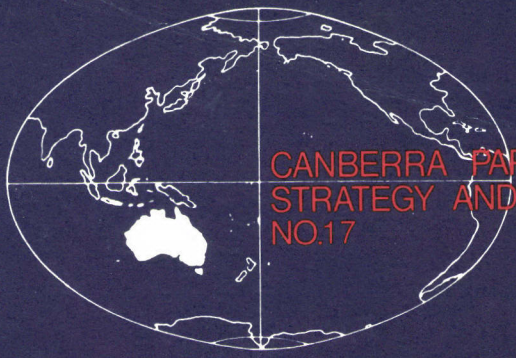

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ROSS BABBAGE DESMOND BALL J.O. LANGTRY ROBERT O'NEIL

The Development of Australian Army Officers for the 1980s

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Ross Babbage
Desmond Ball
J.O. Langtry
Robert O'Neill

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During the 1970s Australia's defence policy and strategic environment have undergone major changes. 'Forward defence' is no longer the basis of Australia's strategic posture; revolutionary changes in weapons technology are making existing operational methods ineffective in crucial aspects; and Australia has to develop a more self reliant national defence capability. At the same time, rapid developments are occurring in the ways in which complex decisions are taken, in the rate at which the frontiers of knowledge are expanding and in the beliefs and expectations held by members of Australian society.

Therefore the Australian Army has to plan the development of its leaders to meet fundamentally new requirements. In this monograph, the authors attempt to analyse the Army's problems in this regard and to suggest ways in which they might be solved. An earlier version of the paper was submitted to the Australian Army's Regular Officer Development Committee which investigated this topic in 1977-78.

Robert O'Neill
Editor, *Canberra Papers*
and Head, *Strategic and*
Defence Studies Centre

Mr Ross Babbage is currently on leave from the Department of Defence and is conducting research in the Department of International Relations at the Australian National University for his Ph.D. His doctoral dissertation will include a discussion of Australia's developing strategic situation and a detailed analysis of a wide range of conceptual options which may be available to security planners in the 1980s. Before joining the Department of Defence he wrote a Masters thesis at Sydney University dealing with Australia's independent capacity to meet major threats. Since that time he has contributed to a wide range of defence forums and written extensively on a number of conceptual and applied security issues.

Dr Desmond Ball is a Research Fellow in the Strategic and Defence Studies Centre, Australian National University. He has previously been a Lecturer in international relations and military politics in the Department of Government, Sydney University; and a Research Fellow at the Center for International Affairs, Harvard University. He has published a number of articles and monographs on various aspects of national security policy, in both Australia and the United States. Most recently, he edited a volume on *The Future of Tactical Airpower in the Defence of Australia.*

Colonel J.O. Langtry (Australian Regular Army Reserve) is a graduate of Melbourne University. A former infantry officer, he retired from the Army in 1974. During the latter part of his Service career he worked in the fields of future developments in weapons and tactical ground force concepts, national assessments in the Joint Intelligence Organisation, and strategic assessments and defence policy in the Department of Defence. He is currently the Executive Officer in the Strategic and Defence Studies Centre.

Dr Robert O'Neill is Head of the Strategic and Defence Studies Centre, and a Professorial Fellow in the Department of International Relations, Research School of Pacific Studies, Australian National University. A graduate of the Royal Military College of Australia and the Universities of Melbourne and Oxford, he served in Vietnam as an infantry officer, 1966-67. After lecturing in history at the Royal Military College, he joined the ANU in 1969 and became Head of the SDSC in 1971. His work embraces both contemporary strategic analysis and the historical study of warfare. He is the Australian Official Historian for the Korean War, Armed Services Section Editor for the *Australian Dictionary of Biography* and member of the Editorial Advisory Board for the publication of *Documents on Australian Foreign Policy.*

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Chapter 1

Introduction

The Regular Officer Development Committee (RODC) which was established by the Australian Army in 1977 was charged with one of the most interesting and important tasks undertaken in this area since at least the Second World War. In appreciation of the significance of its task, the RODC chose to interpret its terms of reference broadly; for the factors affecting the quality of military personnel and the requirements of officer development are both numerous and complex, e.g. they include changes in strategic policy and doctrine, force structure, technology, weapons systems, civil-military relations and the socio-political environment as well as changes in personnel policies.

The RODC also chose to seek a wide range of submissions, both formal and informal, structured and unstructured, specialized and general, from individuals and organizations within and outside of the Army. Because this subject was of great interest to us and related to the recent activities of the Strategic and Defence Studies Centre at the Australian National University a dialogue soon developed in early 1977 between the RODC and the SDSC. It became evident to us that we should attempt to set forth our views in writing so that they might be examined more closely by the RODC and this paper is the result.

After the paper's preparation and submission in July and August 1977 the dialogue continued in a ready spirit of give and take on both sides which has assisted us considerably in the testing, evaluation and refinement of concepts. We would like therefore to record our appreciation of the vigorous and direct manner in which the members of the RODC conducted these discussions. We would not wish to pretend that by the end of 1977 we all shared identical views on officer development. However it is fair to say that we recognize a large area of common ground shared by both groups. We are also grateful to the RODC, particularly the Chairman Brigadier P.J. Norton, for permission to publish this paper.

It is particularly important that the future development of Army officers is being investigated in Australia today. A number of the basic elements which affect Australia's security and its security policy and posture are tending to become increasingly dynamic, raising in a very real sense the prospect of Australia's officer development system becoming obsolescent. Australia's basic national strategic policy is currently in a state of flux; the policy of

'forward defence' has been rejected in favour of something generally referred to as 'defence of Australia', but the alternative strategies which fall within this reference have yet to be identified, delineated, defined, compared and evaluated for final choice of what is to be our new strategic policy. Developments in weapons technology are creating a new battlefield environment for future military operations. Changes in technology require that new areas of competence be developed. The context, scope, and day-to-day working aspects of civil-military relations are changing, as, indeed, is the whole relation between the military and Australian society.

These developments obviously must be matched by changes in the officer development system. But the relationship is one of mutual interdependence rather than of uni-directional influence. Of the many factors which determine the effectiveness of Australia's security posture, that of officer development is itself one of the most important. It is clear that training and experience are often critical on the battlefield. But the contribution which the military can make to more effective and efficient defence decision-making, to the design of a flexible force structure and to the development of tactics and strategy which are sensitive to changes in weapons technology and in the nature of operational requirements is sometimes of greater significance.

It is of particular importance that the Army has taken the lead in inquiring into officer development, since many of the new strategic developments have special implications for that Service. This is the case, for example, with regard to the changes in Australia's basic national strategic policy. The R.A.N. and the R.A.A.F. are generally more involved in technical operations and are relatively less sensitive to changes in the geographical environment of their operations. It is more imperative for the Army to familiarize itself with the indigenous terrain, geography, climate and vegetation; to adjust to the implications of self-reliance and logistic support and even for operational support in matters such as the assistance provided by air and naval firepower; to extract itself from its long immersion in counter-insurgency operations in South-east Asia in order to face the new requirements of the defence of Australia; and to confront the problems of defending a vast area with only a small population.

The Army has also been affected more than the other Services by the recent escalation in manpower costs in that the manpower component of Army expenditure is higher than that of the other Services. As other studies of military personnel development have pointed out, manpower issues are assuming an ever greater importance in defence planning and budgeting.[1]

[1]See Eva M. Norrblom, *The Returns to Military and Civilian Training*, (The RAND Corporation, Santa Monica, R-1900-ARPA, July 1976), p. iii.

In terms of defence expenditure, manpower costs in the mid-1960s used to account for about one-third of the total defence expenditure. By the early 1970s the proportion had reached 50 per cent, and in the last three years it has been near 60 per cent. The November 1976 White Paper acknowledges that in recent years manpower has come to absorb too large a portion of the Defence Vote, and states that over the five-year programme period the expenditure trend on manpower will be reversed.[2] As the most manpower-intensive of the Services, the Army will be the most affected by this reversal, including both operational and supporting elements. On the support side, for example, given that service manpower costs considerably more than civilian labour, there is an argument for further replacing uniformed staff with civilians in such rear-area tasks as stores, pay, maintenance, accounting and general office functions. There will be increasing pressures to release military personnel for active training and combat-oriented activities. A second impact of escalating costs will be to provide a further argument for the early streaming of those officers destined for staff and policy-making duties.

This paper has been prepared with particular emphasis on the implications of 'likely trends in defence policy, continental defence concepts, Army capability requirements, force structure and related technological developments', in accordance with guidelines given by the RODC.

The paper does not address either specific Army capability requirements or the details of officer education and training. General Army capability requirements are susceptible to academic analysis; they can be derived logically from a statement of the basic national strategic policy and an appreciation of the capabilities of the notional adversaries. However the particulars of capability requirements, of weapons systems, and of brand names can be decided only on the basis of knowledge and experience of operational factors by the professional practitioners, and of system specifications, many of which are classified. Questions such as whether or not Australia should have acquired the Leopard tanks are therefore not considered here. Neither is this paper concerned with questions of officer training and education as such. It is believed that a background discussion of the trends in the general strategic environment is essential for a consideration of those questions, but that other areas of expertise must be involved in the determination of the appropriate details of officer training and education. Hence we believe that to go further than we have would be to risk infringing the limits of our competence.

Finally, as with any study of future developments, there is a special difficulty in distinguishing the perceptive from the prescriptive, the inevitable

[2]Hon. D.J. Killen, *Australian Defence*, November 1976, (Australian Government Publishing Service, Canberra, 1976) pp. 30, 59.

from the desirable. There is perhaps some certitude with regard to technological developments, and particularly developments in weapons technology, since these are in many cases already in R & D and prototype forms. For example, first-generation smart bombs and other forms of precision guided munitions were used in Vietnam and the Yom Kippur War. But technology does not automatically produce developments in other areas. These require the application of human intelligence. It is possible to speculate on how the Australian force structure, tactics and strategy, command and control arrangements, and officer development should best adapt to the new weapons technologies and the changing basic strategic policy. Chapter 5 below is perhaps such an exercise. But military history is replete with outstanding examples of both success and failure of military personnel and organizations to adapt to changing conditions. Indeed, victory or defeat in battle and even the prospects for national survival depend ultimately very largely on the ability to adapt and to achieve the maximum advantage from changing circumstances. It is perhaps the principal requirement of officer development that this ability should become a natural attribute of officers passing through their professional development system.

Chapter 2

Australia's Changing Strategic Environment

The nature of Australia's strategic environment has changed radically in the past decade. Since the end of the Indo-China conflict and the withdrawal of U.S. and other land forces from South-east Asia, Australia has had to abandon its time-honoured policy of 'forward defence'; strategic thinking today focuses much more on the direct defence of Australia, its maritime and air approaches, and its vital interests. Moreover, at least up to very major contingencies, Australia must itself accept the principal responsibility for its own defence. As Admiral Sir Victor Smith stated recently:

> the requirement for Australian forces to operate alongside allies outside Australia is very greatly reduced. In fact, Australia's obligations are first to itself, and to have an ability to handle any lesser contingencies independently and successfully. I emphasise that in my view, Australian forces should be oriented first and foremost to meet contingent requirements for military commitments in Australia's own national defence environment, its territories and the sea and air space around it.[1]

Something of a consensus has developed in Australia around 'defence of Australia' strategies and policies. Although the terms'defence of Australia' and 'continental defence' gained much public currency during the period of the last Labor Government, strategic thinking had been developing in this direction since at least the Guam Doctrine of 1969. This developing consensus is perhaps most evident in the evolution of the basic strategic documentation. The *Strategic Basis* of 1968 was the last to base Australian strategic policy on the maintenance of a 'forward defence' posture. The 1971 *Strategic Basis* reflected the transition phase; while realistically assessing the limitation of ANZUS and listing a number of constraints on the willingness of the United States to rush to Australia's assistance, and doubting the practical significance of SEATO, it nevertheless based policy on the U.S. relationship and saw counter-insurgency operations as the capability principally necessary for Australia.[2] The 1973 *Strategic Basis* represented a full abandonment of 'forward defence'; it stated:

[1] Admiral Sir Victor Smith, 'A Military View on the Limitations on Australia's Future Defence Capabilities', *The Australian Journal of Defence Studies*, (Vol.1, No.1), March 1977, pp. 5-6.

[2] 'A New Top Secret Basis for a New Defence Policy', *The National Times*, 25-30 June 1973, pp. 6-7.

> Australia's basic strategic concern is the security of our Territory from attack and threat of attack and from political or economic duress;[3]

and the then Minister for Defence, Mr Barnard, said (at the Opening of the Chief of the General Staff's Exercise, Royal Military College, Duntroon, 12 August 1974):

> We place emphasis on the defence of Australia as a criterion to be used in developing forces, tactical doctrine and infrastructure.[4]

This emphasis was accepted by the Liberal Party's defence spokesman in Opposition at that time:

> The immediate objective of defence policy must be to provide, within the means available, for the physical defence of the national territory, including dependencies and the continental shelf and sea and air space adjacent to Australia.[5]

A similar emphasis is expressed in the November 1976 White Paper on *Australian Defence* – for example, when discussing the requirement for 'self-reliance', it states:

> A primary requirement is for increased self reliance. In our contemporary circumstances we no longer base our policy on the expectation that Australia's Navy or Army or Air Force will be sent abroad to fight as part of some other nation's force, supported by it. We do not rule out an Australian contribution to operations elsewhere if the requirement arose and we felt that our presence would be effective, and if our forces could be spared from their national tasks. But we believe that any operations are much more likely to be in our own neighbourhood than in some distant or forward theatre, and that our Armed Services would be conducting joint operations together as the Australian Defence Force.[6]

Indeed, chapters 1 and 2 of that document provide a useful summary of 'Australia's changing strategic circumstances'. Work on clarifying Australia's basic strategic policy is still proceeding within the defence establishment, but it seems most improbable that there will be a return to a substantially forward-based posture in the foreseeable future.

While the emphasis is clearly on the defence of the Australian continent, the precise reaches of the relevant 'neighbourhood' have not yet been delineated. Two particular 'forward' areas deserve consideration for inclusion in

[3] c.f. Mr Lance Barnard, speech at the Opening of the Chief of the General Staff's Exercise at the Royal Military College, Duntroon, 12 August 1974, p. 11.

[4] ibid., p. 10.

[5] A.J. Forbes, 'National Security and Defence', in Ray Aitchison, (ed.) *Looking at the Liberals*, (Cheshire, Melbourne, 1974), p. 122.

[6] Killen, *Australian Defence*, op.cit., p. 10.

the environment of possible future Australian military operations – Papua New Guinea and Antarctica. The former is of obvious strategic significance to Australia. And Antarctica is likely to be accorded greater strategic significance in the 1980s. There is almost certainly oil there; and there are vast quantities of krill and plankton – unexploited food sources capable of feeding millions. Military operations in either of these areas would require capabilities which might not be generated by efforts to defend the Australian continent alone. We take for granted that the defence of Australia includes the defence of the maritime approaches to Australia.

There is a similar lack of definition of the concept of 'self reliance'. The requirement for 'self reliance' was recognized in the November 1976 White Paper:

> Our alliance with the US gives substantial grounds for confidence that in the event of a fundamental threat to Australia's security, US military support would be forthcoming. However, even though our security may be ultimately dependent upon US support, we owe it to ourselves to be able to mount a national defence effort that would maximise the risks and costs of any aggression.
>
> Short of this major, and improbable, situation, we could face a range of other situations that we should expect to handle more independently. It is not our policy, nor would it be prudent, to rely upon US combat help in all circumstances. Indeed it is possible to envisage a range of situations in which the threshold of direct US combat involvement could be quite high. This is as it should be. An alliance does not free a nation from the responsibility to make adequate provision for its own security, or to help support stability and security in its own neighbourhood, should this requirement arise.
>
> This self-reliance posture derives essentially from our own national interests and responsibilities.[7]

Unfortunately, however, there is nothing in the basic strategic documentation which provides any working definition of 'self-reliance'. What are the circumstances in which U.S. assistance might not be forthcoming? What levels of contingencies fall into the category of 'fundamental threat' against which U.S. support would be available? What are the implications of self-reliance for the Australian defence industrial infrastructure?

Since planning cannot proceed without some further guidance here, it is imperative that these considerations be subjected to early and detailed analysis. Self-reliance requires that the Australian force structure be configured first and foremost for the defence of the Australian continent and

[7]ibid., pp. 10-11.

island territories on the basis of our own independent efforts. It must be recognized therefore that it is a diversion of scarce resources to procure forces for combined operations with allies except where this purpose can be achieved as a bonus by-product of self-reliance. Dependence on allies should be necessary only for contingencies which Australia is incapable of meeting from its own resources – essentially a major attack by the Soviet Union or China. Australia should take responsibility for all contingencies lower than these most improbable events. It is fortunate that there is something like a step-level function describing the difference in capabilities between the superpowers and Australia's other notional adversaries. None of Australia's regional neighbours has the military capability to engage in any significant level of hostilities against Australia. And with the exception of Japan, none have the economic base to develop such a capability. There is no doubt that Australia, using its own resources, could be defended against them if those resources are allocated wisely.

Such self-reliance requires, however, radically new ways of thinking and a restructuring of the Australian force posture. It requires an acceptance of a notion of national security much wider than the present focus on the military or defence element, which embraces the political and economic life of the nation as a whole, both in terms of its need for protection and its capacity to contribute to the security of the nation at large. In summary, there must be a recognition of the increased relevance of a 'total defence' posture and policy.

Although some consensus has developed around a basic national security policy of 'defence of Australia', with its implicit requirement of self-reliance, and there is an increasing acceptance of the necessity for a 'total defence' approach, the relevant strategic concepts and operational strategic policies have yet to be delineated.

With regard to the relevant strategic concepts, Australian defence planners are faced with a curious and most difficult planning problem; the nature of the contingencies to be addressed in the basic planning process. The period since the Second World War has seen an increasingly explicit emphasis on political objectives and political constraints in military operations – in, for example, the notions of deterrence, limited warfare, and the 'constabulary functions'[8] of the military. In many defence establishments, the notion of war-fighting as the guiding criterion for force structure design has given way, at least at the strategic level, to that of deterrence, which is an essentially psychological concept. With regard to actual war-fighting, the concept of limited war has come to characterize all military operations involving the

[8]c.f. Morris Janowitz, *The Professional Soldier: A Social and Political Portrait*, (The Free Press of Glencoe, Illinois, 1960), p. 418.

superpowers since World War II, and virtually all regional conflicts during this period. Military forces have increasingly become involved in 'constabulary' operations, i.e the maintenance of 'order' or, more correctly, the *status quo*. In many Third World countries this has involved internal operations; for Western powers it has usually meant involvement in support of the status quo in the Third World. At a lower level, it has meant the surveillance and policing of national waters and offshore resources and coastlines, countering 'terrorism', etc.

As Janowitz has expressed it, the principal functions of the military in the post-World War II period have been 'strategic deterrence, limited warfare, and enlarged politico-military responsibility'.[9] Australian defence policy has not been too atypical here. Especially in recent years there has been a marked and explicit emphasis on 'low level' contingencies, ranging from policing actions to dislodging any 'limited lodgements'.

It is true that these lower level contingencies have a higher probability of occurrence than that of any more extreme scenario because the utility of the latter to an aggressor is much harder to perceive. And, more generally, it is appropriate that due consideration be given to the political nature of modern military planning and operations. However, the new demands of 'defence of Australia', and of self-reliance in that defence, as compared to 'forward defence', would seem to imply paying much more attention in defence planning than in the period of dependence on allies to the more extreme contingencies where allied support cannot be taken so much for granted. In particular, greater consideration should be given to the problems of deterring such extreme contingencies. Successful deterrence involves much more than merely having adequate hardware; there must be the will to engage in military operations in the eventuality that the deterrent is challenged, and it must be clear that this commitment has been communicated to the notional adversaries. On the hardware side, however, deterrence would seem to imply relatively large forces-in-being, at least in the strike arms. Such forces-in-being should also have a capability of expanding to meet high-level contingencies within the defence preparation time anticipated to be available. They should also be capable of handling any lower level contingencies that might arise at quite short notice.

Unfortunately, it might be that the forces required for these two purposes are different. It is an axiom in the strategic literature, for example, that the criteria for deterrence and for defence are not only different but could even be quite incompatible. The objective of military deterrence is to reduce the probability of enemy military attacks, by posing for the enemy a sufficiently

[9]ibid., p. vii.

likely prospect that he will suffer a net loss as a result of the attack, or at least a higher net loss or lower net gain than would follow from his not attacking. Deterrence in this sense is a process of influencing the enemy's intentions. The strategic policy and associated force structure required for this process may be quite unsuited for the conduct of some of the military operations which could ensue in the event that deterrence fails.

It is much more difficult to illustrate this defence/deterrence dichotomy at the tactical level than at the strategic level, but one example relating to the use of strike aircraft will be outlined here. Equipping the Australian F-111C strike force with nuclear weapons could, at least perhaps under some circumstances, provide a quite formidable deterrent force. But that same force would have many inadequacies for actual defence operations. It would, for example, lack credibility in situations of relatively low level threats, probably even up to the point of rather extensive lodgements on Australian territory. Even for larger scale threats it would lack credibility if the notional adversary also possessed a nuclear strike force; in this situation a nuclear stalemate would obtain and conventional airpower would be required in actual force engagements. In any case, the possession of nuclear weapons does not automatically guarantee that deterrence will not fail. Aggression could still occur through irrationality, misperception, accident, or whatever, and the forces required to deal successfully with that aggression are more likely to be much larger numbers of aircraft equipped with precision-guided conventional weapons rather than a small number of relatively vulnerable F-111s.

Rather than being solely designed for a deterrent role, then, the Australian force structure must also have at least some capability for actual conventional war-fighting purposes. Indeed, given Australia's limited resources, the deterrent mission may have to be compromised in order for a credible defence force to be procured.

This dichotomy has direct implications for officer development. As other commentators have argued:

> Since armed forces do not have to be used to be effective, and if all goes well are unlikely actually to be used at all, there must inevitably be a conflict between the mental attitudes and somewhat rigid organisation which are essential if armed forces are to give a good account of themselves in battle, and the great flexibility and intellectual vigour needed to meet the evolution of new political initiatives.[10]

The design of the actual force structure will depend principally upon the choice of strategic policy. Concepts such as 'defence of Australia' are rather

[10] *The Economist*, 2-8 July 1977, p. 112, review of John Downey, *Management and the Armed Forces: An Anatomy of the Military Profession*, (McGraw-Hill, London, 1977).

vacuous unless defined in operational terms.

There are in fact several alternative strategies which are compatible with a 'defence of Australia' concept – and each of them has different implications for officer development. Five of these alternatives were surveyed by Ross Babbage in a paper for the U.S.I. of the A.C.T. in September 1974:[11]

Option 1 – Maintaining the present force structure

Although the present force structure was designed to be a basis for externally deployed task forces, there are indications that some members of the armed forces and the bureaucracy favour its retention for the radically different 'defence of Australia' requirement.

Its present existence is, however, its major asset. Some of the skills currently in existence in the Australian Defence Force are not really required for continental defence. Current military doctrine is not really suitable for the new task. The core force concept, which in practice involves retention of 'a bit of everything' as a hedge against future uncertainties, has enormous problems in effective implementation. Would a simple multiplication of the present structure provide an effective force for the defence of continental Australia?

Option 2 – An Australian nuclear deterrent

An acceptance of this alternative would involve Australia developing a nuclear weapons arsenal which, together with an appropriate delivery system (possibly submarine or aircraft launched), would provide a capacity to inflict unacceptable damage upon the homeland of a threatening major power. In all major scenarios reliance would be placed upon the deterrent potential of Australia's nuclear forces.

This option could be expected to suffer from several major problems. There are many significant contingencies in which such a posture would be incredible. It is difficult to design a posture capable of imposing, with certainty, the threat of unacceptable damage on all potential enemies. The indigenous construction of a significant nuclear arsenal and delivery capability would be very expensive and cause a severe strain on national resources. The commencement of an Australian nuclear weapons programme would probably have the effect of stimulating an arms race in Asia and thus significantly accelerate the already disturbing rate of proliferation. More dangerously, it could even tempt a potential adversary to launch a preventive attack

[11] Ross Babbage, 'Strategic Options for the Defence of Australia', *United Service*, (Vol. 28, No. 2), October 1974, pp. 15-26.

before the weapons could be deployed. Finally, the development of a credible nuclear weapons system would probably increase the probability of Australia being targeted in peacetime by major, and also perhaps, middle powers.

Although the adoption of this alternative is most unlikely, its implications for officer development would be quite extreme. Indeed, a policy of sole reliance on a national nuclear deterrent for all contingencies may render any large Army unnecessary – and possibly unaffordable, given the demands of the nuclear programme on Australia's finite resources.

Option 3 – Civil Defence

Civil defence should be an essential part of any 'defence of Australia' posture. It can be cost-effective as a means of limiting damage against nuclear attack, and provides enhanced deterrence against conventional threats. In the context of total defence, civil defence becomes an integrated effort with the regular forces; for the latter, it is imperative that they be familiar with their role in this relationship.

Option 4 – Selective development of present force to meet 'defence of Australia' requirement

This option would involve the development of strong conventional forces with a capability to operate effectively in Australia's continental environment. Air, maritime and land forces would all be large, well-equipped and properly trained to meet a wide range of contingencies.

The maritime element would probably include a regional surveillance capability, long-range strike forces and a capacity for seaborne transportation of ground units. The air force would provide integrated air defence, close air support and air transportation for ground forces. Ground elements would include large armoured and armoured infantry forces, a comprehensive communication system and a logistics organization backed by an extensive radial road and rail network.

The strategic rationale for this large conventional structure would be to lift Australia's deterrence capacity in a wide range of scenarios. If the deterrence posture failed, Australia's forces would aim to raise an aggressor's costs and risks to the highest possible levels. In low level harassment or raid scenarios, such forces would be capable of moving rapidly to the scene of hostilities in sufficient strength to dominate the battlefield. In the larger scenarios, involving an assault undertaken or supported by a major power, they would be trained to concentrate their firepower in an effort to make an enemy landing force inoperative. Air and naval units not only would assist in this

direct counter attack, but also would be deployed to disrupt the enemy's seaborne lines of communication and supply.

When this defensive option is carefully analyzed in the circumstances of a major assault, some difficulties become apparent. It is important to grasp the enormous difference in scale between Australia's conventional force capacity and that which might be available to an invader. For a foreign power to attempt seriously a major assault on the Australian continent his supporting economic capacity, his naval and aerial might, his numerical strength, firepower and probably technological capacity would have to be far superior to any within Australian capabilities. However a great power could deploy such force. In addition to this overwhelming conventional strength he would possess the advantages of surprise, initiative and free selection of the point of attack. An invader could choose from a large number of beachheads, some of which might be aerial landing points hundreds of miles from the sea. He could choose to concentrate his firepower at one spot or disperse it at several locations simultaneously or successively. Under these conditions it would probably prove extremely difficult to anticipate an enemy's intentions to the extent required to permit advanced concentration of significant Australian forces at landing sites.

Hence there are some problems in defending Australia against a conventional great power assault using purely Australian conventional forces. Either by employing technological skills, (possibly the electronic battlefield concept) or the sheer weight of firepower and numbers, an invader might well be able to destroy even a carefully phased mobile defence. However the multiplier effect of the attack/defence force ratio would work to Australia's advantage and so a moderate Australian force could deter all but a great power from aggression.

Option 5 — Territorial defence

Territorial strategy has been developed from a realization that against an invader superior in technology, firepower and numbers a conventional defence has little chance of success. Its objective is not to defeat an enemy in large positional or mobile battle, for such attempts would simply present opportunities for effective application of the invader's superior firepower and conventional military might. Indeed, because of the invader's assumed overwhelming conventional strength, he could not in the final analysis be prevented from occupying the cities, towns and installations of his choosing. However, because of the nature of the Australian continent, it would be physically impossible for even the most advanced power effectively to control the whole country, or even large parts of it, at any one time. A territorial defence

strategy is designed to develop fully the defensive potential of the nation at large. It could be implemented in such a way as to exploit Australia's nature as an island, its continental time and space, its variable climate, its diverse terrain and vegetation cover and its basically nationalistic population to force an invader to conduct an exhausting protracted campaign. Over a considerable time, the objective of this comprehensive strategy of resistance would be to raise an invader's psychological political, military and economic costs to a level which would induce his collapse and withdrawal.

Despite the significant role which could be played by civilians in a strategy of territorial defence there would be an important requirement for formal military units. They would probably possess the following capabilities. The maritime air and naval forces would be concentrated in an anti-shipping role. The ground element would be large, extremely mobile and equipped with an integral anti-armour and anti-air capability. In addition there would be a comprehensive intelligence network, an advanced electronic countermeasures capability and a small regional surveillance force.

In Australia's non-urban regions, territorial forces would derive much of their strength from an exploitation of Australia's vast continental space and the advantage in time which this space can give the defence.

While territorial defence could significantly raise Australia's deterrent threshold to an intending invader, its suitability for minor scenarios is rather questionable. While the air and naval strike units could probably be effectively utilized in these lesser contingencies, the ground forces would suffer from their limited ability to rapidly concentrate large conventional units in isolated regions. This weakness would appear to exclude effectively the territorial option as a comprehensive solution to Australia's continental defence requirement. A further weakness is that loss of the political and economic heartland of the major cities might destroy Australia's capacity to sustain resistance in the other areas.

Conclusion

Many of the capacities required for an independent continental defence structure are contained in options four and five. By carefully selecting the more desirable features, it may be possible to devise a strategy and force structure which maximizes Australia's limited resources and provides a flexible capability to meet all contingencies.

Australia's island nature presents a potential attacker with the problem of crossing a major water gap to reach his target – one of the most difficult of all operations to carry out if opposed and if the transportation of a major ground element is involved. Hence the fundamentals of a credible defence posture against a major attack would appear to be:

a. an Australian ground defence capacity, both conventional and territorial, sufficient to compel an attacker to transport a very large force, which while in transit would be difficult to protect; and

b. an Australian maritime strike force, both naval and air, which would require an attacker to have substantial naval and air superiority in order to be able to land an effective force on Australian territory.

Hence, while the first line of defence would be the maritime strike force, a major ground element would be necessary in order to compel an enemy attacker to offer the large number of relatively soft targets against which the maritime strike force would be most effective. Thus although the Army would be in the second line of defence from a war-fighting point of view, it would be an essential integral part of any credible deterrence posture. To fulfil both roles, i.e. deterrence and war-fighting, the Army must be substantial in size, capable of fighting a lengthy engagement against an enemy equipped with modern weapons and mobilizable within the defence preparation time available.

Chapter 3

Development in Conventional Military Technologies

The nature and speed of recent technological developments and the impact which they are having upon the conventional military battlefield is a second general area of fundamental change in Australia's strategic environment. In perhaps its simplest form, technology is merely providing new and better pieces of equipment. Yet because of the quantum jumps in capability which new systems frequently provide, even this relatively straightforward replacement of old equipment usually also involves the abandonment of traditional techniques, procedures and skills and the development and adoption of those that are new.

A far more involved consequence of new technology is its provision of an ever widening array of alternative means of performing important military functions. Sometimes these new technological options serve to reinforce traditional means of undertaking tasks, but in other situations they effectively compete with the established means of task performance. Thus, in many environments, we now face a situation where a mix of new and traditional means can better perform a task than an improved version of an old means on its own. In other situations new technology options may actively compete with, and even serve to replace, traditional options.

In an elementary sense these processes of technological development are not new. However, the speed of current change and the scale of its potential impact is quite unprecedented. Dr Heilmeier, the Director of the United States Defense Advanced Research Projects Agency, described the nature of the current situation in the following terms.

> I really do believe this is a unique time. I cannot remember a time in the last decade, or perhaps the decade before that, where there were so many technology initiatives on the horizon that could make a major difference to the national security. I think that in this case, the payoff is very, very large. We are not talking about incremental changes to the way we do things today. We are talking about radically different concepts, things that can make a big difference.[1]

[1]Testimony before the Research and Development Subcommittee of the Committee on Armed Services, U.S. Senate, *Fiscal Year 1977 Authorization for Military Procurement, Research and Development, and Active Duty, Selected Reserve and Civilian Personnel Strengths,* (Washington, March 9 1976, Part II, p. 5859)

As Dr Heilmeier implies, the pace of technological change affects much more than simply the performance of the items of equipment with which armed forces are supplied. Quantum jumps are being made in the capability of many types of system and in some fields completely new capacities are being developed. Strategies, doctrines, tactics and force structures are all being subjected to increasing pressures for change. The nature of conventional warfare as it has been known in the past is being changed fundamentally. The realms of what is possible and impossible on the conventional battlefield are in a state of flux which is unprecedented in both scale and scope.

The impact of these rapid advances in conventional military technology cannot be expected to be uniform worldwide. In many environments, financial, political, bureaucratic and social constraints will limit the procurement and application of the new technologies will vary greatly according to a wide range of local situational variables – weather, terrain, vegetation, space, morale, education levels, leadership etc. Thus, the implications of new technology developments for different types of environments are likely to vary greatly. Detailed analysis of the consequences for individual situations is, however, not attempted here. Rather, the discussion is concentrated upon the broader more universal implications of the full range of new technology developments.

This section addresses the principal aspects of the current developments in conventional military technologies – both the new conventional weapons technologies and the new developments in command, control and communications (C^3) technologies, with some elaboration of a series of tactical and strategic implications which arise from these respective developments.

With regard to conventional weapons technologies, something of a revolution has been developing over the past decades – as Dr Malcolm Currie, the past Director, Defense Research and Engineering, stated in 1975:

> A remarkable series of technical developments has brought us to the threshold of what I believe will become a true revolution in conventional warfare.[2]

Some of the products of this revolution have direct application to the defence of Australia; others certainly suggest a re-thinking of at least parts of the basic structure of Australia's defence posture.

This revolution in conventional weapons technology is perhaps best illustrated by developments in tactical missile systems – in engines, in warheads, and in guidance systems. The greatly enhanced precision guidance capacities now available or in the pipe-line offer extraordinary accuracy. These guidance systems rely for homing upon either those characteristics of the target which

[2]Cited in Phil Stanford, 'The Automatic Battlefield', *New York Times Magazine*, 23 February 1975.

distinguish it from the surrounding environment (by, for example, its optical, infra-red, acoustic, or radio-wave, etc., signatures); or highly accurate navigation to impact upon fixed targets with known locations or upon mobile targets passing known locations (by, for example, terrain contour matching, advanced inertial navigation systems, distance measuring equipment, etc.). In addition to missile applications, these various homing techniques can be applied to rockets, bombs, artillery rounds, mortar rounds and other types of ordnance. The implications of this extraordinary precision is that 'if a target can be acquired, it can usually be hit. [And] for many targets hitting is equivalent to destroying'.[3]

The propulsion systems of most types of weapons platforms and weapons themselves are being improved significantly. Most particularly there are several research and development efforts which appear to promise very much improved fuel, weight and space efficiencies. Engine developments include much more efficient solid propellant rocket booster motors and relatively small but also highly efficient turbofan jet engines (for use in, for example, cruise missiles). In weapons themselves, new forms of high density propellants will give much increased speed and range to man-portable systems.

With regard to conventional explosive and warhead technology, the destructive potential of a given conventional warhead volume and weight has increased greatly in recent years. A variety of new technology warheads has been developed to meet specific battlefield requirements. For instance, for the purpose of disabling, delaying and channelling concentrated movements of enemy forces, minelets and bomblets of 'fist' size have been developed. Because of their relative cheapness these weapons can be laid over large battlefield areas by aircraft, artillery and ground based dispenser systems.

For the neutralization of airfield runways, hardened aircraft shelters and other similar structures, terminally accelerated penetrator bombs have been developed with capacities not only to pierce and crater thick concrete but also to cause extensive heaving and disturbance beneath large areas of the surface. Another major development in conventional warhead technology has been that of fuel air explosives (FAEs). These are designed rapidly to spray and then ignite an aerosol cloud of highly volatile fuel. The effect is to exert very high overpressures over the immediate area of the explosion. Immediate applications are for mine clearance, for the destruction of hard targets,

[3]James F. Digby, *Precision-Guided Weapons*, (The RAND Corporation Santa Monica, P-5353, March 1975), p. 7.

bunkers, aircraft shelters, armoured vehicles, ships, etc., and as an anti-personnel weapon against units in the open and in entrenchments.[4]

A number of new weapons concepts and new weapons platforms have also been developed. For example, modern precision guidance propulsion and warhead technologies have revolutionized long range bombardment capacities by making it possible to produce very compact cruise missile systems which can be launched from standard torpedo tubes, aircraft pylons, shipboard canisters and ground vehicles to hit fixed targets up to 3,200 kilometres distant with accuracies of perhaps a few metres. Shorter range systems, especially those designed for the anti-ship function, are limited more by the problems of precise target acquisition than those of range and accuracy.

Developments of comparable significance are under way in the fields of, for example, tank gun systems, lightweight anti-tank and other weaponry, and sensor weapons (with integrated sensor and warhead systems, such as the CAPTOR anti-submarine mine). Completely new types of weapon systems and platforms include high-powered laser weapons, remotely piloted vehicles (RPVs), hydrofoils, and surface effect ships.

In addition to developments in purely weapons technologies, other technological advances are occurring in such areas as surveillance, target acquisition, remote data processing power, etc., which also have important implications for strategic policies and national defence postures.

A principal consequence of these new developments in conventional military technologies is that if a target can be acquired and identified there is now an order of magnitude increase in the probability that it can be destroyed quickly even if it is positioned at a distant location. Hence, it seems likely that target acquisition and identification, even at extended ranges, will become an increasingly central function on the conventional battlefield.

From the Australian point of view, the most significant of these new surveillance and target acquisition technologies are underwater sonar surveillance systems, airborne early warning and control systems (for which there is now a requirement in the five-year rolling programme), ground-based over-the-horizon backscatter (OTH-B) radar systems (e.g. Project Jindalee), and, in the longer term, satellite surveillance systems.

Area surveillance, target acquisition, classification and locating systems as well as weapons systems themselves have all multiplied in different forms. However, while in most cases there are more systems of different types and the capabilities of individual systems have risen greatly, the overall effective-

[4] For further discussion of FAE applications, see Desmond Ball and Steven Rosen, 'Fuel Air Explosives for Medium Powers', *Pacific Defence Reporter*, April 1977; and Desmond Ball, 'New Military Technologies for the Defence of Australia', *Pacific Defence Reporter*, February 1978.

ness of military structures as a whole in performing their prime functions has not been enhanced automatically by a comparable increase in efficiency. Total structural effectiveness is dependent heavily upon the manner in which the numerous individual systems are co-ordinated and directed. If this co-ordination, command and control function is performed with maximum efficiency, in many environments the potential for overall task performance will exceed the sum of maximum individual system capacities. In other words, sophisticated communications, command and control (C^3) systems are capable of producing a force multiplier effect. These new C^3 systems will also have a direct and significant impact on defence decision-making processes.

This revolution in conventional military technologies has many profound implications for the future operational requirement and officer development. The first implication for officer development suggested by this 'revolution' is the necessity for greatly enhanced technical competence on the part of regular officers. The lack of such competence in some key areas has already become apparent – with, for example, FAE munitions, which have significant implications for battlefield operations and military organization. More generally, the role of technological change as a determinant of military power can only increase.

It should be recognized, of course, that while the need for greater technical competence on the part of officers will increase, it is unrealistic to expect officers to keep abreast of all technological developments.[5] Technological change is presently taking place so rapidly and on such a broad front that even full-time professional technologists must specialize or be content with a superficial acquaintance with major trends. This suggests a need for regular – perhaps annual – surveys of the technological developments relevant to the Australian situation that focus on the operational and officer development implications of newly available and imminent capabilities. Relevant technologies are those that Australia may have to contend with and those that Australia might reasonably consider acquiring.

[5]It should also be noted that some recent technological developments may tend to operate to increase the relative importance of some of the more conventional military skills and to retard the relative growth of the more technical specialties. As Harold Wool has argued, for example:

> Advances in design of electronic equipment, including solid-state circuitry, miniaturization, and the introduction of modular (replaceable) components, have tended to reduce maintenance requirements for these new types of equipment. Although the volume and variety of military electronics equipment will probably continue to increase, this increase may be accompanied by a slower growth, or levelling off in associated requirements for enlisted electronics technicians.

See Harold Wool, *The Military Specialist: Skilled Manpower and the Armed Forces*, (The Johns Hopkins Press, Baltimore, 1968), p. 48.

A second set of implications derives from the impact of technological change on strategic and tactical offence-defence relationships. There is some consensus about the direction in which the new technologies are tending in this regard. Outlining the views of a number of writers on the military impact of the new weapons, Richard Burt has written that these developments 'seem to presage a new era in conventional land warfare that an increasing number of observers argue will favour the defender over the attacker'.[6] And James Digby, in many respects the leading authority on the new technologies, has opined that 'the new style of arming goes a long way toward making the small countries more defensible'.[7] Indeed, Digby's principal conclusion with regard to the impact of the new technologies is that they are 'probably advantageous to the defender'.[8]

In fact, however, despite the apparent consensus regarding the military implications of the new generation of conventional weapons, any assessment really depends upon much more specific factors – the particular new technology itself, the tactics and strategy associated with its use, the actual combat environment in which it is to be employed, whether or not the notional adversary possesses similar weapons or at least counters to them, etc. For example, with regard to the question of seizing and holding advantageous terrain, it is often argued that the deployment of the new precision guidance technologies will favour the defence of territory, since the costs of a premeditated attack against well constructed and alert defences will be higher than before. However, as Richard Burt has pointed out, while ground will become more difficult to seize, it will be almost as difficult to recover, since the anti-tank and air defence technologies can be turned to the protection of a small portion of territory gained in a surprise strike.[9]

From the point of view of the defence of Australia, it should be possible to procure a small number of carefully selected high technology early warning, identification and long range target detection systems and a large number of medium technology weapons systems which, when structured into appropriate military units, should provide a highly survivable capacity to defend in depth. To illustrate the point, medium technology anti-aircraft, anti-tank and anti-ship weaponry is relatively inexpensive to procure, while at the same time being highly reliable and simple to operate and maintain.

[6]Richard Burt, 'New Weapons Technologies and European Security', *Orbis*, (Vol. XIX, No. 2, Summer 1975), p. 518.

[7]Digby, *Precision-Guided Weapons*, (P-5353), p. 16.

[8]ibid., p. 23.

[9]Richard, Burt, 'New Weapons Technologies and European Security', pp. 523-524. This point is made at greater length in Steven J. Rosen and Martin Indyk, 'The Temptation to Pre-empt in a Fifth Arab-Israeli War', *Orbis*, (Vol. 20, No. 2, Summer 1976).

The selective exploitation of the potential which the new technologies provide should have the effect of enhancing greatly Australia's deterrent and defensive capacities against a wide range of contingencies.

A third set of implications relates to the increasing vulnerability of large concentrations of weapons systems, support, or manpower. With regard to weapons systems, those which have large radar, magnetic, heat, acoustic, electronic or other media signatures are becoming much easier to detect, identify and acquire as targets as a result of significant advances in long range surveillance and target acquisition technologies. Once acquired as a target the new precision guidance, propulsion and warhead technologies are increasing greatly the ease with which targets can be attacked and destroyed at both short and long ranges. At the very least, large systems are increasingly suffering from 'passive attrition', i.e. they are being forced to adopt expensive defensive equipment fits and elaborate defensive operational tactics in attempts to ensure their continued survivability on the modern battlefield. These defensive reactive measures are very complex and expensive and almost all imply a very great degradation in total system cost effectiveness in that system's traditional role function.

Hence, as the new military technologies are deployed 'it will become much less desirable to concentrate a great deal of military value in one place or in one vehicle'.[10] This increased vulnerability of large and costly weapons systems (and support systems such as airfield, fire-support bases and supply dumps) suggests the acquisition of larger numbers of cheaper systems capable of mobility and dispersion. The combat arms, and particularly the infantry, will have to operate in much smaller units, without a concentrated support infrastructure, operations will be much more dispersed, and greater mobility will be essential. Greater hardening will offer little protection against some of the new weapons (such as FAEs deployed in an area mode).

Fourth, following on from this development and distinct from the Army's own instrinsic operations are the implications of the increasing vulnerability of large logistic support areas and other basing structures. Given the Army's responsibility for some aspects of the protection of bases and the supporting infrastructure of the other Services, as these become more dispersed the Army's task will become more complex.

Fifth, the increasing vulnerability of large concentrations of manpower, together with other associated developments, is raising the relative survivability of small military units. Because large and obvious weapons platforms are being subjected to higher levels of both active and passive attrition in intense battlefield environments, it is becoming increasingly desirable to

[10]Digby, *Precision-Guided Weapons*, (P-5353), p. 7.

disperse military capacities. It is becoming preferable to force an enemy to try to find and destroy many relatively inexpensive platforms rather than a few high value ones. This development is being reinforced by the fact that the range capabilities of many small weapons platforms are being extended greatly and effective guided firepower is becoming increasingly light and compact. In combination these factors are having the effect of making small units viable for a much wider range of tasks than has hitherto been the case. Small units are not only being able to threaten and destroy larger units in more situations, but they themselves are frequently more survivable because of their lower all-media signatures and their high level of natural agility. Add to this the relatively low cost of these small units and it becomes clear that in many battlefield environments in the future, small unit proliferation will be a major feature.

The proliferation of small, relatively independent military units will have a large number of secondary implications for military structures. Most notably, research and development and equipment priorities are likely to change. Further, tactical doctrines and operational procedures are likely to require heavy modification if the potential offered by the new technologies is to be exploited fully. One likely change in tactical doctrine will be a reduced requirement for the highly vulnerable close concentration of military units, in many environments. Concentration of precisely directed firepower launched from remote locations will be able to provide much of the capability which in the past has been available only from closely deployed forces in the immediate battlefield area. However, at the same time, it is important to realize that high levels of force dispersion are likely to increase reliance upon high capacity command, control and communications facilities. In many situations the span of effective command is likely to be reduced severely. This, in turn, will place very greatly increased authority and responsibility in the hands of small unit commanders. Personnel training systems will need to be adjusted to ensure that military personnel filling key positions within this type of structure are equipped adequately to meet the very intense demands which may be made upon them in battlefield situations.

Sixth, the developments currently under way in conventional military technologies suggest that the capacity to remain untargeted will become more important. Because precision ordnance delivery at both short and long ranges is becoming increasingly easy and the destructive capacity of conventional warheads much greater, it is clear that one's capacity to remain untargeted is becoming an increasingly central determinant of battlefield outcomes. As has been discussed above, this is stimulating a high level of force dispersal, but it is also encouraging the rapid development of a wide array of stealth technologies and tactics. In terms of equipment it means the extensive deployment of

visual, radar, sound, heat and electronic suppression and camouflage systems. In the field of tactical doctrine the primary effect will be to accentuate the requirement for dispersed and co-ordinated movement undertaken in the cover of vegetation, built-up areas, darkness and poor weather. Where a battlefield function regularly requires a high level of battlefield visibility, remotely controlled or remotely emplaced automatic systems are likely to provide the most desirable means of task performance.

Seventh, round-the-clock operations will increasingly become the norm. This development derives from two principal factors: the development of night vision devices and the increasing pace of tactical war.

In the coming decade, the increasingly widespread use of both active and passive night vision devices will greatly reduce the traditional usefulness of night for concealment purposes and for rest. These devices can provide a greatly enhanced detection and target acquisition capability, not only through bad weather, rain, snow and fog, but even dust. A proliferation of these systems will also severely degrade the degree of security hitherto provided by vegetation and artificial netting. Further, chemical smoke as a form of visual protection will lose much of its effectiveness.

With much of the security hitherto derived from darkness, bad weather and light camouflage being removed, it can be anticipated that tactical war in all its phases and theatres will become more intense and an almost non-stop round-the-clock operation. This has different implications for different people in different situations, but on the general level it has obvious significance in purely human endurance terms. Patterns of sleeping, eating and general human activity are likely to be far more subject to modification to fit the new military requirements. Various forms of drugs may be dispensed to improve peak efficiency, extend human endurance or to assist personnel to sleep and rest even in noisy and uncomfortable environments.

In any event much will need to be done in educating all officers (and n.c.o.'s) in the employment of their human resources (some might say more concisely and simply – the exploitation of 'man – the weapon') in war with a sound understanding of the implications of both the physiological and psychological stresses involved. This is a requirement above and beyond the teaching of health, hygiene and 'man-management'. Since a unit's combat efficiency depends upon cohesion and teamwork, even a comparatively slight drop in the soldiers' psychological and physiological status will often lead to a greatly exaggerated loss of efficiency in the unit. Conversely, a slight improvement in the individuals' performance can give a marked boost to the unit's overall performance – perhaps the difference between victory and defeat, especially in fast-moving, round-the-clock operations.

For the commander, a formal, although specialized and limited education in man's physiology and psychology under climatic and battle stress should lead to –

a. Improvement in the quality of his leadership.
b. Clearer appreciation of the 'worth' of his force.
c. Improved management of his human resources (including improved training techniques).
d. Improvement of unit and individual efficiency.
e. The ability to obtain the optimum from his force with less risk of under- or over-estimating its absolute capacity.
f. The ability to appreciate and exploit weaknesses in his enemy due to physiological and psychological stress.

With the growing emphasis on general education and technical training, it is perhaps even more necessary to balance academic and technical training with education in the realities of the battlefield and its physical environment lest leaders and commanders are produced who will not be buffered by experience against their untutored reaction to the brutalities of war.

In the broader tactical field, the intense and non-stop nature of future war will have significant force structure implications. This will perhaps be most noticeable in its encouragement of a modular concept of rapidly replaceable, self-contained small elements. In the most intense battlefield environments these elements might be of battalion group, but more likely of company group, size. In less intense environments, company or possibly platoon modular units may well be favoured. Hence the suitability of the present structure of Field Force formations is questionable, as is its normal method of deployment.

The current developments in conventional military technologies also have a number of important implications for officer development through their impact on decision-making processes and on command and control. Something of a paradoxical situation may be emerging in this latter area. On the one hand, the trend is going in the direction of small groups operating in a dispersed and, sometimes, autonomous fashion. Yet with the development of remote data-processing units (as augured by the capabilities of the new Univac 1100-42 now operational with the Australian Defence Department), there is already a tendency for central commanders, and even the political leadership, to involve themselves in day-to-day military operations.

This tendency became increasingly evident during the recent South-east Asian conflict. In the mid-1960s, for example, it was apparently common practice for President Johnson personally to select targets for bombing in North Vietnam. The potential of military satellites for rapid voice communications to and from the on-scene command during crisis situations was clearly

demonstrated during the Saigon evacuation and the *Mayaguez* incident. According to a recent report on the *Mayaguez* incident, the communications network demonstrated 'the extent to which decision makers in Washington can exercise control over events taking place halfway around the world'.[11] This capability was made possible principally by satellite communications.

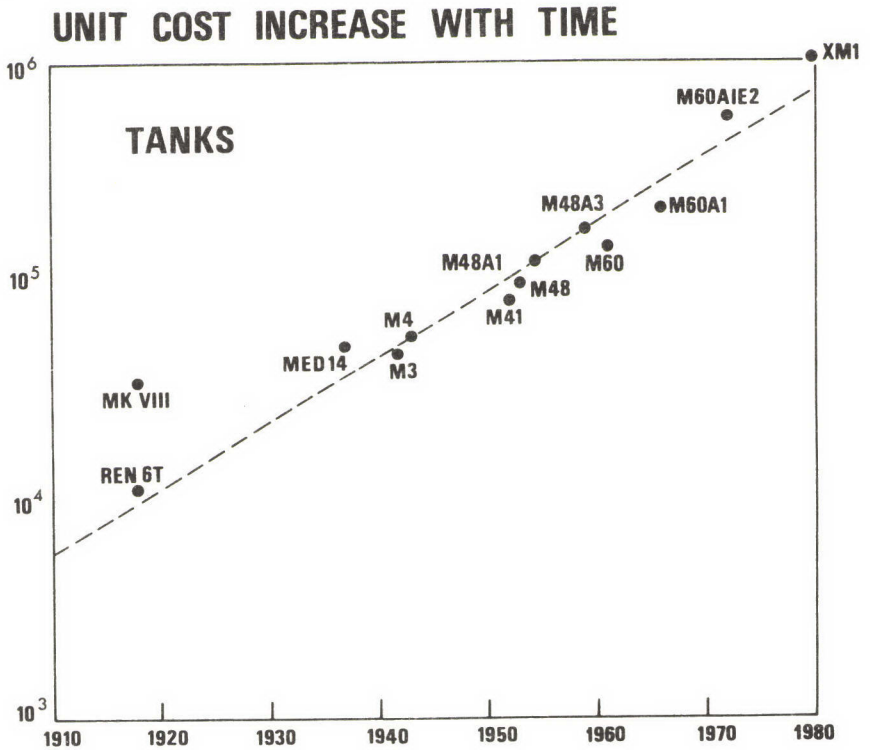
Yet these close central command/on-scene command relations cannot always be relied upon. As evinced in the Pueblo and EC-121 affairs, breakdowns and delays can occur at critical times. Moreover, in the electronic environment of the future, radio silence may become increasingly necessary. The autonomy of small operational elements will then have to extend to the higher command functions. Officer development should ensure that the development of technologies for close central control does not lead to the atrophy of on-scene command skills.

Finally, there are some important implications of the enormous escalation in costs of new weapons systems for the question of the future operational requirements and officer development. This is illustrated in the post-World War II trend in tank costs.[12] In World War II, a tank cost about $100,000 (F.Y. 1970 dollars); it now costs about a factor of 10 more (if we count the ill-fated MBT-70 as the most modern example of the technology trends in tanks. In any case, the XM-1 and the Leopard II will cost more than $1M. each).

[11]Statement of Richard H. Schriver, Director of Telecommunications and Command and Control Systems, DoD, in House Appropriations Committee, *Department of Defense Appropriations for 1977*, (Washington, 30 March 1976), Part 6, p. 20.

[12]See Norman R. Augustine, 'One Plane, One Tank, One Ship: Trend for the Future?', *Defense Management Journal*, (Vol 11, No. 2), April 1975, pp. 34-40; and James R. Digby and S.J. Dudzinski, 'The Strategic and Tactical Implications of New Weapons Technologies' in Robert O'Neill, (ed.), *The Defence of Australia, Fundamental New Aspects* (S.D.S.C., Canberra, 1977) pp. 49-54.

A similar point can be made with many other weapons platforms and systems. With regard to attack aircraft, for example, see William D. White, *US Tactical Air Power: Missions, Forces and Costs*, (The Brookings Institution, Washington, D.C., 1974), pp. 55-59.



Source: Augustine, as cited in Footnote 12, p. 36

This trend suggests three points. First, the effectiveness of the tank has not increased to the same extent as its cost over the period. For example, the Israeli armoured forces made extensive use of an up-gunned World War II M-3 tank in 1967 and achieved decisive victories over the technically superior T-54 and T-55. Second, for Western powers, the problem is not just the absolute escalation in cost; what makes it worse is that Soviet systems do not seem to be suffering the same complaint, at least to anywhere near the same extent. And, third, there are now emerging whole families of light anti-tank missiles, which promise dramatic increases in tank-killing effectiveness, and costing only $4000-$5000 (for infantry-portable systems such as TOW and Dragon, plus about $30,000 for the launcher) to $10,000-$20,000 for air-launched systems (e.g. Maverick).

Two solutions come to mind. One, which for a time commanded quite widespread acceptance in the United States, is that of a 'hi-lo' mix of equipments. As described by Admiral Zumwalt, 'hi' connotates those high-performance weapons systems that are also so high in cost that the country could afford to procure only a few of them at a time, but whose flexibility and versatility still make them cost-effective; 'lo' refers to moderate-cost, moderate-performance systems that could be procured in relatively large numbers, sufficient to ensure that the forces could be in enough places at the same time to fulfil the mission requirements.[13] Something of this sort of thinking has recently emerged in Australia, although not altogether for the same reasons, with, for example, the notion of a 'split force' for the Australian TFF to replace the obsolescent Mirage III-0 fighters.[14] But there must be considerable questioning about the applicability of this particular notion of a split force in the Australian procurement context. For one thing, the unit purchases are generally so small (almost certainly less than 100 in the case of the TFF) that if two or more equipment types are procured, the duplicated

[13] See Admiral Elmo R. Zumwalt, 'High-Low', *United States Naval Institute Proceedings*, April 1976, pp. 46-56.

[14] The idea of a two-aircraft Tactical Fighter Force is not new. In 1972, for example, it was proposed that the 24 Phantoms then on loan to Australia be retained for the ground support role and the Mirage III's be dedicated solely to the air superiority mission.

This idea was more recently given something of an analytic basis in two major studies relating to the TFF – the Central Studies Establishment's 'Naval Air Power/Tactical Air Weapons Systems (NAP/TAWS)' studies, completed in 1974-75, and the Air Staff's 'Fighter Development and the Tactical Fighter Force' study of 1974.

In both of these cases, however, it is possible to explain the 'split force' result on grounds other than that of the defence of continental Australia.

For some discussion of this, see Desmond Ball 'The Politics of Defence Decision-Making in Australia: The Mirage Replacement', (SDSC, ANU, January-February 1975), particularly pp. 31-33.

logistic and support costs come to take up a quite disproportionate share of the overall life cycle costs of the force.

If, however, there is some acceptance of this approach, the Services would have to adopt a 'two-tier' structure for their equipments, their training and even their manpower.

The second solution is to simply move down the technology ladder altogether, procuring much larger numbers of low-technology systems. Because the last few per cent of the technical performance parameters specified for a new weapons systems account for a disproportionate share of the total cost of the system, it could be that a force of this sort would be more effective than one consisting of smaller numbers of high-technology systems.

But, as Digby has pointed out,

> ... there are many complex questions of balance raised in the choice of 'many inexpensive' instead of 'fewer more expensive' vehicles. One has to ask about whether the inexpensive vehicles will have the needed speed, range, and payload. Will the manpower required make the 'many' less desirable? Will only the 'few' be able to mount effective countermeasure devices?[15]

These questions can only be answered on the basis of some force-on-force calculations of a type that has not been done so far.

Yet only when this analysis has been done will all the implications of the resultant force structure for officer development be clear. In the meantime few would argue against proposals to include a significant proportion of high technology, long lead-time armoured and mechanized forces in our ground force order of battle. But, the question of cost aside, there are limits as to the numbers that can be raised, equipped and logistically sustained in high intensity operations. If Australia is to develop her maritime strike forces and air superiority capabilities, as it should, it is probable that for a long time to come the Army will have to accept that there will be insufficient funds to equip a large field force which would be available on general mobilization as an 'all singing, all dancing' high cost and high technology force.

Our forces as a whole in a state of general mobilization are, then, almost certainly likely to be two-tiered:

(a) a limited number of forces equipped to a high level of long lead-time, high cost, advanced technology, which would include the Navy and Air Force, but only a relatively small proportion of the Army;

(b) the majority (perhaps as many as 600,000 to 700,000) of the Army equipped to a markedly lower level of technology in terms of unit costs but not necessarily in terms of capacity.

[15] Digby, *Precision-Guided Weapons*, (P-5353), p. 13.

Chapter 4

General Technological Development

Technological change is not just a key determinant of military power, tactics, strategy, and battlefield outcomes. It is also one of the principal dynamic forces in society as a whole today. And the military cannot be considered in isolation from more general societal developments; this is particularly the case today, with defence of Australia strategies implying a much closer relationship between the military and the society in which it operates.

Some of these general technological developments will affect the future operational requirement and officer development only indirectly. In other cases, however, their impact will be both direct and significant.

Again, the necessity for an appreciation of the role of technology in not just military/strategic matters but also in the direction of Australia's social, national, and international development is imperative.

The new mass media technologies are already having a significant impact on management in advanced societies where new arrangements of people and tasks are evolving – arrangements that are challenging bureaucratic and managerial traditions. The extraordinary increase in the speed by which public announcements as well as news are transmitted via the increasingly graphic mass media is exerting sharp and steady pressures forcing a speedier executive response. At least in consensual societies it is becoming well nigh impossible for government to ignore issues discreetly in the face of the rising need for instant comment and action. Contentious world issues can no longer be hidden from open societies.

On the politico-military scene, communications technology as applied to the mass media will have important repercussions. One of the great lessons of the Vietnam war is that the advances in the communications mass media will increasingly expose military activity to public scrutiny, and will provide greater opportunities for effective propaganda and psychological warfare. Democratic governments will be increasingly hard-pressed to provide public justification for their military actions, and are consequently likely to incline towards over-cautious policies. Governments could be faced with significant problems in explaining to their people the nature of likely threats, their own national strategic aims and objectives, and their relationships with allies. In internal security or insurgency situations in particular, governments will be faced with choices between an escalatory response that might not achieve the desired military result quickly and a gradualist response that could lead

to prolonged conflict. It will not be easy to have action taken before the critical point is reached at which matters get out of hand. The task for national-security decision-makers will be to obtain public support to ensure action at the right time with the right weapons and techniques.

Overall it is becoming abundantly clear that unified civil and military management of a nation's strategic affairs is necessary to bridge the potential conflict of interests between military necessity and political expediency. The present tendency toward closer political control of military operations is likely to be accentuated even further in the 1980s.

Developments in the speed, capacity and reliability of communications, including real-time surveillance will also add momentum to the integration of civilian and Service management at the highest levels in defence organizations. Modern strategic communications systems coming into service for the 1980s will have the capability of providing the top levels of government and military command with integrated, secure and instantaneous contact, both visual and voice, with every level of command in the battlefield environment. These developments, on the one hand, provide opportunities for a better political direction of armed forces, for more direct application of high-level defence management and decision-making, and for more rapid response in a conflict situation. On the other hand, there is a danger of over-control and over-centralization, leading to delays in executive action, thus negating some of the available technology for rapid and fluid action. The effort to centralize command, to combine it with flexibility, and to enlist modern data-processing and communication equipment in the process, will provide considerable scope for error and breakdown. On occasions it will add to the 'fog of war'.

At the level of the combat unit there will be a parallel danger that sophisticated weapons will outstrip the ability of the command structure and of the soldier to exploit them fully, especially within the constraints of politically monitored operations. Clearly there will be an increasing need to provide demonstrable guidelines for the politicians as well as field commanders, setting out their respective roles and areas of jurisdiction in circumstances where either the military or the politician are to act. Whatever might be done, we should take account of the risk that over-control could undermine initiative and flexibility at lower levels of command, bringing in its train lowered morale and hesitancy in accepting responsibility.

Although technology is not the only source of change in society – factors such as population growth, urbanization, shifting propensities of young and old all play a role – it is indisputably a major force behind the accelerative thrust. Some people, including members of the military profession, thrive on the new rapid pace, others are fiercely repelled by and will attempt to retard the process; but the great majority are likely to continue to try to adapt,

probably grumbling, but perhaps without really comprehending the true significance of the impact on their lives. For Australia through the 1980s, the accelerating pace and complexity of life appears to be irreversible.

In the context of officer development perhaps the most significant impact of technology is in the field of education. It is popular today to refer to the 'information explosion'. Of course the rate at which man has been storing up useful information has been spiralling upward. But it was the advent of the computer and more flexible and versatile communications in the 1950s which triggered the rate of knowledge acquisition to quite unpredicted, dumbfounding speeds, and the new generation of computers and communication techniques will greatly accelerate the process again.

Even today the most skilled and intelligent people admit difficulty in keeping up with the deluge of new knowledge – even in extremely narrow fields. There is an increasing need for specialists, and hence the greatest impact is likely to be in the field of education.

In education, as in the production of material goods, advanced societies are shifting irresistibly away from, rather than towards, standardization. Although there is still need for imaginative, far-sighted and broadly educated executives, there is little evidence that the technology of tomorrow can be run without large numbers of highly trained specialists.

Techno-societies are demanding, and will continue to demand more 'multi-specialists' (men who know one field deeply, but who can cross over into another as well) rather than rigid 'mono-specialists'.

Man looks increasingly to education to fit children for life in the future, and yet the patterns of education are more oriented to the past and the present than the future – particularly the future in techno-societies. The understanding now emerging, and which will probably find full expression in the 1980s, is one which recognizes that the new generation needs to be taught to make repeated, probabilistic and increasingly long range assumptions about the future. There is an ever increasing need to make projections about the kind of jobs, professions and vocations that may be needed twenty to fifty years in the future; assumptions about the kind of family forms and human relationships that will prevail; the kinds of ethical and moral problems that will arise; the kind of technology that will surround us and about the organizational structures with which we must meet.

Whilst the foregoing judgements are addressed to society in general, it would seem that they apply equally, if not more so, to the modern multi-tasked staff officer and commander. There would seem to be little doubt that the rising tide of new knowledge will force increasing numbers into ever-narrower specialization, and this will need to be reflected at least to a degree, in military education.

Organizational Trends

Effective methods for preventing, or coping with, problems of co-ordination and communication in a changing technological society are likely to be found in new arrangements of people and tasks, in arrangements which sharply break with bureaucratic tradition.

It may be a long time before the systems of bureaucratic hierarchy, which today characterize both government and large scale industry, are replaced because they are well suited to controlling tasks in which masses of moderately educated men perform routine operations and, no doubt, some such tasks will continue to be performed by men in the future. Yet it is precisely such tasks that the computer and automated equipment do far better than men. Wherever organizations today are caught up in the stream of technological or social change, wherever research and development is important, wherever men must cope with first-time problems, the decline of bureaucratic forms is most pronounced.

The extraordinary increase in the speed by which public announcements as well as news of economic and political factors are transmitted exerts a steady and sharp pressure in the direction of speeding up the tempo of administrative reaction. It is already clear that the acceleration of change has reached so rapid a pace that present models of bureaucracy are failing to keep up. Information penetrates through society so rapidly, and drastic changes in technology come so quickly that newer, more responsive forms or organization must characterize the future.

The current trend, which is likely to carry forward into the 1980s, is symbolized by the rapid rise of 'project' or 'task-force' management. Here teams are assembled to solve specific short-term problems. Both in the U.S.A. and elsewhere the trend is from vertical to lateral communication systems. The intended result is speedier communications, and as the vertical chain of command is increasingly bypassed, managers are tending to lose their monopoly on decision making. The trend is gaining added momentum from the advent of specialists in vital fields so narrow that often the men on top have difficulty understanding them.

This trend is evident within the Defence bureaucracy and is likely to continue. It has implications for all officers functioning in the higher Defence machinery, which can be expected to evolve in its nature, even if rather more slowly in Australia than elsewhere in advanced societies.

To some extent it is possible to see a reflection of this trend at the tactical level. As intense operations are becoming more and more complex and unpredictable, responsibilities should become more and more decentralized. There will be increasing reliance on issuing mission-type orders (operation

instructions) rather than the detailed operation orders more appropriate to 'set piece' battles. They are likely to become the rule at task force, divisional level and higher levels, and will require subordinate commanders to exercize greater initiative, resourcefulness, and imagination – operating with relative freedom of action not permitted under the constraints of operation orders.

Basically, a mission-type order or operation order contains three fundamental elements:

(a) what it is the commander issuing the order wishes to be accomplished;
(b) the limiting or central factors that must be observed for co-ordination;
(c) the resources available to the subordinate commanders and the support they can expect or count on from sources outside their command.

The more we give our forces built-in organizational flexibility, the more we equip our forces with weaponry capable of very rapid engagement, the faster moving is the battle, the more commanders must make plans and issue orders flexible enough to allow subordinates to bring maximum combat power to bear in rapidly changing situations. Coupled with this development is the requirement for leaders at all levels to be able to adapt to situations as they are, not as they were expected to be.

Conclusions

All of what has been said so far points to the conclusion that the Service officer will be required increasingly to re-adjust quickly to rapidly moving technical, tactical and organizational changes in his military environment with less opportunity to assimilate fully their significance before his knowledge becomes obsolete, unless some drastic modifications are made in training methods. Already it is becoming apparent in a number of countries that the rate of production and introduction of training manuals is falling behind the rate at which new tactics are emerging. Traditional classroom methods of instruction are no longer adequate in many areas. For example, there is an increasing need for commanders to gain experience through exposure to the combat decision-making process in real terms and to simulated battle situations in which there is realistic representation of the modern and likely future battle field environments.

As a case in point, attention should be focused on the complexity of the modern Army's tactical command post procedures, particularly in dismounted formations not versed in the requirement for greater mobility, shorter response times, round-the-clock operations, greater dispersion, etc. The Army will need to give more attention to training in simulated battle environments in which good command post decisions must be made against all the pressures of battle – lethality; noise; masses of information, much of it electronically

displayed and often conflicting; physical discomfort; fatigue; interruptions; and the unreliability of communications in the modern day electronic warfare environment. The sense of timing in the command post is becoming the critical factor in the land battle. The emphasis should be on preparing our commanders for the next battle as we can best project it.

The stage at which junior Army officers should be given such training for more senior battle appointments, particularly in command and closely related staff appointments, is a critical factor, and is one which should not be lost sight of in the struggle to find time to fit in more general military and academic education requirements. If the 'core-force' concept is adhered to, the demand for competent commanders and leaders at all, but especially at the middle and higher levels will exceed the numbers available on general mobilization. The implication is that the Army should continually be training young officers for battle appointments at at least two and possibly three levels above that of their peace-time appointments.

Chapter 5

General Army Capability Requirements

The general capabilities which the Army must have in the defence of Australia are likely to be far broader than in the past. If the strategic analysis of the roles of the Australian Services given at the end of Chapter 2 is accepted, then it is apparent that the Army has two main roles: to assist in the establishment of a credible deterrent posture by the Australian Defence Force at large; and to be able to compel any invader who lands on Australian territory to fight a major, costly and protracted campaign in which there is no obvious prospect of easy success for the enemy.

At the same time, the Army may also be called upon, in conjunction with the other two Services and various civil agencies such as the police, to meet low-intensity contingencies, including 'aid to the civil power', a responsibility set forth in section 51 of the *Defence Act*. Therefore the Army must be able to co-operate effectively with other Services and agencies in discharging these tasks. Because low-level threats can materialize with very little warning time, the Army must be able to deploy small forces with great rapidity to anywhere within the limits of Australian territory. These forces must be highly trained and capable of defeating the most sophisticated guerrilla and terrorist groups. They must also be adept at handling the very complex political problems which usually accompany such low intensity operations. Hence special training must be given in these aspects, both individual and collective. The Services must ensure that their officers are well versed in the complex procedures for rendering 'aid to the civil power'.

However there is no doubt that to meet the two main roles will be the greatest challenge before the Army in the coming decades. The task of the Army in implementing its role as a major element of a deterrent defence posture is essentially to demonstrate to a potential enemy a capability for great expansion within the lead-time for the creation of the enemy's invasion force. The enemy must also be convinced that the Army can fight hard and inflict heavy losses on him.

In other words the Army's problem in implementing this role is not simply to field hundreds of thousands of men armed with broomsticks. They must have a credible resistive capacity. However, this task is still somewhat different to the second major requirement – to fight a major war on Australian territory – because an enemy does not have to bring the Army to battle to be effectively deterred. All he has to be convinced of is that the Army can,

from its base of men, weapons, and operational skills, expand sufficiently rapidly to deprive him of easy success in order for his deterrence to be achieved.

Hence the basic factors, such as organizational structure, surge capacity, general appearance of proficiency and viability in the face of modern weapons systems, are the key to a successful deterrent posture. There is no doubt that the relatively small, and largely regular, Australian Army has a widespread and justified reputation for proficiency. However it cannot be said at this stage to have developed an organizational structure for a major, nation-wide defence effort, to have any great surge capacity beyond the limits of the existing Army Reserve, i.e. a surge capacity of 50 per cent rather than 1000 per cent, or to have achieved any notable increase in its viability in the face of the new weapons which are coming, and will come in increasing numbers, into service in other major armies.

It seems fair to state that there is wide agreement that these are all matters to which the Army must attend in its development in the 1980s and beyond. Therefore officers must also be developed to master these problems, i.e. to lead the Australian Army on its long march towards the achievement of vital new capabilities. They must be aware that their service will be rendered in an age of dramatic challenge and change and that if they are not bringing these changes about, they may be wasting a vital opportunity in maintaining the long-term basis for Australia's security.

The Army's task in implementing its second major role, that of actual war-fighting, is even more formidable because it involves fully training, equipping and supporting the large numbers of men which will be necessary to defend the nation on land. There will be aspects of the development necessary to fulfil this second role which can be left until the risk of an attack by a specific enemy is demonstrably high. However there are other long lead-time aspects of this capability, particularly in terms of approaches to training, the development of operational doctrines, and the building of the infrastructure necessary to equip, move and supply the Army in the field, which cannot be left until a threat appears. Hence these tasks must be added now to those tasks which must be performed to achieve a credible deterrent posture.

In addition to these tasks for meeting both low intensity and major threats to Australia's security of a direct nature, there are others, familiar to all present members of the Army, which relate to the stability of Australia's region. They include the training of foreign soldiers of all levels in Australia, participation in combined exercises, the training of Australians abroad, the provision of Australian advisers for assisting in key technical and staff areas in neighbouring countries and the development of a capacity for limited, short-term intervention in hostilities abroad, particularly to rescue Australian

nationals. These tasks all have a bearing on the maintenance of Australia's security and so the capacity to perform them should be maintained and developed, albeit at a lower priority than the vital requirements of giving Australia itself a credible defence capacity.

The major implications of these general Army capability requirements for regular officer development are as follows:

1. In view of the dynamic nature of the task in front of the Army, the professional study of strategy and tactics will have to be lifted to a higher level if we are to make the best use of our scarce resources. Hence in the post-graduate studies of officers, at staff colleges and in other tertiary institutions a little more importance should be attached to the broader aspects of strategy than has been the case in recent years. Similarly individuals should be encouraged to think about, discuss and write about these problems, through forums such as the U.S.I. of Australia, at all stages of their careers.

2. The increasing pace of technological change, and its widening implications for operational doctrines and methods, suggest that more needs to be made of the study of weapons technology by the Australian Army. It will not be sufficient to leave such matters to technical staff, artillery and ordnance officers. They will have to become part of the professional studies which are common to all who aspire to significant levels of command. Hence officers will have to be equipped with a sound fundamental knowledge of science and technology before they are commissioned. Their post-graduate training should improve on this knowledge and the Army should encourage them to experiment in order to discover the specific implications for Australia of developments which are taking place overseas. Out of this combined theoretical and practical experience should come up-to-date, viable operational doctrines for the Army at large.

3. The great variety of Australia's terrain, climatic conditions and man-made infrastructure places a further requirement for new studies and broader experience in an officer's development. Training facilities should be established in the major types of terrain and climatic conditions, for both individual and collective use. Also these regional familiarization centres should develop in soldiers the skills necessary for meeting the wide range of contingencies of various levels which could occur in those regions.

4. The art of command will be a major area for new developments in all armies, as the nature of warfare changes, as the parameters of the political-military relationship evolve and as new C^3 techniques are introduced. Hence the command training aspects of current schools, courses, promotion examinations and exercizes must be revised to permit Australian soldiers to master the most vital aspect of their profession.

5. The Army will face a growing dilemma imposed by the demands of producing both generalists and specialists. Generalists will have to know more about a wider range of issues than before. Specialists will have more depth in their fields than ever before and also will not be able to remain as securely between the guide-lines of an individual discipline or field as has been the case in the past. Hence career streaming will become more important and it will be easier to waste an officer's service years by putting him into a posting where his knowledge and experience are not being used to the full, challenged and expanded. Special attention will have to be paid to fostering and enhancing the self-confidence and judgement of highly trained officers, given that the normal means of self-reinforcement via successful practice of one's profession are not likely to be open to the Army very often.

6. Perhaps the most vital aspect of an officer's development to face the operational challenges of the coming decades will be the acquisition of the skills of innovation and adaptation. Text-books and standardized doctrines are likely to be of less use than before, as the pace of change of military activities increases and as the factors with which they have to deal become more imponderable in abstract form. Hence an officer, and those in his charge, will have to depend more on his own resources for forming judgements and making decisions. He will be able, probably, to call on a wider range of assistance in making decisions than ever before, but he himself must decide whether he needs such help and what form it should take. The 1990s, if not the 1980s, are likely to be the age of the tactical and strategic innovator, rather than of the expert performer of a set routine.

Chapter 6

Military Organization

The Structure of the Australian Defence Force[1]

Currently the three Services exist as three separate organizations. They are organized internally on functional principles rather than geographical subdivisions, consisting of an operational element – the Fleet, the Army Field Force Command and the RAAF Operational Command – and one or more support elements. Each service can thus readily make contributions to a joint force if required to do so. However the joint force structure into which such contributions would have to be fitted does not exist and so if the Australian Services are to be used jointly to defend Australia, there would be appreciable delays until the framework was set up. Given that the Department of Defence is now integrated, that the post of Chief of Defence Force Staff has been created, giving its incumbent command over the three Services, it seems only logical that a joint force structure should be established also.

When one looks at the nature of Australia's future security problems, the reasons for setting up such a force structure appear to become all the more compelling. In essence, Australia's security problems can be grouped into three categories: first, those accompanying the maintenance of sovereignty over Australian territories, coastal waters and the adjoining economic zone if this concept becomes accepted internationally; second, those of defending Australia and Australian interests in low level contingencies such as attacks by foreign guerrilla groups, friction with neighbours concerning access to fishing grounds, seabed resources and narrow waters, the location of boundary lines, and small raids; and third, those of repelling major raids, incursions or invasion. The first category of problems requires constant attention from the R.A.N. and R.A.A.F. by way of maritime surveillance operations. Problems of the second category could arise at very short notice. There are no lengthy warning times inevitably associated with their presentation as would be the case in the assembly of large forces for an invasion and therefore they must be met by the normal forces in being in time of peace. Like the first category, problems of this nature are likely to affect most of the maritime and coastal zones around Australia and these areas pre-eminently

[1] For amplification of the ideas in this section see, Robert O'Neill 'Structural Changes for a More Self-Reliant National Defence' *Dyason House Papers* (Vol. 2, No. 3), January 1976.

require two and possibly all three of the Services for an effective response capacity. In the case of dangers of the third kind, some warning time would be available for shaping a response and increasing Australia's defence capacity. However, given a determined enemy, Australia would have no time to waste in this situation. Furthermore since the outcome of such a conflict could well determine the continued existence of Australia as an independent and free nation, it would be inadvisable to enter a race for defence preparedness with the handicap of a non-existent force structure when one can be created for quite small financial costs. The deterrent value of a well organized and proficient Defence Force must also be given special emphasis.

The essential elements of a joint Defence Force command structure are, as in the case of the single Services, twofold: an operational element and a supporting element.

(a) The Operational Commands

The operational element must be able to meet attacks in the maritime approaches to Australia, in the coastal region or on Australian territory itself. Therefore a natural subdivision into three operational specialities is suggested by these three different environments: a Continental Defence Command, consisting essentially of ground and air forces; a Coastal Defence Command, consisting of light elements of sea and ground forces, backed by air reconnaissance and strike forces; and a Maritime Defence Command, consisting of long range sea and air forces.

Perhaps the Coastal Defence Command could be subsumed under the Continental Defence Command for three reasons. First, there would be a considerable commonality of ground and air forces appropriate to both Commands. Second, in the absence of major threats, the main concerns of a Continental Defence Command would be essentially in the coastal region. Third, operational boundaries between the areas of responsibility of these two Commands could be difficult to determine on any functional basis, particularly in the vicinity of the coastal cities whose defence would probably be a major responsibility of the Continental Defence Command.

Perhaps a separate Retaliatory Strike Command might also be required. If for example, it were agreed that the best method for dealing with an aggressor was to strike at his support bases in his home territory or in a third country, a special counter-attack force based on the F-111 aircraft, submarines, and surface vessels firing cruise missiles would be necessary. The operational characteristics, command problems and tactical methods of such a force would tend to differ from those of a maritime defence force whose main business was to defeat an enemy's attempt to land a force on Australian soil by sea or air.

However, these two modifications aside, there would seem to be a clear case for at least two operational commands to be established as a basis for meeting all requirements, viz. a Maritime Defence and a Continental Defence Command.

(b) **The Supporting Commands**

The principle of functional subdivision can also be applied to the supporting element. The operational Commands would require a logistics system to sustain their activities, a training system to supply properly prepared and skilled individuals and to run the major training establishments of the Defence Force, and a pool of reserves. Therefore the supporting element might be divided most effectively into three: a Logistics Command, a Training Command and a Reserve Forces Command.

The reserves, whether individuals, units or formations, could be fed forward either into other branches of the support element or into the operational Commands as need arose in order to permit rapid and flexible responses to different and changing situations. It is not necessary that this pool of reserves should be identical with the existing Service Reserve forces, i.e. the part-time volunteers who can be mobilized in time of emergency. Many of these part-time Reserve units would be allocated more properly to the operational Commands and other support branches to provide them with an in-built expansion capacity. Indeed, in the future some of these Commands may include more part-time personnel than regulars. Similarly the notion of a reserves pool should not be seen as excluding regular forces, some of whom would be most appropriately employed in this way.

There should be flexibility regarding the tightness of the joint nature of these Commands. The operational Commands would be unlikely to have to meet a requirement for furnishing a purely single Service force. However the support Commands would include not only the backing for the joint operational Commands but also that necessary for each individual service to maintain its skills, personnel and equipment. The Training Command would concentrate particularly on joint warfare but also could include general responsibility for single Service training, from basic recruit level through to the Staff Colleges in order to achieve the most effective use of resources. The Reserve Forces Command would be concerned primarily with three separate single Service pools of reserves, and would thus be only a loose co-ordination authority. The Logistics Command would also need some single Service elements to cater for the needs of the single Service components of the other two support Commands.

In conclusion, a joint framework would seem to be a fundamental requirement for effective national defence. If organised on functional lines it would foster specialization, enabling Australia to achieve high defence effectiveness with economy of effort and elimination of waste. A flexible structure would assist in meeting differing contingencies, therefore provision should be made for incorporating a system for replacement and interchanges of men and equipment. The structure proposed above would bring the Services together in a functional way, just as they would be in war. It would facilitate the development of a unified and cohesive strategic doctrine, an administrative system and training policies for the defence of Australia. It would allow for the attainment of higher operational proficiency by the Services by encouraging specialization in both regional and functional senses – a proficiency which is extremely important for a force of relatively small size.

Such a structure would assign a functional role in Australia's defence to all major parts of the Services, simplifying many of the usual problems of training, identification of operational goals and priorities, and morale in a protracted period of peace. The structure suggested would also provide for constant training and exercizing of intermediate headquarters. It would encourage greater standardization of operational methods, administrative procedures, organizations and equipment across the three Services. Most importantly of all, it would heighten the deterrent capability of the Australian Defence Force, raising the stakes for an enemy attack through minimizing unpreparedness in some sectors which could offer some easy loopholes for a cheap attack.

The Structure of the Army

A strong case can be made for a combined conventional and territorial defence posture for the Army, e.g.:

> Considering all of the levels of threat and taking account of the size of Australia, the immensity of the Army's logistic problems under enemy naval and air superiority and the possibility of the enemy's denial of Australia's major support areas in the higher levels of threat, it would seem that the answer is a simple, vigorous and flexible response which does not depend on complex technical servicing or movement of vast tonnages of POL supplies, water, etc., for the maintenance of armoured, mechanized and even conventionally organized infantry divisions. A concept based on local forces and dispersed, irregular forces in conjunction with conventionally organized mobile reserves positioned in tactical proximity to likely areas of conflict is more appropriate. Such a concept of territorial defence would involve the mobilization and co-ordination of elements of the local population

in the form of para-military, VDC, civil disaster and similar organisations, and the deployment of conventional and unconventional (i.e. irregular) forces in their own localities and regions.[2]

The conventional/territorial posture is well suited for meeting low level threats, requiring ground force deployments in the dispersed mode for operations in support of the civil authority under state control. At this level of commitment, the full divisional structure would not seem to be appropriate. Nor would the divisional structure be well suited to the next stage of low level operations, i.e. the transition to purely military operations. As these two stages could persist for a considerable period in any conflict, officers will need to be well versed in the conduct of civil/para-military operations outside the conventional context of the divisional battle.

In Chapter 3 reference was made to the likelihood that on general mobilization our forces as a whole would be two-tiered with only a small element of the Army being equipped with long lead time, high-cost, advanced technology items e.g. armoured, mechanized, air-mobile formations. The great majority of the Army would, perforce, be equipped to a markedly lower unit-cost level of technology, although not necessarily low level technology, with relatively short lead times for acquisition. The latter part of the Army would be in effect, 'lightly-equipped' forces which, even within the constraints of being tied to low unit-cost technology, could be selectively equipped to operate effectively in the event of highly mobile, dispersed, intense, round-the-clock operations, especially in the defensive posture. Furthermore such forces would be much less demanding logistically than conventionally organized and equipped 'heavy' divisions.

It was suggested also in Chapter 3 that the non-stop nature of future war could have significant force structure implications, such as the encouragement of a modular concept of rapidly replaceable, self-contained small elements, thus challenging the suitability of the currently accepted notion of the divisional structure and its method of employment.

As presently organized the division is at its most efficient when it can operate as an entity under centralized command and with direct control of its organic and allotted support. The basic deployment pattern is generally two brigades or task forces forward and one in rear as a reserve, providing depth in both attack and defence. In protracted, round-the-clock operations in the modern context of intense conventional warfare, it may be impossible to avoid involving the entire division in conflict simultaneously.

The strain on the command and control staff elements could exceed even that of the close combat troops. It may be perhaps only two or three days

[2]J.O. Langtry, 'Ground Defence of the Australian Continent', *United Service* (Vol. 28, No. 2), October 1974.

before the entire division has to be withdrawn for a protracted period of rest, re-inforcement and re-equipment. The casualty rate to both men and equipment is likely to be very high indeed. With only a very limited number of such divisions likely to be available to Australia, it would seem unwise to plan on engaging them in protracted operations, offensive or defensive, using the current divisional organization and concepts of employment.

It is often suggested that it should be feasible to replace units and sub-units within the division during combat as necessary. This course would seem to be both impracticable and undesirable because of lack of time and the fast flowing nature of the likely future battle environment; lack of familiarity with the battle scene and divisional operational procedures on the part of replacement units could seriously prejudice overall combat effectiveness; and command and control staffs at all levels could well be exhausted long before the introduction of fresh units could be completed.

It seems likely that the requirement to engage in round-the-clock operations, especially for protracted periods, and the highly destructive nature of modern warfare will result in a demand for a larger number of smaller divisions containing a larger number of smaller, more self-contained units than at present, with as many as possible of their capabilities held organically. Alternatively, the divisional level of command and control might be dispensed with in favour of a larger number of independent task forces. There would appear to be not much to choose between these two possibilities: either course envisages the loss of one or other element of command and control at formation level – i.e. division or brigade/task force level. However either of these changes will introduce problems of an increased span of command which will require careful attention.

Much of the foregoing discussion has been based on acceptance of the implications of round-the-clock operations. However there are perhaps weightier factors which suggest that changes in the divisional structure and methods of operation are inevitable. Let us consider some of them.

Much of the combat effectiveness of the division as we have known it has depended upon centralized control over reliable, continuous and secure electronic communications. In the likely electronic warfare environment of the modern battlefield, it is doubtful that these qualities in communications systems could be achieved with regularity in many circumstances. Hence there is likely to be a trend towards decentralization and delegation of command and control.

Current armoured, mechanized, air-mobile and even infantry divisions in combat require huge daily tonnages of supplies. To provide such tonnages in an adverse air and naval environment, and over long distances is very likely to be beyond Australia's logistic capacity for a long time to come. Hence

both the scale of operations which we can sustain and the degree of dispersal of the logistic infrastructure which we can achieve require review.

Battlefield and strategic surveillance, including by satellite, is becoming near total in its completeness, both by day and night. This development does not favour the operation of large, highly concentrated formations, especially large formations with long, conspicuous and vulnerable logistic 'tails'.

The advent of precision guided missiles and fuel air explosives calls for high orders of concealment, mobility and dispersion. The existence of remotely delivered minelets enables the user to canalize the battlefield quickly and much more effectively than ever before. In this sort of environment, large formations, even armoured and mechanized divisions, are likely to be very vulnerable. At all levels it is becoming less desirable to concentrate men and material in one place or one vehicle. Against fuel-air explosives, even hardening may offer little protection.

The nature of the modern ground battle, the high cost of high technology weapons and the high probability of 'a kill in any hit' inherent in many of the new weapon systems call for shorter response times and hence lower formations must have more tactical initiative than in the present structure.

New technologies now available to the infantryman, even simple 'fire-and-forget' hand-held weapons, are enhancing his firepower to a point at which he can conduct a range of operations independently of divisionally controlled indirect fire support.

In summary, although it might eventuate that there may be scope for retention of the traditional divisional concept for part of our ground forces, future training programmes should also recognize that the trend for combat arms in intense conflict, especially for infantry, will be towards operating them as much smaller groups of a number of arms with a much greater delegation of command and control than at present, and considerably less reliance on the day-to-day logistic resupply of large tonnages.

It will be at least as important that future training programmes also provide for the training of officers in the conduct of low intensity operations in which command and control is vested in a civil/para-military body outside of the conventional military context.

Chapter 7

Civil-Military Relations and Defence Decision-Making

In recent years, the military and civilian communities have come closer together. Indeed, the developing 'civilianization' of the military is now a commonplace theme in the military sociological literature. The following observations are illustrative: Morris Janowitz, perhaps the pre-eminent military sociologist, has written of the "civilianizing' [of] military institutions and... blurring [of] the distinction between the civilian and the military';[1] Harold Lasswell, Kurt Lang, and other contributors to Janowitz' volume on *The New Military* have suggested hypotheses regarding convergence of the military and civilian structures;[2] and Albert Biderman and Laure Sharp have studied the accentuating 'civilianizing' trends in the military.[3]

It is not the intention here to deny some essential differences between the military and civilian communities. As Janowitz himself has pointed out,

> The military establishment as a social system has unique characteristics because the possibility of hostilities is a permanent reality to its leadership. The consequences of preparation for future combat and the results of previous combat pervade the entire organization. The unique character of the military establishment derives from the requirement that its members are specialists in making use of violence and mass destruction. In the language of the soldier, this is recognized on a common sense basis; military mission is the key to military organization.[4]

The intention is, rather, to suggest that the distinction between the military and the civilian is being blurred. Janowitz has advanced a series of propositions which have 'had the effect of "civilianizing" military institutions and of blurring the distinction between the civilian and the military.'[5] It is worthwhile detailing these in full:

[1]Morris Janowitz, *Sociology and the Military Establishment*, (Russell Sage Foundation, New York, 1959), p. 16.

[2]c.f. Morris Janowitz, (ed.), *The New Military: Changing Patterns of Organization*, (W.W. Norton and Company, Inc., New York, 1964).

[3]Albert D. Biderman and Laure M. Sharp, 'The Convergence of Military and Civilian Occupational Structures: Evidence from Studies of Military Retired Employment', *American Journal of Sociology*, (Vol. 73), January 1968.

[4]Janowitz, *Sociology and the Military Establishment*, p. 18.

[5]ibid., p. 16.

1. An increasing percentage of the national income of a modern nation is spent for the preparation, execution and repair of the consequences of war. Thus, there is a trend toward total popular involvement in the consequences of war and war policy, since the military establishment is responsible for the distribution of a progressively larger share of the available economic values.
2. Military technology both vastly increases the destructiveness of warfare and widens the scope of automation in new weapons. It is a commonplace that both of these trends tend to weaken the distinction between military roles and civilian roles as the destructiveness of war has increased. Weapons of mass destruction socialize danger to the point of equalizing the risks of warfare for both soldier and civilian. As long as the armed forces must rely on large numbers of drafted personnel, powerful influences toward civilianization are at work.
3. The revolution in military technology means that the military mission of deterring violence becomes more and more central as compared with preparing to apply violence. This shift in mission tends to civilianize military thought and organization as military leaders concern themselves with broad ranges of political, social, and economic policies.
4. The previous periodic character of the military establishment (rapid expansion, rapid dismantlement) has given way to a more permanent maintenance or expansion. The permanent character of the military establishment has removed one important source of civilian-military conflict, namely, the civilian tendency to abandon the military establishment after a war. Instead, because of the high rate of technological change internal conflicts between the military services have been multiplied.
5. The complexity of the machinery of warfare and the requirements for research, development, and technical maintenance tend to weaken the organizational boundary between the military and the nonmilitary, since the maintenance and manning of new weapons require a greater reliance on civilian-oriented technicians.
6. Given the 'permanent' threat of war, it is well recognized that the tasks which military leaders perform tend to widen. Their technological knowledge, their direct and indirect power, and their heightened prestige result in their entrance, of necessity, into arenas that in the recent past have been reserved for civilian and professional politicians. The need that political and civilian leaders have for expert advice from professional soldiers about the strategic implications of technological change serves to mix the roles of the military and the civilian.[6]

[6]ibid., pp. 16-17.

This increasing 'civilianization' of the military is evident in areas such as organizational structure, operations, and occupational structure. With regard to organizational structure, for example, Janowitz has commented that:

> As a social organization, the contemporary military establishment has for some time tended to display more and more of the characteristics typical of any large-scale nonmilitary bureaucracy.[7]

In terms of operational activities, the relative shift away from preparations for the application of violence and towards the deterrence of violence, together with the increase in constabulary missions, has also led to the military being a more 'civilianized' profession. Increasingly wearing mufti, today's military officer is much more concerned with management – in Russell Hill, in the Australian Defence Force at large, and even in the conduct of military operations.

With regard to military occupational structures, there has not only been a tendency towards increasing specialization within the military, but also something of a closer correlation in the specialized skills of the military and civilian communities. This latter was recognized by Morris Janowitz in *The Professional Soldier:*

> Skill changes in the military profession have narrowed the differences between civilian and military occupations. The professional soldier must develop more and more skills and orientations common to civilian administrators.[8]

This convergence of military and civilian occupational structures has been confirmed, at least for the United States, by a number of studies. For example, Biderman and Sharp have concluded from studies of the employment patterns of retired military personnel that changes in both the military and the civilian occupational structures have made them now resemble each other much more closely than was the case in the past.[9] Harold Wool's comparison of the broad occupational distribution of the military force structure with the occupational distribution of the civilian labour force comes to a similar conclusion: 'occupational trends... reflect a continued convergence of the military and civilian occupational structures'.[10]

This relationship is, of course, not really surprising. The occupational structures of military systems have always, at least to some extent, reflected and been integrated with those of the civilian economy. Since technology is

[7]ibid., p. 15.

[8]Janowitz, *The Professional Soldier*, p. 424.

[9]Biderman and Sharp, 'The Convergence of Military and Civilian Occupational Structures'.

[10]Wool, *The Military Specialist*, p. 53.

the most dynamic and pervasive factor affecting occupational structures, and since the evolution of military technology has broadly paralleled that of the civilian economy, some degree of parallel development in the occupational distribution of the two labour forces might reasonably be expected. On a broader level, as the society changes, its military institutions will reflect these changes. Furthermore, its military institutions may be a major agent of change in other institutions.

Neither should it be surprising that the occupational skills structure of the military has become increasingly specialized. That specialization is just as relevant to military as to civil systems was recognized by Adam Smith just on two centuries ago:

> The art of war – as it is certainly the noblest of all arts – so in the progress of improvement it necessarily becomes one of the most complicated among them. The state of the mechanical, as well as some other arts, with which it is necessarily connected, determines the degree of perfection to which it is capable of being carried at any time. But, in order to carry it to this degree of perfection, it is necessary that it should become the sole or principal occupation of a particular class of citizens, and the division of labor is as necessary for the improvement of this, as of every other art.[11]

Yet specialization has generally been resisted by the military establishment – to the detriment of operational efficiency and effectiveness. The World War II mobilization found the personnel systems of the military services poorly prepared to cope with the vast needs for specialized manpower generated by the War. The problem did not surface publicly in Australia during the Vietnam period only because the 'sharp end' of the commitment was carefully selected and tailored to fit into the American infrastructure. But increasing specialization is probably demanded by the requirements of greater self-reliance.

There are, of course, a number of good arguments in favour of the generalist personnel structure, particularly in the case of the higher leadership levels, which partly explains the general antipathy of the military establishment to specialization. The Army has tended to emphasise combat operational command experience as a criterion for promotion at the senior levels of the career structure, reflecting its principal mission of combat and its history of dependence on allies for logistic support. It is also argued that the Army is too small to sustain significant specialist streams. The pyramidical nature of the divisional structure also works to enhance the generalist concept.

[11] Adam Smith, *The Wealth of Nations* (1776), cited in Wool, *The Military Specialist*, p. 9.

These arguments and practices must be reconsidered in the light of the new strategic requirements. The Australian Defence Force must now accept the responsibility for all missions required by the defence of Australia. Although operational planners must be very careful in determining which particular missions are genuine requirements, the range of missions will be greater than that generated by counter-insurgency and other operations of the post World War II years. Greater self-reliance in areas of maintenance and logistic support, etc., will also require the acceptance of greater specialization. In a more 'total' defence context, the management, logistic, training and other elements of the defence force contribute just as much of the overall effectiveness of the force as the operational elements, and these respective contributions must all be recognized in the promotional system. The R.A.N. and the R.A.A.F. already appear to promote, at least to a greater extent than the Army, on the basis of specialized abilities in recognized areas rather than primarily command experience and expertise. Thus the Army will have to give increased attention to the development of specialists as well as continuing to give other officers the breadth of education and experience which is essential for senior command appointments.

The principal non-military area where greater specialization is required is that of defence policy decision-making. Closer working relations between civilians and military officers in defence policy decision-making was a fundamental feature of the reorganization of the Defence group of Departments, with the diarchic structure which that reorganization produced.

Although it is true that the Reorganization Act and the new organizational structure guarantees military inputs into the decision-making process at the highest levels, the military are often disadvantaged *vis-à-vis* the civilian in exercising these opportunities.

As former Minister for Defence, W.L. Morrison, has written:[12]

> The reorganization provides for direct access to the Minister by the CDFS and the Chiefs of Staff. The revised functions of the Chiefs of Staff Committee include responsibility for providing to the Minister 'collective professional advice on military operations and on the military implications of defence policy and activities.' Previously the Chiefs of Staff Committee had more restricted terms of reference. Apart from individual meetings with the Minister the Service viewpoint can also be put in the periodic meetings of Service and civilian officers with the Minister, which since the passage of the reorganization amendments has been formalized in the

[12]W.L. Morrison, 'The Role of the Minister in the Making of Australian Defence Policy Since the Reorganization of the Department of Defence', in O'Neill (ed.), *The Defence of Australia*, pp. 75-77.

Defence Council. These meetings provide an opportunity for an exchange of views on current activities, the status of equipment programs presented in the form of the 'Milestone Report', strategic assessments, force levels, departmental expenditure, etc. There is therefore no legal or organizational impediment to the Services getting their views to the Minister or to the Minister exercising his authority in respect of the Services.

The capacity of Service personnel to 'intermingle' effectively in the development of defence policy is limited both by the constraints of Service requirements and by the expertise and experience gained from continuity of their civilian counterparts. The Report of the US Blue Ribbon Defence Panel in 1970 found that

> 'The promotion and rotation systems of the Military Services do not facilitate career development in the technical and professional activities such as research and development, procurement, intelligence communications and automatic data processing.'

It recommended that 'specialist careers' should be established in these areas. In 1968 a tour of duty in the Defence Department for servicemen was extended from two to three years and the posting was upgraded by the stipulation that a Service career should be seen to be incomplete if it did not include at least one tour in the Defence Department. Despite these changes and the broader training given in the Service Staff Colleges, there continues to be an imbalance between the Service and civilian input in the development of defence policy. The participation pressures of the reorganized Department of Defence may redress this imbalance, but equally it could exacerbate Service frustrations.

A thorough going review of recruitment, training and career development policies is needed to equip Service personnel for their broader responsibilities, otherwise Service personnel will continue to be handicapped in their capacity to respond to the opportunities opened up by the reorganization and to meet the challenges implicit in the re-orientation of Australia's defence policy.

There are at least five major areas in the defence policy decision-making structure and process in which, as a result of recent organizational changes and the re-orientation of the basic national defence policy, the military contribution either should grow larger or indeed can only grow larger – and which have direct implications for officer development. These are the areas of intelligence, analysis, policy, operational planning and procurement.

The importance of military contributions in the intelligence field was well recognized at the time of the establishment of the Joint Intelligence Organization (JIO) in 1969. One of the two Deputy Directors of JIO is a senior military officer; the Directorate of Joint Service Intelligence, JIO, is pre-

dominantly military; and military officers serve in other offices, such as the Directorate of Scientific and Technical Intelligence (DSTI), JIO. With the establishment of the Office of National Assessment attached to the Department of the Prime Minister and Cabinet, the military inputs into Defence intelligence can only increase.

With regard to defence analysis, military officers serve in the Central Studies Establishment and the Services Analytical Studies Group of the Military Studies and Operational Analysis Division, Defence Science and Technology Organization (DSTO), and in the Force Development and Analysis Division, Strategic Policy and Force Development Organization. The contributions of these analytic groups to the defence decision-making process are presently rather minimal. While they can be enhanced by some organizational changes, (e.g. the possibility of the Superintendent, Central Studies Establishment, having a second hat in a line position in Defence Central), and by the development of better analytic methodologies, it is primarily through officer development, and particularly a better appreciation on the part of military officers of the essentially bureaucratic/political nature of the decision-making process, that these analytic contributions will be more effective.

With regard to operational planning, the Defence organization now provides for substantial and significant military contributions at the senior staff levels in the office of the Chief of Defence Force Staff. As the requirements for such planning inevitably increase, and as greater attention is paid to such critical areas as clarifying the war-time roles of the Secretary and the Chief of Defence Force Staff and the lines of authority between the C.D.F.S. and the field commanders, writing the Joint Warfare manuals, testing these in exercises, etc., then so will the demands on officer development increase in this area too.

A similar situation exists in the policy planning area. The Military Staff Branch of the Strategic and International Policy Division, Strategic Policy and Force Development Organization, is tasked with the job of providing professional military information and advice in respect of the work of the Division, but is presently too small to effect any significant inputs into the policy planning system; again, the military contribution can only grow.

The developments in defence decision-making will ensure that, in general, the demands on officer development will increase. It has become increasingly apparent that, in defence decision-making, outcomes are determined, apparently inevitably, by adversary processes. Optimizing 'solutions' are increasingly

being seen as irrelevant to many Australian defence problems, with attention passing to a more realistic concern 'to improve officer development and organization structure'.[13]

With regard to the increasing requirement for specialized military inputs into defence policy decision-making, consideration should be given to an adaptation of the general notion of 'streaming'. As Admiral Sir Victor Smith has written:

> ... the more time that an officer spends on courses or in field postings the less time there is for him to develop the special skills required in policy formation. One solution that comes to mind is that a Service officer should be selected relatively early in his career and his future postings in the main, but by no means exclusively, would be at Russell. Consequently, as he progresses in rank so his skill in areas of defence policy formulation will develop and his input will be all the greater.[14]

The USAF experience with this has been enormously successful. As a reaction to the McNamara innovations in defence policy decision-making in the early 1960s, which were perceived by the military to disadvantage their contributions *vis-à-vis* those of the civilians, the USAF responded by 'streaming' through to one and two-star positions officers trained in analytic methodologies and management techniques, but with no field or command experiences. By the later 1960s the balance had been restored. There is no doubt that a large number of Australian officers favour such a 'streaming', and, indeed, much dissatisfaction exists at around Major level with the absence of a career stream in defence policy decision-making.

Acknowledging the necessity for specialization would, in a very real sense, mean little more than accepting the present realities. But it would also provide a basis for extracting all the advantages that could accrue from further specialization in the operational environment, in logistics and other support, and in defence policy decision-making.

Perhaps the chief changes required in the present system of officer development would be in the direction of more effective use of the time of those officers who seem likely to reach senior levels, while they are in the mid-career range. While it is appreciated that the Army will never be able to avoid

[13] See Darcy McGaurr, 'Defence Procurement: In Search of Optimality', (Paper delivered to the Conference on 'Armed Forces and Australian Society', Royal Military College, Duntroon, May 1977), introduction; and Bernard Schaffer, *The Administrative Factor: Papers in Organization, Politics and Development*, (Frank Cass, London, 1973), Chapters 9 & 10.

[14] Admiral Sir Victor Smith, 'Military and Civilian Inputs into Defence Policy', (Paper delivered to the Conference on 'Armed Forces and Australian Society', Royal Military College, Duntroon, May 1977), p. 6.

entirely the resort to 'gap-stopping' in officer postings, a major conscious effort should be applied to matching individuals to the development opportunities afforded by planned career structures, be it either as specialists or as generalists.

Chapter 8

The Civilian Defence Infrastructure

One of the more important consequences of Australia's changing strategic re-orientation is the greatly increased requirement for national self-sufficiency in security affairs. Australia now requires a capacity to deter and, if necessary, defend against a very wide range of international pressures and threats, primarily with its own resources. Yet because of the size of the national economy and a large number of other political, economic and social factors, the proportion of Australia's total resources which can be devoted to the national security function on a full-time basis is limited. Inevitably this means that the Australian military structure cannot possess sufficient resources to meet the requirements of the full range of potential pressures and threats on its own. Additional resources and support must be gained from the civilian sector of Australian society. In its most comprehensive form, this process of mobilizing the latent national security capacities of civil infrastructure has been termed 'total defence' doctrine. In practice, it is not something which is best left to improvization. The military structure as a whole needs to be prepared in peace-time for the high level of civil-military co-operation likely to be demanded of it in periods of international crisis or war.

These developments have three specific implications of major importance for the Army.

First, bearing in mind the central need for a high level of national self-sufficiency, it will become increasingly important for the Australian Army to be organized and equipped to utilize fully the production and support capacities of the civilian infrastructure. In some circumstances this may require significant modifications of 'idealized' service equipment preferences. The full extent to which this may be necessary is only likely to become apparent following detailed examination of the precise nature of Australia's indigenous capacities. However, in general, it will mean a move towards:

- Service equipments with a large number of component parts standardized with those from domestic civil production lines.
- Multi-purpose basic designs with modular specialized components. This maximizes the scope for domestic production, lowers costs, reduces servicing and maintenance costs and increases operational flexibility.

– Increased functional efficiency, simplicity, endurance and reliability, if necessary at the expense of a marginal loss of peak performance capability.

Second, there will be an increased tendency for full-time military forces to concentrate their activities in those skill and technology areas not duplicated in civil society and which cannot be acquired readily by civilians. For instance, in a mobilized Australia, road transport operators, civil, electrical and mechanical engineers, doctors, dentists etc., are all likely to be fairly readily available. Certainly these people would require some retraining and their equipment some modification to maximize their efficiency in performing national security functions. But in many cases this adaptive process can be performed quickly and inexpensively. For the armed forces to maintain more than an absolute minimum capability in these fields in periods of peace will come increasingly to be regarded as a wasteful duplication of effort.

Third, in order to be able to utilize fully the national security support capacities which the civil infrastructure can provide, it will be necessary for military personnel to be made actively aware of the scope for emergency co-operation on a national, regional and local level. In its most simple form, this is likely to involve detailed civilian and military discussions on a wide range of co-operative measures. But in addition, methods and procedures of interaction and support will need to be tested and practised in full scale exercises.

Those components of Australia's civil infrastructure likely to be most directly involved in these processes of close civil-military interaction are as follows:

Civil industry. Consultation is likely to extend from the establishment of equipment requirements, through the processes of research and development, production, post-delivery support, maintenance and modification. Those sectors of industry involved would be not only those normally engaged in meeting military requirements in periods of peace, but also the much larger number of firms whose civil productive capacity would be turned to meeting military requirements in times of international crises or war.

Transport. A high level of compatibility will be required between Army transport and civil air, road, rail and shipping networks.

Other sectors of the national infrastructure which are likely to be heavily involved in the expanding processes of civil-military interaction are *Communications, Police, Civil Defence, Food and Water, Energy and Fuels* and *Medical Facilities and Services.*

For the Army Officer Corps as a whole, the greatly increased requirement for civil-military co-operation and co-ordination will necessitate a much higher level of familiarity than at present with those components of the civil infrastructure which are of national security significance. But in a much

broader sense, these developments reinforce the already established requirements for a high level of personal flexibility, adaptiveness and improvisation. In crisis situations officers may need a capacity for very close participation in the transformation of sectors of the civil infrastructure to meet national security requirements. In order for this to be feasible, much deeper knowledge and specialized expertise is likely to be required in some specific areas. This might necessitate the training of specialist military liaison and co-ordination personnel who could become closely familiar with both shop-floor and management operating techniques. In this field, there may be particular scope for the training of those normally employed in key sectors of the civil infrastructure as Army Reserve officers. The skills required by such personnel may be more akin to those of civil management and trade union leaders than those of conventional military commanders. Their specialized expertise could be employed in detailed mobilization and contingency planning and in the establishment and maintenance of close liaison with all sectors of the civil infrastructure which are considered of national security importance.

The potential returns from an effective co-ordination of civil and military capacities are an otherwise unattainable level of total national security deterrence and defensive capacity. Its implications deserve much more detailed consideration than they have hitherto received. As other recent wars have shown, the civil-military interface is becoming increasingly complex as the dependence of effective defence on the whole resources of the nation grows. Therefore this aspect is becoming much more important as an area of study, planning and specialized activity for Army officers.

Chapter 9

General Socio-Political Factors

Despite the absence of any perceived major threat to Australia, the prospect is that world politics are unlikely to become more stable than at present: they could in fact prove to be considerably less stable or, as some would say, a 'state of stable conflict' might obtain.

It is in this sort of relatively benign strategic environment that Australian society, in common with most consensual societies, is likely to become inattentive to and complacent about defence matters, to become more amilitary if not anti-military in outlook, and to believe that security can be maintained with less martial effort. Such trends in public opinion could result in the alienation of the military from the civilian society[1] unless positive steps are taken by the military leadership at all levels to influence community attitudes favourably. To do this it is necessary to recognize the greatly changed and still changing attitudes of Australian citizens and to understand the factors which motivate them.

Important as it may be for the military leadership to attempt to influence community attitudes favourably, by far the more important endeavour for the leadership will be to adjust to the high rate of change in the attitudes and behaviour of Australian youth in recent years, which is likely to continue at an accelerating rate. As discussed in Chapter 4 above, some individuals will thrive on the new rapid pace, and others will be repelled by it. The same can be said of the middle aged military leadership. Nevertheless the most senior, who are traditionally the most conservative, in the military hierarchy must be encouraged to make way for change; the middle ranking officers must be educated to stay abreast of change and work positively for it, while at the same time retaining those old traditions which are likely to remain valuable; the younger officers must be taught to comprehend the nature and impact of the changes in society and to be able to identify with their peers in the civilian community.

It is important to accept that the emerging world is one in which young persons see the present world in different ways from those who are older. The old and the young may be looking at the same things, but the young do so with reference to a different set of experiences from the old. For example, the young generation of today are aware that mankind has the undoubted

[1] J.O. Langtry, 'The Impact of Socio-political and Socio-economic Trends on the Environment of the 1980s', *Army Journal*, No. 292, September 1973.

potential to destroy itself. They are also aware that mankind has the capability to alter profoundly the physical environment, either for good or for ill. They are probably the first generation to be so broadly educated as to be aware of the wide range of socio-political and socio-economic problems besetting the world, and to experience the implications of accepting uncertainties and probabilities as a general principle. Many of them reject absoluteness in judgements and opinions, or 'black and white' values.[2]

Serving officers are becoming increasingly sensitive to these fundamental pressures for change and no longer feel that they can remain aloof from them. Most particularly they are becoming aware of a changed attitude to constituted authority in the Services. But this change is only a reflection of a much more profoundly transformed attitude to constituted authority in the civil community, where it has a wider impact and wider implications.

A very useful guide to the full range of the changes under way in Australian society, many of which have no counterpart in previous history, is given in the Report of the Millar Committee on the Citizen Military Forces.[3] The technological revolution has not only forced communities into new patterns of thought and changed their responses to the demands of their daily lives but also given added impetus to the need for trained technologists within the Services. It will be difficult to encourage sufficient numbers of officers to specialize unless there are prospects of promotion to high rank within their field of expertise. The technological revolution is moving so rapidly that the technical officer will have to remain practising in his field of expertise if he is to keep abreast of its development.

It is relevant to note Morris Janowitz's propositions, referred to in Chapter 7, that changes in military technology have had 'the effects of "civilianizing" military institutions and of blurring the distinction between the civilian and the military'; and that

> the complexity of the machinery of warfare and the requirements for research, development, and technical maintenance tend to weaken the organizational boundary between the military and the non-military, since the maintenance and manning of new weapons require a greater reliance on civilian-oriented technicians.[4]

The continuing technological revolution will tend to accelerate this process with the consequences that technologically trained military leaders will tend

[2]ibid.

[3]Committee of Inquiry into the Citizen Military Forces, *REPORT*, March 1974, (Australian Government Publishing Service, Canberra, 1974), Chapter 3.

[4]Janowitz, *Sociology and the Military Establishment*, p. 16.

to think more about the impacts of political and economic developments on their professional problems; and the political and civilian elements of the defence structure will continue to expand their interest and influence in the analysis of the strategic implications of technological change.

The impact of the pervasiveness and sophistication of the mass media has already been mentioned in Chapter 4 and so will not be dealt with further here.

The impact of expanding educational opportunities in Australia should be viewed against the background of the 'post-industrial' or 'technocratic' society towards which we are moving, with its increasing emphasis on superior knowledge, meritocracy, and highly complex, even more impersonal, computerized decision-making by increasingly larger organizations. Many young people find this prospect discouraging. Hence there is a trend amongst them towards more comprehensible social and moral concerns and the humanitarian aspects of life, away from the highly rational, complex, impersonal realities induced by technological advance. The present level of articulated social consciousness in the community has risen largely from students and other young people and it is constantly being espoused by the changing student population. It particular, the differences that exist between those whose education was completed by the early 1950s and those whose education took place substantially in the late 1950s and afterwards are substantial and require special recognition. The great upsurge in pure and applied science which occurred after World War II produced major changes in basic thinking in almost every discipline and the rate of change has accelerated ever since.

The 'information explosion', as discussed in Chapter 4, has had and will continue to have profound effects on the education process. Hence there is little doubt that the rising tide of new knowledge will force increasing numbers into every-narrower specialization (which in itself creates new problems of communication within society). This development will apply with equal force to military education. Although there will continue to be a need for imaginative, far-sighted and broadly educated executives (and military leaders and staff officers) there will also be a pressing requirement for large numbers of highly trained specialists – particularly 'multi-specialists' rather than 'mono-specialists'.

To state that there will be a continuing need for broadly educated executives, military leaders and staff officers is not to suggest that their professional skills should constitute a specialist field. The expertise which they require must come from mastery of several other specialist fields. Military leaders cannot be developed effectively on a narrow, in-bred 'state within a state' basis. On the contrary, because the military must be accepted as an integral part of the society which they serve, there is an increasing need for as many

military leaders as is possible to be broadly educated across the spectrum of disciplines, from the humanities to the sciences. Only from such a broad basis of knowledge should specialization by those aiming at higher command and staff appointments be permitted, so that the facility for human understanding and inter-disciplinary communication is developed and so that these officers might have the capacity to make informed judgements on extremely complex issues across their field of professional concern.

The general level of education of Army officers has risen in recent years. Tertiary education is no longer the sole preserve of an elite represented by the Royal Military College graduates; graduates from the Officer Cadet School, men commissioned from the ranks and non-commissioned personnel are becoming increasingly interested in lifting their educational standards, via universities, colleges of advanced education, technical colleges and staff colleges. As was experienced during the period of the last National Service scheme, the Army should anticipate on mobilization a much higher proportion of graduates amongst other ranks than it has been accustomed to. There will be an increasing tendency amongst subordinates to make their own judgements and to challenge articulately any expression of a 'theirs is not to reason why' form of authoritarianism. They will want to play a positive part in the formulation of military education and training programmes, and to contribute to the development of tactics, strategy and defence policy.

The fostering of a more intelligent attitude towards the giving of and the obedience to orders should do much to improve both public attitudes to the Army and the retention rate of recruits. This development should be coupled with, wherever practicable, more informality (rather than less discipline) in work situations and the structuring for small group team work activities with a view to improving productivity.

It is likely in future that there will be a heightened political awareness amongst soldiers, derived from a broader education in their youth. These soldiers will tend to be more sceptical about traditional military 'indoctrination'.

This brief analysis of selected social considerations does not provide the basis for detailed conclusions and recommendations. However it is consistent with Chapter 3 of the Millar Report and, in particular, with the first recommendation made therein, viz:

> The Army should establish at the highest level military/civil machinery for continuous assessment of social changes and their relevance to recruitment conditions of service and training, *and introduce this information into the training of leaders at all levels.*[5]

[5]Committee of Inquiry into the Citizen Military Forces, *REPORT,* Chapter 3.

In implementing this recommendation, consideration should be given to the fact that, for the foreseeable future, the Australian Army will have a relatively small regular component with a limited overall capability and that, therefore, in a major conflict it will be dependent on the citizen soldier. He will be predominantly influenced and conditioned by his civilian social environment, and not by the more structured, conservative, hierarchical society likely to continue within the regular component of the Army.

Because there will be an increasing need for specialization within the Army, there will be an increased requirement for career 'streaming' of officers. No doubt the size of the regular component of the Army and the relatively short span of active service life will militate against career 'streaming' but every opportunity should be taken to expand the existing programme without losing sight of the fact that specialization should be developed from the basis of a broadly based general education.

The older forms of command relationship are outmoded and will have little credence in the Australian Army of the future. The present and coming generations of young officers will have much talent to offer, but it will have to be harnessed carefully and effectively if they are to achieve their potential. They will wish to be heard and to be permitted to participate in shaping both the future development of the Army and their roles within it. They will be capable of contributing usefully to most facets of the Army's development. Therefore the Army's officer development programme should ensure that, early in their careers, young leaders will have outlets within the Army for the vigour and ability which will characterise the new generations. They should also be given every opportunity to keep in close touch with the realities of the social changes in the community.

In conclusion, it seems true to say that an officer's role is in many ways perhaps more demanding, more diversified and more complex in peacetime than it is in war. This trend seems likely to continue as our society advances into the 1980s and beyond. The potential of young leaders to perform their roles is also rising. However the realization of this potential in terms of enabling the Army to discharge its responsibilities effectively will be achieved only through an imaginative, challenging and adaptive officer development system.

Chapter 10

Conclusion

It will be evident from the views expressed in the preceding chapters that we believe a thorough examination of future officer development to be both important and timely. The establishment of the RODC demonstrates the Army's conviction that the future proficiency of its most vital asset, its leaders at all levels, cannot be taken for granted in a world of rapid change. The work of the RODC to date inspires optimism that the Army is not going to allow itself to slide into the Slough of Despond, enmired in self-pity and devoid of initiative because it is not facing the challenge of continuing combat operations.

This danger is very real for any Army in a period of protracted peace because we all depend to some extent upon the stimulus of external and situational factors to sustain our drive, vitality and relative proficiency *vis-à-vis* other competitors. In the coming decades, the Australian Army faces the prospect of having to be its own pace-maker to a large extent. However, provided that is sustains its present approach, it is not badly placed in terms of the requirements necessary to stimulate its own professional development. It has tolerable resources in terms of numbers, facilities and training environment. The regular officer corps is far more diverse and better educated than was the case between the two World Wars. A high proportion of its officers and n.c.o.'s have had recent combat experience. There will be problems to be faced such as continuing scarcity of resources and lack of public interest but, provided that the Army uses its assets wisely, it does seem very improbable at this point that these problems will stifle that development of the Army which is essential to its remaining effective.

If the Army is going to be its own pace-maker in a time of rapid change, it is going to require a continuous process of self-review. We are not suggesting that the RODC should be institutionalized on a permanent basis – that would be very prejudicial to the nature of effective review which, *ipso facto*, is not capable of being standardised or made routine. But we would envisage that a series of *ad hoc* reviews, conducted at varying time intervals, at different levels and for different purposes, should become an integral part of the Army's life, much more than has been the case in the past.

It is not our intention in this conclusion to reiterate the points made in each chapter. Rather we wish to attempt a conspectus view of the issues canvassed.

The prime challenge in front of the Army and its officers in the coming years will be to discharge effectively their role in the defence of Australia in the face of changing ways in which nations may use military forces, changing utilities of the use of force in international and domestic relations, changing relationships between individual nations, between groups of nations, changing forms of weaponry and changing types of supporting infrastructure both on and off the battlefield. There is wide recognition that change is taking place in all of these areas on a continuous basis. However not so many realize that occasionally these changes will occur as step functions rather than gradual, smooth progressions. Although step function changes tend to be damped down by rigidities in the system to which they are applied, they can also have an escalatory effect on other systems; for example a sudden change in the attitude of one country to another can polarize whole groups of nations, can stimulate new force deployments and can change people's views on the utility of military force virtually overnight. Hence in gearing to face the requirements of a changing world, we must be able to cope not only with continuous, gradual change but also with radical change.

In these circumstances the yard-sticks of previous experience and the supports of old-established operational methods will be of little use. Officers will have to rely much more on their own judgements of the requirements of each particular situation confronting them and they are going to need a wide stock of knowledge and confidence in their ability to handle these problems if they are not going to be beaten by a better competitor in the form of an outside enemy. Trials and experimentation with new forms of technology and new operational doctrines will have to become the normal practice for the great bulk of the Army, rather than leaving this work to a few, small, specialized teams.

Warfare, of course, will remain an extremely bloody business – perhaps worse for the participants than ever before because the difference between what they are accustomed to in time of peace and what they will have to endure in war seems likely to grow rapidly. Hence an army must be able to cope with these difficulties and, before it runs out of strength, surmount them. Armies will need discipline and effective control systems to maintain their cohesion. They will have to pay as much attention as ever to the maintenance of morale and *esprit de corps* and so they should not forget the many lessons of the past in this regard, particularly the ways in which armies collectively and soldiers individually have reinforced their spirits and fortitude through the conduct of their relationships with their wider national societies. The social prominence of the nineteenth century volunteer has been replaced by the intrinsic fascination of modern military equipment for those members of the public who display a positive interest in the Army. The

ceremonial parade is still a popular form of civil-military interaction but it may lose its appeal to one side or the other due to competition from other public events and the disproportionate time which preparation of a parade may require. Nonetheless, intelligent officers will be able to adapt past traditions to meet current needs if they think about the problem. External factors in warfare may change but human nature has many areas of constancy which serve to maintain the relevance of old lessons regarding the ways in which people behave in combat.

However with respect to the wider aspects of the Army's development in peace-time and its contribution to the formation of national defence policy, old forms, customs and usages will be of less supportive value. In these areas, officers must derive motivation, knowledge and support from engaging in intellectually challenging activities with their seniors, their peers, their juniors and with the wider world beyond the Army from which people observe the Army's conduct with some interest and some knowledge but very little understanding of what the Army is actually doing at any one time. The more time-honoured supports of demonstrably successful performance of duties in accordance with clear and well-known criteria of effectiveness will not be so generally available in the changing future.

This is not to say merely that the development of the military profession will reduce to the blind leading the blind. That is a peculiarly negative way of describing the situation. Rather, like most other professions which operate essentially on the frontiers of knowledge, the Army will be in a situation where the path ahead may not be so clearly visible for all to see but none the less those who are abreast of new information will know in which direction to head.

The main task then for the system of regular officer development in the Australian Army will be to enable as many people as possible to stay abreast of and probing beyond the moving frontier of knowledge, requiring the acceptance within the Army of a more mobile or dynamic approach to professional activity than ever before. The institution of this approach will require the concerted utilization of the whole of an officer's service, both in formal education and in practical experience.

APPENDIX

A Note on Sources

Much of this study was compiled from the published works or work-in-progress papers of members of the S.D.S.C.

In sourcing the paper we have provided detailed references only to sources outside the Centre.

The principal works of Centre members used here were the following:

Robert O'Neill, (ed.), *The Defence of Australia: Fundamental New Aspects*, (S.D.S.C. Canberra, 1977).

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