor can obtain a high rate of return with very little risk, and because of the tax savings (applicable to the country where the transaction occurs) the lessor can recover its contribution within ten years.
(b). The lessee can lease very expensive assets for a long period of time at a low interest cost.
(c). The lender can obtain a return either equal to or above that available from alternative forms of lending with very little risk of default, if the lessee is a good credit risk.

These attractions are applicable in Australia's case and are central to the argument that leasing is a practicable alternative for the acquisition of defence equipment.

CONCLUSIONS
An Alternative to Purchase is Essential

Australia is faced with a declining population growth which offers the potential for more rapid economic development, provided inflation and high unemployment are brought under control. To do so will require sustained and harsh management on the Government's part. Furthermore, the prospect of increased defence force outlays to properly cope with continental defence needs is gloomy. The burden to taxation is already too high. In a climate of imperceivable threat, the burden of defence expenditure is in conflict with the Government's austerity measures.

Rapid technological change has brought rapid obsolescence in defence hardware accompanied by soaring costs. Replacement costs and cycles are becoming more difficult to
meet. The trend suggests this situation must deteriorate rather than improve. Current technology weapons provide a deterrent value and a measure of battlefield survival, both of particular relevance to Australia's defence strategy. The trend of weapon replacement getting bigger, more sophisticated and more powerful may soon be reversed as a result of recent technical developments. There is therefore a risk of prohibitive wasteful outlays on capital equipment replacements through early obsolescence and the emergence of less costly alternatives.

Capital equipment expenditure competes with other components of the defence vote. Promised increases in capital expenditure suggest a compensating reduction in defence manpower, a dangerous course for the already thin continental defence. Capital equipment procurement costs and replacement programmes create irregularity in defence outlays which lead to public and political criticisms. Larger outlay years have to be defended against the lower outlay years, an exercise of increasing difficulty.

**Government Policy and Force Capabilities**

Substantial changes in strategic policy can occur as a result of changes in Government or through ongoing studies and analysis of the strategic forecast and defence objectives. Changes may be sudden and often affect capital equipment. There is a high risk of redundancy in such equipment and therefore a risk of high wastage of the defence outlay. Furthermore, the time frames of perceived capability and the life and procurement times of equipment acquired to fulfil a capability are consistent. Capability needs can change rapidly. Accommodating rapid changes in capital equipment on a purchase basis would be prohibitive now and more so in the future. An alternative financial strategy is essential.

**Leasing — A Practicable Alternative**

The $10 billion annual arms trade is effected through Government and private arms suppliers and dealers. Though arms are becoming obsolescent more quickly, their life is not shortening. There is a large market for obsolescent arms providing attractive financial returns. Obsolescent but useable equipment therefore has good resale value on the used arms market. Furthermore, the prospect of a continuing and substantial outlet for used conventional weapons is favourable.

Australia has large international loans outstanding at interest rates averaging 7.51 per cent. All of the Government outlays are indirectly financed to some extent by these loans (although most are negotiated for specific purposes) on the grounds that each outlay is drawn from 'consolidated funds'. It can be argued that outlays on defence capital equipment are therefore financed indirectly by these loans. Some loans are in fact raised specifically for defence capital equipment purposes. If there was no expenditure on defence (capital equipment), the extent of the loans required would be reduced by that amount. Australia has a good international credit rating, and has access to substantial loan funds. International lending institutions are keen to lend and are on the look-out for new business deals. Loans for military equipment are common. The largest purchases today are made with borrowed money. Credit is provided by either Governments, some arms manufacturers or international lending agencies.

Costly arms purchases can affect the trade balance to the disadvantage of arms importers. Australia has particular trade balance problems with the US, UK and a number of other European countries, Australia's principle arms suppliers. As weapon costs increase and the replacement need becomes more frequent, this position is likely to deteriorate.

Leasing has been used since 2000 BC and has now become a well established form of financing. Two notable and particularly advantageous applications were the US 'Lend-Lease programme for Britain's war effort and the lease of 24 F4 Phantoms for the RAAF. The 'lend-lease' programme financed British weapon needs which Britain was unable to buy or manufacture at the time. The F4 lease allowed Australia to acquire aircraft to fill a short term need and which would have been uneconomic to purchase.

The two categories of financial and operating leases require different techniques for economic evaluation. Although in many cases the sum of the lease payments may exceed the purchase price of a piece of equipment, leasing is generally more attractive than purchasing. This is because of:

(a) the credit assistance provided; and
(b) the control of the risk of obsolescence.

Operating leases are particularly advantageous for avoiding the risks of 'early' obsolescence. From a Government’s viewpoint an operating lease is preferable to purchase when money earmarked for defence could be put to more profitable alternative uses. The financial lease, in particular leveraged leasing, permits financing of costly projects on a long term basis. The acquisition by lease financing thus becomes an alternative to negotiation of a loan for an outright purchase.

There is a ready availability of international credit and a proliferation of arms dealers through which costly leases could be financed. There is also a lively and favourable market for used and obsolescent capital equipment. These two conditions indicate that leasing is a practicable alternative to purchase.

NOTES AND ACKNOWLEDGEMENTS

5. B. E. Weathers, Jr, Maj. Air War College Associate Programme, USAF, Maxwell Air Force Base, USA.
7. Ibid.
8. Ibid, Page 1.
30. W. L. Morrison, MP, Ibid.
32. For example, the cost of the equally capable P3C Orion is only $10.5 million (The Military Balance 1977-78, Table 11 — Major Identified Arms Agreements, July 1976-June 1977, Page 96) and has a lower operating cost.
36. Ibid, Pages 2-4.
41. Ibid, Page 52.
46. See Securities on Issue, Australia and Overseas, at 30 June 1978, 1978-79 Budget Paper No. 6, Table 12 and Table 11 Average Rates of Interest Payable at 30 June.
49. Ibid.
51. Ibid.
52. Ibid, Page 112.
54. Australian Society of Accountants, ‘Accounting for Leases and the Associated Problems Relating to
57. Ibid.
63. Ibid.
65. L. A. Frank, 'The Arms Trade in International Relations', Tables 2, Major Weapons Systems Prices, Praeger, New York, 1969 — Based on 1968 price of $US2.5 million per aircraft plus 'other costs' of $10.5 million.
73. J. I. Bogen, Financial Handbook, Ronald Press Co., 3rd Edition, New York, 1948, Page 1181. The present value is defined as that sum of money, which when placed at compound interest for the full number of periods involved (investment opportunity rate) will amount to the given sum. Thus at a rate of say 8% $25 million to be earned a year from now has a present value of $23.2 million, two years from now a present value of $21.4 million, and so on.
78. Ibid.

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BOOKS IN REVIEW

The following books reviewed in this issue are available in various Defence libraries:


Australian Defence Policy for the 1980s

The Conference aims to provide a forum for public debate on key strategic questions before the Australian Government in the 1980s: the conduct of the ANZUS relationship; defence co-operation with South-east Asia and the South-west Pacific nations; the future shaping of the Australian Defence Force: development of the national defence infrastructure; and the role of defence activity in the Australian economy.

The conference will be conducted by the Strategic and Defence Studies Centre, Research School of Pacific Studies, Australian National University, Canberra. (6-9 July 1981).

All enquiries should be addressed to the Conference Secretary, SDSC, RSPacS, ANU, Box 4 GPO, CANBERRA, ACT, 2600 (Telephone 49 2276/49 3690.)
By Colonel M. H. MacKenzie-Orr, OBE, GM

"Who so ever desires constant success must change his conduct with time"  
Machiavelli

Introduction

There has long been a tradition of cooperation between the police and Defence forces to arrange for the safe disposal of munitions of all varieties, and of explosives of military or commercial origin. The services assist the police by providing mobile, fully equipped Explosive Ordnance Disposal (EOD) teams to respond to calls for assistance in Australia, the teams are operated by EOD control centres in each Military District (effectively each State and Territory).

Traditional tasks have included the disposal of war-time "souvenirs", military munitions discovered as a result of building projects, elderly commercial explosives of dubious origin and often as not in dubious condition, and occasional assistance or advice where explosives have been employed by criminals. In recent years the growth of domestic and international terrorism and the use by terrorists of relatively sophisticated techniques and explosive weapons has significantly increased both the degree and level of involvement of the military. The term improvised explosive device (IED) has become all too familiar to law enforcement officers and the ingenuity and complexity of such devices has shown a marked increase over the past decade. Unfortunately knowledge of IEDs and terrorist techniques is becoming increasingly widely known and available to "conventional" criminals.

Terrorism

Terrorists are criminals, and it is the responsibility of the police forces to deter, apprehend and prosecute them. The safe blower utilising explosives is obviously a customer for police forces but what of the terrorist with access to modern military weapons such as:

a. high velocity small arms with a range of armour piercing, exploding, chemical filled etc projectiles and very high rates of fire;

b. specialised projectors for explosive or chemically filled munitions;

c. grenades, that may be hand thrown or projected from adaptors to small arms weapons;

d. anti-personnel and anti-vehicle mines which may be fitted with anti-handling devices;

e. anti-tank rockets which can be operated by one or two people and which have ranges of up to 1000 metres;

f. anti-tank guided or self guiding missiles which can be fired by one person and which are accurate to ranges in excess of three kilometres;

This article is based on observation and experience in Counter Terrorism in Europe. Before joining the Australian Army, the author served as the British Army's Chief Explosive Ordnance Disposal Officer from 1970 to 1974. He has presented papers to the International Conference on Terrorist techniques and methods. The views expressed are those of the author and do not necessarily conform with those of the Department of Defence.
g. small easily portable mortars capable of projecting high explosive or chemically filled bombs up to a range of five kilometres; and

h. an increasing range of ground to air or air to ground missiles with ranges of up to five kilometres which can be launched against aircraft or other targets, and which are in some cases, self guiding after launch.

The growth of terrorism and increased cooperation between terrorist groups has made available to them good intelligence and information on their targets which are often proxies used as hostages to achieve their real aims. They have access to good communications and communications monitoring equipment, a range of surveillance devices and, fairly generous financial resources. In countries where they have a measure of indigenous support they can compensate for deficiencies in their arsenal by manufacturing simple but effective weapons. In addition ingenious and lethal devices can be manufactured from materials available in almost any corner store.

Explosive Devices

The use of explosive devices to kill, to destroy property or the threat of their use to coerce people has long been a technique used by criminals, terrorists, revolutionaries and armies. Now, however, the increasing availability and lethality of explosive weapons, not to mention nuclear, biological and chemical weapons, has made it possible for very small numbers of terrorists to disrupt the lives of large communities, states or even nations. The activities of relatively few activists of the Irish Republican Army (IRA) have tied up enormous government forces for over 10 years, caused considerable disruption of the community in Northern Ireland, and to a lesser extent in Eire and the remainder of the United Kingdom. In Portugal the President of the Republic, heavily guarded, was killed in his armoured car by a large terrorist bomb and throughout the world a number of aircraft have been lost with all passengers and crew as a result of explosive devices planted on board. The need to develop and define counter measures to cope with the terrorist threat is a problem that affects all nations.

Terrorists

Whilst terrorists are criminals and undoubtedly a police responsibility, the problems they present are very different from those posed by conventional criminals. For example:

a. Many terrorist weapons and techniques are unlikely to be familiar to conventional police forces nor are police forces ever likely to be able to devote the resources in manpower and equipment to develop effective counter-measures. In most democracies, the number of police available for crime prevention, law enforcement, apprehension and prosecution of criminals is rarely adequate and a balance is struck between an "acceptable level of law breaking" and the resources devoted to upholding the law. There can be no balance with terrorists; that is there can be no "acceptable level of terrorism".

b. Terrorists do not have simple criminal motives. They are likely to be completely law abiding in every situation save that which concerns them. They are therefore unlikely to be known to informants or to have criminal records.

c. The weapons terrorists use are unlikely to be those used by the respectable criminal. This means that the police will often be outgunned and even unaware of the potential of the weapons used against them.

d. Terrorists will often have been trained by experts and may be backed by a competent organisation. Conventional Police Forces are inadequately trained and equipped to counter this type of threat.

Countering Terrorists

How then are governments to counter terrorism? There are three options they can:

a. give a number of conventional policemen specialist training; and/or

b. set up dedicated anti-terrorist police units, i.e., a para military force; and/or

c. employ the defence forces.

Let us examine each of these options in more detail.

Specially Trained Conventional Policemen

The selection of a number of policemen drawn from the various branches of the force for special explosive disposal duties (Bomb Squads) is a technique favoured by many countries. In large police forces, or those where bombings are
a significant part of criminal activity, these personnel are often exclusively devoted to bomb squad tasks. Such arrangements exist in many of the United States Police Forces, and the Metropolitan Police in UK has a small team of ex-army bomb disposal experts in their technical services division. Where the threat is readily identifiable and the weapons in use are restricted to a limited range with limited effects such squads provide an efficient and speedy service. Should a marked increase in activity occur however they rapidly become over extended and, if an escalation in the complexity and variety of IED or military explosive weapons occurs, they have neither the research facilities nor the depth of experience necessary to minimise the risks when providing counter measures.

Where activity is low, devices relatively simple, and police forces smaller, personnel are selected from existing divisions, given basic training and called together only as specific situations arise. They do not use their special equipment or skills as part of their normal duties and rely on periodic refresher training to keep their expertise viable. Normal promotions, sickness leave, etc. make such squads difficult to administer and the secondary nature of their specialist role tends to hinder the development of a high degree of skill and expertise. Their efficiency and ability to cope with a sharp rise in either the level of activity or the complexity of weaponry will be limited. They will also be unable to devote sufficient time and effort to research and development of equipment and countermeasures. Such squads however probably are all that can be justified in a period of low activity.

Para-Military Forces

The Federal Republic of Germany has a para-military force, called Grenzen Gruppen Nine which is 1000 over strong and equipped with military weapons, armoured cars and enormously expensive training facilities. Its personnel are specially recruited and trained and live in barrack type accommodation when on short notice standby. To all intents and purposes they are a military force with police powers. They are under Federal control and are available to the Lander (States) Police Forces if required. They have not yet been employed operationally within the Federal Republic and such incidents as have occurred have been dealt with by the State Police Counter Terrorist Squads.

Some of the problems in creating and maintaining a force of this nature, in addition to the very high capital and running costs, are briefly:

a. It is difficult to maintain a high degree of efficiency and alertness and morale when operational activities are rare.

b. It is difficult to retain personnel and hence continuity when the opportunities for advancement for such highly trained personnel outside the organisation are numerous and attractive.

c. It is difficult to maintain adequate liaison with all intelligence organisations to keep abreast of changing threats.

d. It is difficult to undertake adequate research and development to cover the spectrum of explosive weapons possibly known to terrorists and to develop proven and reliable counter measures.

Conventional Military Forces

The role of Defence Forces is to defend their nation against aggressors. They may fulfil this role either by deterring any would-be-aggressor, or in the event of open hostilities, by inflicting such damage and casualties that the aggressor sues for peace. To carry out their role the defence forces devote enormous resources to:

a. the study of weapons and countermeasures of all kinds;

b. training in the use of weapons of all kinds;

c. training and exercising in the tactics of defeating well equipped and organised enemy forces of all kinds;

d. weapons research;

e. studying the organisation, administration, and command and control of armed forces of varying sizes in varying situations; and

f. maintaining the morale and efficiency of personnel at times when operations or even the possibility of operations seems remote.

Since World War II Australian Defence Forces have been involved in limited wars, counter-insurgency campaigns and in providing advice and military support to other nations. A considerable amount of expertise has also been accumulated in low-intensity operations. The techniques and methods of the saboteur and guerilla are well understood by sections of the defence forces, and form part of the training of selected units. As many of the techniques and
much of the equipment used by the defence forces is classified in order to maintain the essential element of surprise and to delay the development of counters by the enemy, the decision to employ particular techniques or equipment will necessarily remain a military one.

The difficulties in employing elements of the defence forces to aid the police in dealing with criminal or terrorist acts involving the use of explosives or explosive weapons are numerous, eg:

a. At what stage in counter-criminal/terrorist operations should the assistance of the defence force be sought?

b. Who makes the decision to seek defence force assistance?

c. What are to be the command/control arrangements?

d. What powers, if any, are to be given to individual members of the defence forces deployed in such operations?

e. Is any indemnity to be given to the members of the defence forces, for the possible consequences of their actions?

f. What, if any, joint training and exercising can be carried out between the defence and police forces in anticipation of operational co-operation?

The experience of various European countries has shown that defence force personnel can be employed in criminal/terrorist situations without causing public unease or undermining the authority of the police. Public debate overseas on the need for and the circumstances in which defence forces can provide aid to the civil power has been widespread and the general consensus has been that the most efficient means (if need be the military) should be used to carry out the task.

**Conclusion**

Although Australia has to date been remarkably fortunate insofar as incidents involving terrorists or criminals using terrorist techniques are concerned, it is unlikely that this situation will continue. As has happened overseas the distinction between certain types of criminals and terrorists will become more and more blurred as the former increasingly adopt the technique developed by the latter. This will require a clearer understanding of the complementary roles of the police and military in matters concerned with counter terrorism.

Although the police must have the primary role in dealing with terrorists, the expertise of defence forces may be essential when the weaponry and IEDs used to present problems outside the scope and experience of police forces.

A tradition of military support to the police exists and assistance with training has increased over recent years. The expertise of the defence force makes support to the civil power in counter terrorist situations a logical additional role for defence to undertake. Whilst such a role may impose some additional burden on the defence force it is likely to be considerably less costly in resources and less difficult to implement than the alternative of training police forces to be completely self-sufficient in all aspects of counter terrorism.

"Let such teach others who themselves excel"  
Pope
"Role and the man become identified, and since in working a man fills a role, he becomes of meaning by reason of his work. He identifies himself with work. 'I am a pilot, piloting is me'. Filling a role, he plays a part, therefore he is a part, he 'belongs'. Without this sense of belongingness, he feels insecure.'" T. T. Paterson (1955)

SYNOPSIS

The Officer Work Attitudes Study investigated the relationship between certain attitudes to work and the personal and work situation valubles associated with these attitudes. This article reports some aspects of the study. The attitudes in question were, firstly, a feeling of involvement or identification with the present job (called Task Identification) and, secondly, a feeling of involvement with the under employment area of which that job is a part (called Employment Area Involvement). A survey of Army officers in five employment areas produced data from a sample of 392 on which certain hypotheses were tested. From the analyses, it was concluded that Task Identification is enhanced when an officer (a) is doing work which he finds intrinsically interesting and is using knowledge and skill which he acquired by education, training and career experience, (b) is developing what he sees as important professional attributes, and (c) is able to influence the decisions make in his area of work. Employment Area Involvement is influenced by much the same factors, but, in addition, is positively related to the officer's perception that future work in the same employment area will lead to valued rewards. It was also found that Task Identification is positively related to both self-perceived effort and self-perceived performance, and that it was Employment Area Involvement influence the individual's preferences for further work in his employment area. Some implications for commanders and career managers are discussed.

INTRODUCTION

What do Army officers feel about their work? And why? The Officer Work Attitudes Study, conducted in 1978, aimed to answer these questions, by investigating some of the psychological factors at work which influence work attitudes. Although the primary purpose of the study was to satisfy university academic requirements, the findings, summarised in this report, have practical relevance. The following aspects are covered:

- Theoretical background, in which are introduced the concepts on which the study was based, including the variables and their hypothesised relationships.
- Outline of method and results, which presents, in language which is as non-technical as possible, the method and results of the study. These sections contain some tables and statistics to illustrate the discussion in the text.
- Discussion and conclusions, including an outline of the major implications of the study.

THEORETICAL BACKGROUND

The Importance of Work Involvement

Work involvement can be thought of as a feeling that one takes one's work seriously, has important values and components of one's identity in it, will be affected emotionally and significantly by work experiences, and will be mentally pre-occupied by one's job. (The
essence of work involvement is captured in the epigraph to this article, this being from a block which described a study of morale in the Royal Air Force during World War II.) Work involvement is not the same as work satisfaction, the latter being defined as a person's degree of contentment with rewards which he gains from being in his work role and which is seen as being not as single attitude but many².

The conceptual origins of the study lay in the belief that there is more to personal adjustment to work than mere satisfaction or contentedness. In particular, I had observed, for many years of working with officers, warrant officers and NCOs in many employment areas, that work satisfaction and work involvement do not always go together. For example, it sometimes happens officers are quite contented with their current appointments but, at the same time, not very "involved" in them: they have no strong identification with or commitment to the work role associated with that appointment, and would be just as happy with any one of many others. It is not uncommon, for example, to see this "satisfied-but-not-identified" state among officers in staff jobs which they regard as staging posts sandwiched between regimental or training appointments. Conversely, an "involved-but-not-satisfied" state can also be frequently discerned: in fact, the more a person identifies with his work role, the more likely he is to feel impatient and discontented with any factors of his job which he sees as being obstacles to adequate performance in that role. Perhaps no better example of this exists than among officers in the Army's Field Force: they identify strongly with their roles as regimental officers yet are never hesitant in expressing dissatisfaction with any lack of resources, training time, leadership, etc, which thwarts what they want to do in those roles³.

I theorised, therefore, that work involvement and work satisfaction should be seen as separate indicators of career adjustment and that, of the two, the former is the more relevant to effective performance in a professional organization. That is, I believe that leaders want their subordinates to be as much "involved" with as "satisfied" with their jobs, and that the subordinates probably often want the same thing. Therefore the neglect or under-

emphasis of work involvement in both academic studies and managerial goal setting is undesirable.

The Officer Work Attitudes Study was aimed at investigating both work involvement and work satisfaction and those factors in the military work environment which are associated with them. The report which follows, however, limits itself to the results directly associated with officers' work involvement and those factors in the work situation which are associated with it⁴.

Theoretical Framework of the Study

In the work place, the individual seeks intrinsic rewards (eg. challenge, recognition, self expression, personal development, etc) and extrinsic rewards (eg. friendship, pay, advancement, etc). The extent to which these rewards are gained and to which they influence his attitudes are a function of both the person and the work situation.

Personal characteristics. The person brings to the work place a characteristic self image. His wants (or needs or expectations) determine which features of his work are most important to him, and how much of each it will take to make him "satisfied" or "involved". His "self image" is his perception of himself as he relates to his environment — the kind of person he believes himself to be. The self image is made up of his perceived abilities and strengths, his interests, values and sense of the relative importance of various life roles (such as leader, worker, father, husband) for gaining what he wants from life. This self image (or self concept or identity) influences the attractiveness of different work roles to him, and the potential of each to achieve involvement and satisfaction.

The work situation. In the work place, the individual does a certain kind of work, operates according to a particular managerial plan, deals with certain people, works within a given organizational framework, and so on. All these features — and others not mentioned — define his "work situation".

A person's reaction to his work — as indicated, say, by his work involvement and work satisfaction — is determined by the interaction of his personal characteristics and his work situation. For example, a person whose self image is that of leader, man of
action and patriot has the potential to become strongly involved with officer roles in the Services. Another person, whose self image is based primarily on his life roles as a father and husband, may never approach the same levels of work involvement whatever his occupational history. Both men may, however, for different reasons, achieve equal satisfaction from their work.

The outcomes of the interaction between the individual and the work situation may “feedback” to the original input variables and thereby further influence the total process. For example, if a person finds satisfaction in a particular job, this may cause him to place greater value on that role relative to other work or life roles. The resulting greater salience of this role, in his self image, may lead to his greater involvement in it; and, further, if this greater involvement is noticed by his supervisor, it may be rewarded with promotion or greater autonomy, stimulating more satisfaction and involvement — and so on. The overall process is illustrated in Figure 1.

In the Officer Work Attitudes Study, it was reasoned that an officer’s work involvement — his psychological identification with his work role — would be a function mainly of the extent to which his work role allowed him to express his self image, or to be “himself” at work. For example, if a person saw himself as resourceful, decisive, a leader and a “man of action”, we would expect him to become more “involved” in a role which allowed him to “be” these things than in one where he had to be a follower and make few important decisions. He would simply not identify with this latter role, would not want to “give himself” to it. It follows that certain features in the work place are likely to be important influences on work involvement. One of these is the kind of work done — the task content. Another important factor, perhaps mainly for people who see themselves as leaders or managers, is their degree of influence in the job, or the extent to which they are able to participate in decision making.

Another point of theoretical importance in this study is that involvement with the job can
be different to involvement with the wider employment area of which that job is a part. The study distinguished between these two attitudes, calling the former Task Identification and the latter Employment Area Involvement. The concept of employment area builds on the Regular Officer Development Committee's (1978) proposal that the various specialist officer employment areas in the Army should be called Officer Employment Categories, each being a family of jobs which have in common an overall purpose, a certain kind of work, and a hierarchy of appointments (and thus implied lines of advancement) eg. Regimental Infantry, Field Artillery, Personnel Management. Whilst Task Identification and Employment Area Involvement might generally be closely related, there are plausible circumstances in which they could diverge eg. an officer could be moderately involved in his job because it provided some match to his self image (eg. gave opportunity for leadership and decision making) but have low involvement with the relevant employment area because he was more interested in specialising in others. Therefore, if we are to comprehensively examine officers' involvement in their work, we must look at both attitudes.

THE STUDY
This decision outlines the methodology of the study. First, it describes the variables which were measured, and goes on later to show how they were combined into hypotheses.

Variables
Among the variables measured in the Officer Work Attitudes Study were:

- **Work Involvement**, comprising two separate dimensions:
  - **Task Identification** — a person's sense of involvement in his job: his feeling that the work he does is an important source of identity to him and serves as the source or potential source of satisfying important wants; and
  - **Employment Area Involvement** — a person's sense of involvement in his employment area: his feeling that further participation and achievement in that employment area is important to him in the context of his overall Army career.

- **Opportunity for Self Expression** — a person's belief that his strengths and interests can be expressed and developed in his present job. (This variable is an indication of the degree of congruence between the self image and the work role.)

- **Career Factors** — a person's assessment of the present and likely future state, in his present employment area, of career aspects which are important to him.

- **Participation in Decision Making**: the degree to which a person participates in important decisions which affect what he does in his work and how he does it.

Each of these variables was measured on a scale which comprised at least four questionnaire items. Example items from each scale are shown in Table 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Example of a questionnaire item from the scale used to measure the variable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Identification</td>
<td>&quot;I am very much involved personally in the kind of work I do in my present job.&quot;</td>
</tr>
<tr>
<td>Employment Area Involvement</td>
<td>&quot;If I were to accomplish something or achieve something in my Army career, I would prefer that it be in connection with the kind of work done in my present employment area?&quot;</td>
</tr>
<tr>
<td>Opportunity for Self Expression</td>
<td>&quot;How much opportunity does your present job give you to do the things you are best at?&quot;</td>
</tr>
<tr>
<td>Career Factors</td>
<td>&quot;To what extent do you think that experience in this employment area enhances an officer's long term prospects?&quot;</td>
</tr>
</tbody>
</table>

* Used in a 5-point Likert-type scale (strongly agree, agree, not sure, disagree, strongly disagree).
** Used in a 5-point Likert-type scale, anchored at each end by opposite statements (eg. "A very great deal" — "Very little").

Hypotheses
The expected relationships among these variables can be summarised in the following hypotheses:

I. The greater a person's "Self Image — Work Role" congruence (as indicated by the extent of his Opportunity for Self Expression), the greater his:
   Ia. Task Identification, and
   Ib. Employment Area Involvement

II. The greater a person's Participation in Decision Making, the greater his Task Identification.
III. The greater a person’s Career Factors, the greater his Employment Area Involvement.

The Sample and the Data
Virtually all officers in five employment areas were approached. The final sample was 392 (69% response rate). The five areas were:
- Regimental Infantry — officers in battalions of the Royal Australian Regiment and the SAS Regiment;
- Supply Control/Operations — officers whose work involves the analytical planning and control of supplies, in units such as supply groups and some appointments in supply battalions;
- Warehousing — officers who manage activity associated with the storage and maintenance of supplies;
- Training — officers in Army schools who manage or perform the functions of design, conduct or evaluation of courses; and
- Material Development — officers who identify and specify military material needs or who perform the staff activities required to have specific items evaluated and acquired.

The data were gathered by five questionnaires, which took 60-90 minutes to complete. About half the members of the population were visited in their units and the questionnaires administered personally; the other half were contacted by mail. (Interestingly, there was little difference between the response rates of the two groups.) The data were stored and analysed on the University of New South Wales computer. The response rate was not high, but the distribution of ranks within each OEC sample suggested that there were no serious demographic biases in the data (Jans, 1979a, 1980). The data analysed mainly using multiple regression analysis (Cohen and Cohen, 1975).

RESULTS

Task Identification
The relationships between Task Identification and other variables are shown in Table 2. (Rank and Tenure in the job have been included in the analysis to control whatever influence they might have on the person’s attitudes.)

It can be seen that Task Identification is strongly related to both Opportunity for Self Expression and Participation in Decision Making. That is, an officer is likely to feel strongly involved in his job when he:
- is doing work which allows him to use and develop what he feels are his personal strengths, and which suits his interests; and
- feels that he has some influence on the decisions made in his organization which affect him and has some autonomy in carrying them out.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Multiple Regression Analyses of the Relationship Between Task Identification and Both Opportunity for Self Expression and Participation in Decision Making (Total Sample)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RANK</td>
<td>.02 -</td>
</tr>
<tr>
<td>TENURE</td>
<td>.04</td>
</tr>
<tr>
<td>PDM</td>
<td>-</td>
</tr>
<tr>
<td>OSE</td>
<td>.62</td>
</tr>
</tbody>
</table>

It can be seen that, of the two, the stronger influence is that of Opportunity for Self Expression. This becomes even more evident when we look at the results of the same analyses taking each of the employment area groups separately, in Table 3. These statistics for these smaller samples show that, whilst Opportunity for Self Expression is strongly related to Task Identification in every case, that between Task Identification and Participation in Decision Making is somewhat unstable: in four of the five analyses in Table 3, the beta coefficients of PDM have become insignificant in statistical terms. This is no doubt due to the strong relationship between PDM and Opportunity for Self Expression (their product-moment correlation, r is 0.50, p < .001), an important clue in interpreting the results, which will be discussed later.

These findings support the original concept of job involvement: that it comes about when a person feels that his work matches his self image or professional identity. For an Army officer, it appears that both task content and executive influence (the latter being achieved through participation in decision making) serve to express the self image of both technical and executive competence. The relationships hold even when they are adjusted for the influence of rank and tenure in the job.
Multiple Regression Analyses of the Relationships Between Task Identification and Both Opportunity for Self Expression and Participation in Decision Making: All Five Employment Area Groups Taken Separately

<table>
<thead>
<tr>
<th>RANK</th>
<th>TENURE</th>
<th>OSE</th>
<th>PDM</th>
<th>Material BETA</th>
<th>Training BETA</th>
<th>Infantry BETA</th>
<th>Supply BETA</th>
<th>Warehousing BETA</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2</td>
<td></td>
<td></td>
<td></td>
<td>.38*</td>
<td>.68**</td>
<td>.48**</td>
<td>.38</td>
<td>.58**</td>
</tr>
<tr>
<td>p</td>
<td>.0001</td>
<td>.0001</td>
<td>.0001</td>
<td>.00001</td>
<td>.0001</td>
<td>.0001</td>
<td>.00001</td>
<td>.00002</td>
</tr>
</tbody>
</table>

**p < .05  **p < .01

NOTES:
1. The response rate for supply officers was 100%. Thus the relationships in this group are parameters, rather than statistics and represent the the situation in that population at that time. Statistical inference and levels of significance are not appropriate here.

Employment Area Involvement
The relationships between Employment Area Involvement and other variables are shown in Table 4. (Rank and Experience — the total time spent in the employment area — are included in the analysis as control variables.)

Table 4
Multiple Regression Analyses of the Relationships Between Employment Area Involvement and Both Opportunity for Self Expression and Career Factors

<table>
<thead>
<tr>
<th>RANK</th>
<th>EXPERIENCE</th>
<th>OSE</th>
<th>CARFAC</th>
<th>BETA</th>
<th>BETA</th>
<th>BETA</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2</td>
<td>.26</td>
<td>.26</td>
<td>.31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .01

Both Opportunity for Self Expression and Career Factors are strongly related to Employment Area Involvement. The results of Table 4 show that an officer is likely to strongly identify with the employment area of which his present job is a part if he:
- is presently doing work which allows him to use and develop what he feels are his personal strengths, and which suits his interests; and
- assesses that future work in the employment area will be rewarding in both intrinsic and extrinsic terms.

In addition, officers of higher rank and greater experience in an employment area are more likely to identify with it.

Again, these results support the hypotheses and the theoretical rationale discussed earlier.

The relationships between the four independent variables and Employment Area Involvement tend to be fairly stable, as is shown when the analyses were repeated on the five separate employment area groups (for details, see Jans, 1979a). A final point to note is the strong connection between opportunity for Self Expression and Career Factors (r = .50, p < .001): obviously, the greater the person’s self-image — work role congruence, the more favourably he views the future in the same work area.

Conclusions on Hypotheses
It is concluded that all hypotheses are supported by the results. However, the two variables Opportunity for Self Expression and Participation in Decision Making are so closely related — the latter apparently being a subset of the former — that Hypothesis II is significant only in the context of Hypothesis Ia.

Relationships of Attitudes to Effort, Performance and Career Intentions
The question might be asked: is individual work involvement a condition worth trying to promote? Does it make any difference if one's subordinates identify with their work, or will uninvolved people perform just as well? With

<table>
<thead>
<tr>
<th>Effort Identification</th>
<th>Employment Area Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>.39**</td>
<td>.23**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>.33**</td>
</tr>
</tbody>
</table>

**p < .001  n.s. = not significant

Note: 1. The correlation coefficients associated with Task Identification are significantly greater (p < .05) than the respective coefficients of Employment Area Involvement.
2. The correlation coefficients associated with Effort are greater in both cases (p < .05) than those associated with Performance.
The more striking feature of the results of this study is the importance of the variable Opportunity for Self Expression. Opportunity for Self Expression, which is seen as being an indication of the match, or congruence, between a person's self image and his work role, has a powerful influence on his Task Identification, on his expectations about the chances of gaining intrinsic and extrinsic rewards in future work in that employment area, and, through this, on his Employment Area Involvement. Although the methodology of the study does not allow one to confidently attribute causality, it seems reasonable to interpret this pattern of relationships as follows (see also Figure 2): high congruence between self image and work role (Opportunity for Self Expression) leads to high Task Identification; becoming involved, an officer is then likely to want further work in that employment area and to view the future in its employment area were examined. Officers in the Material and Training fields were grouped according to their expressed preference for future postings in the respective areas and as Table 6 shows, those with greater involvement tend to be those who want to experience more of that work in the future.

Although the measures of effort etc were not particularly rigorous, these results suggest that there is a payoff in enhancing the work conditions which are associated with high work involvement.

**DISCUSSION**

The more striking feature of the results of this study is the importance of the variable Opportunity for Self Expression. Opportunity for Self Expression, which is seen as being an indication of the match, or congruence, between a person's self image and his work role, has a powerful influence on his Task Identification, on his expectations about the chances of gaining intrinsic and extrinsic rewards in future work in that employment area, and, through this, on his Employment Area Involvement. Although the methodology of the study does not allow one to confidently attribute causality, it seems reasonable to interpret this pattern of relationships as follows (see also Figure 2): high congruence between self image and work role (Opportunity for Self Expression) leads to high Task Identification; becoming involved, an officer is then likely to want further work in that employment area and to view the future in its

<table>
<thead>
<tr>
<th>Table 6</th>
<th>Differences in Involvement Scores Between Those Officers Who Prefer to Remain in the Employment Area and Those Who Prefer Different Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Material Development Officers</td>
<td>Chose &quot;Material and Logistic Management&quot; (n = 30)</td>
</tr>
<tr>
<td>Chose &quot;Material and Logistic Management&quot; (n = 30)</td>
<td></td>
</tr>
<tr>
<td>Task Identification</td>
<td>2.63</td>
</tr>
<tr>
<td>Employment Area Involvement</td>
<td>8.83</td>
</tr>
<tr>
<td>b. Training Officers</td>
<td>Chose &quot;Training&quot; (n = 30)</td>
</tr>
<tr>
<td>Chose &quot;Training&quot; (n = 30)</td>
<td></td>
</tr>
<tr>
<td>Task Identification</td>
<td>3.23</td>
</tr>
<tr>
<td>Employment Area Involvement</td>
<td>10.47</td>
</tr>
</tbody>
</table>

* p < .05  ** p < .01 (one-tailed tests)
since it can be assumed that his "executive/leader" self image is an important part of his total self image, it is easy to see how this feeling would enhance self-work congruence and Task Identification. Also, the more the technical task content of the job (eg personnel work, operations work, logistics work) is compatible with the person's interests and self-perceived strengths, the more he will identify with the job. Of the two, the technical content appears to be the stronger influence. In a sentence: people are more likely to be "turned on" by interesting work than by other intrinsic rewards based on non-task content factors, such as autonomy and responsibility.

As an illustration of this, let us imagine an Army officer, Major X, employed in a particular directorate in the Department of Defence. X finds that the work he has to do in this directorate interests him very much; in fact, he is able to directly apply knowledge he has learned from military and university courses, and to use what he regards as his forte. Here the technical task content of X's job has resulted in high self-work congruence, and he is likely to identify strongly with the job and the employment area of which that job is a part. Now contrast X's situation with his hypothetical colleague, Major Y. Y has the same interests as X but works in a job where the work is quite different to that done by X, and which is inconsistent with his (Y's) past experience. Even if both officers had the same degree of influence on organizational decisions, Y's work involvement is likely to be lower than X's, simply because Y has lower self-work congruence than his colleague.

Many readers may regard these deductions as being merely consistent with commonsense. Yet they might reflect for a moment on what the Army traditionally expects of its officers. The Army expects loyalty without question, dutiful behaviour without complaint, and commitment and involvement regardless of circumstances and rewards. It can be seen from the above results, however, that many officers simply do not identify strongly with their work in the absence of important intrinsic incentives to do so: an officer is unlikely to be involved with his job and employment area if the work is not compatible with his strengths, interests and values. This is not something which can be "blamed" on officers. What we are seeing here is merely the reflection in the Army of a certain value system in society: the value of self expression, and the shaping of attitudes based on the extent to which this self expression can occur. If an officer cannot be the kind of person he wants to be in his job, his involvement in that job and employment area is likely to be low. The Army cannot take involvement for granted: it must strive to create the conditions where involvement can be developed.

These conclusions have obvious practical implications. Both career managers and commanders have a part to play in enhancing self-work congruence. Firstly, the Army must strive to allocate officers to work areas (both regimental and staff) which are consistent with their present self images, and/or provide extensive pre-assignment training or experience so as to increase each person's actual and self-perceived competence in the technicalities of that work area and thus mould his self-image in the appropriate direction. This is essentially a "fitting the person to the job" approach. Secondly, commanders must practise a leadership style which optimises the influence which
their subordinates have in the decision making process. This is especially necessary to compensate for the obvious practical limitations of career managers to always allocate officers to work which will be "congruent". But in addition to their control over management task content, commanders can also affect the technical task content of their subordinates. Every large organization contains a variety of different roles, with different task content, however specialised the technology used by the organization: innovator, administrator, intelligence gatherer, trouble shooter, etc. In the Material Development field, for example, whilst many appointments are oriented towards production of plans and conduct of trials—ordered, systematic activities—a small number of officers might be needed as the "sellers" of the plans: the "storm troopers" who prepare the ground for the acceptance of plans by vigorous interpersonal activities within the bureaucracy. The individual who identifies with this kind of work is possibly of a different type to those who might commonly become identified with Material Development work. In sum, the results have implications for practices in career management and the training and assessment of commanders and supervisors. These conclusions are germane to the recommendations of the Regular Officer Development Committee, especially to those concerning an officer's acquisition of a mid-career acquisition of a staff speciality. The results here—that officers prefer particular kinds of work, and see themselves as working best in such work—are powerful arguments against the "generalist" philosophy of career planning which has held sway for the Army for so many years (Jans 1979c, RODC, 1978). If this philosophy is continued, we would expect to find a generally lower average level of individual work involvement than we would in a dual-specialist scheme similar to that proposed by the RODC.

CONCLUSIONS

The Officer Work Attitudes Study investigated ARA officer's attitudes to their work and certain job and career factors which were hypothesised to be related to these attitudes. This article concentrates on the attitudes known as "work involvement": the person's feeling that the present and future work roles are important sources of identity and satisfaction to him. Work involvement was defined in terms of involvement with the job (called Task Identification) and involvement with the employment area (called Employment Area Involvement). The most important influence on these feelings of involvement was found to be the kind of work the officer does, in terms of the extent to which:

- he finds the technical tasks he does to be intrinsically interesting;
- he uses knowledge and skill which he has acquired by education, training and career experience;
- he develops what he sees as important professional attributes; and
- the work he does, and the executive influence he has, makes the officer feel like an Officer.

The study contains implications for career planning and commander/leader style in Army organizations. Career managers and commanders should critically examine the way individuals are allocated to jobs and assignments, and leaders should ensure that subordinates have an optimum share in important decision making in the unit.

The results support two of the major recommendations of the RODC: firstly, that commanders at all levels will need to increase the degree to which their subordinates participate in decision making; and secondly, that there should be a greater degree of individual specialisation within professional military careers. The results here suggest that greater specialisation could lead to greater job and employment area involvement, and that this could lead to greater individual effort and performance, provided that officers were initially allocated to work areas in which the work content was consistent with their professional self images.

Whilst the study was concerned with individual adjustment to work areas within the Army rather than to the career of an officer in general, it would be unrealistic to believe that the two are not unconnected. It is likely that involvement in a job or employment is directly related to involvement in the career as a whole. Greater attention to the above could improve the Army's ability to retain officers. Moreover, whilst all the above has been in terms of officers' adjustment to their work, it is likely that similar findings could have been obtained in respect to Other Ranks. We might especially believe that soldiers' work involvement is just
as closely related to their self-work congruence as is officers’, with logical implications for soldier allocation and career management.

This report began with a question: What do Army officers feel about their work? The substance of this article covers only a part of what is presented in the larger study but it is plain that the answer is complex. A major conclusion is that there at least two sets of attitudes to work — work involvement and work satisfaction — and each of these has short and long term dimensions. Involvement and satisfaction are not unconnected, of course, but the multi-dimensionality of both sets of attitudes deserves attention by commanders and personnel managers at all levels. The Officer Work Attitudes Study points the way to a more sophisticated and professional approach to the study of organizational behaviour in the Services.

NOTES

1. A more rigorous definition is contained below.
2. Work Satisfaction should be thought of as “multi-facetted”, rather than as a single, all-encompassing attitude. A great deal of research has revealed that satisfaction with one aspect of a job is not necessarily related to satisfaction with other aspects (Locke, 1976). A recent US Air Force Study, for example, identified over 30 separate dimensions of work satisfaction — with pay, with leadership, with physical conditions, with coworkers, with the work itself, etc (Gould, 1976).
3. It is, of course, possible for a person to be both involved and satisfied: in fact, this is probably the most common of the three states.
4. Greater detail of the results, including those associated with the satisfaction variables, can be found in Jans (1979a, 1979b, and 1980).
5. This is called the “upward spiral of career success” (Hall, 1976).
6. In Jans (1979a) these two dimensions were called, respectively, Psychological Identification with the Kind of Work, and Employment Area as a Central Career Interest. For what should be obvious reasons, the shorter titles are preferred in a paper of this nature.
7. Multiple regression analysis assesses the relationship between a single dependent variable (eg Task Identification) and two or more independent variables. It shows the total relationship between the dependent and the independent variables (given as “the amount of variance explained”, R²) and also shows those independent variables which are making the most contribution to this explained variance (given by the “beta coefficient” of each: the greater the value of beta, the stronger the relationship). Another important feature is that it shows the relationship between the dependent variable and each independent variable with the effects of the other independent variables accounted for, or held constant i.e an “all-other-things-being-equal” relationship (Cohen and Cohen, 1975).

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GROUND DEFENCE and SECURITY

ROYAL AIR FORCE ANSWER TO A VERY COMPLEX PROBLEM

By Squadron Leader S. D. Kerr, RAAF

Introduction
An article titled 'Tactical Fighter Force Security' by Flying Officer Fraser appeared in the September-October 1979 Defence Force Journal. This article addressed the passive defence measures which should be taken to protect the new TFF, and naturally these same measures should be taken to protect all RAAF aircraft.

However, the article did not look at the very real and complex problems of the active ground defence and security of RAAF airfields and assets.

The capabilities of aircraft and the dedication of their crews will matter little in war if the aircraft are destroyed on the ground, the crews are killed or harassed beyond the point where they are operationally effective, and support aids, services and supplies are neutralized or destroyed.

All defence forces including our own, train and maintain specialists to destroy aircraft on the ground and to commit other acts of sabotage and harassment against air force assets. These of course are not new tactics and have been used with varying degrees of success since aircraft started to have their present considerable effect on the outcome of battles. The British SAS were founded for this very task.

Australia is lucky that its isolation allows us to learn from the experience of others, provided that we are intelligent enough to respond in a positive manner.

Terrorist — Insurgent Activities
Political and military trends are consistent throughout the world and following overseas experience, anti-government internal security activities can be expected to increase in frequency and violence in this country, while any formal attack will certainly be supported by sabotage groups.

Targets for these attacks, whether we are at war or not, are sure to include military establishments, as the tactical advantage and political kudos to be gained from the destruction of targets such as aircraft or air force assets on an airfield is far in excess of the effort or cost required to carry out the task.

The RAF Answer
The Royal Air Force has found the answer to these problems in the RAF Regiment. During World War II the RAAF also had its own RAAF Infantry Regiment, however, today a core force of Airfield Defence Guards (ADG) are established into an organization similar to, but much smaller than, an RAF Regiment Field Squadron to carry out active ground defence tasks. The RAAF has no parallel organization to the RAF Regiment Rapier, Low Level Air Defence (LLAD) Squadrons.

This article is presented to make readers aware of the existence of the RAF Regiment and to give an insight to the history and activities of that organization.

This article on Royal Air Force Catterick and the Royal Air Force Regiment has been compiled from facts extracted from the booklet 'RAF Catterick' and from an article which appeared in 'Air Mail' the Journal of the Royal Air Forces Association' of which the author is a life member.

The 'Air Mail' article is a product of the Director General of the Royal Air Force Regiment.

Article received March 1980
The Royal Air Force Regiment

The Royal Air Force Regiment was formed on 1 February 1942 by Royal Warrant of His Majesty King George VI as a Corps within the Royal Air Force dedicated to the defence of its bases. All of the Regiment's activities today are linked with the front line of Air Force endeavour and RAF Regiment officers and men are proud of the profession at-arms. Her Majesty Queen Elizabeth II is their Air Commodore-in-Chief.

Royal Air Force Catterick was opened in 1914 as a Royal Flying Corps training station and was taken over as the Royal Air Force Regiment Depot in 1946. Today members of many allied air forces including the RAAF receive training under RAF Regiment instructors at RAF Catterick in the skills and tactics of airfield defence.

The Writer is one of those RAAF officers who have been lucky enough to have had the privilege of being trained by, and working with, the RAF Regiment in recent years. He found the officers and men of the Regiment to be generous and considerate hosts and instructors.

The facts for this article were taken from the writings of the present Commandant General of the RAF Regiment and from the RAF Catterick handbook. The Commandant General has kindly consented to the information being reproduced.

Royal Air Force Regiment History

After the evacuation of Dunkirk and the German invasions of Norway, Greece and Crete, it became obvious that the Royal Air Force would have to take measures to defend its airfields instead of relying solely on any assistance that the British Army might be able to provide. For this purpose, the Royal Air Force Regiment was established in February 1942 by Royal Warrant of His Majesty King George VI. A Regiment Depot was first opened in a requisitioned holiday camp at Filey. This Depot later moved to Belton Park, near Grantham, and then in 1946 to Catterick, its present home.

At first, the Regiment's task was essentially defensive, but as the war progressed it quickly turned to an offensive role. In November 1942 five field squadrons and five AA flights took part in the "Torch" landings in North Africa but, before this, Regiment units had already seen action in the Middle East. From Alamein to Tripoli the Regiment protected RAF airfields and seized those of the enemy. Squadrons of the Regiment were the first British units to enter Bizerta and Tunis. Regiment units from North Africa augmented by others from UK, also took part in the invasions of Sicily and Italy. The Regiment provided some of the first British units to land in Greece as part of the Special Boat Service.

The Regiment took part in the D-Day landings, and in the subsequent campaigns for the liberation of France, Belgium, and Holland. In addition to protecting tactical airfields, armoured car and field squadrons were used to capture V1 and V2 sites. In the United Kingdom LAA squadrons were operating against flying bombs on the South-East Coast. The German Ardennes offensive endangered many secret radar sites but the Regiment, operating under difficult conditions, managed to extricate both equipment and personnel.

On New Year's Day 1945 the Luftwaffe launched its final great offensive of the war against airfields in Holland and Belgium; on this day 27 aircraft were shot down 54 damaged by LAA Squadrons of the Regiment, who also shot down the first jet aircraft ever to be destroyed by ground action, an Me 262. Towards the end of the European campaign the Regiment received orders to occupy all airfields in North-West Germany. They moved ahead of the spearheads of the Second Army to carry out this task, and became the first allied forces to enter Denmark.

Meanwhile other Regiment units were operating against the Japanese in South-East Asia, where they won high praise for their part in the defence of Meiktila and other airstrips in difficult terrain. It was during this period that the first Regiment Parachute Squadron was formed. Squadrons also took part in the re-occupation of Indo-China, Indonesia, Malaya and Singapore. As a tribute to its work in the Far East the Supreme Allied Commander, Lord Mountbatten, sent for an airman of the Regiment to witness the signing of the Japanese surrender in Singapore.

Since the war the Regiment has taken part in many campaigns. The Aden and Iraq Levies and the RAF Regiment (Malaya), all local forces led by Regiment officers and NCOs, fought in emergency operations in their respective theatres. Squadrons were fully
employed during the Cyprus emergency. One Squadron took part in the Suez invasion. Units of the Regiment have also served in Kenya, the Gulf, Aden, Jordan, the Maldives Islands, Hong Kong and Borneo. Regiment personnel have also taken part in nuclear weapon trials in Australia and Christmas Islands. The Regiment continues to serve in all those areas of the world where there are Royal Air Force aircraft and installations to be protected. In ceremonial, too, the Regiment has played its part, giving displays from New York to Berlin; from Edinburgh to Lisbon; from London to Melbourne. It provides the personnel for the Queen’s Colour Squadron of the Royal Air Force which represents the RAF at State and other formal occasions. It also parades the Queen’s Colour for the Royal Air Force in the United Kingdom. The RAF Regiment also has its own Queen’s Colour which was first presented by Her Majesty the Queen at Buckingham Palace in 1953. Her Majesty the Queen presented a new Colour when visiting RAF Catterick in 1967.

During the war the Regiment had a fighting force of over 85,000 men serving in some 170 LLAD and 70 Field Squadrons. Although this large force is now much reduced in numbers, the regiment retains a number of LLAD and Field Squadrons and a limited ability to operate in the parachute role. The Royal Air Force is, therefore, a highly mobile and flexible force trained for operations in all parts of the world.

The Royal Air Force Regiment Today

The Commandant General of the Regiment, Air Vice Marshal Henry Reed-Purvis, recently summarized the shape and role of the only Corps in the Regular Air Force, with the obvious enthusiasm of an officer who has devoted his entire career to the RAF Regiment. His commentary ranged across the spectrum of Regiment activities and I will cover his major points.

Since the beginning of World War II, there has been ample evidence that the easiest way to destroy air forces is to neutralize aircraft when they are on the ground. The six-day Arab-Israeli war of June 1967 demonstrated again that devastating losses can be inflicted upon parked aircraft, and American experience in Vietnam also highlighted the potential of the modern threat to airfields. The need for a secure base is vital for successful air operations.

In Great Britain the Army is responsible for the general defence of territory from which the RAF operates. The RAF is responsible for the local defence of its airfields and installations against both ground and low-level air attack. The RAAF and Australian Army have a similar joint agreement for the ground defence of RAAF airfields and assets. The fact that the RAF Regiment continues to flourish today, despite intense scrutiny and wholesale defence cuts is not some sad commentary on lack of cooperation between the British Army and the Royal Air Force, but rather of the widespread recognition by all of the British Services of the hard learned lesson that air operations must be mounted from a secure base, and of the essential need of the RAF to have an integral Corps dedicated (that is under command) wholly to its defence.

The principal war role of the Regiment is the defence of RAF airfields in Allied Command Europe. The need for improved air defence in the United Kingdom has also revitalized RAF Regiment responsibilities for the home base. The Regiment continues to be associated with RAF operations in other theatres and a continuous RAF Regiment presence is maintained in Cyprus, Belize and N. Ireland. The Regiment’s Order of Battle was increased to six combat field squadrons in 1978. All of these units are shortly to be re-equipped with armoured fighting vehicles which will include ‘Scimitar’, and ‘Spartan’ armoured personnel carriers.

These rugged tracked vehicles will add a new dimension to the Regiment’s fire power, mobility, flexibility and communications. The Rapier Surface-to-Air Missile (SAM) force has also been increased to six squadrons. To complete the line-up there are four wing headquarters and the Queen’s Colour Squadron, the RAF’s ceremonial drill unit which also has an important war role. All in all, a compact but very potent specialized and cost effective force. Now to look at each area of the RAF Regiment endeavour in more detail.

Field Squadrons

Field squadrons are established to provide immediate protection against enemy ground forces (such as airborne troops, guerrilla forces and sabotage teams) which may infiltrate or bypass the main army positions. In peace they may be required to protect bases against
terrorist attack and give aid to the civil power. In war they must be capable of providing a protective screen around the airfield, under cover of which the base personnel can continue their duties without disruption. Some of these base personnel have to be employed on the close-guarding of vulnerable points within the airfield perimeter, but any large scale diversion from their primary work would not be countenanced until a significant attack had developed which the screening forces could not contain. In that event, the base personnel would man defensive positions, leaving the more exacting combat missions, such as counter-attack, to the RAF Regiment. The combat squadron is somewhat larger than an army infantry company and more heavily armed and mobile to suit its airfield defence role.

One of these squadrons is composed of trained parachutists to provide the RAF with a measure of flexibility.

Field Squadrons are also deployed with the Harrier Force and their tasks in connection with the protection of isolated Vertical/Short Take-off and Landing (V/STOL) sites are particularly challenging.

**LLAD Squadrons**

The second operational responsibility of the Regiment is still the defence of airfields against low-level air attack. In this, the aim is to deny the enemy the use of air space immediately adjacent to RAF airfields while allowing friendly aircraft to operate freely and safely. The Regiment is now re-equipping with the Rapier all-weather SAM system, and following experience in operating the interim Tigercat SAM system, gunners have become equally adept with Rapier as they were for so long with the faithful but operationally far inferior Bofors.

Rapier is acknowledged to be the most effective low-level surface-to-air missile system in the world and the RAF Regiment's proficiency with the system has had a lot to do with this assessment. This system is currently being introduced to the Australian Army.
RAF Regiment personnel clear a building

A deployed RAF Regiment Rapier Unit
Other Tasks
The Regiment still has a number of tasks outside the main operational stream, including responsibility for nuclear and chemical defence within the RAF. Throughout Europe, RAF airfields and installations are at risk from direct or indirect attack with Nuclear Biological Chemical (NBC) weapons. Accordingly, Regiment staff train all airmen serving in Germany and elsewhere to fight, in this role. The Commandant General believes the RAF are ahead of all other NATO Air Forces in training and preparation for NBC defence and survival.

At RAF training units, RAF regiment instructors continue to ensure that all new entrants are able to handle fire arms and understand the fundamentals of basic military skills. This training role is particularly important at the RAF College, at the Officer Training Unit and at airmen schools. For follow-on training at operational units, a Regiment officer and NCO instructors will be found at every station where they are responsible for active and NBC defence continuation training, advising the commander on his defence plans and coping with traditional Regiment tasks including preparations for special parades, civil assistance programmes and Air Cadet liaison duties. The standing of the busy and often over-taxed Station Regimental Flight has never been higher and this is testimony to their professionalism, enthusiasm and endeavour. These tasks are, of course, carried out by Ground Defence Officers and ADG’s in the RAAF.

Ceremonial
The Queen’s Colour Squadron deserves further mention since it goes to war with the rest of the Regiment although it is established as the RAF ceremonial unit.

In recent years QCS has performed for TV audiences on the 'Pebble Mill' programme and delighted Edinburgh Tattoo spectators with the latest edition of their internationally famous continuity drill display. Other regular appearances include the Royal Tournament, Festivals of Remembrance, the Berlin Tattoo and during 1979 a first in Australia at the Melbourne Military Tattoo. The squadron from time to time carries out public duties at Buckingham Palace, St James Palace and the Tower of London, but their most sparkling recent engagement was associated with The Queen’s Silver Jubilee — in London for the procession to St Paul’s and at RAF Finningley on the occasion of The Queen’s Review of the Royal Air Force.

General
This quick look at the broad spectrum of RAF Regiment responsibilities has covered training and ceremonial at one end of the scale to operational tasks at the other: a span of responsibility involving some 2,400 officers and men. One of the most serious problems faced by the Armed Forces in Great Britain is the demands placed upon individual men and women by ‘overstretch’ — excessive commitments and a shortage of resources. The RAF Regiment was one of the first combat arms to experience this trend in the 60s and 70s with officers and gunners spending much of their time away from home on operational detachments in places like N. Ireland, the Gulf, Oman, Malta and Belize. Family separation and long hours on duty have become a way of life. No dramatic relief is seen in the near future, but the resilience and loyalty of the gunner and his family remains. They are every bit as determined and cheerful as their predecessors and slowly but surely, progress is being made to redress the imbalance which has put a tremendous strain on everyone over the past few years.

The Regiment continues to provide an efficient, cost effective force which meets manifold tasks. The Commandant General’s aim is to enable units to discharge these responsibilities with a minimum of fuss but with a vigour, style and professionalism which has been the Regiment’s stock-in-trade for nearly 40 years.

In the Ministry of Defence the Commandant General, as a member of the Assistant Chiefs Committee, reports direct to the Vice Chief of Air Staff. Thus the RAF Regiment’s place in
the Royal Air Force is directly linked with the mainstream of Air Force endeavour and its voice is heard at the highest level. Since late 1976 the Commandant General has also assumed the role of Director General of Security for the Royal Air Force and as such he has overall responsibility for the RAF Police. As this responsibility is reflected throughout the staff and chain of command, security problems of a joint nature that might earlier have been judged to overlap traditional boundaries, are dealt with jointly by Regiment and Police Staffs at all levels. This is particularly important in the areas of internal security, counter-terrorism and in any aid to the civil power action.

As I see it the Gunner is much better equipped than before, perhaps physically fitter, and his new sophisticated fighting equipment means that the Regiment must look for a chap with a good deal of ability. However, he is no technocrat — he still calls a spade a blank shovel, and he still has the trooper's sense of humour and enjoys a good fight. You will also find him to be as proud of his Corps and shoulder flash as the best of his predecessors were. To other airmen, he is still a 'Rock Ape' but perhaps the phrase is now used as one of endearment (or exasperation) in the same way as he, in turn, calls them 'Penguins'.

Throughout the RAF and indeed to many other locations, you will find the Regiment on support helicopter squadrons, at the School of Infantry Warminster, and at the Royal Marines Commando Training Centre. One or two serve with the Special Air Service. There are Regiment officers serving on exchange with the USAF, and as instructors at the RAF Staff College and the Royal School of Artillery. Some five junior Regiment officers serve as aides-de-camp to senior RAF officers.

There is no doubt that over the past decade the RAF Regiment has consolidated its position as an integral and respected combat arm of the RAF and the additional two squadrons formed in late 1978 have helped to redress any imbalance imposed by defence cuts in relation to sizeable and demanding commitments.
introduction of modern surface-to-air weapon systems and 1980 class armoured fighting vehicles shows that the Regiment is keeping in step with modern technology and re-emphasis the importance of their defence mission in the eyes of the RAF Leadership.

As testimony to the Regiment's success and by way of endorsing the sagacity of those who made the decision to form the Corps over 38 years ago, today they can see Air Forces throughout the world, from North America, through Africa to Europe looking enviously at the RAF model and in some cases making exact copies.

I was fortunate to see their endeavour at first hand and have greatly benefited from the experience.

Well that is a brief look at the RAF Regiment, like the RAF, the RAAF is currently in the process of making some changes to our ground defence and security forces under the Directorate of Intelligence and Security, bringing together all elements who are concerned with security tasks, this should eventually provide the RAAF with a competent, well motivated security force which can be expanded in war and still meet peacetime commitments.
By Major Burkhill, RAAOC

Introduction

SHOOTING is not a skill or science peculiar to this century. There has been so much said about the nuclear age that the humble rifleman has probably felt eclipsed. An Army might level its enormous strength at a single, occupied hillside and plaster it with enough firepower to make the scenery resemble something out of Macbeth. But when the smoke has cleared and the dust has settled on the hillside, riflemen will still be in their holes, ready to fight. Tanks may come and planes may go but the man with the rifle will continue to be the standard by which victory or defeat is determined.

Between wars marksmanship has in many cases been overlooked and by some has become almost a forgotten art. When hostilities begin there is a frantic rush to get marksmen trained, and because of this, full value is not always obtained from them.

Competition has been used as a means of improving marksmanship standards since the days of the longbow but is often underestimated by many of those in authority. Much more interest would be shown in developing the required skills of the marksman if there was a better understanding of the contribution made by both civilian and military competition shooting.

It is my intention to attempt to illustrate the close association which is traditional between the organisation of the National Rifle Association of Australia and the Australian Defence Forces. In particular I shall concentrate on the Rifle Shooting movement in New South Wales, its organisation and operations and how it affects units located in 2 Military District.

A Brief History

The news of the outbreak of the Crimean War in 1845 caused great public concern in Australia. Men in all positions of society responded to the call and drilled shoulder to shoulder in the hour of danger. The formation of the Volunteer Corps in the various colonies in 1854 was the beginning of informally organised rifle shooting in Australia.

In 1859 the importance of the movement was again forced into prominence as there was fear of a French invasion and a great mood of apprehension passed over the people of the United Kingdom and her colonies. It was the possibility of invasion by Napoleon III that inspired the creation of the Volunteer Movement in Britain and led to a wide appreciation of the rifle in the framework of National Defence and competition target shooting.

Target shooting became properly organised with the formation of the National Rifle Association (NRA) in Britain in 1860. The first practical step was to stage a National Prize Meeting which Her Majesty Queen Victoria supported both actively and financially. She founded the annual prize of £250 for competition among the Volunteers and fired the first shot at the original meeting in 1860. Thus was laid the foundation stone of British target shooting which, for many years, was largely confined to the Volunteer Forces and closely followed the trend of the military musketry training requirements.

On 1st September, 1860 the Australian Volunteer Corps was formed by the Governor General of the Australian Colonies at a ceremony in Sydney. In the same year the New South Wales Rifles Association was formed, its object being:

Major Burkhill enlisted in the ARA in 1959 and was allotted to Infantry. He was posted to 2 RAR and served in that unit until 1963. This included service in Malaya in 1961 to 1963.

He graduated from OCS in 1963 and was reallocated to RAAOC. He served in a variety of regimental and instructional postings until 1967 when he was posted as Staff Captain 'Q' in HQ PNG Comd in Port Moresby. In 1969 he was posted as OC 10FP in Nui Dat, South Vietnam. On his return to Australia he commanded several ODPs and on his promotion to Major in 1974 commanded several Supply Companies. Administrative postings with 21 and 22 Supply Battalions followed. He is currently serving with 1 RTB, Kapooka.
"to give permanence to the Volunteer Corps and to promote rifle shooting throughout New South Wales". The Victorian Rifle Association was also formed in the same year and had the same objectives. The formation of these two associations was followed by annual open championships and interstate teams matches. State Governments paid team travelling expenses, the Defence Department loaned staff to aid in conducting these events and the Australian Jockeys' Club in New South Wales converted the Randwick Racecourse to a range for annual events.

Australian Government assistance continued and, with Federation, markedly increased as the accurate marksmanship of the Boers taught the British countries a bitter lesson.

The South African campaign, in which the limitations of British marksmanship were sadly exposed, awakened a more general interest in the rifle throughout Great Britain and the Colonies and the value of accurate shooting received new appreciation.

The war changed ideas regarding the firing positions which were in general use in target shooting. These had more or less conformed to military requirements; standing, kneeling and sitting prevailing in the service rifle competitions and in general range practices. In the early months of the South African War, the British troops sustained many casualties through failing to adequately conceal themselves in action. The advantage of the prone position became abundantly evident and as a consequence the other firing positions disappeared from competitive shooting other than in a few events held primarily for the Armed Forces.

World War I soon showed the value of the Civilian rifle club movement. The NRA was authorised by the War Office to form a school of musketry at Bisley Camp to train musketry instructors. The school proved to be invaluable and many thousands of instructors were trained and posted to units in all theatres of war.

The early days of World War II showed no immediate requirement for accurate rifle shooting, and it was the German Army which first proved the value of trained snipers in a war of movement. Sniping had become almost a lost art in the British Army and so the NRA was again asked to provide instructors to teach marksmanship to potential sniping instructors. The training school became known as the NRA of the Small Arms School and it did much useful work.

In Australia, Federal Parliament financial assistance and very close liaison between the Department of Defence and the National Rifle Association of Australia, have continued to this very day. The Australian Army has found that its marksmen's abilities have improved due to their association with rifle clubs and these days the Australian Army Rifle Team contests the annual National Teams Championships with teams from each state.

Other countries have interpreted the lessons of past wars, including the Military Actions since World War II, very differently. Research shows that small arms, including machine guns, mortars and rockets, are still the deciding factors as fear of similar retaliation deters the use of nuclear weapons.

The "National Times" summarised the "Lessons of Vietnam" in 1975 with these conclusions:

"Every man, woman and dog in Australia should spend at least three weeks a year on a rifle range, learning marksmanship and guerilla tactics. Then as did the North Vietnamese, 'Row your boats — but if you land, we will be ready to repel you'..."

I would like to point out that target shooting is one of the few sports which rewards the participant with tremendous pleasure and also has a great national benefit.

**Current Factors**

The organisation of the Rifle Shooting Movement in New South Wales and the lines of responsibility of that movement as they are supposed to exist and as they do exist differ in some instances due to the lack of appointments on one hand and the adoption of a system which has evolved through necessity and misunderstanding on the other. The resolutions of these problems have been under consideration since 1975.

**Legal Consideration**

The Defence Act, 1903 as amended, Part XI — Regulations, Section 124 (1) states *inter alia*:

"The Governor-General may take regulations not inconsistent with this Act, prescribing all matters which by this Act are required or permitted to be prescribed, or which are necessary or convenient to be prescribed, for securing the discipline and good government of the Defence Force, or for carrying out or giving effect to this Act, and in particular
prescribing matters providing for and in relation to:

(j) The formation and management of rifle clubs.

(k) The formation, incorporation and management of rifle associations.

(l) The formation and management of a council consisting of representatives of rifle associations.

The "Australian Rifle Club Regulations" are Statutory Rules made by the Australian Government under the authority of the above section of the Defence Act.

**Organisation and Responsibilities**

The National Rifle Association of Australia (NRAA) is a legally constituted body which is formed under the Defence Act. It has been established for many years and has strong international affiliations thus indicating good, strong and reliable administration. This association was first formed by the military to create and foster a competitive spirit among units of the Armed Services and in so doing improve the expertise of service members. It was later opened to civilian members, so that in times of national emergency, a pool of experienced shooters would be available from which to draw marksmen as required. Over the years the Army has become less and less involved with the result that the NRAA is now almost entirely controlled by civilians.

Under the Australian Rifle Club Regulations, the Minister for Defence being the responsible Minister, should appoint a Director of Australian Rifle Clubs. This Director would have the principal function of being responsible to the Minister for:

a. The control and administration of the Australian Rifle Clubs.

b. The co-ordination and supervision of:

(1) The implementation throughout the Australian Rifle Clubs of the orders and instructions issued by the Minister under regulation 81.

(2) Matters relating to the National Rifle Associations of Australia, to the Australian Small Bore Rifle Association, to State Small Bore Associations, to District Rifle Associations or to District Small Bore Rifle Associations; and

(3) Such other matters as the Minister from time to time directs.

The Minister may also appoint an Inspector of Rifle Clubs in a Military District. The main function of this Inspector is to be responsible to the Director for the co-ordination and supervision within that Military District for:

a. The implementation of orders and instructions issued by the Minister.

b. The activities in that Military District of any State Rifle Association, State Small Bore Association, District Rifle Association or District Small Bore Association.

c. The activities in that Military District of rifle clubs and their members; and

d. Such other matters as the Director of Australian Rifle Clubs or the Regional Secretary from time to time directs.

As well as the Director and Military District Inspectors of Rifle Clubs the Minister may also appoint such Inspectors of Rifle Ranges, range clerks and staff as he considers necessary for the efficient administration of the Australian Rifle Clubs.

Superimposed on this organisation, which, apart from one Inspector of Rifle Ranges and some range staff, does not exist in New South Wales, are the various Councils and Associations made up of rifle club members. These organisations are headed by the Council of the National Rifle Association of Australia which, under the Regulations, should be made up of:

a. Two elected representatives of each State Rifle Association, and

b. The Chief Instructor of the Army School of Infantry.

The objects of the Council of the National Rifle Associations of Australia are:

a. To promote and conduct all international and inter-state rifle competitions held in Australia.

b. To decide any questions affecting rifle shooting referred to it by a State Rifle Association; and

c. To advise the Minister on any matter affecting rifle shooting upon which he desires the opinion of the council.

In each state there should be a State Rifle Association which is managed by a council. This council should consist of:

a. Regional Secretary as President (he may be delegate to a chairman).

b. One representative each of the Navy, Army and Air Force appointed by the respective Service Commanders in that State; and
c. Advice to the Regional Secretary on any matters affecting rifle shooting upon which he desires the opinion of the council.

Military Involvement

In accordance with the Rifle Club Regulations a rifle range which is used by any Navy, Army or Air Force unit shall be available for the rifle clubs in the locality, but a rifle club shall only be permitted to use the range at such times as are arranged by the responsible officers of the services concerned.

The Regulations also stress that Officers of the Defence Force shall, on all occasions, use their utmost endeavours to promote the success of the annual competitions of the various rifle associations and the activities of Rifle Clubs generally.

It is my belief that units should be actively encouraged to affiliate with civilian rifle clubs. These clubs would guarantee continuity of administration, and some, particularly the older, more established clubs, have quite strong traditions and fascinating histories which could well be effectively incorporated in the ceremonial programmes of most units.

Some of the advantages of these affiliations would be:

a. Young and inexperienced shooters would be exposed to the vast experience of recognised marksmen. This exposure would tend to develop their shooting ability.

b. Continuity of club administration would be available as would the amenities which go hand in hand with long and well-established organisations.

c. The pool of experienced shooters would once again be established, and because of the contact with soldiers in the rifle clubs, the civilian members would be more familiar with Army procedures, organisations and colloquialisms and thus be more effective in time of national emergency.

d. Provide a continuation training ground for the marksmanship aspects of the Army's recently introduced snipers.

Conclusion

The National Rifle Association of Australia was formed to promote and encourage marksmanship throughout Australia in the interests of defence. Since its inception the NRAA has played an important part in the framework of Australia's national defence and its value to the nation, particularly in time of war, has been abundantly demonstrated. Its organisation and development should be encouraged and assisted by the Defence Forces, not because they have a statutory obligation to do so, but because of the expertise, resources and facilities which they can, and so willingly do, provide.

NOTES

Major Burkhill commenced his shooting career when he represented 28 Commonwealth Brigade in Malaya in the 19 Gorkha Divisional Championship. He fired in his first Queen's Medal final in 1966 and although he has never won the medal he has fired in most finals since then. He represented 1 Task Force in the Free World Military Assistance Force Championship in Long Bin Vietnam in 1969. In 1975 he was appointed Captain of the Australian Army Rifle Team which competed in the Bisley Championships in Surrey, England. On his return to Australia he was a foundation member of the Army's Target Rifle team in the appointment of Adjutant and has been Captain of that team since 1976. He is also currently filling the position of 2 Military District Rifle Shooting Representative.
JOHN Churchill, Duke of Marlborough, was born at a time of great constitutional and political turbulence; his family's fortunes reflected this turbulence. After a time as a royal page he began his military career in the Foot Guards at about the age of seventeen years. Later he served in the French Army under Marshal Turenne, one of the great soldiers of the time. It is asserted that his service in the French Army enabled him to learn 'from a French general how to destroy French armies'. Over the next thirty years he served his country well and took a part of growing importance in the events of the time. These events are well summarized and Churchill is the obvious choice in 1702, when England declared war on France, to take a leading role in the struggle against that country.

David Chandler devotes much of his book to the ten great campaigns which engaged Marlborough's energies for the decade 1702 to 1712. In this time Marlborough achieves eminence as both a soldier and a diplomat. Each campaign is presented in detail. The action is not only described in concise terms, but also analysed in depth. Chandler has closely studied the terrain of each battlefield and writes from firsthand experience of the local topography. The reader is greatly assisted in this respect by the simple and effective sketch maps drawn by Arthur Banks who delineates with great clarity the dispositions and movements of the infantry, cavalry and artillery on the fields of battle.

As leader of the military might of the Second Grand Alliance, Marlborough was forced to spend much of his time between campaigns in delicate diplomatic activity in the various courts of the Allies, seeking and gaining commitment and support for the great struggle against France, with the main purpose of establishing a European balance of power. Because of the diversity of national outlooks such activity was a prerequisite for the timely production of a composite army capable of meeting the French threat to peace.

Readers' attention is directed, particularly to Chapters 5 and 15, entitled 'The Art of War' and 'Marlborough — An Assessment of the Man and Soldier', respectively. In Chapter 5, the author presents an interesting account of the effects on warfare of the improved weapons, which came into use at that time. The replacement of the matchlock by the flintlock musket considerably increased regimental firepower. 'The flintlock was several pounds lighter than its predecessor, only misfired twice in ten shots on average, and could be discharged eight times faster (a good foot soldier being capable of firing two shots a minute). The ineffectiveness of the pike against this type of weapon and its final abandonment, more slowly by the French than by the English and the Dutch, is mentioned.

In Chapter 15, Marlborough's career as a military leader is analysed in considerable depth and his achievements and failings reviewed with objectivity. Chandler compares and contrasts the military abilities of Marlborough with those of allied and enemy commanders and, quoting relevant comparative evidence, provides a realistic assessment of Marlborough as a person and as a soldier. The author emphasises that Marlborough was a commander who preferred, when possible, decisions made on the battlefield. The remark of an early biographer who stated that Marlborough 'never fought a battle he did not win nor besiege a town he did not take', is relevant.

The author does not let the reader forget that Marlborough's battles were not all military ones. The domestic background and political events of Marlborough's life are skilfully etched in. Chandler is to be commended for the skill with which he develops the main theme — that of Marlborough as a military commander —
without neglecting the other aspects of Marlborough's life which all contribute to make him such an outstanding and influential figure in eighteenth century Europe. Marlborough's responsibilities and onerous offices at this time sometimes weighed heavily on his shoulders, and readers can hardly miss the implication that on some occasions, at least, Marlborough must have left England for an exciting and dangerous season of campaigning against the French, with considerable relief at leaving behind the complexities of English political life.

Marlborough's popularity with his troops is well known. He made every effort to ensure that their welfare was adequately provided for. In return he received their respect and even affection, and they were always prepared to make that extra effort for 'Corporal John' when called upon. Marlborough's popularity with his troops is in part, at least, a reflection of his mastery of the enormous administrative and logistic problems inherent in eighteenth century warfare in Europe.

This book was first published in 1973; a second edition in 1979. In it David Chandler skilfully narrates a story of compelling interest. He has delved deeply and thoroughly into the plentiful source material and has presented a convincing portrait of a soldier of quite outstanding qualities and achievements. In cases where the author adopts views on opinions different from those of other authorities, he gives reasons and justification for reaching his own conclusions. In his introduction Chandler writes:

In attempting to assess any great military leader, it is essential to set him firmly within his military context. If this is overlooked, as is sometimes the case in military biographies, a very distorted image can emerge. Space has been devoted, therefore, to analyses of Marlborough's military education and of the contemporary art of warfare. There can be no denying that his true greatness rests in his showing as a general. If in terms of British politics and European diplomacy he ultimately failed, his military record remains unique and unimpaired.

The success with which the author has accomplished this aim makes this biography of great value and interest both to students of military history and the general reader.


Reviewed by Brigadier F. W. Speed

THE dust jacket is misleading. The grinning skull wearing the old-fashioned flying helmet suggests a fictional thriller. It is not. Certainly the book is thrilling where it takes the reader right into the thoughts and feelings of aircrew beginning their final mission, the thirtieth of a series. It brings out dramatically the intense opposition encountered in the long, 475-mile (765 km) journey to Nuremberg from airfields in Britain, and the 550-mile (885 km) return. It describes in stark detail the conditions under which crews struggled to stay alive.

Thus it builds tension and urges the reader on. But it is more than a thriller with macabre reading value.

The book is a simple study in the second world war Bomber Command planning, tactics, conduct of operations. It is the story of a single, massive raid, in which nearly 800 pathfinder and bomber aircraft took part.

The writing is professional and readable. The profusion of adjectives and adverbs, particularly in the opening chapters — alluring to some writers, abhorred by many readers — can be distracting where the reader is trying to concentrate on facts. But these are matters of composition that can be overlooked. Moreover the book deserves support for its Australian origin.

Cutting through to the narrative, *The Nuremberg Massacre*, examines, in some detail, the objectives in this industrial city away in the eastern region of Germany, the meteorological factors involved, the professionally developed state of the German air defences, and the tactics evolved by the RAF to achieve its aims.

The author, as he says in the preface, does not set out to prove that the night of 30 March 1944 ended in the catastrophic defeat of the RAF or in glorious victory for the Luftwaffe. What he does not say, but certainly demonstrates, is that the tactics of attrition which debilitated the allied armies of the 1914-18 War found their way into the allied air forces of the 1939-45 campaigns, with similar, not quite fatal results. Among the questions that emerge from this particular raid are:

- Was departure from the accepted practice of mounting large scale operations only on nights of little moon justified?
• Was the route chosen to avoid the notorious Kammhuber Line good enough?
• Was there no alternative to the long, straight 270-mile (435 km) leg in the centre of the route?
• Once the project had reached the initial phases, was enough notice taken of the changes in meteorology?

The author suggests, dispassionately, the gulf in outlook between the air crew who carried out a mission and the air staff who planned it. Though a final judgment is avoided, implied is the notion that the staff needed an infusion of innovation, to lift the planners to fresh heights. There must be lessons here.


Reviewed by J. Docherty, Editor RAAF News and Triad

THIS is the latest in a long line of books by a man who has had a lifelong obsession with aircraft — and the Royal Air Force in particular.

Among the 16 titles already under his belt are Mosquito at War, History of the RAAF, Guns in the Sky, and Spitfire. The 17th is Fighter Command, a workmanlike, professional piece of writing that holds the attention by virtue of its incisive nature and attention to detail.

Fighter Command was formed in 1936 and maintained its independence until its merger with Strike Command in 1968.

It begins with a short, sharp chapter on the “Ancestry” of the RAF that lays bare the shortsightedness and shortcomings of official policies on air strategy for the defence of Britain.

The book lays emphasis on the courage of the young men who conquered their personal fears to become heroes, mostly unsung, and of their discipline and paradoxical individualism.

Fighter Command’s first AOC-in-C, Sir Hugh Dowding, fought a hard, sometimes seemingly impossible battle to drag Fighter Command from its position as the poor relation in the RAF to the finest fighter defence force ever seen. Mr Bowyer portrays the struggle with skill and in depth, and brings up a number of controversial points in the process.

The book’s black-and-white plates are of high quality and many of them, especially those from the author’s own collection, are quite striking. Almost astonishing is one of a Mosquito that somehow made it back to base after getting too close to its victim, a Junkers 188.

There are personal recollections by the Fighter Command pilots, many of them graphic and with a curious bent for detail, which somehow makes the descriptions of combat unreal, almost dreamlike.

But, occasionally, there intrudes into their narratives a stark reminder of the reality of total war — and the reader sees the classic British curtain of understatement pulled aside to reveal the raw fear that gripped these young men who had to face sudden death several times a day.

Fighter Command’s separate existence was brief. But this excellent book will help make its memory immortal.


Reviewed by Major J. D. Herlihy.

THE term ‘military’ in the title is a misnomer — the book could more accurately have been entitled ‘The Service Officer and Australia’s Defence’. The whole thrust of the book is directed to the role of the military decision-maker, and his capacity to adjust to change in the institutional, technological and social milieu of contemporary Australia. As such it is a valuable addition to the literature of the defence debate.

Four articles, which comprise the first part of the book, examine the institutional and political environment in which the service officer must operate, and more particularly their role in higher policy formulation. Part II is devoted to an analysis of the education and career management requirements of officers. Three of the articles in this latter section are by serving officers. Attention is again focused on the officer in staff and senior policy making positions, rather than his regimental counterpart. The concluding article, by Dr. O’Neill provides a critical synopsis of the foregoing arguments and a historical survey of the relationship between Australian forces and society. The latter survey may have been better placed as an introductory chapter.

The first chapter, by Dr. Hugh Smith examines the broader societal trends which are
forcing the pace of change; in particular the politicization and limitation of the scope of military action and the ‘civilianization’ of armed forces. Drs. Mediansky and Ball move from this broad overview to address the workings of the higher defence machinery in the areas of strategic policy and equipment acquisition. Both are critical of the performance of service officers in these two areas. Mediansky argues that in strategic policy, officers are hampered by an inadequate opportunity to contribute, and by a lack of career preparation for the bureaucratic ‘cut and thrust’ of Defence Central. On the other hand, Ball is critical of the dominance of officers in the equipment procurement process — not so much their right to predominate, but rather the narrow single-service perspective which guides their decisions.

In his second article, Ball again criticizes what he sees as outmoded decision-maker perspectives — specifically the failure to develop a coherent policy for mobilization. He presents a cogent plea for greater self reliance in equipment acquisition and the utilization of civilian resources. The structure of the defence higher command machinery is also questioned in terms of its workability, both for force expansion and the control of operations. One argument is, however, dated. The Army force structure no longer reflects a predominantly forward defence role, as Ball suggests, but a more balanced capability to operate either in Australia or overseas. But perhaps his most telling point is contained in his last sentence — referring to mobilization he suggests that ‘...the demonstration of such a capability might itself, through the enhancement of deterrence, make actual mobilization never necessary’.

In Part 2 Lieutenant Colonels Mench and Jans and Majors, Cheeseman and Sydney analyse the officer education and career management systems of the Army. Mench identifies the service requirement for tertiary educated officers, and although favouring a tri-service academy for officer training, advances a strong argument for tertiary officer education. As a Parthian shot he suggests that the problem of the officer corps’ capacity to adapt to change may be not just a matter of appropriate education, but a deeper malaise — a group psychological unsuitability for the demands of modern warfare.

Whatever the merits of the ‘psychology of military incompetence’ thesis, Jans, Sydney and Cheeseman address the immediate problems of reconciling the needs of the service and the desire for job satisfaction in the employment of officers. All three argue that the dictates of job efficiency in the technological age require specialization in a more limited job arena than at present. Even so, they recognize the need for a grounding in the regimental environment, and their consensus is for an officer Corps comprised predominantly of dual specialists (i.e. a regimental and a specialist staff or technical vocation), with lesser numbers of ‘generalist’ officers and specialist professionals. The arguments are persuasive and support the views expressed in the RODC report. Even so, we would be wise to heed Dr. O’Neill’s cautionary reminder in the final article, that breadth of experience and an empathy for the soldier in the field should never be lost, if we are to maintain an efficient Army. It is a pity that the arguments of the three service officers for greater career specialization could not be balanced by a separate article arguing the merits of the generalist career model.

To conclude, the views expressed by Dr. Mediansky and his co-authors are a valuable addition to the Australian defence debate. But because so much of the book is devoted to the career development of the service officer there is a danger that it may only attract a limited readership. This would be unfortunate, because much of the material, particularly in the first four chapters, question the more basic framework of Australia’s defence effort. What we need now is the development of academic debate on the future of the private soldier — in particular his capacity to adapt to changes in warfare and society in the coming decades. It is to be hoped that the Regular Soldier Career Development Review will stimulate such debate, in a hitherto neglected area of academic scrutiny.

Reviewed by Michael Underdown, Research Assistant (Defence Studies), Public Policy Studies, University of Melbourne.

BRIGADIER ‘Birdie’ Smith served with the Brigade of Gurkhas during World War II as a member of the ‘Forgotten Army.’ His decision to research the Allied recapture of Burma was made after publication of the Stillwell
The American film industry had previously propagated the view that Burma (and much of the rest of the world) was recaptured by Errol Flynn. Stillwell's message was that the war was won by the Americans and their (Nationalist) Chinese allies. This contradicted the belief of those who had fought throughout the Burma Campaign, that "it was a military struggle between British and Indian units on the one hand the Japanese on the other."

Within the framework of a study of the campaign as a whole the author has provided detailed accounts of such major battles as those at Imphal and Meiktila. Nevertheless, the emphasis is on the logistic and human problems associated with fighting in the jungle and on the strains and divisions among the Allied leaders and their effect on the commanders in the field.

As their campaign in Malaya took shape the Japanese High Command ordered the 15th Army to capture Burma in cooperation with the IJN. The move was seen as a necessary step in the campaign against the Nationalist Chinese. Rangoon fell on 8 March 1942, less than two months after the Japanese attack had begun. The Allied troops not lost in the retreat to India regrouped and spent the next three years recapturing Burma from the Japanese.

The difficulties faced by General Wavell in controlling rioting in India were compounded by Churchill's insistence that Rangoon be recaptured by September 1942. This was an impossible task, and no doubt influenced subsequent strategic planning. The British 14th Division under General Irwin, with headquarters at Calcutta, advanced through Arakan only to be halted in December of that year. Churchill insisted on a continuation of the action which met with disaster and General Slim was finally ordered to take command of the Allied troops.

Brigadier Smith provides a careful picture of the role of such enigmatic commanders as Major General Ord Wingate and General Joseph Stillwell. The test for Wingate's Long Range Penetration Group (the Chindits), expanded to 25 British, Gurkha and West African battalions, came when it was decided at the Quebec Conference in July 1943 that they would be employed in cutting off the Japanese from Stillwell's Assam to China supply route.

Neither Earl Mountbatten nor Wingate were able to persuade Chiang Kai-shek to order the advance of the Chinese Expeditionary Force into Burma. However, the Chinese 22nd and 38th Divisions did fight with Stillwell's 5307 Composite Unit (Merrill's Marauders) in an endeavour to capture Myitkyina on the route of the proposed highway to China.

By mid-1944 the Allies, after a victory over the Japanese in the Ha-Go Offensive in February, had dug in. Air supply by the RAF and USAF was of vital importance to the success of the Imphal Battles and subsequent campaign, as has been attested by both Slim and General Marshal. The Irrawaddy was crossed in January 1945 and after a major battle at Meiktila in February/March there was a relentless drive for Rangoon, which was captured on 2 May.

This book is handsomely produced, with well-drawn maps and an interesting selection of photographs. It is shown quite clearly that, although Slim's 14th Army did not reconquer Burma alone, it certainly was responsible for the final victory, a victory which would have been achieved much more easily were it not for political interference and the prima donna nature of some Allied commanders.

NOTE


Reviewer: Dr L. H. Barber, Senior Lecturer in History, University of Waikato, New Zealand.

STUDENTS of military history and veterans of the Korean war will agree that Operation Chromite, the bold amphibious assault by United Nations' troops in September 1950 deserves repeated analysis. Legend in his own lifetime, General of the Army, Douglas MacArthur, facetiously described his plan to land 70,000 troops on the beaches of Inchon, 22 kilometres from Seoul, as a "5000-to-1 gamble".

Michael Langley, a military historian with six previous published works to his credit, shows in his latest book, a reappraisal of the Inchon landing, that MacArthur's gamble was made
more certain by thorough staff work, by inter-

erservice co-operation between the Army, Navy, Air Force and Marines, and by MacAr-

thur's ability to convince his subordinates of his
capacity for success.

Operation Chromite was a bold attempt by

the United Nations command to seize the ini-
tiative from the North Vietnamese Army that

had pushed it south to the Pusan perimeter.
The operations designer, MacArthur, correctly

assumed that his World War II Pacific theatre
strategy, of amphibious landings made in force
behind the enemies forward position and across
enemy communication lines, could well be
adapted to meet the Korean emergency.

However, difficult terrain, tide, and uncertain
weather, introduced a high risk factor into his
operational plans.

Langley notes that an initial problem that

confronted MacArthur's staff was the vigorous
tidal range of 32 feet within the Inchon har-

bour.

On the ebb tide the harbour became a vast
mud flat, stretching three miles out to sea,
and changing every channel and inlet to coils
of twisting mud.

Only for three hours on each tide could landing
craft hit the beach. Outside that time they
would be stranded — sitting ducks for the
enemy bombardment.

A second hazard was provided by the nature
of the landing zone itself. The author of

Inchon. MacArthur's Final Triumph notes
that:

The word beach was itself a misnomer . . .
for the whole coast line adjacent to Inchon
consisted of fords and spits of lands, im-

mediately overlooked by the forward slopes
of precipitous hill features which would
 idealy suit the defenders.

MacArthur defended his operational target
with the argument that the element of surprise
must be high with such an unlikely landing area
chosen. Of course the same could have been
said of Gallipoli.

Despite the risk of cyclones, and despite the
logistic shortcomings of Inchon's harbour, the
landing succeeded, Seoul was returned to the
South Koreans, and MacArthur began his
march beyond the 38th Parallel, a march that
ended in a Chinese invasion and the General's
recall by an enraged Harry Truman.

Michael Langley's Inchon is a clear and
readable account of the assaults on Green
Beach, Red Beach and Blue Beach, and of
the battle for Kimpo airfield. His Appendix A is a
diary of Operation Chromite and his third
Appendix notes some of the problems facing
those who would reconstruct the battle.

If there is a weakness in this work it has to do
with general political and biographical com-
ment, and with somewhat extreme comparisons
between MacArthur's battle plans and those
from classical military history. There is a lack
of tightness in the contextual setting, with too
much irrelevant material.

But this is a small defect when the book's
total strength is considered. Michael Langley's
new appraisal of Inchon is a fine battle study,
presented in a lively style. His splendid com-
bination of accuracy and compelling reading
will make this a popular work amongst both
military historians and interested general
readers.

Officer Education: Problems and Prospects

Proceedings of a conference on officer education in the tri-service context
held at R.M.C. Duntroon in May 1980. Contributors include Paul Mench,
Michael Underdown, Sir Arthur Tange, Rear Admiral Dovers, N. A. Jans and
Theodore Ropp.

Copies may be obtained free of charge from: Dr. Hugh Smith, Department
of Government, R.M.C. Duntroon, ACT, 2600.