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Cover: Detail from diorama 'Dernancourt, April 1918', at the Australian War Memorial.

ARMY JOURNAL

A periodical review of military literature

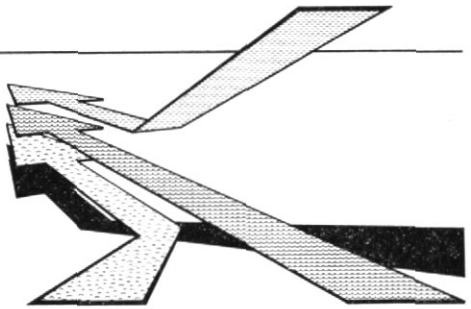
No. 276, MAY 1972

Contents

(Army Public Relations)

Members of the Australian Task Force, among the last to leave South Vietnam for return to Australia, approach HMAS *Sydney* in Vung Tau harbour in late February of this year.

An Integrated Department of Defence



Lieutenant Colonel M. M. van Gelder
Royal Australian Engineers

THE Services' relationships with the Department of Defence and the Minister for Defence, have been highlighted in recent weeks.[1] During this period, the wider roles of the Services in the fields of civic action in South Vietnam and of maintenance of internal security by aid to the civil power in New Guinea have been given wide publicity. The Kerr Committee[2] has been established to inquire into the 'worth' of the serviceman; and, although not receiving as much public attention, a special committee has been examining and making recommendations on the overall command and organizational structure of the Australian Army.[3] All these events serve to throw the spotlight on the Services and create an atmosphere suitable for a study of the organization of the Australian defence forces and more specifically in this paper, of the higher defence machinery.

The average civilian could be forgiven for believing that there is a need for some 'rationalization' of the present machinery, particularly as he may now suspect that the cause of much of the inter-Service rivalry and the tensions existing between the De-

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Lieutenant Colonel van Gelder's biographical details are contained in previous issues of the journal. After attending the Australian Services Staff College in Canberra in 1970, he was posted to Army Headquarters in the Directorate of Manning. As AAG M2 he is concerned with long-term personnel planning. Lt Col van Gelder is a graduate in civil engineering and economics with the post-graduate qualification of M.Eng.Sc.

With this paper Lt Col van Gelder won the 1970 AMF Gold Medal and ASCO Prize Essay competition (awarded in 1971).

partment of Defence and the Services on the one hand and some government departments on the other, is rooted in the present organization and command of the Australian Defence Forces. He must be wondering why Service portfolios always seem to be 'hot' portfolios, and in this regard, despite Army's greater involvement in Vietnam, the Navy and the Air ministerial posts seem no less free of contention. He must be becoming increasingly impatient with the procrastination over major equipment purchases and the location of defence installations. He must be mystified by the fact that whenever something goes wrong with the Services it is always extremely difficult to pinpoint the blame. Invariably the blame is put down to inter-departmental misunderstanding or military misinterpretation of higher directives. Causes are not isolated because of the difficulty of tracing the origin of instructions and orders. Nowhere can he find evidence of a clear decision-making apparatus which is prepared to accept full responsibility for all defence decisions and actions.

There are other no less important reasons for examining defence organization. Rarely, if ever, will any future operation of war be considered or conducted on a single Service basis. It follows, therefore, that if the actual planning and conduct of operations by Australia's forces are to be an inter-Service or joint matter, there are strong reasons for the organization and command of these forces to be put on the same basis.

Moreover, it is fashionable to talk about the declining value of the dollar and the increasing competition throughout areas of government expenditure for a greater share of the public purse. Without further elaboration this competition may be put down to the increasing demand for social services and the rapidly increasing cost of equipment as it becomes more technologically sophisticated. Therefore any organizational move which provides scope for economies and greater efficiency, possibly through firm central control over budgeting, is deserving of attention.

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1 Bruce Juddery, article 'The Tensions on Russell Hill' *Canberra Times* 6 March 1971.

2 Committee of Inquiry into Financial Terms and Conditions of Service for Male and Female Members of the Regular Armed Forces 1969/70.

3 Army Review Committee, Chairman Major General F. G. Hassett CBE DSO MVO, 1970.

It is proposed to look at the last major attempt to reorganize the defence departments in 1958 and the government reaction to the still-secret recommendations of the Morshead Committee, and then to examine the present inter-relationship of the departments. After a consideration of the principles which, in the author's opinion, should underlie any new organization, it is further proposed to suggest a new integrated organization and discuss its advantages and disadvantages.

BACKGROUND

A Minister and Department of Defence have existed since the establishment of the Commonwealth in 1901. Prior to the Second World War, the Defence Department embraced the three Services and the Munitions and Supply machinery, the Defence Committee which is responsible for advice on defence policy and joint service matters, and an overall Secretariat which, through its central Finance Branch, also exercised financial control over the Defence Vote.

To provide for war expansion, separate Departments were formed for the Navy, the Army, the Air Force, Munitions, Aircraft Production and for Supply (other than Munitions and Aircraft). The Secretariat of the Department and the Defence Committee machinery became the Defence Department with responsibility for overall defence policy and for conduct of the business of the *War Cabinet and Advisory War Council.*

'The present functions of the Minister and Department are accordingly an evolution from nearly fifty years' experience since Defence was made a function of the Commonwealth, and have been assigned and defined from time to time by the Government or the Prime Minister.'[4]

Since the war, other departments which have participated in the defence effort have been the Treasury, through its Defence Division exerting financial control over Service estimates and expenditures, the Prime Minister's Department, in a general co-ordination sense through its Cabinet secretariat functions and

[4] Commonwealth of Australia. 'The Defence Department and the Higher Defence Machinery — Functions and Organizations', December 1947, Government Printer.

Department of Labour and National Service through its participation in the National Service Training Scheme.

It was generally recognized that 'despite this elaborate machinery, co-ordination in defence policy was notably absent at least until the late 1950s . . . . Within the Defence establishment itself the Defence Department, traditionally so powerful in Australia, was apparently no longer able to co-ordinate the activities of the Service Departments or to curb inter-Service rivalries'.[5] Despite various government attempts to remedy this situation, eventually in November 1957 it became necessary for the Government to set up the Morshead committee to inquire into the organization of the defence group of departments, and to advise Cabinet.

The Committee comprised Lieutenant General Sir Leslie Morshead as Chairman, and the Chairman of the Public Service Board (Sir William Dunk), the Secretary of the Department of Defence (Mr E. W. Hicks) and the Assistant Secretary of the Prime Minister's Department (Mr E. J. Bunting) as members.

The recommendations, as outlined by the Prime Minister[6] were as follows:

- Separate Departments of Defence, Navy, Army and Air to be amalgamated into a single Department of Defence under a single Minister for Defence.
- Two 'Associate' Ministers, with defence assignments in addition to their own non-defence ministerial portfolios, to assist the Minister for Defence.
- Allotted duties of the Associate Ministers to be on a 'functional' (e.g., personnel or logistics) and not a 'Service' basis.
- Amalgamation of the separate Departments of Supply and Defence Production into a single department under a single Minister.

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5 See B. D. Beddie 'Some Internal Political Problems' in *Australia's Defence and Foreign Policy*.

6 Statement by the Prime Minister, the Rt Hon R. G. Menzies in the House of Representatives on Defence Organization, read 19 March 1958. (*Parliamentary Debates* vol. H of R 18, 19 March 1958, pp. 433-438.)

- Other recommendations relating to various devices for 'improving efficiency, reducing overlapping, encouraging the development of common services, defining the responsibilities of Service Chiefs, and strengthening the overall authority and control of the Defence Minister'.

As summed up by Beddie,[7] the Government accepted without amendment only one minor recommendation of the Committee — the merging of the Department of Defence Production into the Department of Supply. On the major issue of administrative integration, it decided to retain the separate Service Departments and Ministers, but greatly to strengthen, by administrative direction, the co-ordinating and controlling authority of the Minister and Department of Defence. The Chiefs of Staff Committee was strengthened in order to ensure that its advice on purely military matters could be directly presented to the Government; and, to encourage co-ordination between the three Services, a fourth member was added, a Chairman, Chiefs of Staff Committee.

Arguments against adopting the main recommendations of the Committee were mainly of a constitutional type with an emphasis on the subordination of the Military Services to the constituted civilian authority and the complete accountability to Parliament in regard to defence expenditures.

'Having regard to all these considerations, the Cabinet has concluded that a complete integration of the four departments is not feasible, and that in particular, the distribution of the work by the creation of Associate Ministers, each of whom would of (constitutional) necessity have another normal civilian department to administer, could not be accommodated either to the needs of efficiency or the presentation of the Parliamentary system of Government.'[8]

It should be noted here, perhaps, that both the Morshead Committee and the Menzies Cabinet believed that an integrated Department of Defence could not be handled by one Minister — hence the importance of the 'Associate Ministers'.

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7 Beddie, op. cit., p. 133.

8 Statement by the Prime Minister, op. cit.

Although there have been no sweeping administrative changes in the higher organization of defence since 1958, there have still been some advances towards integration. The supremacy of the Minister for Defence has been confirmed, the formation of joint committees and staffs has been fostered, and the responsibilities of the Chiefs of Staff Committee have been increased. On the logistics side, there has been rationalization of some of the common services (canteens, medical and dental stores, bulk food purchases, cataloguing and classification of parts, inspection, EDP processing) and the establishment of joint communications systems. The intelligence function has virtually been centralized under the Defence Department's Joint Intelligence Organization. The Australian Joint Services Staff College (Joint Services Wing only) has been established as a contribution to higher staff and command training on a joint basis, and a proposal for an academy for officer cadets of all three Services was broadly accepted in the military, naval and air establishment. These developments indicate 'a growing integration of outlook and ideas'.

The arrival at the Department of Defence of Sir Henry Bland in January 1968, the new Secretary, was heralded as an event which foreshadowed considerable changes. At the stage of Sir Henry's voluntary retirement from the position in 1970, all control of defence policy had been centralized in the Department of Defence. 'The Services were deprived of much of their say on policy by the replacement of defence planning committees, whose members were virtually the services' ambassadors, by planning staffs, whose members were seconded to Defence for a period of years.

'The Secretaries of the Service departments — Air, Navy and Army — and of the Department of Supply were all made subordinate to the Secretary of Defence, just as their Ministers were subordinate to the Minister for Defence, then Mr Allen Fairhall.

'Inevitably — and correctly — the suspicion grew that Sir Henry planned to revive the still-secret recommendations of the Morshead Committee on defence organization, shelved since 1958, that the service departments be abolished, leaving the

Services without any direct pipeline to the Ministry, save the Minister for Defence. Last September, six months after he retired from the public service, Sir Henry proposed publicly that this step be taken.'[9]

This then is the background of the organizational changes which have occurred in the Department of Defence and the Service departments since 1958. There is no evidence that there are any major changes being planned and emphasis appears to be being placed on the evolving nature of defence organization.

THE PRESENT INTER-RELATIONSHIP OF DEPARTMENTS

Although mentioned in the background, the present composition of the Australian Defence Group of Departments is summarized below, together with a brief statement of role. It comprises:

- The Minister for Defence and the Department of Defence who are concerned with the formulation and application of defence policy.
- Three Service Ministers and Departments which administer their respective Services in accordance with approved policy.
- The Minister for Supply and the Department of Supply who are responsible for the provision of the material requirements of the Services, and for defence research and development in accordance with approved policy.

The role of the Department of Supply, however important in the national defence sphere, is not central to the question of how the Department of Defence should be reorganized. It is therefore proposed not to discuss the Department of Supply further.

Irrespective of interpretation of the degree of control which should be exerted by the Department of Defence, the Service departments operate within, and subject to the general policy authority of the Department of Defence. In accordance with this, there is functional communication at all levels, between the four departments, and representatives come together as re-

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9 Bruce Juddery, op. cit.

quired in a variety of Joint Service Committees to consider and advise on matters of Joint Service policy and interest. To further understand the relationship of the departments it is necessary to explain briefly the roles of the Defence Committee and the Chiefs of Staff Committee and the *modus operandi* of the joint staff arrangements.

The Defence Committee is a statutory body comprising the Secretary, Department of Defence (Chairman), the Chairman, Chiefs of Staff Committee, the three Chiefs of Staff, and the Permanent Heads of the Prime Minister's Department, the Department of External Affairs, the Treasury and the Department of the Cabinet Office. It advises the Minister for Defence and through him the Government on all general questions of defence policy, including the international aspects, overseas force deployment and strategic planning. The Chiefs of Staff Committee, consisting of a Chairman who is a former Chief of Staff and who is appointed by the Government, and the three Chiefs of Staff, deals with matters of a more military nature.

Joint planning and staff work is done by a series of staffs, under the Director Joint Staff (a serviceman of two-star status), who has three Directors to assist him and supervise the work of the staffs responsible to him. Each of these staffs is composed of Service personnel, seconded to the Department of Defence for full-time work, and of relevant public service officers drawn from the appropriate element of the Defence Department and the Department of Foreign Affairs. The Joint Planning and Staff arrangements allow a dual responsibility, the staffs serving both the Secretary of the Defence Department and, on military issues and matters within their sphere, the Chairman of the Chiefs of Staff Committee and that Committee. The Director Joint Staff has authority to deal direct with the individual Services in relation to executive staff action on operational and related matters.

LIMITATIONS OF PRESENT ORGANIZATION

Although not exhaustive, a number of the important limitations on the effectiveness of the present defence machinery are given below:

- The existence of three separate Service Boards with substantial executive powers has limited the extent to

which command and control could be fully co-ordinated. The boards are another step in the decision-making process and quite often in the flow of information itself. The Boards not unnaturally are sensitive both to the superior position of the Department of Defence, and the competing power of the other Boards.

- The three Service Departments are still individually responsible to Parliament for the preparation of Estimates and for general accountability of expenditure. The financial accountability of a Service department is enshrined constitutionally in the position of the permanent departmental Secretary. There must be many occasions when it is difficult to reconcile the Defence Department's requirement for efficiency, the contribution of Service expenditure towards the main defence objectives, and the Parliamentary requirement for correctness of accounts.
- The present inter-relationship between the four departments means that it is necessary to have a considerable number of tri-Service committees. Whilst this is admirable as a means of greater communication, it is not the way to expedite the making of decisions. Committee meetings are time-consuming, and the committees themselves detract from effective action and accountability.
- There are staffs in the three Services working on similar problems, both conceptual and day-to-day. It is most uneconomic to maintain three separate headquarters when functionally the Services have so much in common.
- The rate of organizational evolution of the defence structure does not conform with recent advances in the technical and financial fields. Increased sophistication in weapons and data processing and the introduction of programme budgeting require greater centralized control than is possible at present.
- Technical and analytical skills possessed by one Service are not readily available to the other two Services. Whilst there may be vertical flow of expertise from the Services to the Department of Defence and vice versa,

there is very little horizontal flow. The Services still tend to operate in isolation.

- Although the analytical and critical approach of trained civilian specialists is invaluable, there is a considerable danger that very important military decisions will be made by the Department of Defence without a proper understanding of Service needs and operational realities. The mistake has been made of establishing in the Department of Defence a systems analysis cell to subject important defence proposals to systematic scrutiny, without simultaneously developing the same expertise in the Services. One of the first acts of the new cell should have been to encourage the formation of similar cells in the Services so that there would be a compatability of approach and communication.
- The Chairman of the Chiefs of Staff Committee is responsible only for 'matters of a more military nature' and does not have the executive authority, in the wider field of defence policy which one might associate with a 'Chief of Defence Staff'. Whilst still retaining civilian control of the military it should be possible to place the top professional service officer, with his accumulated military expertise, in a position of unified command. Whilst it may be argued that most military professionals do not have the political and business acumen to be able to discharge the functions of a high government executive post this merely points to the lack of preparation of these officers.

PRINCIPLES INFLUENCING THE PROPOSED NEW ORGANIZATION

The paper to date has looked at the background behind the present defence organization and has endeavoured to point out the organizational limitations. Nothing has been said about the adequacies or good points of the present structure, especially in the light of the respectable overall defence performance, over the last two decades. But all organizations must change to keep apace of developments in other fields, and the question becomes not what reasons are there for changing the *status quo* but how more efficiently can our future defence commitments be discharged with a new organization.

There are certain responsibilities which belong to any higher defence machinery whether it is integrated or not. The decision to integrate rests on an objective assessment of the effectiveness with which an integrated defence structure copes with these responsibilities:

- First, providing the Government with strategic advice on overall defence problems and policy, including the broad division of the resources allocated by the Government for defence between the various sectors of the defence effort.
- Secondly, providing for the higher direction in war of the three Armed Services.
- Thirdly, existing in such a form in peace as to permit the rapid and smooth transition to war.

Any organization which is simple, more streamlined and more efficient, and which can discharge the above responsibilities must be deemed acceptable.

The main principles which in the author's opinion should be considered in devising the structure of an integrated Department of Defence are detailed below.

Ministerial Representation

The Minister for Defence must have complete control both of defence policy and of the machinery for the administration of the three Services. To enable him to devote more time to defence policy (e.g., strategic thinking, overall planning) instead of detailed Service administration, the Minister will undoubtedly need one or more 'Associate' Ministers to handle administrative or single Service matters. Despite the rejection by the Menzies Government of the Morshead recommendation on 'Associate' Ministers, it is considered that ways and means must be found of overcoming constitutional and other difficulties in appointing such Ministers. The statement of the Prime Minister Mr McMahon[10] when he announced the Ministerial changes on 21 March 1971 is noteworthy:

[10] Statement by the Prime Minister as quoted in the *Canberra Times* 22 March 1971.

'It is intended to appoint in due course certain assistant ministers or Parliamentary under-secretaries who would be sworn in as members of the Executive Council and assigned to assist particular Ministers.'

The columnist (unnamed) in reporting the statement said that Mr McMahon feels that senior Ministers waste too much time on matters that have nothing to do with policy or running the Government. He added that the assistant ministers or Parliamentary under-secretaries will be able to answer questions in Parliament only when Bills are being debated in the committee stages.

There should be no need to maintain separate ministerial staffs for the associate ministers. The number of Ministers or the extent of their staffs or their functions is not important in the overall context of departmental integration.

Executive Control

Except in the weightiest of matters it is fundamental that an individual, not a committee, should be made responsible and accountable for a decision. Whilst there may have been constitutional grounds for having retained individual Service boards in the past, application of this principle would probably require their being dispensed within any integrated department. In addition, the 'committee nature' of the Department of Defence should be replaced by a more direct executive hierarchy, with authority flowing from the Minister through the most senior Service and civilian officers (Chief of Defence Staff and Permanent Head of the Department).

Service Identity

Whilst the immediate object of integration is to improve the central control of defence policy and executive action, the efficiency and morale of the fighting Services must not be impaired. Traditions, battle honours and individual identity are vital factors in morale, and they should be preserved, at least until satisfactory alternatives are available. The integration proposed is therefore short of unification. (In an integrated system, by accepted definition, there is a single policy headquarters and a

single commander, but the individual Services retain their autonomy in all other respects. More however will be said about the role of Service Chiefs and single Service responsibilities).

Advice by Experts

Following from the previous paragraph, it may be expected that formation and unit commanders will be critical of an integrated headquarters organization which envisages that senior staff appointments can be filled by officers of any Service. These sorts of misgivings can be removed if a policy is adopted of advice by experts as opposed to advice by staff committees. This principle is fundamental to the concept of integration, and if successfully implemented results in speed and efficiency in the giving of staff advice.

Service Chiefs

In an integrated Department of Defence the Chiefs should become titular heads or senior Service representatives of suitable rank, supported by personal staffs for handling single service matters such as discipline, service customs and specialist affairs. The direction and management of the three individual Services is by the Department of Defence direct to service Commands, either functionally or area oriented. The introduction of specific permanent or temporary joint service commands is very easy under this arrangement.

Single Service Responsibilities

Work within the integrated department should be organized, with a few exceptions, on a Defence rather than a single Service basis. This will promote economies in the common use of resources and technical facilities and the provision of common user items. Detailed differences of activity and procedure between the Services that inevitably arise from their different roles and functions will continue to be handled below departmental level by the single Services. Single Service activity within the integrated headquarters will be confined to that of the Senior Service representatives and possibly very specialized non-operational activities.

Service and Civilian Control

Australia's parliamentary system and the rigid accountability required of the defence group by Parliament dictates that there be effective financial and policy control. To accomplish this there should be integration of civilian and Service management at all levels and in all spheres of activity within the department. No area of activity should be the sole province of either the civilian or military staffs.

Concluding Basic Principle

The Services should be moving towards a Defence Force within which the relationship between sailor, soldier and airman is comparable with that which exists, say, in the Army today between gunner, sapper and infantryman. The integration of the four defence departments is the first major step towards unification (unification demands a single policy headquarters and a single Service). There is nothing to be feared in moving in the direction of unification as long as it is done in a graduated manner. Although it is realized that there will be many problems to be overcome before unification is accepted, it is comforting to note that the United States Marine Corps is a living and highly successful example of unification in being, at least in the field, and the Canadian Armed Forces will have experienced and hopefully overcome most of unification's teething problems before Australia reaches that position.

PROPOSED INTEGRATED ORGANIZATION

An organization seeking to avoid some of the limitations of the present structure and embodying the principles indicated in the preceding paragraphs is shown in Figure 1. As it is the concept not the detail which is important, only an outline organization is shown.

Studies have been made of the United Kingdom, Canadian, New Zealand and United States higher defence machinery, and some of the desirable features of these systems, at least those which are considered to meet Australia's particular circumstances, have been incorporated in the design of the new organization.

The essential features of integrated Department of Defence are as follows:

- One Minister for Defence; with one or more associate Ministers.
- All policy formulation, functional control and overall command under central management.
- A single 'board' or defence committee which is advisory.
- An executive diarchy of a Secretary of the Department of Defence and a Chief of Defence Staff.
- A Chief of Defence Staff who is responsible to the Minister for Defence for the command of the Armed Forces — this command being exercised not through individual Chiefs of Staff but through the Department of Defence machinery.
- Service 'Chiefs' or Senior Service representatives who are advisory, have no command function and are titular heads analogous to the present corps directors in the Army.
- Branches of the Department which, although either predominantly civilian or militarily staffed, have mixed staff of civilians and military personnel.
- A logistics branch which directs all supply, equipment and technical services.

It is believed that there are many advantages which would accrue to the new organization. Wasteful parallel hierarchies of staff working in separate Service departments on the same functional problems would be eliminated. There is a certain parallelism of civilian and military staffs which would be removed as well. Thus common management problems will be dealt with on a Defence basis, and there will be a fostering of integrated as opposed to single Service ideas.

Centralization of financial control will lead to speedier and more efficient assessment of financial priorities and facilitate the use of modern managerial techniques such as programme budgeting or functional costing.

PROPOSED INTEGRATED ORGANIZATION

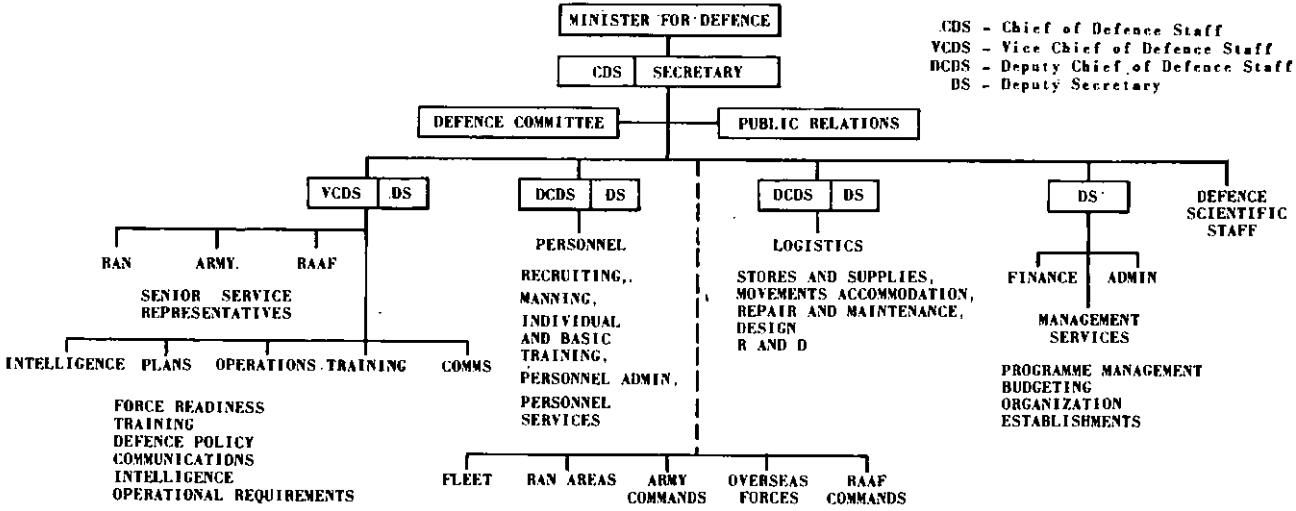


Figure 1

In regard to command, the most senior and experienced Service officer, the Chief of the Defence Staff, will have executive rather than merely advisory responsibilities. Additionally, simplification of the chain of command should obviate the necessity for most of the present committees which are concerned, not with contributing expert knowledge to the solution of problems, but with the presentation of individual Service views (a necessity in the absence of integration).

It is difficult to believe that considerable economies are not possible in headquarters staff, their accommodation, communications, staff work and the common use of resources. There are areas of common staff work in conditions of service quartering and works, for example, which provide scope for the elimination of duplication of effort. Such economies which are always disputed by the opponents of unified effort are not however vital to the concept of integration.

The new organization is not without its disadvantages. There will be inevitably a penalty of dislocation during the period of transition from single Service departments to one integrated department. The dislocation will be more prolonged the greater the reluctance of the Services and the Public Service to change established patterns.

The centralized larger machinery of the integrated department could become clogged with detail, thus slowing down rather than speeding up the process of decision-making. This is probably a psychological rather than a real problem, and certainly one which could be overcome by internal administrative action.

The final disadvantage is that, although the Services have been retained below the departmental level, they have been 'truncated' and may feel that they have lost too much of their identity. This disadvantage may also be psychological in nature and possibly very temporary.

CONCLUSIONS

The history of the development of the present higher defence structure indicates that defence organization is very much evolutionary. There is nothing sacred about the present or the past defence organizations. In fact the limitations

of the present machinery appear to warrant the formation of an integrated Department of Defence.

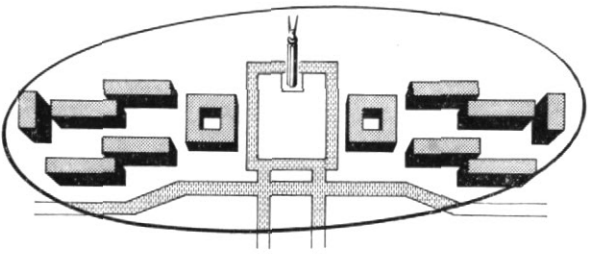
The main features of the organization proposed in this paper revolve around the appointment of one Minister for Defence, who delegates responsibilities to one or more Associate Ministers, and to a diarchy of Secretary, Department of Defence and a Chief of Defence Staff. Command as well as policy-making is exercised by the integrated department, and single Service responsibilities begin below departmental level in the various functional or area commands. It is believed that there are more advantages than disadvantages accruing to this new organization.

The author, being a little imbued with the idea of unification, is the first to admit that there is a great danger of adopting integration for integration's own sake rather than for the greater efficiency it should produce.

'The organization of the Services and the higher defence machinery is not an end in itself. It has only one purpose: a more effective and more efficient defence capacity within the limitations imposed by available manpower, finance, equipment and other resources.'[11]

Acknowledging this, there is still a responsibility incumbent on any serviceman or civilian concerned with defence to indulge in a continuing programme of research to improve the organization within the peculiarly Australian environment. The effort itself is rewarding because it inculcates a greater understanding of the difficulties of decision-making in the defence sphere, and an awareness of the increasing importance of adopting an integrated outlook in tackling defence problems. □

[11] 'Integrating the Armed Forces' Article, *Canberra Times*, 4 July 1967.



Leadership in Perspective

Correlli Barnett

THE purpose of this article is to illuminate our contemporary problems of leadership by the light of history; to examine how the scope and technique of military leadership have been affected by changing historical circumstances since the seventeenth century, when the British Army was first evolving into a permanent force. Yet before tackling the theme of the changing pattern of leadership, it is essential first to define what we mean by 'leadership'. For while we talk easily and often about this desirable quality, do we really think out what are those ingredients of character and personality which go to make a man a leader rather than merely a person in charge? Are the conventional definitions of the qualities of a leader adequate, or are they open to criticism?

For in discussing leadership one is not discussing generalship or statecraft or management, or any other kind of specialized profession that involves the quality of leadership. In looking for a definition, one is looking for the basic essence which finds expression in these various specialized ways. What does this essence amount to? What are the fundamental qualities of the leaders?

I think the conventional British view is that these qualities are ethical and relate to character. Lord Montgomery, for instance, in his book on 'Leadership', enumerates what seem to him the essential attributes of the leader. An irreproachable private life is one of them. That rules out Napoleon, Nelson and Lloyd George for a start. The leader, says Lord Montgomery, must have a carefully regulated working life. This rules out Hitler and Churchill. He must be abstemious. That outs Churchill again. Not only Churchill, but also Pitt the Younger and General Ulysses S. Grant.

I take the views of Lord Montgomery to be pretty representative of the conventional things often said about leadership. Now the point about this conventional view is that it makes out the leader to be a kind of cross between Billy Graham and a super Boy Scout. None of it squares with the human and historical reality, of a dynamic force of terrifying power, often blind, sometimes destructive. Leadership, it seems to me is the human, the moral, equivalent of a natural force like electricity; it is the communication of moral energy to a human herd that needs it.

In my view leadership is a psychological force that has nothing to do with morals, or good character or even necessarily intelligence, nothing to do with ideals or idealism. It is a matter of relative will powers, a basic connection between one animal and the rest of the herd; the process indeed by which a single aim and unified action are imparted to the herd. It is seen most readily in the spontaneous emergence of leaders, without benefit of institutional channels of advancement and promotion, in such places as lumber camps or the criminal underworld or student revolt or, above all, in revolutions.

Our finest English example of the spontaneous emergence of a leader in a revolutionary situation is of course Oliver Cromwell. Other parliamentarians were more eminent than he in social rank, or hitherto more prominent in politics; other parliamentary commanders had enjoyed longer military experience; but Cromwell eclipsed them all, by sheer force of will, by dynamic power of character and personality; by that inner certainty to which lesser men responded by giving him their trust and loyalty. And so, a minor country squire, at the age of 46, after only

three years' experience as a soldier, he became commander-in-chief of the most formidable body of English troops ever to take the field; and later still, as Lord Protector, to become uncrowned King.

I would suggest therefore that among British soldiers, Cromwell best illustrates the raw, fundamental quality of leadership. Not only because he rose by sheer personal force rather than by some institutional channel of advancement, but also because of his very characteristics as a commander: the iron will, the ruthless determination to ride over all opposition, the certainty of the righteousness of his actions.

Cromwell also provides a convenient starting point for examining those factors that have determined the changes in the pattern of military leadership between his day and our own. The most important of these factors, to my mind, is the degree of technical complexity in war. In only three years Cromwell was able to learn the professional military skills of his epoch and become an outstanding commander. Leaving aside siegecraft, warfare in the seventeenth century was fairly simple. Rations of bread and cheese and beer; a transport train of commandeered farm waggons and horses; a commissariat based essentially on living off the countryside; guns of small effectiveness and complication; battles rather like nasty rugger matches, with the three-quarters mounted on horses; there was nothing that was really beyond a country squire with a natural aptitude for command.

Although Marlborough fifty years later and Wellington a hundred and fifty years later were, unlike Cromwell, professional soldiers who arrived at the top only after many years' experience, the conditions of warfare in their days had still not fundamentally altered since the Civil War. What was called for, more than anything else, was a broad natural talent for organization and management; a practical commonsense; qualities which both Marlborough and Wellington magnificently supplied.

The Napoleonic Wars were of course the last great conflict before the Industrial Revolution transformed the whole nature of war. And it is the Industrial Revolution which seems to me therefore to be the great historical watershed in terms of

the leadership of armies, as well as in all other aspects of human life, bringing with it ever greater technical complexities and specialization that ended the era of the all-purpose 'natural' leader.

Just how vast was the change in the scope and nature of military leadership brought about by the Industrial Revolution can be quickly seen by comparing Wellington's army and operations in the Peninsula with Haig's on the Western Front. Compare the 54 smooth-bore field guns at the Battle of Salamanca, or the handful of antique siege pieces employed by Wellington in his sieges, with the 1,295 guns and howitzers of all types from 18-pounder to 8" employed by one, just one, of Haig's armies in 1917. Compare the expertise necessary to handle Wellington's guns with that required to orchestrate those colossal bombardments and barrages of the Great War. In the field of supply compare Wellington's commissariat, improvised on the spot from local supplies and local ox-carts, with the immense organization of dumps, stores, repair shops, railway, horse and motor transport built up under Haig's command.

The immense change ushered in by the Industrial Revolution was not only one of technical sophistication and complexity, but also of scale. Fairfax commanded some 13,500 men at Naseby; Marlborough some 50,000 at Blenheim; Wellington 67,000 at Waterloo. In November 1918 Haig commanded nearly 2,000,000 men, divided into five armies each bigger than Marlborough's or Wellington's.

Then there is the question of supervision by the home government. The quasi-independence enjoyed by a commander-in-chief overseas in the era of sailing packets was destroyed with the coming of the long-distance telegraph, the telephone and radio.

It is impossible to exaggerate the difference between the circumstances in which Cromwell, Marlborough and Wellington exercised leadership and the circumstances which faced Haig and his successors. The three former could, and did, personally organize their army, its communications and its base in the sense of direct personal intervention. The scale was small

enough, the factors simple enough, for them to do this; they could, if they wished, overrule with confidence their subordinates' advice since nothing, not even gunnery, was then really much of a technical mystery. They could decide their own grand strategy without politicians wheezing down their necks.

Haig, on the other hand, could not possibly involve himself personally and directly in all the mammoth and specialized operations that went to organizing the British armies in France; he could not possibly possess such universal technical knowledge as to be able confidently to overrule his various expert advisers or subordinates. 'Raw' leadership, a natural talent for organization and command, was no longer enough, as it had been in Cromwell's day, and later; long and deep professional experience and study had become essential. Comparing Haig's position with that of pre-industrial revolution commanders is really rather like comparing Lord Stokes, and the knowledge and talents which he requires for his job, with the first Josiah Wedgwood in the eighteenth century.

In terms of command of operations too, the industrial revolution brought about in its train a military revolution. Wellington and his predecessors could exercise a direct and personal control over the army's actions on and off the battlefield. They could personally judge the moment to order a tactical movement, or the moment to commit the reserve. The commander thus exercised leadership not only in the professional form of generalship, but in the raw basic sense of communicating moral energy to his army.

Such personal leadership from the top however was impossible on the Western Front, given the scale and complexity of operations. Not only Haig and his army commanders, but French and German generals too found that it was all too easy to lose control of what was happening on the battlefield.

At the same time the Great War commanders faced the novel problem of how to infuse their personalities, themselves as leaders that is to say, throughout the gigantic organizations that their armies had become. Marlborough and Wellington on the other hand could ride with their staffs along the whole front

of their armies before a battle, or hope to visit and inspect every unit in their commands in due course of time. Leadership, in this sense of personal impact on the led, needed artificial aids in the twentieth century; in a word, systematic public relations. Haig and his fellows, given their Victorian upbringing, failed to comprehend the necessity; unable to impose his character on his men by personal contact, Haig failed to impose it adequately at all. The result was that command came to seem remote, impersonal and out-of-touch. You could say, in fact, that while there was command in the Great War, there was, or seemed to be, no leadership.

Yet the Industrial Revolution brought about another change in the scope of military leadership in a curiously *opposite* way. So far I have only been considering leadership, and the changes in its scope, in terms of higher command. What about the leadership of regimental officers?

In pre-industrial armies, such as those Cromwell or Marlborough or Wellington commanded, the scope of leadership open to the regimental officer was, it seems to me, pretty limited, at least in battle. In an age of mass volley-firing, the battalion, even the brigade, acted as a single mechanical body.

The Industrial Revolution, however, which so weakened the commander-in-chief's personal grip on the army and the battle, enormously enhanced the scope of the junior commander's leadership. For there was a strange paradox in industrialized war. On the one hand it was a war of mass-organization, huge armies, huge rearward services; but on the other, on the battlefield itself, and owing to the dispersal forced by modern firepower, it was a shapeless struggle of tiny bodies of men; not even companies, hardly even platoons, sections rather. The fragmentation was made the worse by the breakdown in communications between front and rear under shellfire. It was therefore the subalterns, the sergeants and the corporals who had to take *their own* decisions, hold *their own* little groups together. Both the raw natural quality of leadership and the acquired professional skills of command became important to the junior ranks as never before.

Yet another major factor affecting the changes in the pattern of leadership down the centuries is that of its *style*; the style of leadership appropriate to the type of troops in question. It would be instructive I think to look at the familiar gallery of great leaders in terms of the men they led. For if leadership is something welcomed and wanted by the herd, it must nevertheless come in a guise that is psychologically acceptable. The leader must be well-tailored to his men. Imagine, for example, Napoleon transposed to the British army, calling the Foot Guards 'my children', and pinching them on the cheek. Or Wellington, chillingly cold and aloof, amid the Imperial Guard, who would wait in vain for some splendid rhetorical flourish to stir their Gallic emotions.

Each army in fact had at that time the leaders that suited its character. Napoleon's conscripts were a cross-section of the French nation, men filled with patriotism and belief in the ideals of the Revolution. They could be, and were, commanded with a light discipline. Wellington's men, on the other hand, as we all know, were mostly the very sweepings of British and Irish society, low in education and personal habits, probably not very intelligent. Sternness, severity even, was therefore an appropriate enough style of leadership; aloofness and distance between officer and man, as against the *camaraderie* in the French army. I know that Sir John Moore is often held up as the prototype of a more modern, more human kind of leadership. But was it really suited to the army of the time? It may have worked at Shorncliffe in rather special circumstances, but it doesn't seem to have worked very well on the retreat to Corunna, where it was toughs like Crauford who best held the army together.

On the other hand, the then British style of regimental leadership, exaction of instant, mindless obedience, which continued to work well enough on the poor quality human material in the ranks of the regular army all through the nineteenth century, did not go down at all well with the citizen volunteers of 1914-18; this probably helps to account for the generally bad press the army as an institution later received at the hands of the writers of war reminiscences. It might be said therefore that the Victorian army was commanded at lower levels not so much by *leaders* as by givers of orders.

Now, so far I have been mainly considering the immense changes caused in the pattern of military leadership by the Industrial Revolution. Although I have illustrated these changes by examples from British military history, what I have been discussing is really true of all European armies. Indeed, as late as the 1900s, it was far *more* true of European armies than the British. For the British army was still conforming to pre-industrial patterns of leadership and organization at least half a century after other armies had abandoned them. The British army presents indeed a unique historical case. And so let us look at the special influences which affected the patterns of leadership in the British service.

In the first place, there are the consequences of the national fear and dislike of standing armies in peacetime, a fear which lasted well into the nineteenth century; some pessimists would say it still does. In peacetime in the eighteenth century the army enjoyed virtually no collective existence at all, being scattered in battalions, squadrons even, all over the country; billetted in pubs and used for semi-police duties. Large-scale manoeuvres were unknown; little known even in the Victorian age. There was therefore no opportunity to practise leadership on a large scale; no possibility of experience in handling formations bigger than a battalion. The British military horizon was therefore restricted to the regiment. From the days of Marlborough to the days of Haig a great war meant that the British had to extemporize a field army from scratch.

What followed from this British custom of improvisation? It threw enormous emphasis on the personal talents, the raw basic quality of leadership, of the commander-in-chief. If there was a Marlborough or a Wellington to make the absurdly divided administration work; to improvise a supply system; to organize the field army; and then overcome the shortcomings of untrained and ill-experienced subordinates you had success and victory. If you were unlucky enough not to have a genius at hand, you had instead such displays as the campaign in the Netherlands after 1793, or the Crimea. To make the British military 'system' work demanded therefore a far higher degree of the raw talent for leadership than to command European armies, where the collec-

tive system could, to some extent, carry the second-rater. As late as 1914-18, whereas Joffre and the younger Moltke, or Foch and Falkenhayn, found a ready-made army and military system for them to use, Haig had to create his own army first. The difference between this feat of improvisation and those of the eighteenth century lay in that, thanks to the Haldane reforms, at least Haig had a blueprint to work from; standard staff procedures and the like.

The second major factor peculiar to leadership in the British army, it seems to me, was the imperial role. This role also placed great emphasis on the life of the regiment, since the army was scattered about the colonies and coaling stations in odd battalions. Even in India, the field army in the twentieth century comprised only four divisions. So instead of having the sense of being part of a great collective machine like European officers, the British officer overseas, as at home, had a rather narrow professional horizon. At the same time, the Empire involved the British army in a constant succession of small wars, whereas except for the French in *their* Empire, European armies never fired a shot in anger between their occasional dust-ups with their neighbours. And in terms of leadership, these small imperial wars demanded the simple regimental virtues, rather than the professional sophistication of the Continentals. Such famous Victorian operations as Roberts' march to Kandahar or Wolseley in Egypt or Kitchener on his trip up the Nile to Khartoum in 1896-98, which were large-scale by British standards, display the distinctive imperial pattern of leadership at the top. Everything depended on the commander's personal ability to improvise his army and all to do with it. Instead of a system, there was the General's resourceful mind; a mind which, in the case of Kitchener was closed to everyone. Yet these Victorian operations, so redolent of the eighteenth-century pattern, took place *after* such feats of modern big-business organizations and staff work as the Prussian victories over Austria and France in 1866 and 1870.

There are two further points about the effects of colonial warfare on the pattern of British leadership. The first is the smallness of scale to which British commanders became accus-

tomed; a poor preparation for great modern wars. Wolseley took some 40,000 men to Egypt in 1882. Kitchener's command on his 1898 Nile trip numbered no more than 24,000. Contrast this with the 850,000 controlled in the field by the elder Moltke in the Franco-Prussian War. The second point is that this British reliance on personal improvisation only worked because the opposition wasn't worth much, with the result that British professional standards, thanks to the Imperial role, were not very high. For example, Roberts' own chief of staff wrote of the famous march to Kandahar:

> The march was a lamentable instance of the carelessness and happy-go-lucky style in which we do things. There was a small advance guard, a few men with guns, others scattered about, and the rest in the rear; no attempt was made to keep the baggage and the troops within a reasonable space, and the consequence was, the whole line of march was sprawling along three times as long as it needed.

Since the Afghans were not the Prussians, they took no advantage of this want of professionalism. Few of Britain's colonial enemies ever did.

The primitiveness of these enemies also exercised an immense effect on British tactics and leadership at the regimental level; stultifying them in the patterns of the eighteenth-century. As early as 1870, during the Franco-Prussian War, European armies had begun to abandon the old close formations on the battlefield in favour of what was called a skirmishing swarm. The German regulations of 1888 formally abolished parade-ground formations and volley-firing in favour of small groups of men whose leaders were expected to use their own intelligence and initiative. Yet at Omdurman in 1898 the British army was drawn up much as at Waterloo, and fired by volley. In a word, at the beginning of the twentieth century, and thanks most of all to the imperial role, the British army, alone among Western armies, had not progressed very far beyond the simplicities of the eighteenth century; either in higher leadership, in organization, or in regimental leadership and tactics.

The great reckoning for all this was of course the Boer War. And it was the post-mortem on the Boer War, the Elgin Commission and the like, which drew attention to yet another long-standing tradition of the British army which greatly affected its pattern of leadership; the tradition of amateurism, of the

officer who held his rank because he was a gentleman rather than because he was professionally keen and able. As the Akers-Douglas Committee put it in 1903, the evidence

> shows in the clearest manner the prevalence among the junior commissioned ranks of a lack of professional knowledge and skill, and of any wish to study the science, and master the art, of their profession.

Or, as one witness to the committee put it, 'keenness is out of fashion . . . it is not the correct form'. The Akers-Douglas report also pointed out that it was difficult for officers to train their men or themselves even if they wanted to:

> Under the existing system the officer rarely sees the men for whose military efficiency he is responsible. They are largely employed on non-military duties, such as waiting in canteens, the charge of cricket and tennis grounds etc. . . .

This committee also had many harsh things to say about Sandhurst and Woolwich.

Much of this professional laziness and amateurism was blamed at the time on the fact that British officers had to have a private income, and the more exclusive the regiment and therefore the easier the transition to field rank, the bigger the income. In other words, although purchase had been killed by Cardwell, its soul went marching on: an officer was a private gentleman of substance rather than a career officer looking to his pay. And this was only the consummation of a very long tradition, going well back into the Georgian age and given impetus by Wellington when he was C-in-C. Hence in the Seven Years' War, for example, the slapdash ignorance and casualness of the British officer was commented on in much the same terms as those used in the Boer War post-mortem. It was only by the second half of a European war that the British officer, at any level, had really learned his job.

It seems to me that the Victorian public-school served to reinforce this unprofessional approach. The public-school, as we are often told, existed to turn out 'leaders' for the Empire. Its conception of 'leadership' was, when stripped of its Christian ethical cladding, very much of 'raw' leadership — the all-purpose leader, who by reason of personal character, plus social position and education, automatically 'led' in any situation or career. The need in the modern industrialized world for raw leadership to be

expressed in terms of an appropriate professional expertise and technical knowledge was not perceived. There's the old joke about Shell in the 1920s in some colonial market where oil sales were falling, sending a signal back to head office: 'Send out four more Rugger blues'. It was true of the army too.

Yet despite the hard things said about the British officer in the post-mortem after the Boer War, and despite the Haldane reforms and even the experience of the Great War, the simple pre-industrial idea of leadership seems to have lasted long in the British army. A former C-in-C Middle East in the Second World War once expressed the view to me that it was not only in staff work and the handling of large formations that the Eighth Army was inferior to *Panzerarmee Afrika*, but in the skill, initiative and professionalism of junior officers.

This may all seem too harsh and over-critical. However, what I am really arguing is that the British army's special character and its imperial role produced a certain kind of leadership which was perfectly adequate to that particular role, but which was not so adequate when it came to large-scale operations against a sophisticated European enemy. It took a fair lapse of time therefore, to adapt and learn on the job.

To sum up, in conclusion, the main themes I have been trying to explore: One; because of the imperial role and the fragmented state of the army at home in peacetime, leadership at all levels in the British army was very late, much later than in European armies, in adapting to the effects of the industrial revolution on war. Two; that the general effect of the Industrial Revolution on the pattern of military leadership has been enormously to increase the importance of professional expertise and technical knowledge, so that the raw, natural quality of leadership has become less and less sufficient in itself.

However, there is yet another cross-current here. Under the impact of the industrialization of war in the nineteenth century, there was a tendency for soldiers, especially at the top, to become so immersed in the new technical complexities of their profession, as to lose a broader horizon, especially a social and political horizon. In the British army, soldiers of Haig's and

Robertson's generation very much became military specialists, quite deliberately placing the soldier's role and the politicians' role in two separate compartments. As a result, in the Great War, there was that gulf of suspicion and misunderstanding between soldiers and politicians, because their outlooks were so very different. Yet the all-purpose leaders of pre-industrial days, like Cromwell himself, certainly Marlborough and Wellington too, had a complete understanding of the domestic and foreign political situation of their time. They could talk to politicians in their own language; indeed, in their functions in Holland and the Peninsula, Marlborough and Wellington themselves were politicians and diplomats.

Thus while the Industrial Revolution made deep specialized knowledge essential to military leadership, this specialization could be dangerous. I suppose the German generals in both world wars are the prime examples of the limitations of high technical efficiency combined with professional narrowness of mind. What was wanted in industrial war was the natural talents and broad outlook of a Marlborough, coupled with the technical expertise of a Montgomery; not an easy combination for staff colleges to produce. □

The Fallacy of Defence on the Cheap

Major T. H. Holland
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He, therefore, who desires peace should prepare for war.
— Vegetius, 4th Century A.D.

PART 1

Introduction

ONE of the lessons of history is that a nation usually gets the army it deserves. The successes or failures of an army may invariably be traced back to the preparations made by the army years before the conflict. As it is the government who directs the energies and controls the purse of the military, then it is incumbent upon the government to ensure that the military is given every reasonable assistance to prepare itself fully to carry out the national directives.

It is, of course, always popular to lay the blame on the politician when the army meets with disaster. After a military calamity a few service heads may roll; while on the political side, whole governments may be unseated. The country nods its collective head, swears that this sort of thing will never be allowed to happen again, and apart from days set aside for national maudlin sentimentality, promptly forgets the entire issue.

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Our delinquency in this situation is three-fold. We fail to appreciate the difficulties which beset a government in maintaining a balance between the needs of national and social development and the needs of an adequate defence preparedness. We fail to heed the lessons of our past history which illustrate the awful price which must always be paid for inadequate defence capability. We fail also to realize that, in many cases, the military commander has had little hope of staving off disaster with the means placed at his disposal. We give ourselves over to a mixture of sentimentality and self-aggrandizement, when we should be reminding ourselves of our earlier resolve; to take adequate steps in the future to avoid further needless and tragic losses.

The problem of balancing peacetime needs against probable wartime needs is not an easy one. It is politically unpalatable to restrain national development to prepare for a war which may not yet be considered a probability by the electorate. It is politically disastrous not to have prepared for this war when it comes.

The politician's task is made no easier by the adherence of the people to what I choose to call the 'Inverse Proportion Rule' — that our interest in defence is in inverse proportion to the number of years since the last war, and the expected number of years until the next.

Unfortunately, armies cannot be made in a day: even with the best will they cannot be made in a year, or even five years. The foundations of a successful army are laid in peacetime — many years before a war. There is no quick and cheap way of obtaining an adequate defence preparedness. Defence on the cheap is just not practicable. A nation which does not make adequate defence preparations leads a tenuous existence and, when put to the test in war, will pay dearly for its neglect.

In 1920, a conference of senior Australian generals was constituted to examine Australia's defence needs. They observed, '. . . for Australia to fail to organize all her resources for her own defence would be to prove herself blind to the lessons of history

. . . .'[1] Unfortunately, most democracies do prove themselves blind to the lessons of history; unfortunately, also, most aggressive nations do not.

It is the purpose of this paper to examine some of the lessons of defence preparedness to be gained from our past history; to hold them up to the light, and determine if any of these lessons are applicable today. The problem of defence preparedness is as old as man himself; however, a brief historical survey of the last hundred or so years should suffice to illustrate most of the important aspects.

THE CRIMEAN WAR 1854-56

For want of a nail, a shoe was lost . . . .
— Nursery Rhyme

The Starting Point

A starting point in the continuous process of military history must always be arbitrary. By 1854, however, it may be said that the British Army, despite its multitudinous imperfections, was a modern and professional force by the standards of the day. In selecting the 1850s as a starting point for this short review, one gains the advantage of looking at an army using weapons and equipments and existing in a social environment which may be easily related to the present day. The Crimean War was the first war to be widely reported in the press to the newly emerged newspaper-reading public. The fast steamship brought the Crimea closer to Britain than the Peninsula had been in 1808-14, and for the first time the people of Britain new, and cared about, what their soldiers were doing. It was during the Crimean War that the pre-industrial-revolution military system was exposed to a shocked nation. There had not been a major war for almost fifty years, and defence preparations had been subject to the 'inverse proportion rule'.

Weaknesses Revealed

Administration. The administrative, tactical and strategic blunders which were perpetrated during the Crimean War are

[1] Commonwealth of Australia, Department of Defence. *Report on the Military Defence of Australia,* by a Conference of Senior Officers on the AMF, 1920, p.2.

widely known. The supply system, the basic premise of which was local hiring, collapsed instantly. There were copious loads of supplies in ships at Balaclava while men and animals at the front starved. The road between Balaclava and the front became a hopeless bog. In any case, movement of stores forward would have been difficult as the civilian demand for economy after 1815 had done away entirely with Wellington's waggon train.

Reserves. The recruiting system failed. It was a system designed to cater for a long-service arm and was capable of attracting generally only the poorer types of men. After the first 25,000 men had been sent to the war, all that remained of the army were young recruits. In November 1854, the heights of Inkerman were defended by 8,000 British infantry. A first reinforcement of seven battalions consisted of 6,000 men; but a second reinforcement of eleven battalions contained only 6,500 men.[2]

Reforms

Enquiry. The tactical and administrative handling of the army was, by any standards, appalling. As the waste and suffering became known to the public, there was an enormous scandal. The scandal was followed by its natural corollary — a hunt for scapegoats. In 1855, the House of Commons appointed a select committee to enquire into the state of the army. The result was, the 'Report of the Commission of Enquiry into the supplies of the British Army in Crimea.'

Findings. The report revealed that from 1 October 1854 to 30 April 1855 the mortality rate was 35% of the active army. It stated, ' . . . this excessive mortality is not to be attributed to anything peculiarly unfavourable in the climate, but to overwork, exposure to wet and cold, improper food, insufficient clothing during part of the winter, and insufficient shelter from inclement weather.[3]

Changes. As a result of the findings of this committee, the general uproar created by the public, the government belatedly

2 Barnett, Correlli. *Britain and Her Army,* Allen Lane The Penguin Press, London, 1970, p. 288.
3 Barnett, p. 286.

attempted to improve the military system. Some sensible reforms were instituted. For the first time a full-time Secretary of State for Military Affairs was created. Parliamentary and civilian control of the army was fully achieved. The responsibility for supply and transport was transferred from the Treasury to the War Secretary. The War Department took over the Army Medical Department and became responsible for the clothing of the infantry and the cavalry.

The reforms had little effect on the outcome of the war. It was not until Sevastopol has been captured, and the armies were waiting out the winter of 1855-56 for a peace treaty to be signed, that the troops were adequately clothed, fed and accommodated.

The Cost

It was probably fortunate for Britain that the war had been fought well away from her own shores, assisted by the 90,000 strong French army, and against a peasant Russian army, brave but equally ill-managed. Britain suffered 20,000 war dead. Many — too many — of these casualties were the direct result of the paucity of Britain's preparations for war.

Subsequent Reforms

Having been shocked into action, the British government continued to reform the military after the cessation of hostilities. Twenty years of fitful reform followed the war. The staff college was formally established, and detailed investigations of continental army methods were made.

These reforms culminated in the Cardwell reforms of the 1870s. Cardwell's aim was to save money by improved efficiency, rather than to give Britain a more powerful military instrument. He pursued the reduction of forces overseas, and the abolition of the long-service system of recruitment which had plagued the British army for years.

It was on the base of the post-Crimean War reforms and the Cardwell reforms that the British army stood as it entered the late Victorian era (1870-99). It was a short-service army with a comprehensive military system based on local depots; and it possessed a reserve. Flogging was abolished (except in time of

war), privates' pay was increased to one shilling a day, free bread and meat was issued and living conditions were improved. In 1871, the first large scale exercise ever to be held in Britain was completed.

In Retrospect

It would seem as if Britain, anxious to avoid past mistakes and intent upon avoiding another disaster like the Crimea, was doing its duty by assuring an adequate defence preparedness for the future. However, the events of the 1850s and 1860s were probably the real reason why the British army was not allowed to sink back into complacent relaxation. These events; the Indian Mutiny, the Maori Wars, the need to garrison Canada during the American Civil War and the 'Irish Problem' demanded a large and virile army.

After several of the large-scale annual exercises of the type begun in 1871 had been held, they were allowed to peter out. This was one of the beginnings of the re-application of the 'inverse proportion rule'.

The Crimean War illustrated the absolute necessity for a nation to possess a modern, well-trained army with adequate reserves and a reliable logistics organization. This was not a new lesson. What was new, however, was that henceforth wars would be fought under the eye of the Press, and that the majority of the population would read the press dispatches critically. It would be no longer possible to cover up ineptitude and lack of preparation. In the future, it could be expected that soldier and politician would have to answer to an irate public when things went wrong. If this lesson was accepted, it should have become an exercise in self-preservation for the soldier and the politician to ensure that an adequate defence preparedness was maintained. Judging by the number of heads which have rolled, and the number of governments which have been unseated since those times, this lesson had not been well learnt.

As a sop to the national ego, the fruitless and militarily unimportant charge of the Light Brigade was glorified, and incompetents like Cardigan and Lucan denigrated. However, most of the real lessons have, over the years, been ignored because they are expensive and are not always politically desirable to implement.

THE LATE VICTORIAN ARMY 1870-99

We don't want to fight, but by jingo if we do,
We've got the ships, we've got the men, and got the money too,
We've fought the bear before, and while we're Britains true,
The Russians shall not have Constantinople.

— Music-hall Jingoism.

The Army's Place in Society

The late Victorian era was marked by a change in the climate of national opinion. In 1870 education had become compulsory and patriotism and the exploits and adventures of war became heady reading for the masses.

Although the system of purchase of commissions had been rescinded (because of the cost of the social round) officers still needed a private income to exist in the army. The other ranks, while not the felons and outcasts of previous eras, were formed mainly from the poorest and most ignorant class, who looked upon the army as a form of welfare. The army was, for the first time, a reasonably respectable institution. Almost respectable though it may have been, the army was recruited from the minority social groups — the very rich, and the very poor. The nation, while enjoying jingoism and chanting refrains such as the one quoted above, had little directly to do with the army.

The period was one of small campaigns, mounted mainly in the interest of imperial expansion. The public groaned at defeats like Isandhwana and cheered the defence of Rorke's Drift; they beat their breasts at the news of Gordon's death at Khartoum and treated the victory at Omdurman as if it were another Waterloo. They had lost their perspective and, in any case, were largely personally unaffected by either defeats or victories. They became spectators following the progress of their army of gladiators who, though generally fondly regarded, were not considered to be part of the life which the nation lived.

Among a financial *elite* of officers who, in the main, did not care to be known to be studying their profession, it was natural that some less affluent, and, therefore, more ambitious leaders should emerge. The three popular heroes; Wolseley, Kitchener and Roberts, all qualified to be considered among the less affluent; all were intensely ambitious; and all made a serious study of their profession. Unfortunately men of this type were rare.

Complacency

Life proceeded smoothly in the late Victorian era. Britain was at the height of its imperialist power, and poets like Newbolt and Kipling glorified this army which was unrepresentative of the society as a whole. There was the excitement of successful campaigns, fought usually against poorly equipped natives, and there were three popular heroes to lead the glorious spectacle. Surely there could be no need to be concerned with rigorous defence preparations when the country possessed an army such as this. It was in this wonderful, exhilarating, hypnotic state of mind that Britain went to war against the Boers.

Wolseley, and a few others, were not beguiled by a series of victories in minor wars into believing that Britain was prepared and fit for war against a major power. With uncompromising vigour, Wolseley tried to shake the complacency of the commander-in-chief (the ageing Duke of Cambridge), the government and the people. Heedless of the warnings of the past, again the nation failed to take steps necessary to ensure an adequate defence preparedness.

When planning for contingencies, it makes good sense to plan against the worst case occurring. While it is seldom possible to provide the optimum in men and resources, the worst case should be clearly recognized, and the best provisions possible should be made. Britain was prepared only for the best case possible — a continuation of minor campaigns. She ignored, against the warnings of men like Wolseley, the worst case; a major campaign against determined and well-equipped troops.

Just as dangerous as the ignorance which prevailed prior to the Crimean War, was the complacency, and the disinclination to dig below the immediate surface and examine the state of defence preparedness in the clear light of reality and the changing world political and economic scene.

THE BOER WAR 1899-1902

'E does not lose 'is rifle an 'e does not lose 'is seat.
'ive know a lot 'o people a dam' sight worse than Piet.
—Kipling.

The New Enemy

The Boer War was the first major war Britain had fought against well-equipped, European troops since 1856. The Boers had

bought Mauser rifles and Krupps artillery pieces from Germany, and were able to field an army of 50,000 dedicated calvinistic farmers. These men were well armed, adept at fieldcraft, and knew the country well. They provided a formidable force of mounted infantry.

The Warnings Ignored

When war broke out on 11 October 1899, Britain was not taken by surprise. War had been in the air since 1895. General Butler, the pre-war commander in South Africa had warned that, should there be a war against the Boers, a force of 200,000 troops would be needed. He was recalled for his pessimism.[4]

Wolseley tried to persuade the government to raise and equip an expeditionary force prior to the outbreak of war. This was rejected by the politicians on the grounds of the cost involved, and that perhaps the raising of a force might annoy the Boers and so preclude a peaceful settlement.

The Deficiencies

The results of the failure of the government to give Britain a modern military machine were well demonstrated in the year 1899-1900. 14,750 regular troops were in the country at the outbreak of war. 47,000 men under Sir Redvers Buller, who were to comprise the main field force, were not dispatched from England until two weeks before hostilities commenced.[5] The first year of operations proved to be disastrous for the British army. Grim similarities between Crimea and South Africa began to emerge. A great deal of the blame must be laid at the feet of the British government of the time.

The very fabric of the British Army was proved to be insufficient for modern warfare. Both officers and men did not reflect all that was the best in British society. This rare combination of the very rich and the very ignorant produced an army lacking in organization, training and initiative. Casual officers and inferior human material in the ranks proved to be an inadequate mixture for an army pitted against the Boers.

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4 Barnett, p. 338.
5 Barnett, p. 338.

In a history of the war prepared by the German General Staff, the war was seen as ' . . . a contest between the soldier drilled to machine-like movements, and the man working on his own initiative . . . war had been proclaimed between rigid formulas and untrammelled, healthy common sense'.[6] In the 1880s the Germans had abolished volley firing and mass advances in formal order. Britain was the last of the western powers to adhere to the 18th century close-order tactics. It was with 18th century tactics that Britain went to fight an organized, well-trained, 20th century enemy.

Result of Investigations

After the 'Black Week' of December 1899, Britain reacted in the traditional manner. She sent for a hero, and established a Royal Commission. Field Marshal Lord Roberts of Kandahar was placed in command, and Lord Kitchener of Khartoum was appointed his Chief of Staff.

There was no doubting the courage and tenacity of the officers and men of the British Army. Years of inadequate and disinterested defence preparations had given them a long tradition of dying well. Of the officers, Kitchener reported to the Royal Commission: 'There appears to be too often a want of serious study of their profession by officers who are, I think, rather too inclined to deal too lightly with military questions of moment'.[7] The commission was also told, 'Keenness is out of fashion . . . it is not the correct form.'

The Report of His Majesty's Commissioners on the War in South Africa revealed many deficiencies in the military system. The following are but a few of the facts:

- 60,000,000 rounds of small arms ammunition had to be withdrawn from the theatre as they were faulty.
- 200,000 Lee Enfield rifles had faulty sights; the rifles were found to fire 18 inches to the right at 500 yards.
- The peacetime system of the provision and planning for remounts and transport animals was inadequate.

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6 Barnett, p. 340.
7 *Report of His Majesty's Commissioners on the War in South Africa* (1903), p. 53.

- The medical system was trying to cater for a force three or four times larger than provided for by the medical establishment. Medical equipment was insufficient and old-fashioned.
- The reserves were found to be generally fitter than the regular troops. Of these regular troops, drawn mainly from the major cities, the Commission reported, 'His (the British soldier's) mental qualifications are not up to the general run of European soldiers, and the reasons for it are, that we got them mostly from a class where education is not looked to as much as it is in Germany and France.'[8]

Comment

How easy it would be to lay the blame on 'Tommy'. The poor ignorant beggar was made ignorant by his social environment, and kept ignorant by the military system. He fought his hardest, endured far more than should have been required, and either seeped his blood into the veldt or died of enteric fever because his officers and his government had not done their duty.

Lessons

The lessons which emerge are clear. No modern society can afford to have an army which is largely disregarded and hope to survive against a well-armed and well-trained enemy. Educated, intelligent soldiers are required for modern warfare. Initiative is at a premium — the day of the military automaton has long gone. Soldiers of the right calibre can only be attracted to, and retained in the service, by good pay, conditions and career prospects. This cannot be done on the cheap.

Despite fitful reforms since 1856, the syllabus of the Staff College in the early 1900s was sadly out-of-date and staff work was of a low standard. The officer corps was casual, inefficient and brave — a dangerous combination. It is better to officer an army with cold-minded careerists, than to force soldiers to pay with their lives for the foolish mistakes of dilettantes and poodle-fakers.

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8 Barnett, pp. 342-4.

The blame for all of these shortcomings does not rest alone on the army and the government. The army's size, organization and efficiency are the responsibility of a civilian minister. He is responsible to the government who, in turn, are responsible to the people. The people allowed themselves, and were allowed through disinterest in defence preparations, to have little interest in their army. The nation got the army it deserved — and paid the price it deserved to pay. Eventually, 450,000 men were committed to the Boer War. Of these men, 16,000 died of enteric fever and 6,000 died as a result of battle.[9]

It is only by having an army of good quality men, professionally keen and satisfied with their conditions, that a nation can hope to have a virile defence preparedness. It is only by unrelenting study, and the free use of the intelligence of all ranks, that an army's tactical doctrines and methods can be kept up-to-date. Australia and New Zealand sent 22,500 men to South Africa. These men proved to be among the best of the imperial mounted infantry. They were not necessarily 'born soldiers'. The reasons for their good performance were clear. They were used to horses, used to living out-of-doors, and most importantly, their enterprise and intelligence were not stifled by a military machine which was one hundred years out-of-date.

For the first time Australia had sent a significant force overseas in defence of the Empire. During the war, Australia became a commonwealth, and henceforth she would have to provide a larger share of her own defence.

THE FIRST WORLD WAR 1914-18
GREAT BRITAIN

Every war, even the most victorious, is a disaster for the people; for no gain of land or money can replace the lives of men or can make good the affliction of the bereaved.

— Field Marshal Count Helmuth von Moltke.

Before the War

Entente Cordiale. The years from 1902 to 1914 were not wasted by the British Army or His Majesty's Governments. Britain concluded the *Entente Cordiale* with France in 1904. The

9 Barnett, p. 348.

entente was not a formal alliance between the two countries, but a settlement of various contested questions. Army staff conversations between Britain and France were initiated and led to a growing military collaboration.

Haldane Reforms. By 1909 the Haldane reforms were largely completed. The Territorials had been raised and consisted of fourteen infantry divisions, fourteen cavalry brigades and corps troops. They had a strength of 276,618 officers and men. This strength represented 85.5% of the allowed establishment.[10]

For the first time the British Army was provided with official manuals which laid down detailed staff responsibilities and procedures. Common military forms and methods were adopted throughout the British Empire. It is interesting to note that Douglas Haig, then successively DMT and DSD, and later C-in-C British Armies in France, was mainly responsible for these staff reforms. Without them the prodigious expansion of British and Empire forces must have resulted in complete chaos.

The New Army

The new War Office and the General Staff became functioning realities. Britain had an Expeditionary Force capable of taking the field in Europe within 15 days. 1914 saw Britain with the best-equipped, best-organized and best-trained army it had ever fielded at the beginning of a war.

The War Minister Haldane said of his military collaborators, 'The men one comes across, the new school of young officers — entitled to the appellation of men of science . . . were to me a revelation . . . . A new school of officers has arisen since the South African War, a thinking school of officers who desire to see the full efficiency which comes from new organization and no surplus energy running to waste.'[11]

Tactics had come under careful review. The reconnaissance role for cavalry was fully recognized, and was adopted in favour of the exhilarating, but usually worthless, headlong charge. British infantry marksmanship and fieldcraft were second to none.

10 Barnett, p. 366.
11 Barnett, p. 363.

The War

Although Britain had prepared a splendid army, the likely size of a war on European soil had not been appreciated. The Germans deployed seven armies totalling nearly a million and a half men. The Schlieffen Plan failed to gain Germany a quick victory. This set the pattern of almost the entire war on the western front. The war became one of mass armies, squatting in well-prepared trenches and committed almost entirely to frontal attacks. It became a war involving the whole of the nation and not just the army.

The Deficiencies

Reserves. Although Britain had started the war with a sizable Territorial Army backing up the Regular Army, after the first forty days of operations it became abundantly clear that more men were needed. In the autumn of 1914 Britain had set out to create a mass army essentially from scratch. By the end of 1914, 1,186,337 volunteers had joined up.[12] Unfortunately, the Army did not have the staff trained officers, NCOs, facilities and equipment to weld this number into a proper fighting force.

Industrial Preparations. British industry and industrial skills were found wanting. Both Britain and France lacked the capability to produce ammunition quickly. German industry, however, was so geared that it could convert rapidly to ammunition-making. It was discovered that Britain possessed no chemical industry large and modern enough to make explosives. Britain had depended in peacetime on the German chemical industry!

Few British firms were equipped with machinery to make fuzes. It was, perhaps, poetic justice that Lloyd George, who was a most outspoken critic against military expenditure in peacetime, was charged with the responsibility of creating a British armaments industry. An armaments industry was finally established; but at great expense using equipment purchased from the USA. It became apparent how closely in the modern age industrial capacity is linked to military power.

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[12] Barnett, p. 377.

Two Major Lessons

Although Britain had made the most creditable preparations for defence, two major factors were overlooked. Britain had failed to realize that war on the continent would involve mass armies supported by the entire industrial, economic and manpower resources of their nations. She had also failed to develop sufficiently her capability for industrial mobilization.

Germany had not overlooked these two factors. The German system of reserves enabled the mobilization of seven armies in a very short time. The size of the German force took the Allies by surprise. Germany had made the most complete preparations for industrial mobilization. This industrial capability was sufficient to carry Germany, virtually unaided, through four years of total war.

AUSTRALIA

Before the War

Preparations. The new Commonwealth of Australia had also been looking to its defence preparedness since the Boer War. A Council of Defence was established and patterned on the British Committee of Imperial Defence. The Defence Acts of 1903 and 1904 provided that, in time of war, the Governor-General could call out the CMF. Males between the ages of 16 and 60 were liable to serve in Australia in time of war. The Defence Act of 1909 provided for the establishment of the Royal Military College, Duntroon, the setting up of factories to produce small arms, equipment and ammunition, and for the employment of civilians in defence establishments. By 1911, compulsory military training was instituted for all males between the ages of 12 and 20.

In 1913 the Royal Australian Navy took control of all Sydney naval establishments from the Royal Navy. Prior to the outbreak of the war the RAN consisted of a battle cruiser, three light cruisers, three destroyers and two submarines.[13]

At the request of the Australian Government, Field Marshal Lord Kitchener visited Australia in 1909 to examine

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[13] Millar, Dr T. B., *Australia's Defence*, Melbourne University Press, Melbourne, 1965, p. 14.

defence preparations. As a result of his recommendations, the compulsory military training programme was amended and put into operation on a regional basis of ninety-two battalion areas in twenty-three brigades. There were also field artillery batteries and light horse regiments.[14]

The Reasons

This strong emphasis on defence preparations was due to concern over growing tensions in Europe, the Japanese victory in its war with Russia and a determination to preserve the 'White Australia' policy. The vigour with which defence preparations were made was probably also due to a strong sense of national pride and a determination to be recognized — both normal post-independence symptoms of emerging nations.

The Commitment

The day before Britain declared war, the Australian government offered to send 20,000 men to fight in Europe. A further 10,000 men were offered a week later. On 1 November 1914, the first convoy of the Australian Imperial Force (AIF) of over 20,000 men left for Egypt.[15]

By the end of the war, a total of 329,682 troops had served overseas and an Australian was commanding an Australian corps of five divisions in France. Australia lost 59,000 in war dead. To place this loss in perspective, this was considerably more than the Americans lost.[16] The AIF was a volunteer force. All efforts to introduce conscription in Australia had been defeated.

Comment

The war effort made by Australia was astonishing when one considers that the population at the time was a mere five million. Australia developed by 1918 a defence force out of all proportion to its manpower and economy. Primarily, Australia had entered the war through an emotional identification with Britain and the Empire, rather than any calculated assessment

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14 Millar, p. 14.
15 Bean, C. E. W. *Official History of Australia in the War of 1914-18*, vol. 1, Angus and Robertson Ltd., Sydney, 1939, p. 98.
16 Millar, p. 15.

of strategy or interest. Andrew Fisher's promise, 'Australia will stand behind the Mother Country, to help and defend her, to our last man and our last shilling,' helped him become Prime Minister.[17]

Constitutionally, despite Australia's independence in 1901, few Australians felt that the Commonwealth Government had the power to stay neutral in 1914, since the Crown was indivisible and the Empire a political unit. Although Australia's contribution in the war did establish her position in international affairs, it was a most expensive entrance fee — 59,000 dead, many more thousands maimed and an enormous drain on the resources of a country then only eighteen years old.

Had Australia remained neutral during the war she would have emerged in 1918 as an economically buoyant country. She would have had at least an additional 59,000 fine young men to contribute to her prosperity for the next 20 to 30 years. What tangible things did Australia gain from the war? — international recognition as a minor power, a mandate over New Guinea, some war reparations and a belief (which was to be dispelled forever in 1941) that Britain would be able to come to her aid when danger threatened.

Australia entered a world war in 1914 having had only fourteen years to develop her defence preparedness. Her contribution to the war was excellent, but one cannot help but wonder if there was a case of a defence capability being squandered. It is a clear example of the politician's dilemma; that of striking a balance between defence preparedness and the social and economic needs of the country prior to the war, and deciding upon the scale of commitment once the war starts. Too much emphasis either way can be disastrous. This was one of the few cases in history when it may be urgued that the balance swung too far in favour of things military.

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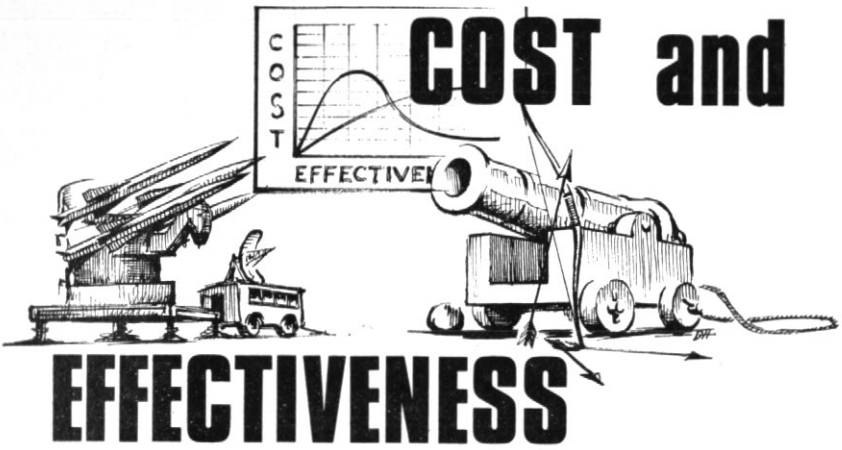
17 Millar, p. 17.



COST and EFFECTIVENESS

Colonel D. G. Osborne
Royal Australian Engineers

THE scene is the Belgravian Military Council room in the year 1476. The Director of Equipment speaks:

> *Gentlemen, we are developing a new personal weapon which will be much more cost-effective than our current crossbows and longbows. We have produced a half dozen prototypes and I would like to set up a demonstration for you.*

The King of Belgravia looks up, transfers his secretarial assistant from one knee to the other, and says:

> *I would like to hear some details of this new weapon before we go to that much trouble, Roger.*
>
> *Well Sire, we call it a matchlock. Basically it is a metal tube which can be sealed at one end. By*

Colonel Osborne is a graduate civil engineer: he joined the Militia in 1941, the AIF in January 1944 and was commissioned into the RAE in March 1944. He served with the 7th Division Engineers in Queensland and Borneo in 1944-45. He attended a technical staff course in the UK in 1953-54, was an instructor at the Army Staff College 1963-65, attended a Management Systems course in the United States in 1970 and the Joint Services Wing, Australian Services Staff College in 1971. Recent appointments have been: Chief Engineer, HQ PNG Command; CI School of Military Engineering; and TSO 1, Australian Army Staff, Washington. His present appointment is Project Officer at Army Headquarters, Canberra.

putting an explosive material at the sealed end and some small balls of lead on top of the explosive and igniting the explosive, the balls are forced out the open end of the tube at high speed in varying directions but generally to the front. Anybody in the way will suffer death or injury.

It sounds interesting and you say it is more cost-effective. What does it cost compared with our present weapons?

Well, the matchlock system as a whole, and I am including operating costs here as well as initial costs, costs less. This is due mainly to the saving in production costs. As you know, these are rising steadily from year to year and the bow and arrow craftsmen are in the forefront of the movement for higher wages. Good quality bows and arrows need highly skilled craftsmen, but the metal tube is the only part of the matchlock which requires much skill.

All right, so it costs less; what about effectiveness?

It is much more effective also Sire.

The Director of Equipment was obviously treading warily on this question; he had had trouble before in trying to convince his superiors on the subject of effectiveness.

Come on, come on, what are its characteristics compared with the bows — range, accuracy, rate of fire?

The effective range of the matchlock is only about 30 metres compared with 100 metres and more for the bows, its accuracy is not good either and its rate of fire of about three shots per minute is unfavourable compared with the firing rate of a bowman of about 20 arrows per minute, but these . . .

That's enough! You produce those figures and still say it is more effective What we need is a new Director of Equipment, not a new weapon. Begone!

INTRODUCTION

Probably the two aspects of systems analysis which cause most concern to analysts, planners and decision makers alike, and which often form the major part of a systems analysis, are denoted by the words 'cost' and 'effectiveness'.

In recent years, the Defence group of departments have been showing an increasing awareness of the importance of establishing better estimates of costs and effectiveness of military systems. This has been brought about by a combination of factors — the increasing complexity and costs of modern systems, the scarcity of resources and a natural desire to gain the most benefit from each dollar spent.

The aim of this article is simply to encourage thought and discussion on the subject.

The term 'cost-effective' has sometimes been defined as meaning 'maximum effectiveness at minimum cost'. At first sight this definition may be satisfying enough but because there are no restraints on the only two variables involved the definition is meaningless. For example, a particular System A may be more effective than System B but also cost more. Which system is the most cost-effective applying the above definition?

A better definition of cost-effective, if we must have one, might be — A cost-effective system is one which can accomplish a necessary task or role without costing an unreasonable amount.

In other words, whether something is more or less cost-effective is largely a matter of judgment.

This is not to say that cost and effectiveness, as separate entities, do not require investigation. They certainly do, and most of this article is directed towards these aspects.

The ingredients of a cost/effectiveness analysis may be summarized as follows:

- Functional objective.

- Alternatives (feasible ways of accomplishing the function, limited only by creative imagination and good military judgment).
- Costs of alternatives.
- Effectiveness of alternatives.
- Criteria for choosing from the alternatives.

If we were asked to consider which of the two, cost or effectiveness, is easier to calculate or quantify, probably everyone would select cost. Dollars have a practical and familiar feeling so we should be able to manipulate costs readily and make sense with them. On the other hand, effectiveness is not so clear cut nor as easily quantified. However, as one probes more deeply into the subject, it soon becomes clear that costs are not as easy to arrive at as it may appear and effectiveness is even more difficult to determine than at first thought.

COSTS

The costing of a major military system for comparative purposes with other systems requires detailed analysis in many areas of military activity. The term 'system' is used in preference to 'equipment' because it is assumed, for discussion purposes, that we are dealing with a system which impacts upon such things as operations, maintenance, training and accommodation.

Let us consider, in general terms, a system to be costed. It could, for example, be a new fire support system for infantry, a new system for the crossing of barriers of a new combat area medical evacuation and treatment system. What costs should be included when considering the various alternatives?

It was not so long ago when the initial costs only were the main concern. Initial costs usually included capital cost of equipment plus the cost of the initial stocking of repair parts. For many minor systems even now these may be the main costs considered, but when the system becomes more complex, if a reasonable assessment is to be made and if Department of

Defence requirements are to be met, many more associated costs should be considered.

Costs which usually need to be taken into account when considering alternatives may conveniently be grouped as Development, Initial and Operating costs.

Development Costs

In the Australian defence environment there is seldom much research or development involved in the acquisition of a major system. Most of the costs for these are hidden in the overseas procurement costs and thereby appear as initial costs. However, if a system is to include any Australian research and development or if proportionate research and development costs on an overseas item is to be listed separately, then obviously these items are included here.

Some minor costs which could be included under development costs are costs of teams sent overseas to investigate likely systems and costs associated with pre-acceptance equipment trials, including procurement costs of trials equipment, manpower and accommodation costs.

Initial Costs

Initial costs can include:

a. the capital costs of equipments required for the particular system in the quantities required, including war reserves;

b. freight costs;

c. costs of establishing the new system which may involve one or all of:
   (1) acquisition of land;
   (2) new or modified accommodation facilities, for example, workshop facilities, housing;
   (3) development costs of new inspection and repair procedures and associated documentation; and
   (4) procurement costs of the initial stocking of repair parts;

d. training costs, which may involve:

(1) training of operators and maintenance personnel overseas as instructors;

(2) training of the initial group of operators and maintenance personnel;

(3) production of training aids (for example, simulators, documentation); and

(4) personnel pay and allowances.

Operating Costs

Operating costs will vary widely depending upon whether the system is operating in peacetime or during war. However, the same sort of items are involved in either case and the following list, which is not exhaustive, indicates the extent of the range of items which may have to be considered:

- Personnel pay and allowances.
- Accommodation improvements, additions and maintenance.
- Consumption of utility services.
- Fuel and lubricants consumed.
- Training ammunition and/or other training resources used.
- Resources consumed or destroyed in operations.
- Replacement training of operators and maintenance personnel.
- Replacement of unserviceable equipment.
- Equipment maintenance costs including repair parts used.
- Transportation and travel costs.
- Overhead or management costs including 'slices' of higher headquarters and installations.
- Depreciation.

Costing Terminology

There are a few terms which appear frequently in costing discussions and which may require some explanation.

Sunk Costs. These are costs which have already been paid or have been irrevocably committed. Such costs are completely irrelevant to present and future decisions. The value and utility of any materiel produced as the result of such expenditure are not irrelevant, but the expenditure itself can have no effect on decisions yet to be made.

Inflation and Current Dollars. The value of a 'current dollar' is the value of the dollar at the time of the cost analysis. If all costs are quoted in terms of current dollars, including future costs, the effects of inflation are completely and conveniently removed from the cost analysis.

Discounting. Discounting of future expenditure (and revenue) is a reduction based on the proposition that a dollar to be spent in the future is of less current value than a dollar spent now. This allows direct comparisons of costs in current dollars even though expenditures may be planned for future years. It has nothing to do with inflation. The discount rate used by government departments is a policy matter but a rate of 10 per cent per annum is generally accepted to be about right. Another way of looking at this is to consider the decision of a person being offered $90 now or $100 (in present dollar value) if he waits one year. If this person finds a decision hard to arrive at, then 10 per cent per annum would be a fair discount rate for him. As an example of the effect of a 10 per cent discount rate, $1,000 to be spent in the tenth year from now has a present value of $405.

Residual Value. The residual value of an equipment or facility is the expected value, in discounted current dollars, at the end of its effective life or at the end of the costing period (whichever occurs first).

Other Aspects of Costing

While it may seem reasonably straightforward, although time-consuming and requiring a large number of assumptions

to be made, to arrive at figures for development, initial and operating costs for a particular alternative there are several basic aspects which require resolution before the first dollar figure can be put confidently to paper.

Several questions require answers:

a. What period should the cost analysis cover — 5 years, 10 years, 20 years, the expected useful life of prime equipment, or several periods?

b. What should be the discount rate?

c. Should operating cost calculations be based on peace or wartime operations, or peace and war in some proportion? In peacetime there is always a dollar limitation, while in wartime the main limitations are time and manpower. Therefore, perhaps decisions should be based on peacetime costs, giving little or no weight to wartime costs.

d. If we are to bring operations into view, what strategic, tactical and logistical assumptions should be made so that useful scenarios can be developed?

e. If a particular alternative would be in service two years, say, before another alternative, what dollar value should be placed on time?

It is up to the decision maker, with the advice of analysts and others, to decide these things. Therefore, to be able to define the costing guidelines to be used in an analysis, he needs to understand their effects.

EFFECTIVENESS

The scene changes to the neighbouring country of Monlovia. The Monlovian Military Council is meeting and the year is still 1476. Coincidently, the same dialogue takes place as in the Belgravian Military Council room, with one important exception — the Chairman allows the Director of Equipment to finish speaking. The Director continues:

> *. . . of a bowman of about 20 arrows per minute, but these characteristics are not the most impor-*

tant to consider. We must look at effectiveness of the new system in the conditions in which we expect it to operate. We are a peace loving country and will be fighting defensive battles, at least initially. The conditions we postulate are that the enemy, armed with conventional weapons, will launch massed attacks on our troops. Our troops will be armed with matchlocks in the main, although we will have some crossbowmen firing at the longer ranges and swordsmen at the rear as a counter-attack force. To counter the drawback of the slow rate of fire of the matchlock, we propose that the firers form up in echelons of three ranks, one rank firing while the other two reload. The poor accuracy of weapon will be an advantage here rather than a disadvantage, while the range, although short, is sufficient to ensure that the bulk of the enemy will not reach our lines.

It must be difficult to train the soldiers to use this new-fangled weapon?

No Sire, because accuracy is not important it takes only a fraction of the time needed to train a bowman.

Further details of the discussions mercifully are omitted. Suffice to say that the Council was convinced that the development should go ahead.

When the Belgravians attacked the Monlovians in 1478, one can imagine the feelings of a former Director of Equipment as he watched the battle draw to its inevitable conclusion.

Before discussing effectiveness further it is necessary to arrive at a meaning for effectiveness when the word is used in the military context. The meaning can be described as follows — For a military system to be effective it must be effective from the user's point of view by being able to achieve set tasks within acceptable time parameters in specified operational environments.

It is, however, much easier to arrive at such a definition than it is to explain how one determines the relative degree of effectiveness of alternative systems, i.e., how does one measure effectiveness?

With a certain amount of confidence we may set out to obtain measures of effectiveness of, for example, firepower, movement of personnel or maintenance of vehicles. But when one thinks of other extremely important factors in a military situation, such as morale, terrain, enemy reactions and command and control, our assurance is likely to decline. The writer can offer not even a faint hope that the true effect of the latter factors on a siutation can be measured quantitatively. The important thing to realize is that one can easily be misled by giving undue weight to items which are measurable while passing lightly over the immeasurable. It is the latter which are often the most important and which should therefore be the targets of thorough subjective effectiveness analysis.

There is another danger when considering effectiveness and that is to mistake performance for effectiveness. Virtually all our military characteristics documents contain detailed performance characteristics, however these must be related to the total environment in which the equipment or system is expected to operate in order to gain a true picture of effectiveness. While it may not be practicable to eliminate performance characteristics from such documents, it is essential that effectiveness characteristics are given more emphasis.

An example of this was given in the Belgravian/Monlovian drama described earlier. Range, accuracy and rate of fire of a personal weapon may seem at first to be of the utmost importance in any circumstance, but in the example given, when related to the operational environment, these performance characteristics were reduced almost to insignificance. The important factor in this case was that the weapon system was not one soldier with one matchlock but a large number of them in a specified formation operating against an enemy of known character, while the important effectiveness characteristic was the system's lethality at close range.

If it is practicable, probably the best way of obtaining a measure of effectiveness of a system is to test it in its operational environment. In time of war this may be a possibility. For systems in early stages of development this approach is clearly not possible in peace or war. For developed systems in peacetime conditions however, the skills and resources needed to mount a major trial in credible operational conditions would normally be prohibitive. Any lesser trials may produce some useful information but would not take account of the immeasurable factors which can often be the most important.

It may therefore be better to undertake a thorough theoretical systems analysis rather than rely on conclusions from limited trials, which could miss the main points altogether. The input data for a theoretical analysis would come from expert judgment, environmental information, military intelligence and technical data covering the various systems under consideration. If time allows, physical trials of at least some of the equipments involved could add useful supplementary data. Such an analysis, provided the analysts were in contact with the realities of the subject, would give a decision maker a better basis on which to make a decision and would avoid the danger of preconceived ideas being given undue weight.

It is not intended to enter any more deeply into discussion of measures of effectiveness. It is hoped that enough has been said to bring out the main points:

- Easy measures of effectiveness are not more important than the impossible ones.
- Performance characteristics are not in themselves measures of effectiveness.
- Effectiveness must be considered in the operational environment, with enemy reaction being one of the main ingredients.

COST/EFFECTIVENESS

Although it has been emphasized that cost and effectiveness are separate entities and need to be analysed separately,

towards the end of any cost/effectiveness analysis there must be interaction between the two. One important aspect of this synthesis is the 'trade-off' of one against the other, bearing in mind that it is effectiveness from the user's point of view which is paramount.

Take for example the case of a medical support system in a combat area. The infantryman, as a user, no doubt would prefer a medical system which produced a doctor on the ground beside him within say five minutes of being wounded. In the interests of economy the soldier may have to be satisfied with medical attention from a centrally located doctor say fifty minutes away. To the user however the latter system would not be nearly as effective. The problem is to trade-off the cost saving against greater loss of life, more cases of permanent incapacitation and lower morale. This involves difficult judgments and decisions.

Another example relates to the maintainability of an equipment. To the user this characteristic is of no direct value. The user is interested in availability, how this is achieved is not his primary concern. In other words, maintainability appears on the cost side of the equation and availability on the effectiveness side. The trade-off here is between spending money and other resources on ensuring that the equipment is maintainable and providing a repair system capable of maintaining it, and availability. It may, in some circumstances, cost less to provide a certain degree of availability, by using larger numbers of cheaper items with lower maintainability than by using fewer numbers of more expensive items with high maintainability or by operating an expensive repair system.

A further example of the trade-off problem may be found in the 'commercially available' versus 'military special' equipment controversy. A commercially available equipment system offers many cost benefits, in initial costs, maintenance costs, training costs and personnel costs. The one benefit offered by a military special equipment system is the probable higher effectiveness in operations. The attainment of this higher effectiveness at considerable cost may not be cost-effective, particularly if the alternative uses for the money saved by using a commercially available

system are considered in relation to the cost-effectiveness of the military forces as a whole.

In the process of synthesis certain approaches can be used to ease the difficulty in trading-off costs against effectiveness. Suppose alternative or competing systems can be designed to achieve the objective at about the same level of effectiveness (judgment is required here). In this case detailed measurements of effectiveness, even if they could be made, are not required and the choice will rest mainly on the results of the cost analysis. This method is sometimes called 'equal benefits analysis'. Examples of its application may be found in some decisions involving the replacement of an existing asset or where there is a choice between leasing or buying a particular system.

Some systems which are dominated by considerations of equipment performance, where credible measures of effectiveness are more likely, can be tackled in the opposite way. A level of expenditure can be chosen for all competing systems and the decision is then based mainly on effectiveness. This method, not surprisingly, is usually called 'equal cost analysis'. An example of its application could be the consideration of rear area air defence systems.

The third and remaining method, involving unequal cost and unequal effectiveness, should be avoided if possible. Unhappily, most cost/effectiveness analyses fall into this category.

Sensitivity analysis is another technique which can be used to throw more light on the subject for the benefit of the decision maker. In any analysis there are always certain assumptions involving cost or effectiveness which, if wrong to a degree, would have considerable effect on results. Sensitivity analysis is simply the assessment of the effects of varying these important assumptions to see what effect the variations have on the results. The decision maker can then make his own judgment on which assumptions are most realistic considering the circumstances. However, if too many assumptions are varied, the multiplication of analytic effort may not only be time consuming but may make the results harder to interpret. Sensitivity checks should therefore be used with discretion.

CONCLUSIONS

The analysis of costs and effectiveness is a complex process with many pitfalls; this should not however imply that such analysis should not be attempted.

Because costs can be analysed with some degree of confidence, and effectiveness with little, there is a danger that costs will dominate decisions.

Although system effectiveness as a whole cannot often be accurately assessed, it is fundamentally wrong to take into account only those aspects which can be assessed.

A soundly based theoretical cost/effectiveness analysis can usually give decision makers a better basis for decisions than limited equipment trials. □